

**State Disaster Management Action Plan
for the
State of Uttarakhand**

**Disaster Mitigation & Management Centre
Uttarakhand Secretariat
Rajpur Road, Dehradun-248001**

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CHAPTER-1

Introduction

Vision

All Developmental efforts and programmes made get nullified in a matter of few seconds. All sustainable efforts face menace from repeated disasters. In the past Uttarakhand has witnessed a number of earthquakes, landslides, floods, droughts & other calamities that have resulted in heavy losses to men and material inflicting injury, disease, homelessness and loss of infrastructure.

The main vision of this document is to initiate coordinated efforts to have an effective disaster management strategy for the State, which will minimize the impact of future disasters. The ultimate vision is to build safer communities through improved disaster risk management

Objectives

In the absence of a defined plan, response to a disaster would be arbitrary leading to over emphasis on some actions and absence of other actions, which may be more critical. Moreover, due to absence of a defined response structure and the duplication of actions by various agencies may lead to complicating the situation there by compounding the adverse disaster effect.

The objective is to localize a disaster and to the maximum extent possible contain it to minimize the impact on life, the environment and property.

A formal planning for managing disasters is therefore necessary to ensure reduction in times of occurrence of any disaster or on its aftermath. This can only be achieved through:

- Preplanning a proper sequence of response actions.
- Allocation of responsibilities to the participating agencies
- Effective management of resources

- To incorporate the disaster resistant features of national building code and earthquake resistant codes of Bureau of Indian Standards.
- To ascertain the status of existing resources and facilities available with the various agencies involved in disaster management.
- Coordination of all responding groups including NGO's to ensure a coordinated and effective response.
- To assess their adequacies and short falls if any in providing a meaningful disaster response.
- To create awareness and contribute towards capacity building.
- Encouraging mitigation measures on traditional know how and incorporating state-of-the-art technology.
- To develop early warning systems backed by responsive and fail safe communications and Information Technology support.
- Identify the requirements for institutional strengthening and capacity building of human resources.
- A systematic effort to put back the social life on its normal course with necessary support and resources.
- Monitoring & evaluation of actions taken during disasters and providing relief.
- To ensure efficient response and relief with a compassionate approach towards the needs of the vulnerable sections of the society.
- To evolve SDMAP as an effective tool.

Themes

The focus of this document is to have constructive and continuous, updated and tested preparedness plans and extremely quick, efficient and coordinated response and recovery plans at all levels (panchayat levels to state level) which ensures maximum community participation in disaster mitigation

activities. To ensure that Disaster Management receives the highest priority for promoting a culture of prevention and preparedness for disasters in Uttarakhand.

1.1 STATE PROFILE – (Social, Economic and Demographic)

1.1.1 Location

Uttarakhand is situated on the southern slope of the Himalayas. The climate and vegetation of different cities of this state vary with the height of its location. Glaciers are located at the highest elevations. However, there are dense forests at the lower elevations. The Western Himalayas between 3000-3500 meters are covered with Alpine Shrub and Meadows. Two of India's most important rivers, the Ganges and the Yamuna flow from the glaciers of Uttarakhand. There are also several other lakes and streams in the region. Uttarakhand is divided into two parts, the western half known as Garhwal and the eastern region as Kumaon.

1.2 Demographic & Socio-economic Profile

As per census, the state has a population of 101 million with average density of 189 persons per sq km. **Demographic & Socio-economic Profile of Uttarakhand State** is given below in the **Table-I**

Table- I: Demographic & Socio-economic of Uttarakhand State figures

S. No	Item	Year	Uttarakhand
1.	Total population (Census) (in lakhs)	2011	101
2.	Crude Birth Rate (SRS) '000 of Population	2007	19.7
3.	Crude Death Rate (SRS) Per '000 of Population	2007	6.8
4.	Infant Mortality Rate (SRS) '000 of Live Births	2009	41

5.	Sex Ratio (Census) /'000 of males	2011	963
6.	Male Literacy Rate (Census) (%)	2011	88.33
7.	Female Literacy Rate (Census) (%)	2011	70.70
8.	Sex Ratio (Census) /'000 of males(0-6)Years	2011	886
9.	Population Density (Per Square Kms.)	2011	189
10.	Decennial growth rate(2001-2011)		19.17
11.	Rural Population	2001	6310275
12.	Urban Population	2001	2179074

(Source: 1)

1.3 Area & Administrative Divisions

Geographical Area: 53,483 sq. km (93% is mountainous and 64% is covered by Forest) Uttarakhand is the 27th state of the Republic of India. The State has 2 Divisions i.e. Garhwal and Kumaun. It has 13 Districts and Dehradun is the capital city. Uttaranchal consists of 13 districts (figure-I). i.e., Almora, Pauri Garhwal, Tehri Garhwal, Bageshwar, Chamoli, Haridwar, Champawat, Nainital, Dehradun, Udham Singh Nagar, Uttarkashi, Pithoragarh, Rudraprayag.

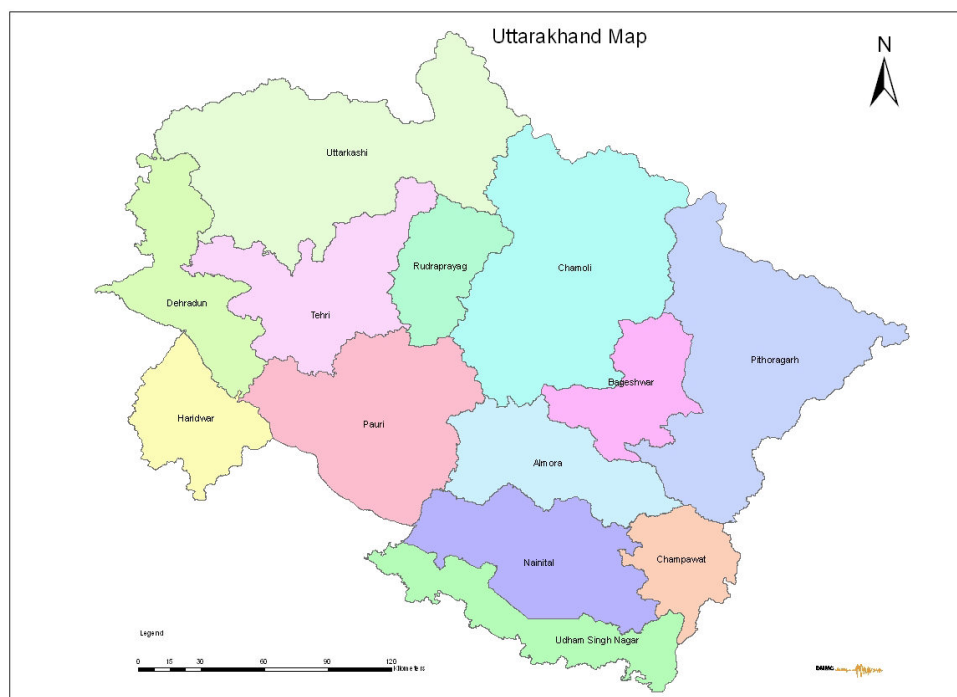


Figure-I The state is having 78 Tehsils, 6 Up-Tehsils, 95 blocks and 7541 Gram/Nyay Panchayats. The state has a total of 16,826 villages, 86 cities/towns, 01 Nagar Nigam, 32 Nagar Palika Parishad, 30 Nagar Panchayat, 09 Cantonment, 06 Development Authority and only five are major cities with population over 1 lakh. It has 5 Lok Sabha, 3 Rajya Sabha constituencies and 70 Vidhan Sabha constituencies.

***(Source-1)**

1.4 Geology

The Uttrakhand Himalayas is divided into following regions :

- (1) Trans Himalayas
- (2) Higher Himalayas
- (3) Lower Himalayas
- (4) Shivalik Himalayas
- (5) Bhavar & Tarai

1.5 Climate

The state has two distinct climatic regions: mainly the hills and the relatively smaller plain region. The climatic condition of the plain region is very similar to plains. The hilly region has cold winters with snowfall for quite a long time, good rainfall in the monsoon, and mild summers. This climate attracts tourists for simply scenic beauty, adventure or even looking for a spiritual environment.

1.5 Rainfall

The State is bestowed with a relatively high average annual rainfall of 1229mm.

- Source: Meteorological Department

Normally rain starts in the State in late April and continues up to September. However, the intensity of rainfall increases during the months of June to September. Higher rainfall occurring during first week of July. Rain continues through August until the first week of September.

(Source: 1)

1.6 Temperature

Summers are extremely hot with temperatures going above the **40°C mark** and with a lot of humidity. Winters can be very cold with temperatures going **below 5°C**. The lowest temperature recorded is -5 to -7°C and highest is between 40 to 45°C.

(Source: 1)

1.8 Literacy and Education

As per Census 2011, Uttarakhand has a literacy rate of 79.63 per cent against the national figure of **74.04** per cent which is much higher than the national average. This is a unique feature of the Uttarakhand and is also the main reason behind the rapid growth of this state. Some hill districts have a

literacy rate above the state average. The Status of Literacy is given below in table II and Education in table III.

Table II: Literacy Rate (in per cent), 2011

S.No.	Districts	Total	Male	Female
1.	Almora	81.06	93.57	70.44
2.	Bageshwar	80.69	93.20	69.59
3.	Chamoli	83.48	94.18	73.20
4.	Champawat	80.73	92.65	68.81
5.	Pauri Garhwal	82.59	93.18	73.26
6.	Pithoragarh	82.93	93.45	72.97
7.	Rudraprayag	82.09	94.97	70.94
8.	Tehri Garhwal	75.10	89.91	61.77
9.	Uttarkashi	75.98	89.26	62.23
10.	Dehradun	85.24	90.32	79.61
11.	Haridwar	74.62	82.26	65.96
12.	Nainital	84.85	91.09	78.21
13.	US Nagar	74.44	82.48	65.73
	Uttarakhand	79.63	88.33	70.70

*(Source: 1)

*(Source: 2)

Table III: Education

(A) Basic/Secondary Education		
No. of schools/colleges	2007-08	21,947
(i) Junior Basic	2007-08	15,356
(ii) Senior Basic	2007-08	4,263
High School /Intermediate	2007-08	2,328
(B) Higher Education		
No. of Institutes	2007-08	119
(i) Degree/Post Degree Colleges	2007-08	102
Universities	2007-08	13

Deemed Universities	2007-08	3
IIT	2007-08	1
(C) Vocational and Training Education		
ITI	2007-08	106
Polytechnics	2007-08	30

(*Source: 1)

1.9 Health Infrastructure of Uttarakhand

The Government of Uttarakhand is committed to improve the health status and quality of life of its people, by focusing on health issues. Its main objective is to reduce disease burden, creating a healthy environment. The Government intends to reach the population stability with due attention to disadvantaged sections, inaccessible and remote areas. It is the first state in India to adopt an integrated Health and population policy. The (Table IV) gives the Medical & Health Institutions as given below.

Table IV: Medical & Health Institutions

S.No.	Allopathic Hospitals/Dispensaries	Year (2009-10)
1	District Hospital	12
2	District Hospital (Female)	7
3	Base Hospitals	03
4	Primary Health Centre	42
5	Additional Primary Health Centre	208
6	State Allopathic Dispensaries	322
7	Community Health Centre	55
8	Dist./Tehsil Maternity Centre	24
9	Health Posts	09
10	Beds in Govt. Hospitals	8075
11	Combined/Female Hospital	39

12	(Mother-Child)Welfare Centre	02
13	(Mother-Child)Welfare Sub Centre	1765
14	Family Welfare Centre	84

S.No.	Ayurvedic/ Unani/Homeopathic Hospitals	Year (2009-10)
1	Ayurvedic Dispensaries & Hospitals	540
2	Beds in Ayurvedic Health Care	1927
3	Unani Hospitals	05
4	Beds in Unani Hospitals	08
5	Homeopathic Hospitals	107
6	Beds in Homeopathic Hospitals	08

1.9.1 Trauma Centres in Operational Condition

- Doon Hospital, Dehradun- 24 hours Medical Emergency & Ambulance Services. Contact No.: For Ambulance -102 & Emergency - (0135) 252229
- 108 Emergency Ambulance Services.
- Base Hospital Srinagar- 24 hours Medical Emergency & Ambulance Services. Contact No.: For Ambulance -108.

Trauma Centre under Construction –

District Hospital Gopeshwar

Trauma Centre Sanctioned –

Base Hospital Almora

(*Source: - 5)

*** To be updated**

1.10 Forests

Table-V

Characteristics	Uttarakhand	Status as on 31.03.2011
Area under forest (sq. km.)	34,651	
Reserved Forests (sq. km.)	24 ,642.932	
Protected Forests (sq. km.)	154.021	
Private Forests (Municipal & Cantonment etc.) (sq. km.)	157.517	

(*Source: 4)

1.11 Agriculture

The state of Uttarakhand has a geographical area of 53,483 sq. km which accounts for only 1.63 per cent of India's area & area under hills is 46035 sq. km. There is a large uncultivable land and fallow land in the hill regions. Already, about 46.3 percent of the total reported area is cultivated. Culturable land (Culturable wastelands, other fallow lands, permanent pastures, grazing lands, and miscellaneous tree crops), which is not currently cultivated, is estimated at about 12.5 per cent of the total.

1.12 Food Grain Production

The resources of the state are limited as far as water and land are concerned. The Food Grain Production (Table-VI) needs to be improved through scientific transformation and modernization of agriculture. Uttarakhand is primarily an agricultural state although its share in the country's total area and production is very small. The contribution of agriculture to the state's domestic product is about 22.410 per cent and the population dependent on agriculture for their livelihood is about 75-85 per cent. The contribution of Uttarakhand to the country's total food grain and sugarcane production is negligible. The (Table VI) is as given below.

Table-VI
Area under Principal Crops

S.No	ITEMS	Year/Period	Unit	Statistics 930898
1.	Cereals			
(i)	Rice	2007-08	Hectare	275608
(ii)	Wheat	2007-08	Hectare	397110
(iii)	Barley	2007-08	Hectare	24336
(iv)	Maize	2007-08	Hectare	29320
(v)	Manduwa	2007-08	Hectare	128156
(vi)	Sanwan	2007-08	Hectare	67159
(vii)	Other	2007-08	Hectare	9209
2	Pulses	2007-08	Hectare	62592
(i)	Urad	2007-08	Hectare	13898
(ii)	Masoor	2007-08	Hectare	12679
(iii)	Peas (Mattar)	2007-08	Hectare	8816
(iv)	Gahat(Kulthi)	2007-08	Hectare	11973
(v)	Rajma	2007-08	Hectare	4873
(vi)	Gram	2007-08	Hectare	1112
(vii)	Bhatt (Black Soya bean)	2007-08	Hectare	5813
(viii)	Other Pulses	2007-08	Hectare	3428
3	Oil Seeds	2007-08	Hectare	31218
(i)	Rape and Mustard	2007-08	Hectare	14373
(ii)	Seas mum	2007-08	Hectare	2443
(iii)	Groundnut	2007-08	Hectare	1385
(iv)	Soya bean	2007-08	Hectare	13010
(v)	Sunflower	2007-08	Hectare	7
4	Other Crops	2007-08	Hectare	
(i)	Sugarcane	2007-08	Hectare	124008
(ii)	Onion	2007-08	Hectare	2216
(Source: -1)				

1.13 Land Use Pattern

The pattern of land ownership is quite different from the rest of India. Most Uttarakhand farmers are owner-cultivators and limited to family farms only, Tenant farming and sharecropping are hardly seen. As such, the zamindari system of big landholders is limited to the plains. Both factors namely of; geography and Pahari cultural heritage has played a role in maintaining traditionally more reasonable land distribution in Uttarakhand (Table-VIII).

Table-VII
Land-Use Pattern

S.No.	Total Reported Area under agriculture (ha)	5672568
1.	Culturable Waste Land (ha)	303144
2.	Area under Forest (ha)	3485847
3.	Barren & Uncultivable Land (ha)	224480
4.	Land Under Non Agriculture uses (ha)	216534
5.	Permanent Pasture & Other Grazing Land (ha)	198737
6.	Net Area Sown (ha)	753711

* (Source: - 1)

1.14 Industrial profile of Uttarakhand & Major Accident Hazardous Units

The status of industrialization and employment in the state of Uttarakhand is given below in the Table. There has been an impressive increase in Uttarakhand as this increase is 22.8 per cent. These SSIs (Small Scale Industries) registered units showed an increase of about 50 per cent and an increase of about 15 per cent in unregistered of Uttarakhand. This increase in scale of SSIs (Small Scale Industries) in Uttarakhand can be attributed to the industrial policy of 2003.

Table -VIII (a)
Industrial profile of Uttarakhand

S. No.	Type of Industry	(2009-10)
1.	(i) Established Industries	203 Nos.
	(ii) Capital Investment (Crores)	23747.03
	(iii) Employed Persons	79697
2.	Small-scale Industry units	
	Registered (Nos.)	35955
	(i) Capital Investment (Crores)	4855.68
	(ii) Employed Persons	142780
3.	Khadi & Gram Udyog	
	(i) No of units	1210
	(ii) Production (Lakhs)	10730.64
	(iii) Employed Persons	3750

(Source-1)

Table-VIII (b)
Factories in Uttarakhand

S. No.	Type of Industry	(2008-09)
	(i) Factories (Nos.)	1907
	(ii) No. of Workers	172861
	(iii) Employed Persons	229727
	(iv) Production (Lakhs)	8292360

(Source-1)

Dehradun, Haridwar, Nainital and Udham Singh Nagar have about 90 per cent of the factories set up in Uttarakhand. Among the hill regions, Almora, Haridwar, Pithoragarh, Tehri Garhwal, has set up small-scale

industries. Rudraprayag and Uttarkashi are the least industrialized hill districts, where even the setting up of Khadi and Gram Udyogs is almost negligible. It is expected that the new industrial policy will focus on these districts.

1.15 Transport & Communication

The state has a good transport and communication network. The state has a total length of 1328km of national highways and 1575km of state highways running through it. The length of metalled roads per lakh of population is higher than that of the all-India average, though due to the nature of the terrain, the length of metalled roads per thousand sq. km. of area is relatively lower. The Tables IX, X, XI, XII of Transport & Communication are as given below.

Table-IX (a)
Motor Roads Maintained by PWD

(i) National Highways	2009-2010	Km.	1375.76
(ii) State Highways	2009-2010	Km.	1575.00
(iii) Major District Roads	2009-2010	Km.	567.88
(iv) Other District Roads	2009-2010	Km.	6827.14
(v) Rural Roads	2009-2010	Km.	12375.68
(vi) L. V. Roads	2009-2010	Km.	1100.65
Total			23822.61

(Source- 1)

Table-IX (b)
Motor Roads Maintained by Local Agencies

Motor Roads Zila Panchayat	2009-2010	Km.	745.56
Motor Roads Nagar Palika/Nigam/Panchayat	2009-2010	Km.	1928.48
Total	2009-2010	Km.	2674.04

(Source- 1)

1.15.1 Railways

The Major Railway stations are Dehradun, Haldwani, Kathgodam, Kotdwar, Hardwar, Roorkee and Lal Kuan. and Railway Stations/Halt are 41 in nos.

Table-X

Type of Line	2009-2010	Km.	Railway Line Length
Metre Gauge (** To Be Verified)	2009-2010	Km.	1928.48
Narrow Gauge	2009-2010	Km.	2674.04

1.15.2 Air Transport

There are air strips at Jolly Grant (Dehradun) and Pantnagar (Udham Singh Nagar). Air strips at Naini Saini (Pithoragarh), Gauchar (Chamoli) and Chinyalisaur (Uttarakashi) are under construction. Pawan Hans Ltd. has helicopter service from Rudraprayag to Kedarnath for pilgrims.

Table-XI

Air Transports	No. of Functional Airports
Items	2
(i) Jolly Grant, Dehradun	
(ii) Pant Nagar, Nainital	

(Source- 1)

1.15.3 Postal and Communication network

With a total of 2717 post offices and 196 telegraph offices during 2002-03, the state also has strong postal and communication services network.

Table-XII**Postal , PCOs, Telephones, Railway Stations**

S.No.	Items	Year/ Period	Unit	Statistics
1.	(i) Post Offices	2009-2010	No.	2715
2.	(ii) No of Telegraph offices	2009-2010	No.	4
3.	(iii) PCOs	2009-2010	No.	10216
4.	(iv) Telephone Connections (Incl. WLL)	2009-2010	No.	379226

*(Source- 1)

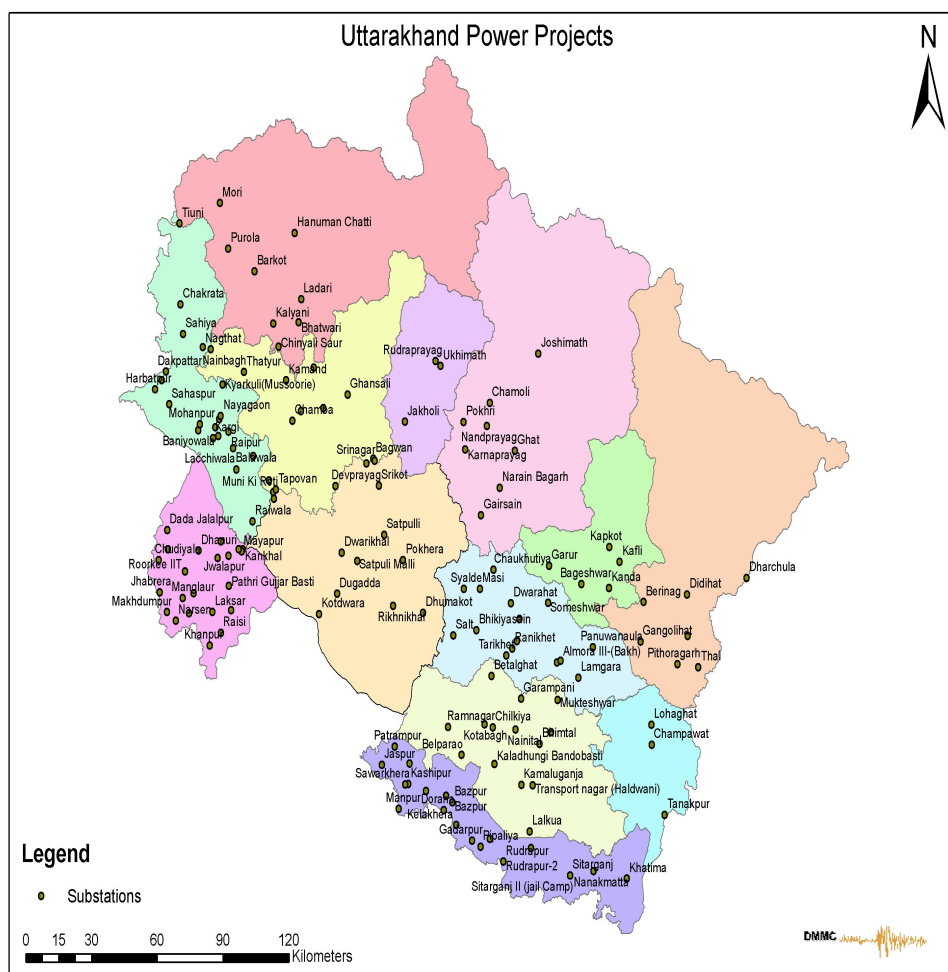
1.16 Power & Electrical Installations

Uttarakhand Power Corporation Ltd (UPCL) is the service provider of Power supply to over 1.08 million consumers of Uttarakhand. These electrical consumers are categorized depending on their domestic, commercial, agricultural and industrial needs.

Today UPCL, Distribution Utility provides to the Sub–Transmission & Distribution to Secondary Substations & Distribution Lines of 66 KV & below in the State. On 1st June 2004, the Power Transmission Corporation Limited (PTCUL) was formed to maintain & operate 132 KV & above Transmission Lines & substations (Table XIII) in the state. Uttarakhand power projects as shown below in (figure –IV).

Table XIII**Table 2.13: Energy Related Statistics of Uttarakhand (2009-2010)**

Total Production of Electricity	Mi.U.W	4126.55
Total Consumption of Electricity	Mi.U.W	6249.2
Electrified villages	Nos.	15270
Installation Capacity	Mega Watt	1305.90



(Figure-II)

References

- * (Source-1):- uk.gov.in (Directorate of Economics & Statistics)
- * (Source-2):- Census of India
- * (Source-3):- Information Directorate
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- * (Source-5):- ua.nic.in

CHAPTER-II

Vulnerability Assessment and Risk Analysis

Introduction

A comprehensive understanding of the pattern of various hazards is crucial in order to have a focus and prioritize the scarce resources for ensuring sustainable development in areas and populations at risk. Similarly, identification of various disasters and the assessment of the consequent effects of such disasters is essential to adopt preventive, preparedness, response and recovery measures to minimize losses during disasters and ensure quick recovery. For a multihazard prone state like Uttarkhand, it is essential to ensure that vulnerability and risk reduction aspects are taken into account for all developmental plans and programmes.

2.1 Vulnerability Analysis

The vulnerability of an area is determined by the capacity of its social, physical, environmental and economic structures to withstand and respond to hazards. Vulnerability analysis has both the engineering aspect & the socio-economic dimension. An analysis of the vulnerability in a given geographic location, an understanding of the socio-economic factors and the capability of the community to cope with disasters, will give an understanding to the development and disaster managers to plan for risk reduction against future hazards.

In addition to the natural causes, various manmade activities have also added the multiplier effect and created the imbalance in overall ecology of the area. All these factors have combined to turn this state into a vulnerable state, affected by almost all the types of natural and manmade disasters.

A brief overview of all these hazards and their potential impact is presented in this document.

2.2 State Vulnerabilities

The State is prone to severe earthquakes, landslides. In addition, the state is also affected by disaster like floods, epidemics, fire, hailstorm, lightening, road accidents, etc. The state of is highly vulnerable to multi-hazards viz. earthquake, landslides, flash-floods, avalanches, Dam Burst , drought, but particularly Earthquake, as the state falls in the highest seismic risk zones of the country i.e. Zone V and IV.

In the disaster prone map of the country, Uttarkhand has attained its position among first five states in respect of natural hazards, i.e., earthquakes, flash floods triggered by cloud burst, landslides, avalanches and forest fires & frequent droughts in summers. These disasters have caused immense loss of property, natural wealth, and human lives.

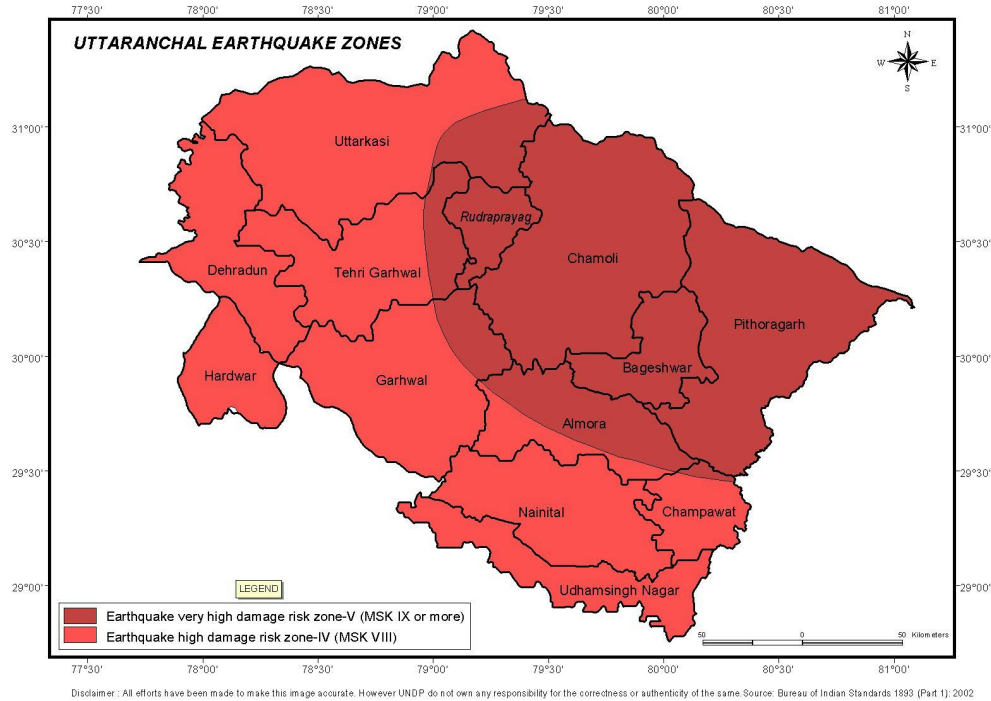
The State of Uttarakhand has witnessed seismic events of lesser magnitude (1991 Uttarkashi Earthquake, 1999 Chamoli Earthquake) this region has been identified as a potential site of a future catastrophic earthquake. With the growth of population and infrastructure seismic vulnerability has increased and previous earthquakes have provided a glimpse of the devastating potential of seismic tremors

On the basis of damage caused due to disasters and their widespread nature, this state can be called one of the most disaster prone states of the country

Remoteness and difficult accessibility in the rural areas along with lack of awareness on disaster risk reduction and preparedness have also contributed to increase in risk of the State's population. As per the Vulnerability Atlas of India, in Uttarakhand approximate 56% percent houses are made of mud, un-burnt brick and stone wall. This is a sign of

very high vulnerability, considering probability of Earth quake, Landslides, Flash flood and Cloud burst etc.

2.2.1 Vulnerability to Earthquakes



(Figure-III)

Uttarakhand is located in the seismic gap of the 1934 Bihar–Nepal earthquake and 1905 Kangra earthquake, and is categorized as falling in Zone IV and V i.e. state falls in the highest seismic risk zones of the country as been captured in the Vulnerability Atlas Shown in the above figure.

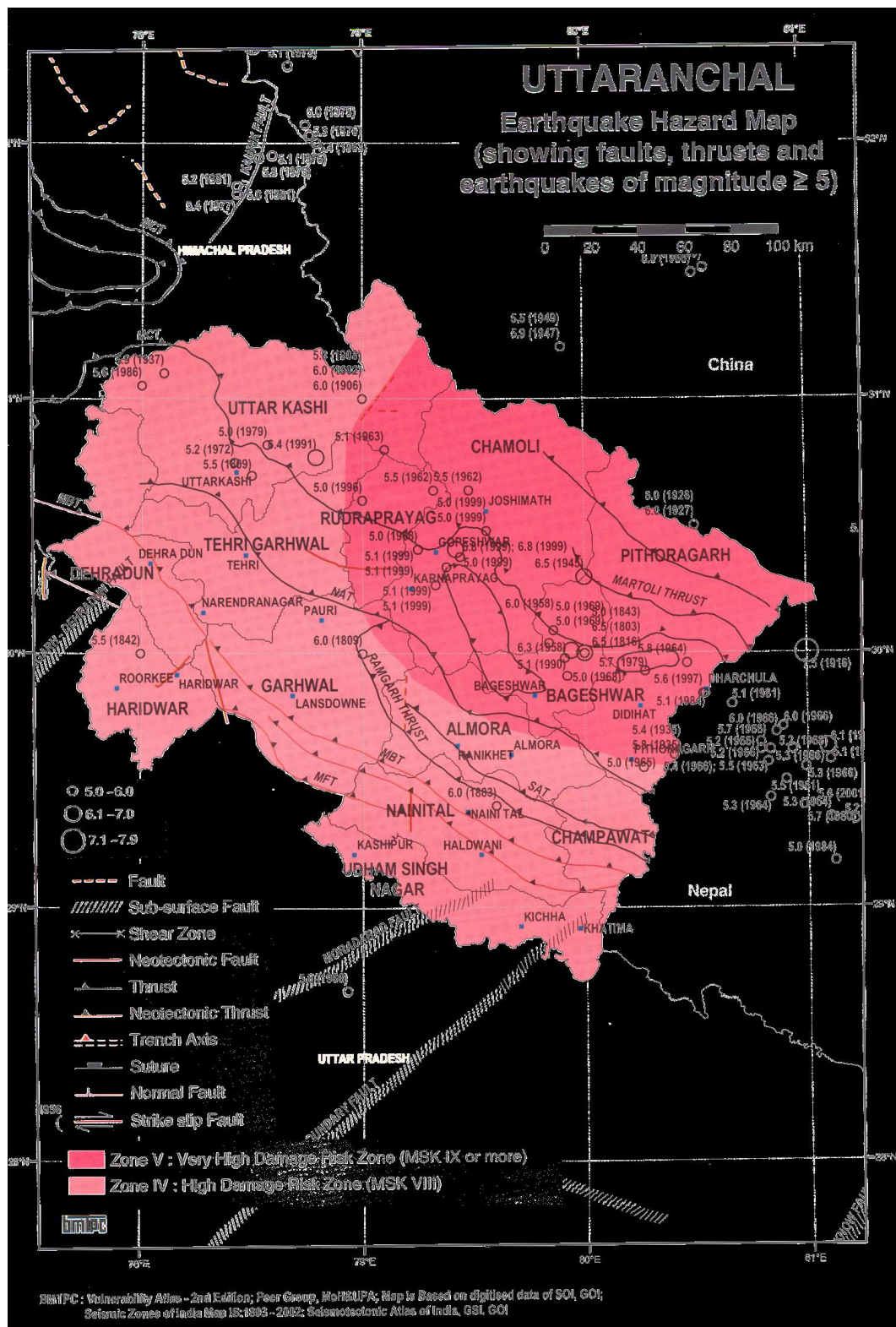
Two regional tectonic features in Uttarakhand, which have earthquake potential, are the main central thrust (MCT) & the main Boundary Thrust (MBT).

The state of Uttarakhand is highly vulnerable to multi-hazards viz. earthquake, flash-floods, landslides, hailstorms, avalanches, Dam Burst drought, but particularly **EARTHQUAKE**, as the state falls in the highest

seismic risk zones of the country i.e. Zone V and IV. The past record of seismic activity in the state and the tectonic profile, probability of a high impact earthquake, can be expected in future.

2.2.2 Earthquake Hazard Map

Based on Seismic Zoning map of India , the State is located in Zone-V & IV of seismic zone as per the seismic code IS: 1893 1984. While earthquakes cannot be predicted, a detailed mapping of seismic fault systems located in Himalayan region is shown below.



(Figure-IV)

2.3 Vulnerability to Landslides

According to geological, topographical and climatic conditions of the area and human factors such as deforestation, unscientific road construction (blastings carried out for road cuttings), constructions of dams or reservoirs, housing schemes, roads, terracing and water intensive agricultural practices on steep slopes etc., implemented without proper environmental impact assessments have increased the intensity and frequency of landslides.

The vulnerability of the geologically young, unstable and fragile rocks of the Himalayan state has increased landslides many times in the recent past due to various unscientific developmental activities in Uttarakhand.

Almost every year the state 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 in Uttarkhand. For this, the state is affected as because there is no other means of transport except roads.

Landslides in Uttarakhand

1979	Okhimath landslide: 39 persons died
1986	Landslides at Jakholi in Tehri Garhwal & at Devaldhar in Chamoli: 32 lives lost
1998	Massive landslides in Okhimath a reformed an artificial lake blocking the course of Madhyamaheshwar river (tributary of Mandakini) 109 people dead

1998	Malpa landslide into river Kali: wiped out Malpa village near Dharchula in Pithoragarh, more than 300 people died.
2002	Landslides at Budha Kedar and Khetgaon 28 persons died together with 99 cattle
2004	Landslides at Jakholi in Tehri Garhwal & at Devaldhar in Chamoli: 32 lives
2008	Landslides at Amru Band claiming 17 lives.
2009	Landslides at La Jhakela in Munisyari Tehsil claiming 43 lives.

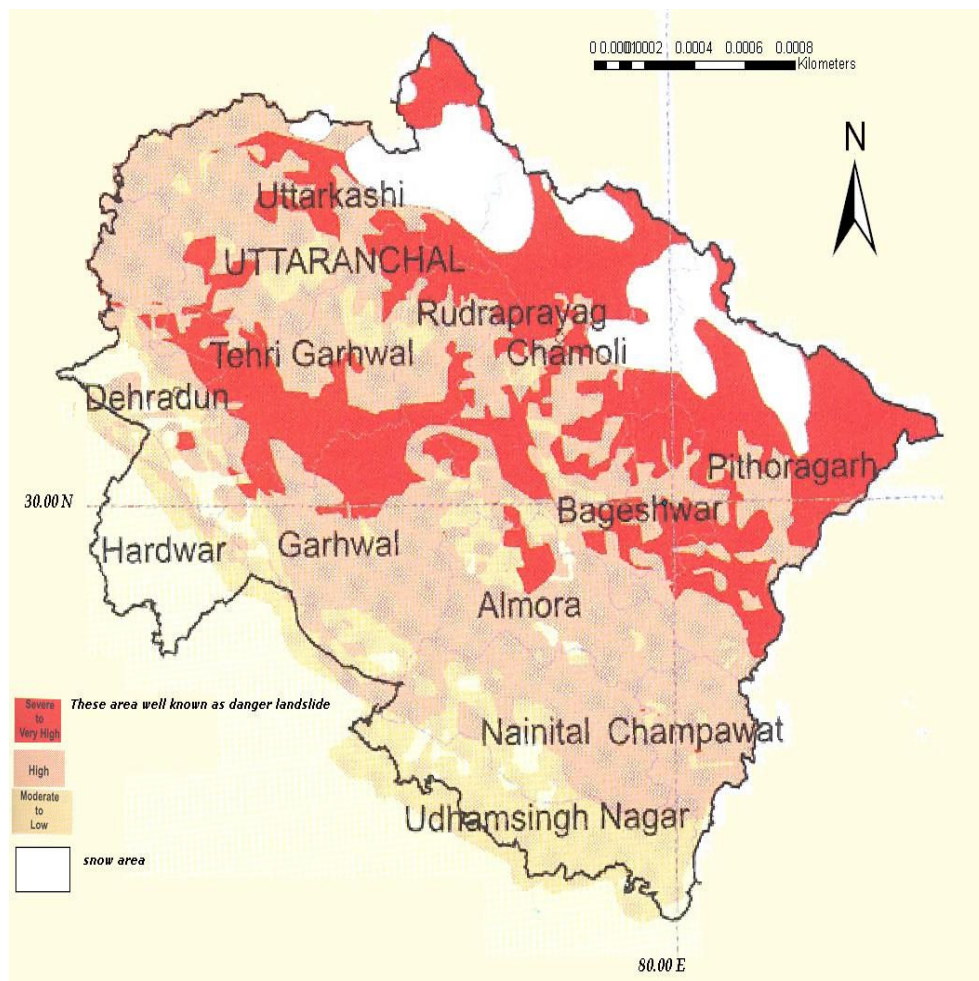
Source: DMMC

2.3.1 Landslide hazard Zonation mapping

Landslides cause widespread damage in the Himalayas. Landslide Hazard Zonation is important to take quick and safe mitigation measures and make strategic planning for the future. GIS based mapping to understand the causes and likelihood of a particular hazard.

The need for such landslide hazard information may vary according to the future land use. Landslide hazard zonation mapping at regional level of a large area provides a broad trend of landslide potential zones.

These maps are useful for development plans, town planning , master plan for cities , construction of highways etc., land use planning in the sense of avoiding high risk zones & decision making during disaster response.



(Figure-V)

Source : DMMC

2.4 Vulnerability to Floods

The State is bestowed with a relatively high average annual rainfall of 1229mm.

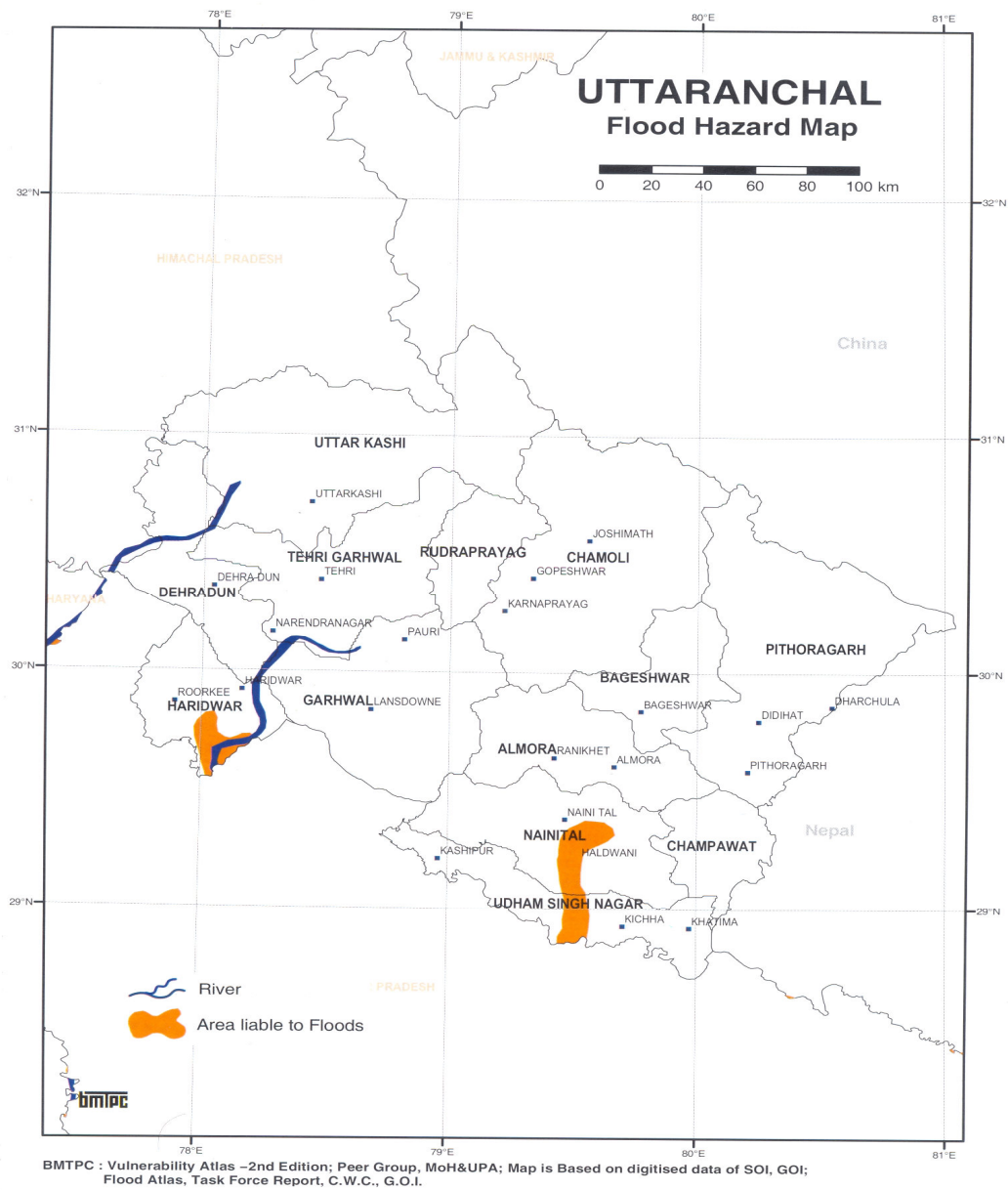
- Source: Meteorological Department

Normally rain arrives in the State in late April and continues up to September. However, the intensity of rainfall increases during the months of June to September. Higher rainfall occurring during this period causing floods in low lying areas and erosion of land throughout the State has become a regular feature in the State.

Deforestation in the Himalayas has increased the severity of floods during the rainy season and reduced stream flows and dried up springs during dry seasons. The increase of soil erosion has reduced the water carrying capacity of the rivers resulting into swallowing of riverbeds leading to floods in the plains. The low lying areas of the State are presented below:

Satellite data can be effectively used for mapping and monitoring flood inundated areas, for flood damage assessment, flood hazard zoning and post –flood survey of rivers configuration and protection works. River configurations are studied post flood, to assess the status of embankments.

Flood Hazard Map based on the Flood Atlas of India prepared by the Central Water Commission. Shows areas likely to flood, other low lying areas are as shown below:-



(Figure-VI)

2.5.1 Cloudbursts

Though not a regular phenomenon, cloudbursts lead to exceptionally heavy rainfall and sudden flash floods in the mountainous streams and rivers, leading to breaching of banks and overflowing of dams. The State will take appropriate measures to decrease vulnerability and restrict construction to elevated places in the cloudburst prone areas.

2.5.2 Flash Floods

Heavy rainfall over a short period of time results in flash floods, landslides and flooding in some parts of the state. It is because the speed and quantity of inflow of water out pace out drainage systems. Very heavy rainfall in hill tops results in sudden down flow of water at a high speed and may create havoc in habitations down below the hillock. Sometimes, this high speed water evades the traditional path and carries with it Mudflows, Debris flows and Rock falls. Such flows and floods hardly give any time for preparation. Flash floods submerge areas suddenly and remain for a short period of time. Yet its damaging potential is as high as that of the general floods. The most unpredictable aspect of this is that flash floods hardly give any time for preparation

Cloudburst in Uttarakhand

2002	Cloudburst in Khetgaon (Pithoragarh) 04 persons died.
2004	Cloudburst in Ranikhet (Almora): 01 casualty
2007	Cloudburst in Pithoragarh & Chamoli: 23 lives lost
2008	Cloudburst in Pithoragarh: 01 casualty
2009	Massive Cloudburst in Tehsil Munisyari district Pithoragarh: 43 lives lost
2010	Massive Cloudburst Kapkot (Bageshwar) 18 school children were buried alive Massive Cloud burst in Almora: 36 lives lost

2011- 2012

Source: DMMC

2.6 Avalanches

Snow avalanches are the sudden slide of large mass of snow down a mountain. There are several factors, which can affect the occurrence of avalanche, including local weather, slope, atmospheric temperature, vegetation; terrain and general snow pack conditions. Different combinations of these factors can create low, moderate and extreme weather conditions. Most avalanches are very dangerous and cause huge loss of life and property. The temperature variation and wind speed are directly proportional to avalanches.

Chamoli, Uttarakhand: Two Army officers were killed in an avalanche on September 21, 2010.

Source: <http://www.ndtv.com/article/india/uttarakhand-two-army-officers-killed-in-avalanche>

2.7 Drought

In context of Uttarakhand causes of drought are natural and human activities both. Several types of weather changes have also altered the normal rainfall pattern in an area and cause drought. And in last few years, it has been observed that human activities like soil erosion, deforestation, excessive use of ground water, pollution etc have also caused drought.

2.8 Hailstorms

Hailstorms cause heavy damage to crops and vegetation. Secondary hazards like snapping of electric poles due to uprooting of trees, disruption of communication links etc are also attributed to hailstorms.

2.9 Socio-economic Vulnerability

Despite the given hazards in the State, the vulnerability of an area is determined by the capacity of its social, physical, environmental and economic structures to withstand and respond to hazards. An understanding of the socio-economic factors and the capability of the community to cope with disasters would provide an understanding to the development and disaster managers to plan risk reduction against future hazards.

Socio –Economic behavior is a direct result of marginalization, non access to goods & services, illiteracy & population growth. In some cases, particularly in urban areas, with a high population concentration of the poor, preventive service measures can not reach everybody, resulting in large sections of people being left to face the impact of the hazards with their own means. The State will endeavour to reduce the socio-economic vulnerability poverty alleviation programmes. The preparedness and mitigation initiatives run by the district and block administration will be sensitive to the increased vulnerability of the poor (BPL population) and the socially challenged groups and aim to reduce their vulnerability.

Socio-economic Profile

Table XIV

Population (in Lakhs) (2011)	Income per Person/ Annum (2008-09)	Infant Mortality Rate '000 Live Births (2007)	Disabled Population (2001)	Disabled Population (%) (2001)
101	36675	48	194769	2.29

Table –XV

District	Population (2011)	Child(Sex- Ratio) (0-6 Age Group) (2001)	Adult(Sex- Ratio) (2001)	Literacy Rate (2011)
Almora	621927	921	1142	81.06
Bageshwar	259840	901	1093	80.69
Chamoli	391114	889	1021	83.48
Champawat	259315	870	981	80.73
Pauri Garhwal	686527	899	1103	82.59
Pithoragarh	485993	812	1021	82.93
Rudraprayag	236857	899	1120	82.09
Tehri Garhwal	616409	888	1078	75.10
Uttarkashi	329686	915	959	75.98
Dehradun	1698560	890	902	85.24
Haridwar	1927029	869	879	74.62
Nanital	955128	899	933	84.85
U S Nagar	1648367	896	919	74.44

Source: uk.gov.in

2.10 Economy and Lack of access to infrastructure

Poor economy, low per capital income and significant poverty contribute to the vulnerability of people. Poverty is the greatest vulnerability as it forces people to settle in marginal and more vulnerable areas.

Uttarakhand is primarily an agricultural state although its share in the country's total area and production is very small. The contribution of agriculture to the state's domestic product is about 22.410 per cent and the population dependent on agriculture for their livelihood is about 75-85

per cent. The contribution of Uttarakhand to the country's total food grain and sugarcane production is negligible. Average Income per person /annum is 36675 which is low as compared to India's figures which is 40605. (Table-I).

The State is handicapped due to inadequate, irrigation facilities, insufficient storage facilities, insufficient marketing/credit institutions and poor infrastructure. Basic services like health, market, are also inadequate in certain hilly and remote areas.

Poor accessibility to infrastructure increases the vulnerability of the population during Disasters.

2.11 Education

Education is a basic requirement that helps improve the coping capacities of the population. The State's literacy rate is still low at 79.63 (Table-II) and it is lower for women 70.70%. Inadequate education becomes a strong disadvantage for exploring alternative occupational or employment opportunities.

2.12 High Mortality

The health care system and health infrastructure of the State are inadequate and add to the vulnerability of people to the disasters. (Table-II)

2.13 Housing

Housing Vulnerability Tables

A systematic study for the whole country has been taken up by Building Materials Technology Promotion Council in the form of the Vulnerability Atlas. One of the important aspects of Vulnerability Atlas is 'housing vulnerability tables' Taking guidance from this work, the types of housing, as existing in each district has been taken from the Census of

India, 1991 and categorized from vulnerability consideration.

The housing infrastructure and its vulnerability to hazard have been categorically analyzed in this table. The vulnerability atlas has tabular details of the house types, risk of damage to house types, damage risk levels for earthquakes, floods. Hence given the intensity of hazard one can analyze the effect of the same on housing infrastructure for the state of Uttarkhand (Figures of Vulnerability of houses in the State given in the **Annexure**)

Quality and design specifications of houses as well as materials used for housing, particularly for roofing and walling, have a bearing on the vulnerability of houses to earthquakes, landslides, floods and fires. The buildings/house types in the State, for which Census has been done, are 2,566,282 as given in the Table-III.

In The Housing category - Wall Types

Consists of 56% (Mud, Unburnt Brick Wall and Stone Wall), 37.9% Burnt Brick Walls, 2.1% concrete and wood wall and 4.0% Walls are of Other Materials.

Where (Mud, Unburnt Brick Wall and Stone Wall) - Category A
(Burnt Brick Walls) - Category B

These two category houses are vulnerable & likely to get severe damage including collapse in moderate intensity of earthquakes. The concrete and wood frame houses placed in Category C account for 2.1% and prove to be much better with only a few collapses.

In The Housing category - Roof Types

Consists of 19.2% (Light Weight Sloping Roof), 18.3% (Heavy Weight Sloping Roof) 62.5% are Flat Roofs.

Table –XVI

Wall Types	No of Houses	% Of houses
(Mud, Unburnt Brick Wall and Stone Wall)	1,437,439	56%
(Burnt Brick Walls)	97,2348	37.9%
The concrete and wood frame houses,	54,750	2.1%
Other category of houses	101,745	4.0
<i>Total Vulnerable houses</i>	2,409,787	93.9
<i>Total no of houses</i>	2566282	100

Source: Vulnerability Atlas of India

2.14 Gender discrimination

Even though women constitute nearly half of the population, they are more vulnerable to disasters because of socio-cultural barriers to various forms of livelihood opportunities.

2.15 People needing special care

Pregnant women, aged & sick are the most vulnerable during and after disasters because of their physical vulnerability and also their lack of capacity of earning their livelihood

2.16 Live Stocks

Live stock at times is the poor man's only asset (Table-IV). Unlike other forms of property, livestock loss is irreplaceable. The contingent issue here is immediate provision of alternate occupation, which is the most difficult part of rehabilitation. Shortage of food affects livestock before it starts to affect human beings. Malnutrition & disease reduce their productive capacity, which results in reduced income for the farmer. Disease among live stock also spread during disasters. These still remain

less considered aspects of disaster management. Insurance is the best option but it still needs to be duly considered in Uttarakhand.

Live Stock In Uttarakhand

Table –XVII

S No.	Classification	Nos. /Production
1.	Total Live Stock (2007)	5140960
2.	Other Small Animals (2007)	257009
3.	Milk Production (Kgs) per day/animal (2009-10) (a) Cow (b) Buffalo	2.959 4.100
4.	Eggs (Nos.) per hen /year (2009-10)	197
5.	Wool(kgs)per sheep/year (2009-10)	1.375

Source: uk.gov.in

Conclusions

Analysis shows that various locations in Uttarakhand are vulnerable to different disasters in varied degrees. Preparedness & mitigation plans, therefore will have to be evolved locally to reduce the impact of the disasters. While evolving such areas specific preparedness & mitigation plans types of vulnerabilities will essentially define the level of preparation & mitigation strategies. These strategies will have to be concentrated more towards the social & economically backward communities as against the vulnerability of the overall system.

CHAPTER –III

Preventive Measures

3.1 Early Warning and Dissemination systems

DMMC will be the main focal point responsible for coordinating early warning, along with the relevant technical agencies and Technical Committees, its dissemination and for ensuring last mile dissemination of same. The State Emergency Operation Centre of the DMMC will be in constant coordination with all technical agencies responsible for natural and man-made hazards, and in instances of any imminent disaster, it will take action to inform the responsible officers for onward communication to the sub-levels and communities.

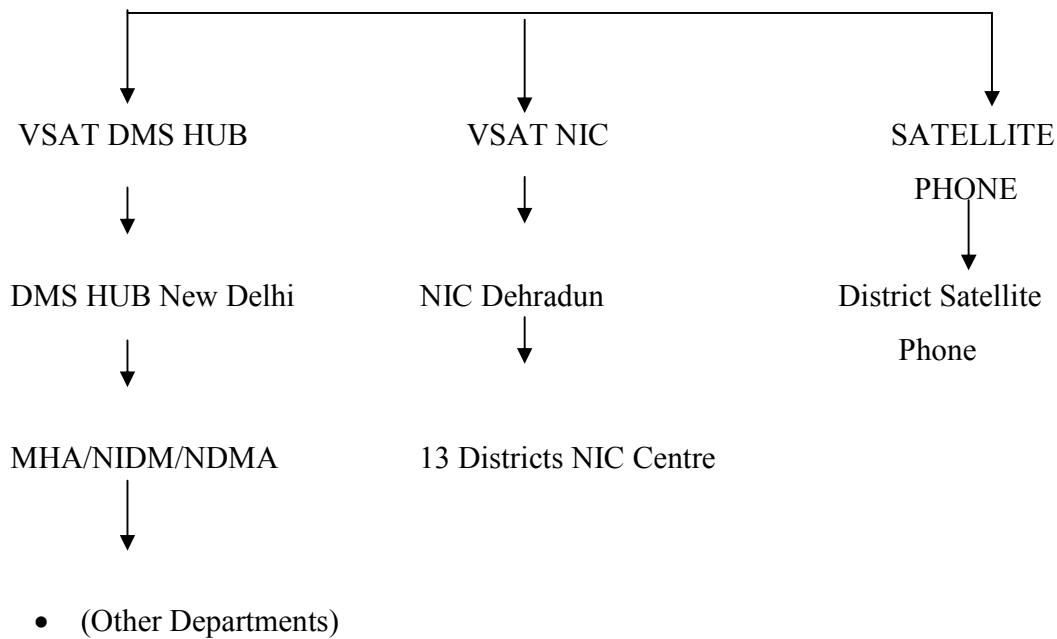
Key Responsibilities:

- Establish coordination with the local technical agencies responsible for forecasting different hazards,
- Establish a reliable communication system (Telephones, Radio Communication etc.) from technical agencies to the State Emergency Operating Centre (SEOC) and to Provincial / District Control Rooms directly or through (DEOC). Ensure redundancy by having alternative communication systems in place in case of breakdowns in the main system.
- Have the system established with media and ensure dissemination of information through same.
- Create awareness among communities and all concerned including Police on the communication system in use for early warning and what immediate actions to be taken, especially on rapid onset disasters.

3.2 State Emergency Operation Centre (Department of Disaster Management)

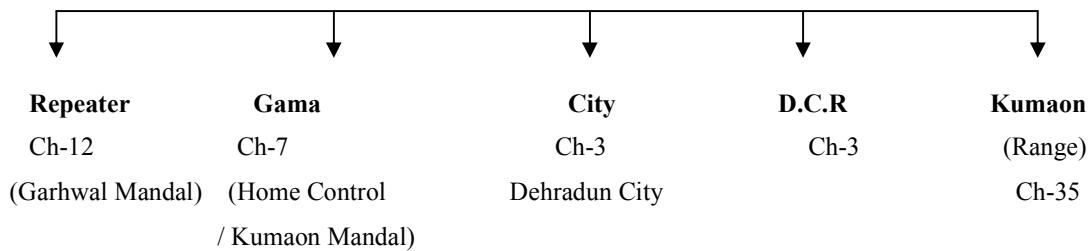
3.2.1 Communication Network

Everyday testing of all the communication equipments in SEOC, which is a major component of the State Emergency Operation Centre.



(Figure-VIa)

3.2.2 Police Wireless Set:-



(Figure-VIb)

In the case of a natural calamity/ Incident the Preliminary Information received from the Police Wireless Set and Immediately after Initial Action Taken Report is prepared based on wireless/ telecommunication opinion. It is sent to all the concerned officers including Hon'ble Chief Minister, Secretaries, Information Directorate, Commissioners, Departmental Nodal Officers, MHA, NIDM, GSI, and Media also.

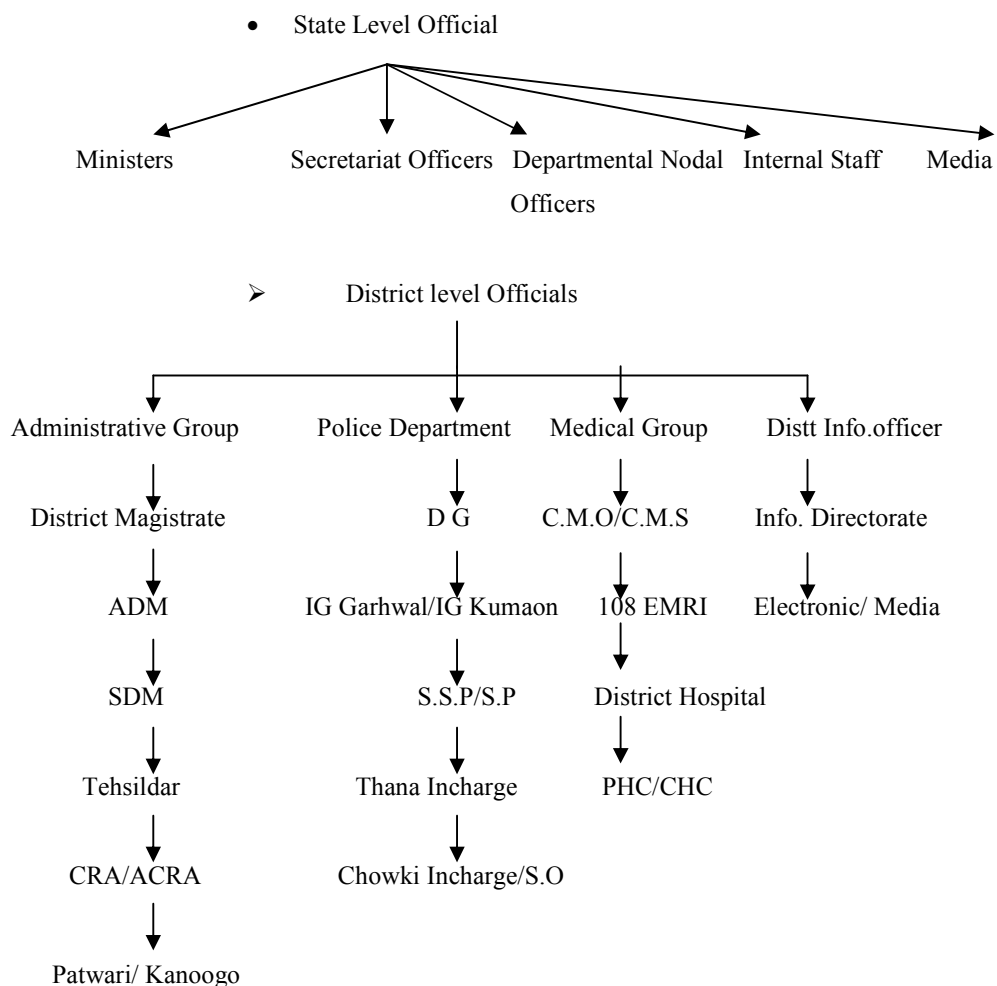
3.2.3 Alert and Information System (SMS Software)

It is a very effective alert information system during the incident. This system plays a very vital role in dissemination of information w.r.t. incident in detail; it includes the following format of reporting:

- Type of Incident -{ Road Accident/ Natural calamity/ Earthquake}
 - Place of occurrence/Block/Tehsil/District.
 - Time of occurrence, Date.
 - Total Persons
- ↓
- Expected casualties
- ↓
- Injured/Seriously Injured

Time to time dissemination of detailed information on the incidence
through
SMS. All messages are communicated to print media and electronic media.

Alert and Information System

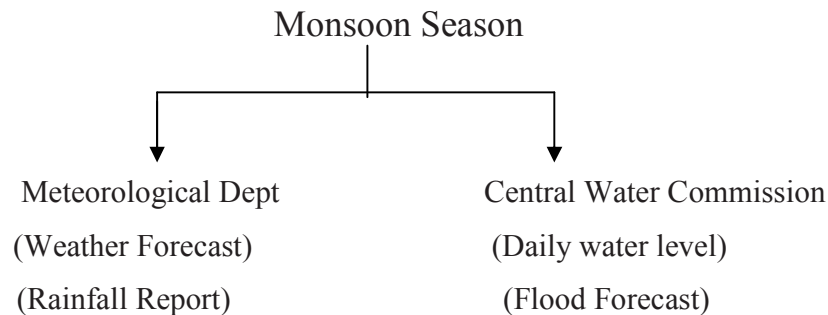


(Figure-VIc)

3.3 Early warning System

The Early Warning System purpose is mainly to prepare for the danger and act accordingly to mitigate against or avoid it.

During the Monsoon Season State Emergency Operation Centre disseminates the monsoon season reports; it includes the following reports that have been gathered from the various departments and resources-:



3.3.1 Rainfall Report

State Emergency Operation Centre disseminates the Rainfall Report of four stations (Dehradun, Pantnagar, Muketshwar, and New Tehri) to MHA, which is received from the Dehradun Meteorological Department. Weather Forecasting is one of the important tasks of Meteorological Department, we all are aware that Uttarakhand state is very prone and is sensitive in the cases of Natural Disaster. During the Monsoon season, the flash floods and heavy rainfall gets increased.

The Daily Report on rainfall and floods is being sent to Joint Secretary (Disaster Management) and Disaster Control Room, Ministry of Home Affairs from 1st June, to 30th September.
(Annexure Attached)

Prevention

3.4 Prevention

Prevention is an important aspect of disaster management. Prevention may be described as measures designed to prevent natural phenomenon from causing or resulting in disaster or other related emergency situations. Clearly, not all emergencies can be prevented, so the concept is taken to have a much broader meaning. Prevention actions concern the formulation of long-range policies and programs to prevent or eliminate the occurrence of disasters.

Prevention involves:

- Identification of hazards;
- Determination of the levels of risk associated with those hazards.
- Taking action to reduce potential loss or damage to life, property and the environment.
- Prevention strategies include legislation and its enforcement, e.g., land use codes, safety regulations, building codes, hygiene, disease control, flood management, etc;
- Soil conservation, watershed management.
- Dissemination of warning.
- Failsafe Communication network.
- Strengthening of environmental management and restoration measures.
- Training, capacity building and awareness building;
- Financial protection: e.g. insurance
- Community Based Disaster Preparedness Plans, public education and warning systems.
- Strengthening of Public infrastructure.

Mitigation Strategy

3.5 Mitigation Strategy

Pre-disaster planning consists of activities such as disaster mitigation and disaster preparedness. Disaster mitigation focuses on the hazard that causes the disaster and tries to reduce its effects. Mitigation is being recognized as an integral component of sustainable development, so that communities are likely to recover more quickly from the Impacts of the disasters.

Objectives of the mitigation strategy:-

- To substantially increase public awareness of disaster risk management for safer communities to live in and work.
- To develop a strategy for reducing the impacts of disaster on community, facility or agency.

The Mitigation strategy is broadly classified into structural and non-structural mitigation measures.

The main components of structural mitigation strategy are as follows:-

3.5.1 Structural Mitigation

Structural mitigation includes physical measures and standards such as building codes, materials specifications, and performance standards for the construction of new buildings; the retrofitting of existing structures to make them more hazard-resistant.

Structural mitigation is more complex than the non-structural mitigation, and usually has a higher associated cost. Mitigation plan for the State shall include all the activities that prevent a hazard or lessen the damaging affects of unavoidable hazards.

Till date there is a lack of efficient legal framework to implement building codes & bye-laws. The state must enforce the implementation of building bye-laws in all new constructions through local agencies and municipal authorities.

The structural mitigation strategy must facilitate adoption of building codes for new constructions in various areas.

The main components of mitigation strategy therefore, are:-

- Risk Assessment and Vulnerability Analysis
- Building Bye Laws & Codes
- Performance & Conceptual Design of the structures
- Retrofitting of the existing structures
- Land-use Planning & Management

Non-structural Mitigation

3.5.1.1 Risk Assessment and Vulnerability Analysis

The Vulnerability of an area is determined by the capacity of its social, physical, environmental and economic structures to withstand and respond to hazards.

The nature of the vulnerability and its assessment vary according to the socio-economic conditions of the people involved, infrastructures, and other physical assests and other economic activities.

The concept of Vulnerability implies a measure of risk combined with the level of social and economic ability to cope with the resulting event in order to resist major disruption or loss.

The Risk assessment means the quantitative evaluation of the likelihood of undesired events and the likelihood of damage being caused by them. Risk assessment should include factors like frequency, intensity, affected area & time to return for normalcy.

The Risk Assessment and vulnerability analysis activity have to be carried out in the state for identification of areas of prime concern.

Vulnerability and Risk Assessment should include the following:-

- Identification of the parameters related to community preparedness and institutional capacities.
- Identification of the parameters related to socio-economic conditions and infrastructure.
- Identification of the parameters related to environmental conditions like terrain, soil and other geological conditions.
- Production of geologic “Thematic maps” based on indicators like geology, soil, terrain etc.
- A detailed database on disaster risk aspects should be developed. It may help in exploring parameters, which will give more relevant picture of the situation.

Conclusion

The assessments of risks and vulnerabilities will have to be constantly revised and a regular mechanism should be established for this.

3.5.1.2 Hazard Assessment

In order to focus limited resources on to those areas of the state at risk, it is necessary to understand the pattern of hazard activity and probability of likelihood of occurrence of hazards.

A special effort will have to be undertaken for Hazard assessment & should be included to demark resources.

- Hazard mapping for the areas exposed to hazards, as well as the potential risk levels for different hazards. The hazard maps can be deterministic or probabilistic.

- Hazard assessment in highly urbanized areas and at the existing infrastructure in terms of their capacity to sustain and the vulnerabilities to various disasters.
- The GIS can be used for hazard management at different levels of development planning. At the state level, it can be used in hazard assessments for resource analysis.

It is suggested that there is a need of a mitigation plan which should be guided by the following objectives:-

3.5.1.3 Building Bye-laws & Codes

- 1 a) Adoption of culture of safety in construction, to follow bye laws & codes and usage of good quality material.
- b) Review and up-dation of design codes for buildings & other structures in the view of previous experience.
- 2 a) The Government shall support these initiatives by providing technical guidance to rebuild or retrofit houses that can sustain the shaking of an earthquake.
- b) Providing necessary resources by ensuring availability of appropriate building materials through local government or building private contractors.
- 3 a) Manuals need to be developed outlining methodologies for new constructions and retrofitting of old ones.
- b) Development of simple guidelines for aspiring house owners.
- c) Construction of Disaster Resistant Demonstration Houses/Unit.

Demonstrating of housing units indicating the various technology features and options, should be built by the Government NGO's/community .Using them in all the buildings of public importance like Hospitals, Schools, Police & Fire Stations, Meeting Halls, Cinema Halls, Cultural Buildings Cultural Community Centers & Government Buildings etc. In this way buildings of frequent use

would be the medium for demonstrating the right level of strengthening features needed.

- 4 a) Identification of vulnerable buildings in the state.
- b) Prioritization of buildings according to their importance.
- c) Assessment and development of retrofitting plans for all lifelines buildings.
- 5 a) Involving of more agencies like PWD, MCD Development Authority, Special Area Development Authority, SIDCUL, & local bodies for retrofitting of their own buildings and other critical buildings and training of staff in all departments dealing with construction.
- (b) Construction of emergency shelters, identification of buildings that could act as shelters and strengthening existing one, strengthening of public infrastructures, which are useful during emergencies.
- 6 a) Building structures on firmer ground or stiff soil as softer soils & soils with moisture content lose their strength with strong vibrations.
- b) Assist in purchasing of the safe sites for construction.

3.5.1.4 Building Performance

Buildings constructed through good design are not necessarily built with safe design. It is suggested that the performance of the construction should be guided by the following objectives:-

- 1 (a) The emergency services of the organization should remain operational after the disaster and ensuring all existing lifeline buildings also remain operational immediately after a seismic event.
- b) Damage caused by the disaster should be reparable and should not be a threat to life.

- (c) The occupants, visitors and emergency personnel must be able to move about safely inside the installation.
- 2 Encourage research and studies on techniques and equipments and promotion of retrofitting technologies.
- 3 The Government shall provide expertise from time to time.

3.5.1.5 Conceptual Design

As a part of the mitigation strategy the construction agencies like PWD, Nirman Nigam will have to consider both structural & material standards so as to ensure that these structures are protected from the disaster impact.

Apart from adopting the building codes, the conceptual design should take into account the following parameters as given in the Table -I below:-

Table –XX

1	Building Location	
2	Zonation	
3	Building Code Requirements	
4	Building Height, Height to Width ratio, Shape/Symmetry	
5	Structural Systems (Shear walls ,Braced frames)	
6	Building material (Ductile material)	
7	Vulnerability	
8	Possible Impact of the disasters	
9	Types of users-residential /non-residential	

The conceptual design decisions should be taken in consultation with the professionals like architects, structural engineers, departments or institutes in the initial discussions and development of the building.

3.5.1.5 Retrofitting of the Existing Structures

It is possible to reduce the vulnerability of existing buildings through minor alterations, thereby enhancing the safety of the structures. The usual methods for retrofitting generally include the insertion of the following elements:-

- Resisting elements, such as bracing or shear walls, must be provided evenly throughout the building, in both directions side-to-side, as well as top to bottom.
- A free standing wall must be designed to be safe as a vertical canti-lever.
- Moment resisting frames.
- Construction of a new frame system.
- Covering of columns & beams.
- Fill-in walls
- Buttresses

3.5.1.7 Structural Alterations for other Installations

- Water tower & storage tanks should be designed to withstand earthquake.
- Upgrade design specifications and quality of construction for concrete poles.
- Replace the pole-mounted transformers with plinth-mounted transformers.
- Set poles to an adequate enough depth to prevent overturning or leaning.

3.5.1.8 Land-Use Planning & Management

The physical impacts of hazards can be reduced by preventing or modifying the occurrence of the hazard, for example in the case of landslide. This can be effectively used by land-using planning and management, particularly areas where structural measures would be too difficult.

- Selecting a safe site for building structures.
- Relocating a community outside the hazardous and disaster prone areas.
- Appropriate land use in the disaster prone areas, by harmonizing land stability with agriculture developmental strategies.
- The measures to promote land- use should include legal enforcement of property insurance against damage by disaster events and creation of public awareness for proper land use practices.
- Formulation of land use policies for long –term sustainable development.
- Using management tools like regulations, which have a potentially greater impact on loss reduction .Development that follows regulations, is less prone to damage than the pre-existing development.
- Long-term land use planning by incorporating all geological related data available and identifying for allocation of hazard free areas for industrial & urban development.
- Land use planning should ensure separation of industrial units from residential areas in order to reduce industrial accidents. Licensing authorities of industries should examine such location aspects.
- High investment industries, installations & other important infrastructure should not be located in the areas that are susceptible to damages.

Non-Structural Mitigation (can be incorporated in previous)

3.6 Non-Structural Building Elements and Contents

The non-structural elements include the stairways, doors, windows, lighting fixtures, false ceilings, wall cladding, heating ducts & pipes. The “building contents” includes all those items that users bring into building: furniture, appliances, electronics, equipment, coolers & air-conditioners, stored items & so forth. When building is totally damaged & collapsed, everything in the building is crushed. Some of deaths, many or most of the injuries, a large proportion of economic damage associated with earthquakes are caused by “non-structural” building elements & building contents that break ,fall or slide .

3.6.1 A Few Steps to Non-Structural Mitigation

Disaster risk reduction can be achieved through a series of small steps. Everyone needs to play his role in reducing the dangers of natural & man-made hazards. We already have the knowledge; we only need to know to create a culture of safety.

Non-Structural Mitigation can be accomplished in a few simple steps:-/Each item should be considered separately for the simplest solution.

There are three important ways for reducing the risk from non-structural hazards:-

- Awareness & Sensitization about earthquakes.
- To relocate furnishings and contents :-
 - a) Heavy furniture should be kept away from places where people sit (or sleep). Corridors & exit routes should be kept free of obstructions.

- b) Heavy and breakable items that cannot be secured should be kept at lower level. Lighter objects can be placed higher up.
- To secure Non-Structural buildings elements- The most important but hazardous element is the brick infill partition wall which can topple over laterally or badly crack longitudinally. One way is to stabilize such walls will be to provide vertical steel angles 50X50X6 mm on its both faces vertically and attached to the wall through bolts .The angles will not only provide the requisite stability to the wall but may also used for fixing the equipment and the furnishings .
- To secure the furnishings & equipments to walls, columns or floors-
 - a) Fasten Tall & Heavy Furnishings using “L-Brackets” or finely woven nylon strapping to secure furniture to wall.
 - b) Tie picture frames and similar items to a hook in the wall & hanging objects by using hook that is almost closed.
 - c) Secure Wall-mounted items, Shelf Contents & hazardous materials.
 - d) Secure objects that can slide short items with wheels or placed on slippery surfaces can be chained to a hook on the wall, if their Height/width ratio is 3/2 or more, the items may need to be secured with straps. Secure water tanks should be secured from all sides so that they cannot topple. There must be enough vertical support & strapping so that the tank will not jump up out of its seat, during the vertical & lateral motion of an earthquake. Stabilizing wires must be secured to concrete rooftop, or beams, not to parapet.

Training Needs Assessment

One of the critical components of the Mitigation Strategy is the training to be imparted to the officers & staff of the various departments involved at the State & District Level.

The training activity will be undertaken both at the State and district level and at the local level through Government, training institutions, NGO's and institutes affiliated to Universities and research centres.

3.7 Objectives of TNA

- The assessment of the levels of the knowledge, attitudes and skills with respect to the task to be undertaken and expected levels of knowledge, attitudes and skills.
- Preparation of training modules and materials based on Training Needs Assessment.
- To establish key components that the training course curriculum should cover.
- Refining the methodologies for Training and simulation both at the Institutional level and at the community level.
- Up gradation of training technology.
- Strengthen existing training initiatives in the State.
- There is a need for action and intervention in a disaster situation at multiple levels. The quality of intervention depends on a lot on the Inter-sectoral, inter departmental co-ordination and efficient team work.
- To assess the specific training requirements of the key personnel to be involved in the intervention.

CHAPTER-IV

Preparedness Measures

Community Based Disaster Management

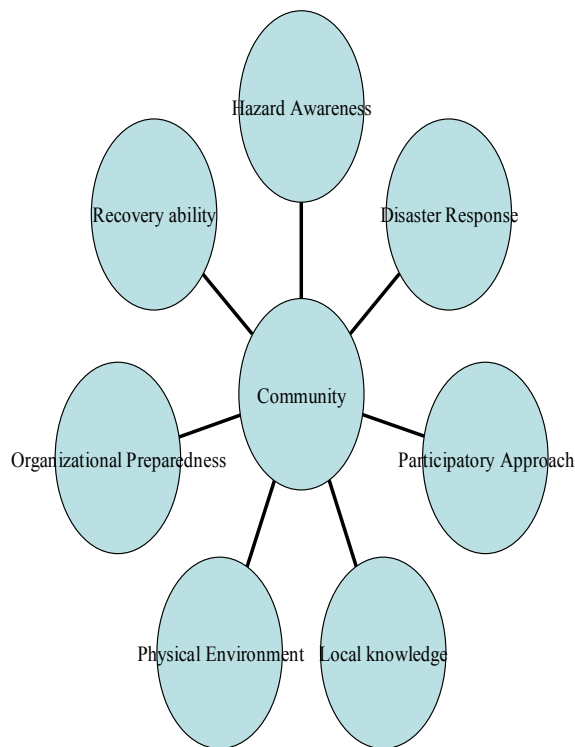
4.1 Components of community preparedness

The capacity of a community to withstand disasters is a function of the vital components of community preparedness. Some of the important components are as given below:-

- **Hazard Awareness :-**
 - (a) Awareness of the risks associated with disasters.
 - (b) Familiar with the basic concepts of disaster management.
- **Disaster Response :-**
 - (a) Understanding roles & responsibilities of community.
 - (b) Understanding of appropriate responses to disasters.
- **Participatory Approach:-**
 - (a) Active involvement of the community, local groups.
- **Local Knowledge :-**
 - (a) Use of local knowledge in measures that are related to disaster management activities.
- **Physical Environment :-**
 - (a) State of physical environment to face hazards e.g. condition of surface, slope etc.
- **Organization preparedness :-**
 - (a) How far the community is organized & prepared to face a disaster.
- **Recovery Ability :-**
 - (a) Ability of the community to recover from the impact of disaster.

The main objective of the community based disaster management is to ensure the components of community preparedness are organized and coordinated effectively.

Components of Community Based Disaster Management



(Figure-VII)

4.1.1 Arrangements for Community based Disaster Management Programme

Based on the above mentioned components following arrangements are required to enhance the community based disaster management programme:-

- To develop self reliance by promoting and encouraging the spirit of self-help and mutual assistance.

- Formation of Block and Gram Panchayat Disaster Management Committee.
- Formation of village disaster intervention team (VDIT) for first respondents of the disaster.
- Selection and Training of Volunteers from each village in Community Based Disaster Programmes.
- Formation of Training of Village Response Groups.
- Mock drills to simulate preparedness and response in villages.
- Ensuring that local authorities, gram panchayats etc. are involved in developing their own mitigation strategies.
- Involving the community in the planning and development process.
- Active participation in all the training activities as may be organized.
- To maximize the involvement of local community, simulate the active participation of women and disabled people in disaster management programmes.
- Relevant authorities shall ensure that the required awareness, resources and training is provided to the community.
- State of Uttarakhand shall support these initiatives by providing necessary resources and expertise from time to time.
- Local community groups and NGO's should actively assist all prevention and mitigation activities under the direction and supervision of the authorities.
- Ensuring no gaps between disaster management activities and planning activities.
- Developing an appropriate relief implementation strategy for the district, taking into account the unique circumstances of the district and prevailing gaps in institutional capacity and resources of the district.
- Ensuring that proper communications systems are in place.

- All disaster management related equipments are well maintained and ready to use.
- Review & regular updating of plans and continuous Improvement of CBDP and Mitigation.

Awareness Generation

It is a well established fact that one of the least expensive yet highly effective preparedness measures is the mass awareness generation. It is the key initiative for disaster preparedness in the generation of mass awareness on disaster.

Communities must be fully aware of its vulnerability to natural hazards as also means to reduce their impacts, before it can insist upon and support actions to mitigate the impacts and take individual steps necessary to mitigate the impacts and take the individual steps

4.2 Objectives of the Community Awareness

- Public awareness and education on hazards, vulnerabilities, risks and impacts of disasters.
- Encourage individual and community for self dependence/ self-reliance before, during and after emergencies.
- Understanding of personal and community responsibilities and the capabilities of disaster management agencies.
- Raising community awareness about the State's disaster management arrangements and awareness about the realistic expectations wrt. to resources.
- Disseminating information to the community before, during and after emergencies.
- Provide exposure to school communities in immediate response, evaluation and crowd management, in order to be better prepared in emergency.

- Awaring the community & how to respond during various disaster e.g. earthquakes, landslides.
- Awareness on availability of resources, use of local resources and optimum utilization of resources during disaster.
- Support the development and implementation of rules regulations which meet community needs for information before, during and after emergencies.
- A common forum for the co-coordinated effort and for supporting the activities of emergency management agencies.
- Creating awareness among the Community through disaster education, training and information dissemination to empower them to effectively cope with hazards

The following activities are being carried out and proposed in the future towards awareness generation :

4.2.1 Awareness Generation for community

- Mass rallies covering various villages of the various districts.
- Disaster mitigation related material /slogans on vehicles ration cards, post cards and other govt. bills.
- Exhibition & Melas for various villages of the various districts.
- Sensitization workshops on the roles & responsibilities of PRI's members in disaster management.
- One minute films (Capsule films) for Disaster management related issues through Television & Radio.
- Broadcasting of the T.V. serials for awareness generation.
- Publication of disaster related articles in local newspapers.
- Movies in local languages (Garhwali & Kumaoni) movies regarding landslides, earthquakes, floods for awareness generation.

- Screening of slides of do's & don'ts in the Cinema hall to create awareness among the public.
- Road shows/nukkad natika in local languages at village levels.
- Publication of disaster related articles in local newspapers.
- Awareness Posters (Do's & Don'ts).
- Putting up hoarding / banners for public awareness.
- Wall writing depicting messages on awareness.
- Producing various IEC materials by DMMC for awareness generation.
- Awareness for identification of Landslide prone areas by hoardings/boards & pamphlets.
- Regular mock drills for various natural disasters and man mad disasters.

4.2.2 Awareness Generation for schools

- Formal training of teachers, staff and administration through District Institute of Education & Training (DIET) centres on disasters & precautionary measures required to be taken before & during the disasters.
- Preparation of School Disaster Management Plans.
- Information on School Disaster Management Plan through DIET & other training centres like Community Resource Centre (CRC), Block Resource Centre (BRC).
- Inclusion of disaster management in the academic curriculum of the schools. It is like any other subject of their course.
- Organizing various competitions on disaster related themes: drawing competition, essay competition, debates etc. Informal teaching aids to be used to educate school children.
- Training of teachers, school staff and school children on first aid, fire safety, fire evacuation drills etc.

- Disaster Management should be viewed as life skill components and have maximum impact when taught through hands on learning.
- Introduction of the concept of DCH (DROP COVER HOLD) in schools.
- Regularly conducting mock drills in the schools.
- Circulation of books and journals published by Disaster Mitigation and Management Centre and various other agencies, through DIET in different schools and institutes.
- The School Disaster Management Plan after putting it into place should be reviewed periodically. This should include the various components of structural and non-structural mitigation measures, education and awareness, training and capacity building of the school stakeholders etc.

4.2.3 Awareness Generation for State, District Officials & others

- Sensitization of senior officers, nodal officers of different line departments and district officials through meetings at regular intervals at State and district levels.
- Sensitization of Architects & Engineers, Planners & policy makers.
- * Inclusion of disaster management subject in curricula of Revenue Police. ** (To be verified)
- Involving all other stake holders for awareness campaign, identifying target group and working on dissemination strategy.
- Sensitization of the State Council of Education Research and Training, District Education Research and Training, Shiksha Sahayaks, Aanganwadi workers etc.

Capacity Building Programme for Disaster Management

It is necessary to build strong capabilities & expertise for handling various aspects of disasters. The capacity to withstand disasters is a function of possessing the capacity to respond (training, availability of resources, skilled cadres) and setting up of emergency response mechanisms which can mobilize trained resources in a quick, efficient and systematic manner.

There is a growing recognition, realization that with advanced and appropriate training, the level of preparedness and response strategy could be effective in minimizing the response time and thus saving lives. By Immediate action at the time of occurrence of any disaster, human loss can be minimized. For the reason, appropriate training is provided to all the stakeholders in disaster management.

4.3 Capacity Building Measures

In order to formulate adaptive, realistic and appropriate training or orientation programmes for all concerned stakeholders, following are the Capability Building Measures.

- 1 a) Providing practical training for search & rescue & first aid to Police, Home Guards, PRDs and Health Department's members through these training programmes, the participants being trained for Earthquake, Landslides, Fire and accident like situations.
- b) Training in evacuation and shelter management and modernization of equipments of Police, Para Military Forces, Fire Services, Civil Defence and Home Guards.
- 2) Strengthen existing training and community awareness initiatives in the state.
- 3) Advanced Training -Search & Rescue advanced course for disasters like earthquake.

- 4) Analysis of training needs of various stake holders in the field of disaster management.
- 5) Ensuring minimum standards for disaster training institutions, training programmes, community awareness courses.
- 6) Incorporation of Disaster Management as one of the main activities of youth organizations such as NCC, Boys Scouts, Girls Guides, National Service Schemes, Nehru Yuva Kendra and local active, interested clubs and their involvement.
- 7) To utilize the services of civil defence, including training civil defence volunteers and initiatives during natural calamities.
- 8) Strengthening of all State and District level control rooms using the state of the art technology.
- 9) Regular updating, rehearsals, mock drills and simulations.
- 10) Including the development and implementation of the training calendar.

4.3.1 Training to Technical Manpower

To develop a force of trained professionals, we must focus our attention to the institutionally and manpower development at all levels. These people may be utilized in future for assisting in retrofitting & reconstruction exercises.

- There is a need to train architects, engineers, planners and masons in developing safe housing and infrastructure facilities.
- Training to the private engineers, architects, contractors & builders.
- Priority wise training to the engineers, architects & masons for disaster resistant buildings should be arranged.
- Training of staff in all departments dealing with construction & in retrofitting methodologies.

4.3.2 NGOs in Capacity Building

NGOs at the disaster site should ensure maximum community participation at stages of operation in order to maintain community morale and confidence. They are in a better position to maximize the use of local resources particularly during emergencies and promote a faster recovery. The flexibility in approach makes NGO's more acceptable in the community.

Community based disaster preparedness programmes brought them still closer to the people. An appropriate strategy to ensure community support and participation has gone a long way in reassuring the community about the administration's intent and seriousness about managing the disaster.

The Role of NGOs in disaster management will be in three stages:

Preparedness

- Public awareness
- Assisting and participating in preparation of disaster management plan at state, district, block, and village levels;
- Policy and Issue-based consultations at State level
- Use of local knowledge in measures that are related to disaster management activities.
- Introducing alternative livelihood practices, alternative methodologies.
- To develop self reliance by promoting and encouraging the spirit of self-help and mutual assistance.
- Reviewing and upgrading DM Plans
- Documentation

Emergency Response

- Dissemination of warning
- Evacuation; Rescue and Search
- Coordination of Volunteers
- Relief distribution
- Medical aid
- Emergency shelter
- Community mobilization
- Women and Child care
- Trauma Counseling

Recovery

- Recovery planning, coordination, evaluation
- Restoration of damaged community structures (schools, etc.)
- Managing emergency group activities
- Rehabilitation of vulnerable groups
- Restoration of environment
- Restoration of livelihood
- Documentation, etc

Role of Media

The Present Day media can most effectively be used to disseminate the information during the all stages of disaster. Disaster cannot be managed by one and needs involvement of various bodies working for the society. The media is a strong link between States/Centre /Countries and whole of the world. If the media has to discharge its role it is necessary to work in co-ordination with the Government & Non –Government agencies.

The Disaster management needs a permanent structure to mobilize resources and for that media, naturally becomes a sharp tool to make mobile NGOs, Govt.'s and other organizations. The media is not only powerful, it has the inner reach to the lowermost tier and the topmost tier as may be most useful for the best Governance and management in the case disaster.

The media should not only play an important role in publicity during disasters but also actively participate in the disaster management process.

4.4 Role of Media

The Role of media involves the following stages and activities:-

Pre disaster: The role of media to disseminate information at all stages of Disaster.

- Awareness and information to people.
- Promotion of training aspects.
- Keep a check on various agencies.
- Planning and encourage people to face the situation.
- Removing fear of unknown.
- Dwarfing Images of all false perceptions.
- Building partnerships between media and other organizations.

During disaster:

- Media Organizations take lead in relief and rehabilitation projects.
- The media plays the roles of relaying the measures being taken.
- Providing latest information and update.
- Broadcast for the assistance of the Medical, Police, Civil Defence,
- NGOs, Fire Department.
- Make Announcements of the disaster and the preventive measures to be taken by the search & rescue.
- Food, water, medicines and other immediate need material.
- Sanitation and hygiene in the effective area and camps.
- Damage Assessment.
- Identify needy spots and cautioning the affected people of the dos & don'ts.
- Establishing contacts, informing and assuring the affected ones of the assistance and the measures of relief.
- Appeal for help to the masses for the victims in cash and services.

Post Disaster

- Monitoring re-settlement.
- Technical and material aid in reconstruction.
- Providing financial aid. Arrest Panic and Provide the True Picture.
- Mobilization of State, National and International Resources.
- Thus Media plays an informative role in pre disaster, during disaster and past disaster stage.

4.4.1 Role of Print Media

It has been our past experiences that Govt. Organizations, NGOs, District. Authorities feel helpless as disaster snaps away the communication. During this period, it has been noticed that the Print Media and the Electronic Media becomes most helpful.

Newspaper is accessible to each and every corner of the country. Every minutest of the detail can be displayed .News Big or even small is published in the Newspaper regarding Disaster Management. This automatically spreads to the remotest village through a word of mouth. The creditability of the Print Media can play a big role in Disaster Management and preparedness. The print media have rather a qualitative role to play in preparing the community and other stake holders for better management of disaster.

4.4.2 Electronic Media

Electronic Media is of great help in warning dissemination by the authorities and especially electronic media can play an important role in dissemination of warning to the public. A continuous contact and cooperation is to be maintained with the national and local TV and radio stations.

- Active involvement of professionals and specialists in these broadcasts is recommended.
- On TV screen, scrolling script could give warning messages and even briefly interrupt programmes for urgent cases.
- TVs could use sophisticated images, graphics like radar and satellite images, GIS maps, etc.
- Also, live interviews and panel discussions can be arranged.
- Internet, SMS via mobile phones, etc., should be actively employed.
- Dedicated sites could be launched and information could be provided with graphics, detailed measures, and response events.

MEDIA MANAGEMENT

4.4.3 Objective

- To provide factual information to public with respect to the latest development.
- Providing specific information to relatives/dependents on dead and injured persons.
- To create a positive public opinion.
- To create a healthy relationship with the press and electronic media.

4.4.4 Duties of Administration & Nodal Department

- Administration, Nodal Department concerned and his team will collect information available and release it to the media at the earliest, of intimation of occurrence.
- The information shall include telephone numbers of Helpline/ Enquiry Booths. Photographers with digital and video cameras should also be taken to the site of disaster.
- Duty officer / Public Relation Officers should be deputed during night shift for interacting with the media, if necessary.
- Duty officer / PRO will organize press briefings at fixed timings.
- Emergency Control Room shall monitor various important media channels to keep track of media reporting. Suitable corrections/clarifications may also be issued, if required.

4.4.5 Spokesperson

Only concerned Minister/Secretary of Department of Disaster Management and District Collector are competent to interact with press and electronic media. Apart from the above, any other officer authorized by competent authority to interact or give interview to the press and electronic media. These persons should ensure that only factually correct and confirmed information is shared with the media. No exaggerated version of any event should be relayed to the media. Nobody shall express or voice any criticism, or express his personal opinion or views about the occurrence of disaster, at any point of time.

4.4.6 Information to be relayed to Press and Electronic Media

Information to be given to media can be broadly segregated in to following categories:

A) Occurrence of Disaster

- Nature of the disaster, i.e. date, time, exact location
- Details of the occurrence of disaster if known fully.
- Prime cause of the occurrence will be relayed to media only with the approval of competent authority.
- Regular reports regarding progress of Rescue and Relief work.
- Expected date and time of restoration.

B) Injured persons

- Steps taken by Administration to render immediate medical help.
- Number of persons rescued/injured persons under treatment in different hospitals.
- Name of the hospitals where injured are being treated.
- Approximately number of patients that have been admitted in different hospitals.
- Names of injured persons.
- Communication facilities like cell phones, STD phones provided at these hospitals.
- Payment of ex-gratia.
- Facilities offered to relatives/dependents of victims.
- Number of dead bodies recovered and number of bodies identified.

C) Helpline Enquiry Booths & Control Room

- Setting up of Helpline Enquiry Booths
- Details of Helpline Enquiry Booths & Control Room:
- Places where these have been opened.
- Telephone & Fax Nos.

Telephone Numbers for Information /update on disaster

- State Control Room
- District Control Room

D) Casualty figures

- There is always a difference between casualty figures given by the administration and casualty figures given by the media.
- The reason for this difference is that administration gives figures based on actual number of dead bodies recovered, whereas media estimates casualty figures based on the visual damage.
- During Press briefings, latest figures on recovery of dead bodies should be shared with media & likely rise in the toll considering the ground realities.

E) Press Briefings at disaster site

- Authorized officer shall collect factual information from the Site and relay the same to the media and State Headquarters. Thus an on-line communication channel will be established to keep media informed of all the important details.
- PRO should be available during press briefings in HQ.
- There should be a fixed time for press briefings so that there is no confusion regarding different versions given to separate channels at various points of time.
- Simultaneous press briefings should be held at disaster site, at District Headquarter and at State level, as per the time intimated, so that the same version is given by all concerned.
- The information release to various media will be as under:
 - TV Channels
 - News Agencies
 - Print Media
- Convenience of media shall be taken care of by PR personnel with assistance of representatives of Administration at site.
- Tour of media persons should be conducted to hospital where injured are being treated.

Geographical Management Information System for Emergency Management

The Geographical Information System (GIS) can play a crucial role in the gathering and analysis of information needed for disaster management. The GIS can give higher quality results than can be obtained manually. It can facilitate decision-making and improve co-ordination among agencies; disaster management planning, monitoring and implementation at the State and district, block, municipality and gram panchayat levels. It will help strengthen disaster management activities at all levels in a more scientific manner at all levels and prove to be a sound Decision Support System.

4.5 Effectiveness of GIS

- Effective Decision Making
- Visual Effect
- More Clarity
- Image Interpretation
- All the information is in the form of Layers.
- GIS data organization format displays data in a format, which is easy to understand.
- GIS database can depict vital features like boundaries, topography, road network, utility and supply lines and other for disaster planning.

DMMC has full-fledged GIS and Remote Sensing laboratory that has generated detailed maps of the entire State on Drainage network, Transport network, Medical and health infrastructure, Warehousing facilities, Police infrastructure, past seismicity, Detailed seismic vulnerability map of cities with house level information.

The use of GIS can provide an effective solution for the purpose in the following manner:-

- Preparation of Geographic Information System (GIS) for disaster mitigation and development planning.
- Preparation of appropriate GIS database and Digital Maps.
- Drawing of blue print of action at the State levels, District, Block & Municipality and showing identified agencies
- Use of the existing maps in 1: 50K and 1:25K scale and preparation of detailed large scale maps of 1: 10K scale, where ever necessary.
- Preparation of topographic maps of hazardous areas on a priority basis.
- Seismic Micro-zonation of all major cities, urban and industrial centres, other vital installations like dams and major mines with detailed risk assessment of all buildings and infrastructure along with district, municipality and block hazard zonation maps of all identified hazards.
- The GIS can be used for Hazard management at different levels of development planning. At the State level, it can be used in hazard assessments for resource analysis and project identification.
- Generation of spatial outputs with supportive tables/charts to help in development planning and decision making;
- Improving the quality conventional forecasting by Integration with the state of art technologies, namely Remote Sensing and GIS.
- Operational use of satellite data for real time data.
- For monitoring and predicting and tracking potential hazards and predicting disaster damage scenarios.

Techno Legal Regime

Past earthquakes have clearly exposed the vulnerability of our State Uttarakhand, which has caused widespread damage resulting in loss of lives and property. This is mainly due to faulty design and construction practices which do not follow earthquake resistant features specified in Bureau of Indian Standards codes.

There has to be an optimum utilization of the land in Uttarakhand due to the limitations of the available land. Keeping this point of view the Development Authority, Special Area Development Authority, SIDCUL, & local bodies has Recommended Building Bye laws/ Regulations as per Housing- Urban Development Department Government Order No.2269/V/Disaster-2007-55 (Disaster)/2006 T. C. dated 06 November 2007 regarding construction of Buildings & Structures Height, Land Cover, F.A.R (Floor Area Ratio), Basement, Parking etc. To incorporate the disaster resistant features of national building code and earthquake resistant codes of Bureau of Indian Standards.

Bye Laws have focused on division of hill and planes according to the definition, restriction of height of the building and structures in different areas, maximum land cover & F.A.R., Height of the building and structures in different areas, incorporation of earthquake resistant features for safety from earthquake, fire safety features, minimal standards to be followed for group housing; provision of basement parking especially in commercial structures; provisions for set- back; Community services like residential occupational/official/hostel/ boarding/lodging/ guesthouse/ rest house/hotel /community hall & Educational Institution/Health Centre/Social & Cultural /religious compounds, provisions for rain water harvesting; completion of development programme.(Annexure-II)

4.6 Hazard Safety Cell

In order to establish proper implementation of the building codes in all constructions in future and to ensure the safety of buildings and structures, as per the Uttarakhand Government Office Order No.484/XVIII (2)/2005 dated 07-05-2005, the Hazard Safety Cell for Disaster management in the state has been established. The Hazard safety Cell will be under the direct supervision and control of the Superintendent Engineer of the P.W.D.

The Hazard Safety Cell comprises of the following officials

S. No.	Description	Department
1.	Superintendent Engineer	P.W.D.
2.	Executive Engineer	P.W.D./Irrigation/Peyjal Nigam /M.D.D.A.
3.	Assistant Engineer	P.W.D./Irrigation/ Peyjal Nigam/ M.D.D.A.
4.	Junior Engineer	P.W.D./Irrigation/Peyjal Nigam/M.D.D.A
5.	Specialists from	(C.B.R.I, I.I.T -Roorkee)

Its main functions are:-

1. Knowledge about Hazard resistant design of buildings and restoration of buildings and structures is given through training / acquisition of published books, documents, buildings codes, guidelines, manuals, documentaries, films etc. on the subject of disasters.
2. a) Reviewing the architectural and structural designs of all RCC, Steel and Masonry buildings & structures from the safety point of view for Earthquakes, Floods and landslides.

- b) Carrying out review of all Government buildings of various departments including panchaayts and standard or type of designs & including;
 - (i) Important service & community buildings with an* important factor (I) 1.5 or higher.
 - (ii) All buildings of over G+2 including apartment buildings, shopping complexes etc. (*important factor)
- (I):- (1) Dams (I) = 3.0, (2) Containers of inflammable gases etc. (I) = 2.0, (3) Important service & community buildings such as hospitals, schools etc. (I) = 1.5), (4) All other buildings (I) = 1.0 as per IS: 1893(Part-1) – 2002
- 3. Preparing the checklist for the quick review of the design to be adopted or new buildings and structures and to carry out the Review * of already existing buildings and structures.
 [The Review* for buildings and structures shall be in compliance with BIS codes.]
 - a) Acting as an advisory cell to the state Government on the different aspects of building safely against the hazards.
 - b) Acting as a consultant to the state government for retrofitting of Government buildings and lifeline structures.

4.6.1 Hazard Safety Units

In order to establish proper implementation of the building codes in all constructions in future and to ensure the safety of buildings and structures from hazards in all the districts, as per the Uttarakhand Government Office Order No.5045/XIV-168(2004), dated 04-09-2006., the Hazard Safety Units for Disaster Management in the districts has been established at the District level. In view of the safety from earthquakes & other types of disasters in Uttarakhand, the government of Uttarakhand /DMMC/ Hazard Safety Cell shall ensure implementation of the directions at the district level through these Hazard Safety Units and in view of the

Disaster Management for the districts, regarding Vulnerability/ Special Requirements, the hazard safety units shall made its suggestions available to the Government of Uttarakhand/Disaster Mitigation & Management Centre.

The Hazard Safety Units comprises of the following officials from the various departments as given below:-

S.No.	Description
1.	P.W.D.
2.	Irrigation Department
3.	Rural Engineering Services
4.	Nagar Palika/ Local Town Agency
5.	Geological and Mining Unit
6.	Officials from other departments may be included if required.

The Hazard Safety Unit functions are same as that of Hazard Safety Cell.

MEDICAL PREPAREDNESS IN HOSPITALS

Observations

1. State plan should streamline with overall health policy and health plan to address the preventive, mitigation and response plan in event of a disaster.
2. Need to incorporate the present set up of Health infrastructure and its capability of expansion at the times of disaster and mass casualty.
The input from Health Nodal Officer in terms of expansion of health facilities in remote places and procurement of health professionals esp doctors and paramedics in next 5-10 years will give a fair to what kind of contingencies we can address in times of disaster.
3. Gaps can be identified and reflected in SDMAP and ad hoc provisions can be planned /made to procure infrastructure (Mob Hospital) and manpower(Doc and paramedics) from other states or center in the event of a disaster.
4. Risk and vulnerability profile has to match the probable requirements of resources in health to cater to that number of emergencies or injuries.
5. Similar would go for Animal Husbandry and Vets.

Introduction

Hospital disaster management provides the opportunity to plan, prepare and when needed enables a rational response in case of disasters/ mass casualty incidents (MCI). Disasters and mass casualties can cause great confusion and inefficiency in the hospitals. They can overwhelm the hospitals resources, staffs, space and or supplies .Chaos cannot be prevented during the first minutes of a major accident or disaster. But the main aim of Hospital Emergency Plan should be to keep this time as short as possible.

4.7 Need for Emergency Plan for Hospitals

Lack of any plan leads to a situation where there are many sources of command, many leaders, and no organized or concentrated effort to solve the problem. Everyone does his/ her own work without effectively contributing to solving the larger problem of the hospital. In order to treat victims of a natural or a man-made disaster, institutions must be organized to respond in timely and efficient manner. Health establishments, particularly hospitals, should have emergency plan.

Therefore, it is essential that all Hospital Emergency Plans have the primary feature of defining the command structure in their hospital with clear-cut roles and responsibilities at the time or onset of any disaster. Most importantly, the staff should be completely what all-mundane procedures can be sidelined in the event of a disaster without essentially compromising on the quality and standard procedure of medical guidelines.

4.7.1 Objective of a Hospital Emergency Plan

The main objective of a hospital emergency/disaster plan is to optimally prepare the staff and institutional resources of the hospital for effective performance in different disaster situations.

The plan should aim at-

- The survival of as many patients as possible.
- A proportional distribution of patients to other health care facilities.
- Hospitals provide full time emergency services on a 24hour per-day, 7 days a week.
- Meet the standard requirements of receiving mass casualty incident patients at all times.
- Assessment of the capacity of a hospital to respond to a given emergency situation.
- Hospital has sufficient number of personnel, including doctors and paramedical staff to meet the needs for emergency care.

- The Services are appropriate to patient needs.
- The emergency services provided are integrated with other departments of the hospital.

Therefore it is imperative for these facilities to make a Hospital Emergency Plan.

4.7.2 Components of the Hospital Emergency Plan

Sophisticated physical structures and trained human resources are not enough they must be duly organized to fulfill the demands for medical care that results when a disaster occurs within or outside the hospital.

The Components which should find mention in a hospital emergency plan are as follows:-

- Command Centre
- Communication office
- Reception & Triage Area
- Emergency Department
- Minor Treatment Areas
- Intensive Treatment Areas
- Mortuary
- Decontamination Areas
- Security Office

4.7.3 Disaster management Training to Hospital Staff

The initial chaos of any disaster scenario in a hospital can be minimized by proper training of the staff of the hospital about the plan and specific roles of each staff member in case of a disaster.

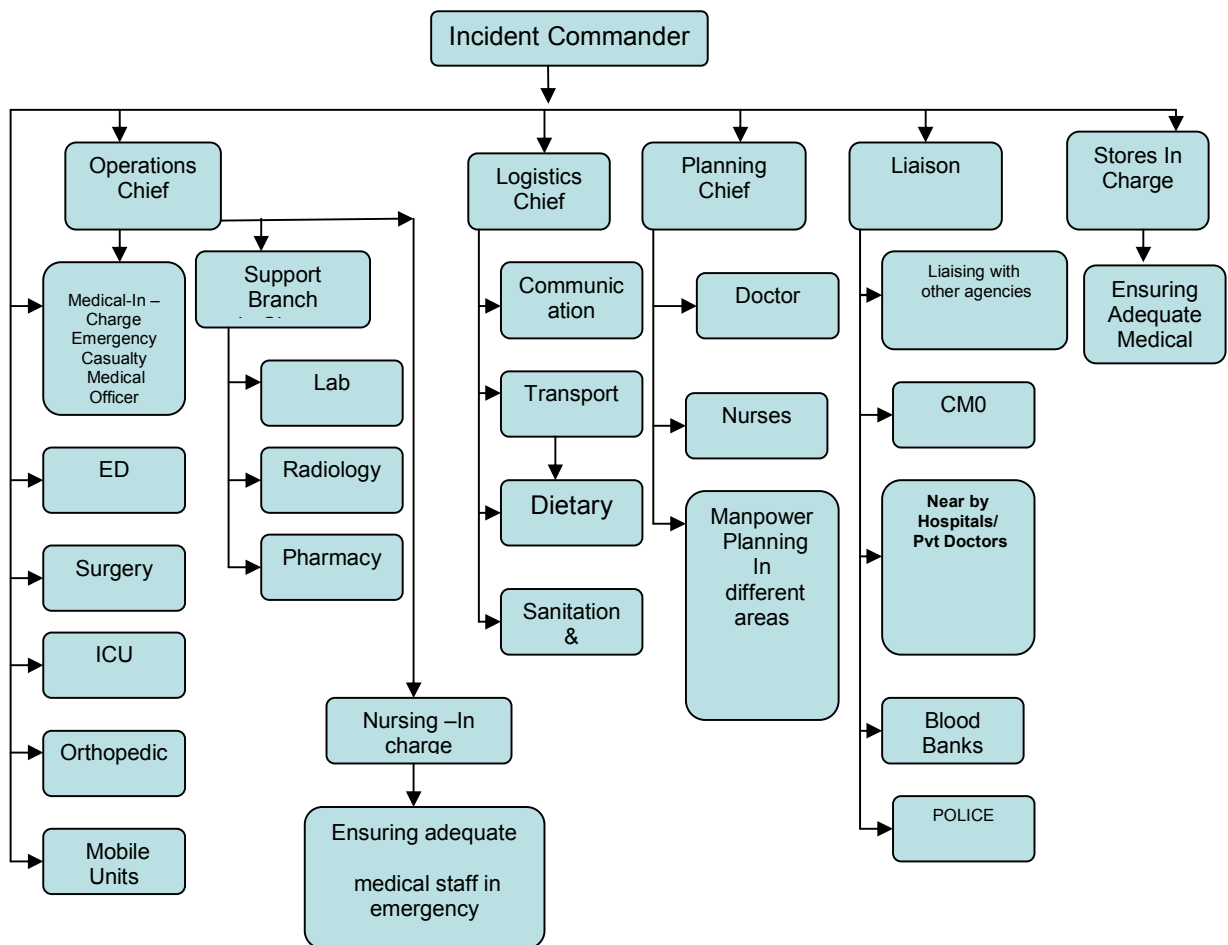
- A presentation made to all administrators, departments heads and managers regarding the implementation of the Hospital Disaster Plan.
- The program should be a combination of education & public relations.

- Specific roles and responsibilities during emergencies.
- Information & skills required to perform duties during emergencies.
- How supplies and equipments are obtained during disasters or emergencies.
- The back up communication system used during disasters and emergencies.

4.7.4 Pre disaster Phase

- Planning: most of the assessment and planning is done in the pre disaster phase, the hospital plans are formulated and discussed in a suitable form for approval.
- Activation of the chain of command in the hospital.
- Operational phase: This is the phase in which the actual plan tackling of mass casualties is performed according to the disaster /emergency.
- In order to ensure effective control and avoid duplication of action there should be a unified command system which should be based on the individual hierarchical plan.
- Listing of Manpower and formation of Incident command.

**Figure below Shows
Incident command Structure for a Hospital**



(Figure-VIII)

4.7.4.1 Disaster Phase

- a) Activation of the chain of command in the hospital.
- b) Operational phase: This is the phase in which the actual tackling of mass casualties are performed according to the emergency plan.
- c) Phase of deactivation: An important phase of the hospital emergency plan when the administration command of the hospital is satisfied that the influx of mass casualty is not continuing.

4.7.4.2 Response

- The Hospital Administration must appoint an Incident Commander to carry out command and coordinate the overall disaster response.
- The Hospital Incident Commander's job is to direct all aspects of the hospital's participation in the disaster operation. The effectiveness of the hospital is his responsibility.
- The Medical Superintendent/Doctor on Call should confirm the emergency by inquiring in the office of the Administrative State Offices or Police Station .If possible, he should obtain information about precise location and time of event, type of incident, estimated number of casualties, potential risks and exposed population.
- Assessment of injuries /illness.
- Assessment of drugs requirement and other medical items required
- Ensuring extra supplies of medical items at the earliest.
- Establish health facility and treatment centers at disaster site.
- Vaccination, site operation camps, carcasses disposal.
- 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 within the hospital to the safest areas.
- Plan for emergency accommodations for auxiliary staff from outside the area.
- It is important that the disaster teams evaluate their performance in order to make the necessary recommendations for future disaster response.

- The purpose of the incident Staff (comprised of Command & General staff) is to provide hospital Incident Command with enough manpower to meet all his or her responsibilities in conducting disaster relief operation.

4.7.5 The operations chief

The operations chief is overall in-charge of all patients care activities and supervises the following areas:

- **Medical Care:-**
 - Emergency department
 - Critical care units
 - Surgical services
- **Ancillary Services:-**
 - Laboratory Services
 - Radiology Services
 - Pharmacy services
 - Mortuary services

4.7.6 The Logistics Chief

The logistics chief is overall in –charge of all support services of the hospital and supervises the following areas:

- Communication systems
- Transportation
- Dietary services
- Stores
- Sanitation, Water and Power supply.

4.7.7 The Planning Chief

The planning chief is overall in-charge of the manpower planning and is responsible for making immediate as well as extended schedules of the following staff:

- Medical Staff
- Nursing Staff

Reserved Staff: In cases of large scale disasters the recommendations are made for community participation and reserve staff concept.

(Depending upon the time & level of the disaster, the roles in the incidence command structure can be taken by the staffs till the time other people arrive to support the existing staff)

4.7.8 The Liaison Officer

The liaison officer is responsible for maintaining a close liaison with the other agencies providing rescue and relief to the victims of Disaster. His work is liaison with the other following agencies:

- The Police
- The Ambulance Services
- Others hospital in the network/area
- Blood Banks
- The Defence Medical Services
- Railways or others agencies medical relief

4.7.9 The Finance Officer

The Finance officer is responsible for allocation of emergency purchases if and when needed in the course of the disaster.

It is recommended that the disaster plans are made in close association with the financial advisors of the hospital/institution. This will make them more cost effective and avoid unnecessary and repeated expenditure

4.7.10 The Security Officer and Fire Officer

During emergency situation the hospital is the focus of not only the patients being brought in but a lot of persons including relatives, by-

standers, media etc. They more often hamper the smooth functioning of the hospital.

The hospital security should be operational at a very early stage of disaster. Some of the duties recommended are:

- Work in a close coordination with local police.
- Restrict and strictly control access to the hospital.
- Direct the entry for authorized persons to appropriate areas.
- Protect staff, patients and key installations of the hospital.

Any command system may be used by the hospital but the most important rule is to make organizational chart.

4.7.11 Stores planning

It is recommended that adequate stores of medical items, surgical items should be kept separately in the Emergency/Casualty and should be marked .The activation of this store is done only after the Disaster has been notified by the appropriate authorities. Close liaison is kept between the Stores In – Charge and the Hospital administration (Central command). Any requirements to the Operational Areas/Treatment areas are conveyed to the Command Center.

4.7.12 Ambulance Services

An efficient ambulance service is an essential part of the casualty service for the transportation of casualties from the scene of disaster to First Aid Posts and Hospitals.

- Mobile Teams (Van based) for first aid and referral—Marking of such Teams-District/ Block wise.
- Disaster Emergency Team composition --MO, Nurse, Pharmacist, Lab Technician, Driver.
- Teams to be mobile enough to rush to the affected area in minimum time and should be equipped to cater for accidents.

- Location of teams and area which they will primarily follow-- in kms and Route Chart. Tele no., Mob no., to a min of 03 personnels is provided, Medical officer / Pharmacist and Driver.
- Availability of data of Non- Government Mobile Health Vans, their Contact Persons, Tel no.
 - Formation of adequate number of mobile units with trained personnel, testing facilities, communication systems and emergency treatment facilities.

4.7.12 Resource Inventory

Material

Ambulance status in Uttarakhand

- Number of Ambulances in Uttarakhand – 342 + 108
(108 Ambulance)
- We have one ambulance at each PHC
 - On road – 281
 - Off road – 61
 - Total 108 Ambulances: 108

Trauma Centers in Operational Condition

- Doon Hospital, Dehradun- 24 hours Medical Emergency & Ambulance Services. Contact No.: For Ambulance-102 & Emergency - (0135) 252229
- 108 Emergency Ambulance Services.
- Base Hospital Srinagar- 24 hours Medical Emergency & Ambulance Services.

Contact No.: For Ambulance -108.

Trauma Centre under Construction

District Hospital Gopeshwar

Trauma Centre Sanctioned

Base Hospital Almora

Blood Banks in Uttarakhand

➤	Total Number of Blood Banks In the State	-	24
	Govt.	-	17
	Private	-	07

Stretchers

➤	Total (approx)	-	1332
➤	Working	-	1332
➤	Stock	-	Nil

Table –XXI

LIST OF CIVIL HOSPITALS (30/100/300 Bedded in Uttarakhand)

S.N.	Name of Hospital	No. of Beds
1	T.B. Sanatorium Bhawali	376
2	Base Hospital Srinagar	300
3	Doon Hospital Dehradun	252
4	Base Hospital Almora	200
5	Base Hospital Haldwani	206
6	S.P.S. Hospital, Rishikesh	148
7	J.L.N. Combind Hospital U.S. Nagar	125
8	B.D. Pandey Pithoragarh	120
9	District Male Pauri	130
10	T.B. Sanatorium Gethiya Nainital	113
11	Female Hospital Dehradun	111
12	District Hospital Uttarkashi	108
13	Combined Hospital Kotdwar	100

14	Combined Hospital Roorkee	100
15	Civil Hospital Ranikhet	90
16	M.L.H. Chandarnagar Dehradun	88
17	District Hospital Almora	74
18	Base Hospital Almora	200
19	Female Hospital Almora	69
20	L.D. Bhatt Hospital Kashipur	66
21	B.D. Pandey Female Hospital Nainital	65
22	B.D. Pandey District Hospital Nainital	63
23	District Female Hospital Pithoragarh	62
24	District Hospital Rudraprayag	60
25	District Hospital Chamoli	60
26	Combina Hospital Ramnagar Nainital	54
27	Coronation Hospital Dehradun	120
28	St. Mary Hospital Mussoorie	53
29	Suman Hospital Narendranagar Tehri	50
30	T.B. Hospital Haridwar	50
31	Combina Hospital Srinagar	45
32	Combina Hospital Old Tehri	40
33	T.B. Hospital Patiyaldhar Chamoli	40
34	T.B. Hospital Pithoragarh	40
35	G.B. Pant Hospital Nainital	38
36	District Female Hospital Pauri	30
37	District Female Hospital Haridwar	30

DEPARTMENTAL RESOURCE LIST

- Human Resource - Total no. of Doctors - 1,100
- **Infrastructure Resources**
 - District Hospitals - 11
 - Female Hospital - 06
 - Combined Hospital - 15
 - Community Health Centre - 49
 - Primary Health Centre - 232
 - State Allopathic Dispensary - 322
 - Health Post - 09
 - TB Clinic / Hospitals/ Sanatorium- 19
 - Leprosy Hospital - 03
 - Blood Bank (Public Sector) - 17 Blood Bank (Private Sector)
- Regional Diagnostic Centre:**
 - Base hospital Almora
 - Base hospital Srinagar
 - Doon Hospital Dehradun
 - Sub Centres - 1,765
- Logistics**
 - Ambulance - 342
 - Stretcher - 1,332
 - Blood Bank - 17 Govt. & 07 Private
 - Mobile Van - 02 available & 26 proposed
 - Other Material

FINANCIAL RESOURCES

Budget for

- Man power
- Capacity building
- Logistics
- Infrastructure modification and maintenance

- Budget for buffer stock at state and districts level

ADDITIONAL RESOURCES

State Medical College

- SGRR, Jollygrant, Sushila Tiwari Hospital & Srinagar Medical College
- ONGC Medical Facility
- Army Medical Facility
- ITBP Hospital
- Private Medical Facility

PROCESS/SOURCES FOR GETTING ADDITIONAL RESOURCES

- Government of India (NCDC Delhi).
- Other states of India (Directorate of Medical Health).
- Private Sector
- Name of Company Agent name Phone No.

Directorate of Medical Health & Family Welfare

107 Chandar Nagar, Dehradun.

Phone no.

0135-2720311,

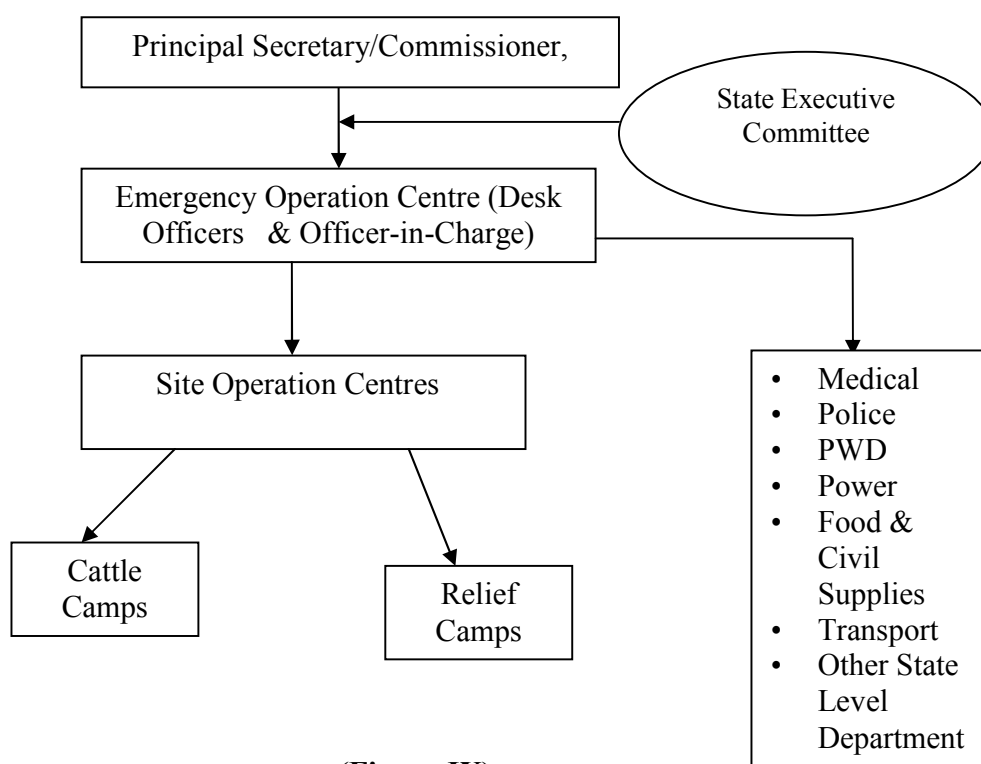
0135-2721792

* * Needs updation

State Level Institutional Mechanism

Disaster management would involve many layers of participating organizations. The three focal levels would be States, District and the site of the disasters. The State level agencies would be involved in policy decisions, resource allocations, and prioritization of activities and the budget allocation and monitoring through the Disaster Management and Mitigation Centre and State Emergency Operations Centre.

Coordination Structure at the State Level



(Figure-IX)

4.8.1 The State Executive Committee (SEC) is constituted to carry out the various functions assigned to it under DM Act, 2005 and will play a major role in preparedness and mitigation.

- a) Hazard Analysis & reviewing the threats & hazards.
- b) Risk Analysis
- c) Vulnerability analysis & evaluation of the preparedness level.
- d) Emergency Management
- e) Management Strategies

The committee shall direct a year under the chairmanship of the Chief Secretary & shall consist of the following functionaries.

Chief Secretary	-	Chairperson
Additional Chief Secretary	-	Member
Secretary, Disaster Management	-	Member
Secretary, Finance	-	Member
Secretary, Medical & Health	-	Member

The following officers shall be special invitees for the meetings of the State Executive Committee :

Principal Secretary, Home
Secretary, Public Works Department
Secretary, Irrigation
Divisional Commissioner, Kumaon and Garhwal Division

4.8.2 Responsibilities of Relief Commissioner

Additional State Secretary of Disaster Management is also the Relief Commissioner of the State in whom the power of administration of prevention, mitigation, preparedness, response and disaster vests.

- The Relief Commissioner Disaster Management is the controlling authority for Grants under "Relief on account of Natural Calamities and Loans and Advances."

- Seeking assistance for Rescue, Evacuation and Emergency Relief Measures from Army/Air Force Units in case of a large-scale disaster.
- Ensuring that adequate grants are placed under the budget head and also Implementations are not hampered on account of paucity of funds or otherwise.
- The Relief Commissioner will have the authority to requisition of resources, materials and equipment from private sector and seek assistance from Disaster Intervention Teams if required.
- Authorize establishment of SOC (Site Operation Centre) & Relief Camps in the affected areas with desk Arrangements.
- Authorize immediate evacuation wherever necessary.

4.8.3 State Emergency Operation Centre (EOC)

SEOC will expand to include desk arrangements with responsibilities for specific tasks. The desk arrangements provide for divisions of tasks, information, gathering and record and accountability of the desk officer to the Relief Commissioner.

The Emergency Control Room under the control of the Commissioner shall be the nerve centre.

- a) To monitor
- b) To coordinate
- c) Implement the actions for disaster management

(In a disaster situation the Commissioner Disaster Management is the central authority exercising emergency powers to issue directives to all departments to provide emergency response service).

Normal Time Activity

The normal time activity of the EOC shall be to:

- Ensure that all communication systems, instruments are in working condition.
- Receive information on a routine basis from the districts control rooms on the Char- Dham Yatra Routes, road conditions & of any incident occurrence etc.
- The Emergency Operation Centre shall receive reports from the District Control rooms, SDMs, Tehsildars of the Incident/ Accident occurrence, as per information based on these the EOC shall forward the preparedness measures details on behalf of the Additional Secretary Disaster Management /Relief Commissioner to the concerned State level Officers including Governor, MHA, NIDM & CM
- SEOC Prepare Action taken reports on the primary basis, the reports are being generated. The document should include:
 - a) Source & cause and affect of the disaster.
 - b) Description of the response effort (Relief and rescue operation detail which is executed by the district administration, police, local correspondences and disaster management teams.
 - c) Detail of ex-gratia, any other assistance to the KIN. Recommendations for preventive and mitigation measures.
 - d) Plans for upgrading emergency preparedness and response plans.
- Monitor preparedness measures, training activities including simulation exercises undertaken by various departments.

4.8.4 Activities on Warning and Alert

On the receipt of a warning or alert received from any such agency which is competent to issue such a warning, or on the basis of reports from District Magistrate/SP on the occurrence of a disaster, all community

preparedness including counter-disaster measures will be put into operation.

- On the basis of reports from the possible disaster site.
- On the receipt of warning or alert from EOC.

It is assumed that the State Administration would be one of the key organizations for issuing, warnings and alerts. Further, the List of Agencies competent for issuing warning or alert are as given below:-

Disaster	Agencies
Earthquakes	Indian Meteorological Department Baba Atomic Research Centre Research Centre, Geological Survey of India, NGRI,
Floods	Indian Meteorological Department, Irrigation Department, Central Water Commission.
Adverse Climatic Conditions	Indian Meteorological Department
Industrial & Chemical Accidents	Police, Transport, Power Department of Industries
Fires (Urban & Forest)	Fire Brigade, Police, Forest Department.

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

- Expand the EOC to include Desk Arrangements with responsibilities for specific tasks depending on the nature of disaster and extent of its impact.

- Establish an on-going VSAT, wireless communication and satellite phone contact with the District Magistrate of the affected areas.

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

4.8.5 Desk Arrangements

The Desk Arrangements is made for the divisions of tasks, coordination, information gathering, & record keeping. Accountability of the desk officer will be to the Chief of operations for specific function. Each desk should have a desk officer assigned.

The DO for Operations, Services, Logistics, Communication and Information Management, Resources desks will be from the Revenue Department.

For Health Desk, The Desk Officer will be from the Public Health Department.

For Infrastructure Desk, The Desk Officer will be from PWD.

The capacity of various desks to coordinate among their respective departments & with the units to be coordinated shall ultimately decide the quality of response. Such a function of coordination would largely depend on the capacity to effectively keep a track on communications received & the decisions taken.

The state level response will be coordinated under the guidance of Chief Secretary.

The Team leaders of Emergency Support Functions shall be deputed as Desk Officer and perform duties under the direction of Operation Section Chief.

4.8.6 Operations desk functions

The Chief Secretary/ Commissioner, Disaster Management will assume the role of the Chief of Operations for Disaster Management.

Response Action

- Rescue & Evacuation
- Salvage operation
- Emergency supplies of water & cooked food.
- Corpse disposal
- Transfer of affected persons to transit camps at the earliest time.
- Emergency transport for the seriously injured at the earliest possible time.

Communication

- Establish communication links through DMMC/EOC among State Level officials and others such as Police, Fire Brigade, FCI, CISF, PWD, Power Corporation, Irrigation, RTO, IMD, GSI and NGO's etc.
- Report to EOC/DMMC and Relief Commissioner on Deployment and reinforcement of staff and resources.

Supervision & Monitoring

Market Intervention

- Prevent hoarding, price hiking and corruption and unauthorized sale of Relief materials.
- Promote and encourage revitalization of local economic activities for speedy recovery.

General

- Disseminate details about legal and official procedures, eligibility criteria with respect to relief and compensation for loss of life, injuries, livestock, crop,

houses, required to be adopted, as received from EOC/ DMMC.

- Maintenance of records date of joining, period of service, leave record, overtime, etc.) for all the persons deployed for relief work within the district.
- Obtaining orders, instructions, clearances, clarifications from GOUA
- Sanctioning expenses for reimbursement with the approval

Service Desk

- Assessment
- Relief requirements as per information
- Cash Compensation requirements as per information

Organize & Co-ordinate

- Relief camps to be set up at the earliest for cooking arrangements, sanitation, water supply, disposal of waste, water stagnation and health services. (In accordance with standards laid down)
- Arrangements for dry rations and family kits and other relief materials.
- Cattle camps
- Supplies of fodder & cattle –feed to cattle camps.
- Supply of seeds, agriculture inputs & services
- Welfare services
- Law & order
- Coordinate NGO activities through DMMC and others such as Indian Red Cross, CARE etc., necessary support to ensure community participation.
- Mobilize and coordinate work of volunteers

- Co-ordinate supplies distributed directly by NGO's & other organization including private donors.

Infrastructure Desk

Organize & coordinate clearance of debris. Temporary Repairs to damaged infrastructure.

- Roads
- Bridges
- Telecommunication
- Power
- Transport
- Water
- Public Buildings
- Canal

Construction of facilities

- Shelters with sanitation and recreation facilities
- Provision of pumps
- Temporary Structures for storage
- Educational facilities
- Postal facility
- Helipads

Health Desk

Organize & Coordinate for

- Treatment of the injured & sick
- Preventive medicines activities.
- Disposal of dead bodies
- Disposal of carcasses
- Water supplies, Sanitation and disposal of waste

Assessment, Supply and Supervise

- Number of Ambulances required and hospitals where they could be sent, (public and private)
- Medical equipment and medicines required regarding treatment as for epidemics
- Medical relief for the injured.

Supervision of maintenance of standards

- Identification of source for supply of drinking water through tankers and other means of transport.
- Transit and relief camps for cooking arrangements, Sanitation, water supply, disposal of waste, water stagnation and health services.
- Providing arrangements of veterinary services, food & water, disposal of solid waste.
- Maintaining standards in cattle camps.

Logistics Desk

Assessment & Arrangements

- Assessment of needs including manpower & deployment of resources as per information.
- Requesting for additional resources from other districts.
- Identification of location where mass cremation /burial can be carried out & manpower & transport that would be required for this work.
- Requirement, availability & locality of depots, & transportation of wood to the location for mass cremation.
- Arrangements with petrol pumps for supply of fuel for authorized relief vehicles against credit coupons.

- Co-ordinating & supervising issue of village relief tickets to affected families.
- Ensuring safe storage & transport of relief supplies.
- Prevent hoarding, price hiking, corruption & unauthorized sale of relief materials.
- Initiate legal action on those engaged in hoarding, price hiking.
- Ensure proper maintenance of vehicles & equipment.

Coordinate and Organize Transport

- Co-ordination of transport with State Road Transport Corporation, Private Transporters, State Government Helicopters, Organizing Transport for Relief Personnel
- Affected persons
- Water, medicines, first-aid and cooked food for affected persons
- Relief Materials
- Seriously injured and sick
- Volunteers
- Reporting upon procurement and disbursement of relief materials received through government and non-government organization.
- Communities for storage of rations, sanitation, water supply, disposal of waste, water stagnation and health services.

Resources Desk

- Stock register for all relief materials.
- Inventory stock register for all non-consumables.
- Record of all personnel payment of TA & DA, daily wages & other incident made to relief material.

- Record of all expenses on administration and disaster management activities.
- Records of all transfer of funds to other government departments.
- Records of all gratuitous relief.
- Records of all compensation paid.
- Records of all finance and accounts as per the formats for the dispatch to EOC.
- Records for all cash receipts according to sources of funding.
- Records for all cash disbursements according to source of funding.

Agriculture Desk

- Rehabilitation of agriculture production
- Regular monitoring of rain; the distribution and variation in rainfall. Prepare the farmers and department officers to adopt contingency.

Applied Research & Studies

To promote research & studies on various aspects of disasters and risk reduction, on topics like:

Early warning & dissemination systems, susceptibility of the warning systems to damage ,monitoring the occurrence of disasters, assessment and mapping of hazards, vulnerabilities to various disasters, the effects of deforestation and land –use patterns urbanizations and space technologies.

4.9 Applied Research & Studies

There is a great need to:-

- Applied research on formulating various mitigation strategies for the specific areas, can be carried out through educational institutions, universities located in the region like Garhwal University, Kumaon University and Roorkee University etc and research institutes like Wadia Institute of Himalayan Geology, IIRS etc.
- Universities, existing engineering and architectural colleges should be encouraged to include disaster mitigation as a part of graduate training programs. The contents of such a course can be hazard –specific. For example-earthquake mitigation as a specialization.
- Improving the quality of forecasting and disseminating warnings quickly through the warning systems- By implementing the Integration of conventional forecasting with the state of art technologies, namely, remote sensing, Data Collection Platforms and GIS.
- Application of Satellite communication & Global Positioning Systems for observations & for monitoring the occurrence of different types of disasters.
- Research & studies be undertaken with national and international assistance if required.
- Sharing, monitor, review and evaluate the research activities.

Such steps would lead to the formulation of mitigation measures, more appropriate to the area.

Resource Inventory

4.10 Resource Inventory

One major step towards strengthening of our response system has been the launch of India Disaster Resource Network (IDRN).IDRN, a web based information system, is a platform for managing the inventory of equipments, skilled human resources and critical supplies for emergency

response. The primary focus is to enable the decision makers to find answers on availability of equipments and human resources required to combat any emergency situation.

The information system is accessible through the Website <http://www.idrn.gov.in> to all disaster response officers at the state & district level.

Data collection, compilation, data entry and updating in regular interval will be carried out at the district level with supervision of the District Collector, overall supervision and co-ordination with the state level nodal officer for disaster management in the state.

This will give at the touch of a button the location of specific equipment/specialist resources as well as the controlling authority for that resource so that it can be mobilized for response in the shortest possible time.

Following things should be taken care of while filling up the formats:-

- Keep the resource inventory database updated.
- Care should be taken to add only properly validated information in the system.
- The records should be thoroughly checked before uploading them to the website.
- Utmost care should be taken when entering the description of the item.

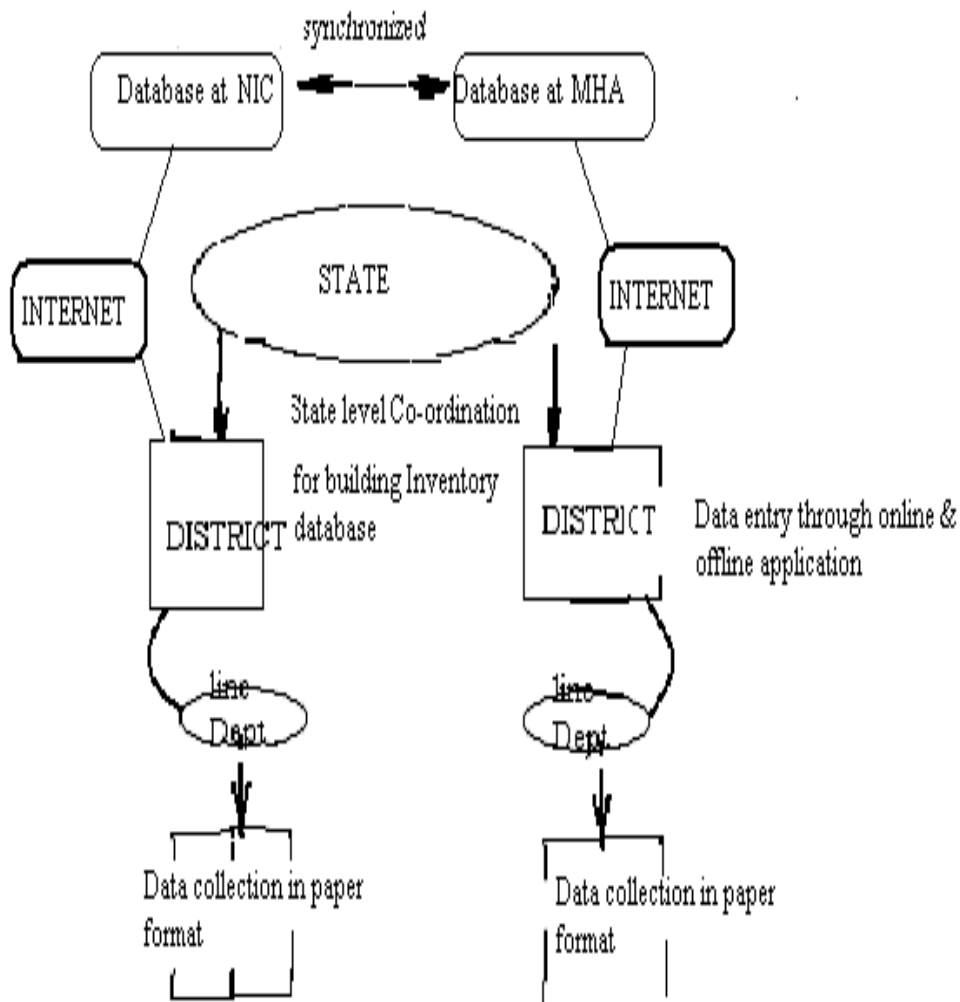
The description should contain the capacity /size or type of equipment.

- If the item is physically located other than the department, then the location needs to be specified.
- For 'availability time 'column, mention the item is available during particular months.

- If the item needs to be mobilized to some other place, transportation mode should be mentioned.
- Care should be taken to enter only inventory of functional equipments.
- Keep the resource inventory database updated every 3 months.

Data Transmission Process

Process & Protocol of Data Collection



Source: <http://www.idrn.gov.in>

(India Disaster Resource Network)

Data collection, compilation, data entry and updating in regular interval will be carried out at the district level with the supervision of the district collector, overall supervision and co-ordination will be the state level nodal officer for disaster management in the state.

Fail Safe Communication

Observations

1. Emergency communication needs to be updated and made more users friendly along with scope of greater interoperability between different stakeholders. The provision for a dedicated hot line between CM, Ministers, other key officials and senior officials should be made to strengthen information sharing from the site of incident/ disaster and to effectively augment decision making.
2. Communication should be extended to the remote places via DSPT set up through BSNL and optimum utilization of radio sets and wireless sets of Forest, GMVN, KMVN should be ensured through well laid out plans of communication of a/m departments.
3. Effort should be made to have one or a few emergency numbers for all emergencies so that the end user does not have to remember various numbers.

4.11 Reliable communications system

We already have Reliable communications system but yet disasters like earthquakes has resulted in partial or failure of general communication system which resulted in delay of information from the disaster site ultimately delay in relief operations.

Therefore establishment of reliable communications plays a crucial role. The installation of satellite phones, VHF, WLL Equipments and HAM equipments in the Remote areas for strengthened communication

system in all the 13 districts and district head quarters offices & Tehsil offices. Training to users in Line departments, District officials & community. Encouraged to use HAM Radios till village level.

4.12 Emergency Operation Centre

Department of Disaster Management has established Emergency Operations Centres (EOC) in all the districts and also at the State level. The State EOC is located in the Uttarakhand Secretariat campus and functions round the year and has the following facilities:

- Satellite phone
- Police wireless connectivity
- Mass sms messaging service
- V-SAT connectivity with MHA Control Room and the State capital and district headquarters
- Data collection, processing and

Lessons Learnt

Till recently the focus of disaster management was on Relief & Rehabilitation. Now the focus is shifting on: Prevention, Preparedness, and Response & Recovery.

Researchers continuously study relief efforts to learn lessons from the previous disasters and find better ways to respond to natural disaster in the future.

4.13 Review of the existing Disaster Management Arrangements

Reacting to a disaster is not enough; preventive and recovery measures and minimizing of emergency response time are equally important. Further, it has been recognized that for optimal use of the scarce resources, disaster management should be incorporated in development planning.

The main lessons learnt from past disasters are:-

- (1) Till recently the focus of disaster management was on Relief & Rehabilitation, but now the focus is shifting to Prevention,

Preparedness, and Response & Recovery. The need of the hour is to have a holistic approach to disaster management and integration of disaster management with regular development plans.

- (2) Delayed response and poor early warning systems cause disproportionately high damage, so communication should be timely and accurate.
- (3) Mobilization of resources in advance and strengthening of infrastructure are essential for evacuation and disaster.
- (4) Coordination of efforts amongst various government departments and other stakeholders as there is often a lack of coordination between them. With many groups competing for resources such as food, water, medication or transport, often duplicating their efforts which could be put to better use if better coordinated.
- (5) Adoption of standard operating procedures makes the tasks of relief, restoration and reconstruction much easier.
- (6) Unity of command in the management structure minimizes role conflict.
- (7) Ensuring all new constructions should come up as per building-byelaws & Standard codes as the weak constructions are more vulnerable to earthquakes.
- (8) Rebuild stronger- as rebuilding quickly of damaged structures after a disaster, without proper regulation and building standards will result in unsafe structures.
- (9) Identification of all the vulnerable buildings in the state. The very unfortunate recent incident in a school in Kapkot which resulted in several casualties of children.
- (10) Households which had received some disaster training were able to deliver first aid to others before official help arrived.
- (11) The State Govt. should have a well laid down policy for Disaster Management.

CHAPTER –V

Response Mechanism

State Disaster Response Plan

5.0 Response Management Arrangements

The present document is a response draft plan for the disaster situations and outlines the framework required for managing such situations. However, the plan assumes in terms of the action to be taken by the various agencies/departments involved in the disaster management.

The Government's approach is to ensure that those departments/agencies, which are responsible for providing a particular emergency response service, will adopt a planned, systematic and coordinated approach to make them most effective, while utilizing the resources most optimally.

Responsibility for response in the first instance will rest at the Gram Panchayat, Block or Municipality level. If the resources required to respond to an emergency exceed what is available at those levels, support will be sought in the following order:

- District
- State
- Centre, other States, International Agencies

The involvement of NGOs and CBOs will also be sought while ensuring a co-coordinated approach at all levels between Government and Non-Governmental agencies in emergency response.

Further every attempt to enlist community support and participation will reassure the community about the administration's intent and seriousness about managing the disaster.

Support Agency

Resource requirements are both intensive and extensive for management of disasters, in terms of the number of agencies involved and the nature of coordination required. Therefore stress should be laid on measures taken to ensure coordination with other agencies.

An Emergency response agency will be designated as a support agency, depending upon the circumstances and the magnitude of the disaster. A support agency is defined as a government or non-government agency, which provides essential services, personnel, or material to support or assist a control or another support agency or persons affected by an emergency.

Coordination

Coordination involves the bringing together of agencies and elements to ensure effective response to emergencies. The district level will ensure co-ordination of resources to support operations which cannot be resourced locally, or which extend over more than one location. The highest level of operational co-ordination and support takes place at the State level. It is at this level that resource support from other States, Central Government and/or other agencies is assessed and requested.

The response plan has been subdivided into the following sections-

- a) Response Activities
- b) Emergency Support Functions

5.1 Response Activities

Warning

It is assumed that the State administration under CS/ P Secy/ Secy Disaster Management at SEOC would be issuing, warnings and alerts.

Most of the disasters except earthquake and fires can be predicted and the community likely to be affected forewarned about any impending disaster through a proper warning mechanism.

Disasters for which warning is not possible include earthquakes, landslide, dam bursts, thunder and lightning and all accident related disasters.

Floods, droughts, epidemics, industrial and chemical disasters are some of the disasters for which adequate warning could be given.

Warning to people through the Govt. field functionaries will be disseminated. Further, the List of Agencies competent for issuing warning or alert are as given below:-

Disaster	Agencies
Earthquakes	Indian Meteorological Department Baba Atomic Research Centre Research Centre, Geological Survey of India, National Geophysical Research Institute
Floods	Indian Meteorological Department, Irrigation Department, Central Water Commission
Adverse Climatic Conditions	Indian Meteorological Department
Industrial & Chemical Accidents	Police, Transport, Power Department of Industries
Fires (Urban & Forest)	Fire Brigade, Police, Forest Department

This system of alert may range from alarms (fires), sirens (industrial disaster), to public announcement systems like radio, television, cable

T.V., loud speakers etc. On receipt of warning, the District/block level machinery and the concerned departments at the State level will be systematically activated for response measures at the earliest.

Evacuation

Evacuation is the planned relocation of persons from dangerous or potentially dangerous areas to safer areas and eventual return. Evacuated people are taken or directed to a place of relative safety, usually to an identified shelter or an emergency relief centre as per the Village/Block disaster management plans. In a situation of SDMs/Tehsildars will be responsible to ensure the registration of the evacuated people. Emergency relief will be provided to evacuees as needed. They will remain at the centre or in other emergency shelters until the danger is over and it is safe for them to return home. To evacuate the entire family together as a unit as far as possible. The evacuation process includes the returning of evacuees to their homes. In situations when evacuated persons must remain away from home for an extended period, temporary accommodation may be necessary.

The following details can be avoided in SDMAP

5.2.1 For effective evacuation ensure the following:

- Shelter sites will be identified within close proximity (one hour walk and or within 5 km) of dwellings.
- Alternate routes will be planned well in advance.
- For appropriate security and law and order, evacuation will be carried out with assistance from police, fire brigade, NGOs/CBOs working in the community.
- In view of inadequate transport or limited time, encourage community emergency evacuation in the following order of priority:
 1. Seriously injured, sick and pregnant women.
 2. Children, women and physically challenged.

3. Old.
4. Others.

5.2.2 Emergency evacuations

Families will be encouraged to take adequate supplies of water, food, clothing & other emergency items. People will be advised to-

- Shut off electrical switches, gas appliances.
- Secure their homes. Close & lock their doors & windows.
- Leave early enough to avoid being trapped.
- Follow recommended evacuation routes.
- Set the livestock free or move them to higher grounds /or earthen mounds.

The families will be encouraged to assemble the following items in their emergency kit which they will carry when evacuating are as follows:-

- Adequate supply of safe water in closed unbreakable containers.
- Adequate supply of non-perishable dry ration.
- Extra clothes, blankets, plates & glasses.
- Toiletries.
- A battery powered radio, torch, lantern & matches.
- Cash, jewellery, medicines important documents.
- Food & prescribed medicine, if any for infant and people needing special care.

Emergency Operation Centre

The existing control rooms will act as the main hub for response activities and for overall coordination. While the SRC will be overall in charge of the EOC.

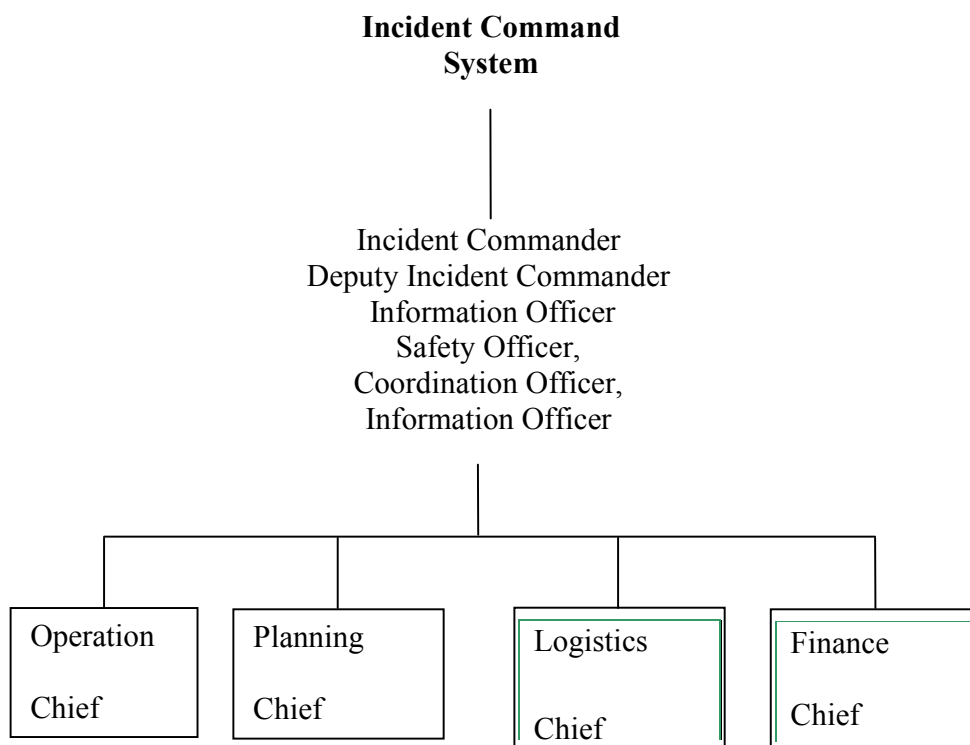
All EOC facilities will be made disaster resistant and operational through out the year on 24*7 basis.

5.3 Incident Command System

ICS is an effective model for centralized management. It can clearly define staff roles and responsibilities and lines of communications. ICS provides a means by which governmental authorities can organize to manage the situation and restore order when it has been disrupted. The Incident Command System (ICS) is a standardized emergency management system that facilitates a rapid government response to emergency situations

- ICS is basically a way to organize the various functions of a team, so that every aspect of an incident response is addressed. ICS includes the five major functional areas necessary for the management of an incident.

The layout of the Incident Command System with concerned staff is given in the chart below :-



(Figure-XI)

- **Command**– includes the Incident Commander; the Deputy Incident Commander; the Safety Officer, the Liaison Officer, and the Information Officer.
- **Operations**– Oversees the on-the-ground activities needed to accomplish incident objectives.
- **Finance**– Oversees the purchases and payment of funds necessary to accomplish objectives.
- **Planning**– Coordinates planning, resource ordering and release, record keeping, mapping, and documentation necessary to accomplish objectives.
- **Logistics**– Oversees the development and use of the infrastructures (food, supplies, transportation, facilities, etc.) necessary to meet objectives.

5.4 Response Planning

The primary aim of this document is the anticipation of foreseeable problems and development of possible solutions within existing constraints as derived out of past experiences.

Planning of the operations will be done quickly and at regular intervals. All planning aspects will be taken care of by this committee and execution of these will be undertaken by the Relief Commissioner.

Once the alert stage has been activated, within the (1-2)hours of the disaster event, the Relief Commissioner's office or the Emergency Operation Centre will be responsible for holding a meeting of the Coordinating Officer of each ESF. They will meet as and when needed, under the leadership of the Relief Commissioner and be responsible for the following during the course of this meeting:

- Damage assessment and submission of preliminary and final damage reports of the circumstance as well as loss sustained.
- Review of the situation and of submission of detailed reports to Government with recommendations.
- Review the actions taken for clearance of roads for movement of traffic, rescue of and relief to the marooned people,

disposal of dead bodies and carcasses, restoration of communication, power and drinking water.

- Ensure that the officers of concerned departments immediately inspect the affected area and take appropriate protective and restorative action.
- Arrange for army assistance.
- Decisions on more resources and relief material that may be required.
- If the magnitude of disaster is very great and assistance from outside the State is required, the flow of materials and manpower from outside will be co-ordinated by the Relief Commissioner and will organise the Arrival point for flow of such assistance.
- The Relief Commissioner will establish an Information & Arrival Centre at the nearest Airport, Rail head and Bus Terminal which will be manned by suitable personnel. These will be the key points for arrival and dispatch of relief materials and rescue task force. At these centres there will be provision for
 - a) **Storage:** Storage facility at the arrival point where material is categorized and if needed, packed for dispatch will be established.
 - b) **Briefing cell:** This cell will give specific briefing for different types of field workers.
 - c) **Donation management cell:** At the arrival point, the donations (in kind) from other states and international agencies are packed and readied for further distribution.

International NGOs should operate independently, without the prior intimation to and the approval of the State/ District Administration regarding their type of support and area of operation. This will help to avoid duplication and other administrative related issues.

5.5 Role of the Relief Commissioner when Disaster Strikes

1) Once the alert stage has been activated or disaster has struck, within the first **two hours** of the event a meeting will be held in the Relief Commissioner office to –

- Review the situation.
- Official declaration of disaster/emergency;
- Prepare a brief report to Government with recommendations;
- Arrange Meeting of the State Executive Committee;
- Appraisal of situation to the State cabinet.
- Ensure activation of Emergency Operations Centre (EOC), at State & Districts concerned.
- Briefing of officers of the concerned Departments/nodal officers for each ESF.
- Arranging for all required inventories from the concerned Departments It will be ensured that all officers remain in headquarters until the situation gets back to normal.
- Departure of first assessment team.
- Departure of first search and rescue team with army personnel, if required.
- Arrange for army assistance, if required.
- Briefing of Media on 8/12/24 hour basis w.r.t progress of relief and rescue operations.

2) The following activities will be initiated parallel

- Assessment of relief materials required will be made. Stock piling of Relief materials at strategic points will be ensured. Take decisions on more resources and relief material that may be required.
- Identify the nodal transport points for the affected areas.
- Send specialized teams to priority areas.
- Review the actions taken for clearance of roads for movement of traffic, rescue of and relief to the marooned people,

disposal of dead bodies and carcasses, restoration of communication, power and drinking water.

- Establishment of communication with the district and block and ensuring regular flow of information.
- Civil society organizations will be alerted and a plan of action for working in coordination with Govt. functionaries will be drawn up.
- State level decisions on more resources and relief material that may be required.
- Review and document the resources (manpower and material) support that has already been dispatched to the affected area.
- Media release.

5.6 Quick Response Mechanism

The State and districts will set up well-trained quick response teams for responding to disasters. The magnitude might be so large that medical and other response teams will be required even before any initial assessment. However, a quick assessment for further planning is also required. Therefore, the quick response teams can be divided into Assessment and Response Teams.

5.6.1 Action Plan for First 24 hours

First assessment team will be constituted, which will mainly comprise of senior officers who will be required to make a preliminary assessment of damage.

Items required by the first assessment team are:

- Survival kit
- Formats for First Assessment should contain the following :-
 - Geographic estimate of damage area
- Estimated total population affected
- Worst affected areas
- Areas currently inaccessible
- Casualty & Injury Report,

- Lists of damaged infrastructure, buildings, health facilities, water sanitation, and crop agriculture.
- Assessment of secondary threats
- Resource needs for response operations
- Priority needs (search and rescue, clothing, food items with quantity and specifications, cattle feeds and fodder, Sanitation, Health, Education, Crop/ agriculture, Infrastructure)

Preliminary Assessment

After the first assessment team has prepared the preliminary report, the EOC and the **State Executive Committee** will re-assess the situation at the site for taking further action. The first assessment team report will include the following-

Extent of damage in terms of

- Geographical area
- Expected affected population and effect on population (primary affected persons, dead, injured missing, homeless, traumatized population, children under five, pregnant women, lactating mothers etc.
- Damage to infrastructure of agencies
- Buildings (Major damaged/destruction and minor
- Infrastructure (road damaged/ destroyed, bridge, communication network, electricity network, telecom network.
- Health Facilities (Infrastructure damage, condition of equipments, staffs affected, Availability of medicines/drugs, vaccination/immunization, major health problems.
- Water Sanitation (Availability of safe drinking water and sanitation facilities, environmental sanitation, stock of disinfectants, condition of water supply system, repair status of water supply system, portable water system.

- Crop/ Agriculture (crop damage, livestock loss, health services for livestock, cattle feed/ fodder availability, damage to agricultural infrastructures).
- Food/nutrition (adequate availability of food for family, relief, Community Kitchen, requirement of baby food.
- Secondary threats (potential hazardous sites, epidemics etc.)
- Logistic and Distributions System (Availability of storage facilities, means of transportation, availability of fuel)
Priority needs (needs of search and rescue, need for team, special equipments and shelter etc.)
- Blankets and Clothing (children clothing, adult clothing, winter clothing).
- Food items (type of food, baby food, specialized food, cattle feed and fodder).
- Sanitation (portable water, chlorine powder and disinfectants, manpower for repair of drinking water points and disinfections of water bodies.
- Health (medical staff, drugs, ORS, equipment, Mobile unit, Immunization vaccine)
- Awareness programmes.
- Crop/agriculture (need of seeds, fertilisers, pesticides, implements)
- Equipments and manpower required for restoration of infrastructures.
- Report by the Collectors of the affected Districts.
- Condition of the Government buildings and communication infrastructure in the affected areas/districts.

5.6.2 Action to be taken within 24-48 hours

- Reinforce rescue operations through dispatch of relief material and trained human resource assistance.

- Strengthen communication and coordination with the affected area
- Arrange for easy distribution of the relief / assistance.
- Arrange for the lat-long of dropping zones for quick relief
- Send out additional search and Rescue and medical first Response teams.
- Accept relief and assistance from outside.

Continued Response

The response and rescue operations continue till the administration is able to take full charge of the situation.

5.7 Emergency Support Functions

The emergency support functions deals with the first response whenever a disaster strikes. The ESFs will come into operation on either receipt of warning of an expected calamity or in the event of a sudden emergency.

The ESFs, comprising of various supporting agencies/ departments, will manage and coordinate specific kinds of assistance, which are common to all types of disasters. The lead agencies involved in the management of these disasters are Search and Rescue, Health and Medical Care (Mobile hospitals), Communication, Food & Civil supplies, PWD, Transport, Jal Sansthan, Power, Police, Fire etc. These lead agencies could be supported by a number of other department/agencies.

The responsibilities, initial activities on receipt of warning and minimum standards for each ESF are as given below.

Early Warning

- Establishing Control Room round the clock.
- Arrangement of vehicle and fail safe communication for information dissemination.
- Transmission of information to each level.

- Ensure functioning of warning system & communication systems.
- Create awareness with the target groups.
- Proper record keeping.

Evacuation

- To warn people about the impending danger & to leave for safer places. Mobilize people to go to identified/safer shelters.
- Organize trained task force members.
- To co-ordinate with Police / Civil Defence -NGOs/CBOs for support.
- Arrangement of vehicles/Helicopters/ boats/ etc. for evacuation.
- Deployment of police for maintaining law & order & peace keeping.
- Monitor emergency relief operation during evacuation.

Search and Rescue

- Deployment of Trained Task Force /Police/Fire Brigade for search and rescue.
- Co-ordination with the NCC/NSS/Civil Defence etc. for rescue operation.
- Ensure availability of the rescue materials.
- Prepare inventory of shelter places and map indicating the shelter centres.
- Arrange for the lat-long of dropping zones for quick relief.
- Provide & arrange Rescue kit at risk areas.
- Establishing Communication systems.
- Provide & arrange Rescue kit at risk areas

Medical aid

- Deployment of Medical staff.

- Stock piling of Life saving drugs/ORS packets/Halogen tablets.
- Treatment of the injured persons and Transportation of the injured to hospitals.
- Vaccination.
- Constitute mobile teams and visit the worst affected areas.
- Disinfections of Drinking water sources.
- Identification of site operation camps.
- Arrangement of fodder/medicines for the animals.
- Vaccination, site operation camps, Carcasses disposal
- Disease surveillance and transmission of reports to the higher authorities on a daily basis
- Establishments of a public information centre with a means of communication to assist in providing an organized source of information.

Shelter Management

- Identification of Shelter/Temporary shelter at appropriate places and arrangement of tents etc.
- Arrangement of Food/Drinking water/Medicine in the shelter places.
- Arrangement of transportation.
- Arrangement for safe shelter for animals.
- Providing the lighting facilities for shelter places
- Deployment of Police Personnel.
- Temporary supply of safe drinking water

Emergency Relief

- Deployment of vehicle.
- Procurement and transportation of Relief materials to affected areas.
- Provision of kitchen in the shelter camps & affected areas.

- Assigning of free kitchen in the shelter camps & affected areas.
- Assigning responsibilities to officials for distribution of emergent relief / running of free kitchen.
- Coordinating with NGOs other agencies for continuing relief operations
- Monitoring.

Water Supply and Sanitation

- Ensuring supply of safe drinking water.
- Disinfectant for purification of water.
- Arrangement of mobile water tankers to specific areas.
- The monitoring of water quality should be restored.
- Involvement of volunteer's workers for inaccessible locations for health awareness campaign.

Infrastructure Restoration

- Begin clearing roads, arrangements for casual workers at key blockage points for fast road clearance.
- Formation of task force with emergency tool kits & specific equipments
- Construct temporary roads & bridges.
- Extra transport vehicles, Earth moving equipments, cranes should be dispatched from Head quarters and stationed at safe strategic spots.
- Keep National & other Highways clear from disaster effects.
- Coordinate road-cleaning activities to assist relief work.
- Damage assessment & Monitoring

The details of the primary and support agencies for each type of ESF are given below in-

Emergency Support Functions

S. No	Emergency Support Function	Primary agencies	Support Agencies
1.	Search & Rescue, Evacuation, Fire Fighting	Police ,Medical, Fire Services	Water supply, Power corp. Quick Response Teams & teams ex Identified Units.
2.	Law & Order	Police	
3.	Medical Response & Trauma Counselling.	Hospitals, Red Cross, NGOS	Police, Transport, Jal Sansthan
4.	Communication	Relief Commissioner	BSNL ,Private Telecom Service Providers, Mobile Phone Operators.
5.	Relief. A. Food B. Shelter	Revenue Department, Food & Civil Supplies	Transport, NGOs, Corporate Sector, CBO
6.	Equipment Support, Debris and Road Clearance & Sanitation.	PWD/Army/BRO	Transport
7.	Water supply	Water Works Deptt	NGOs.
8.	Electricity	Power Corporation	Service Providers, Transport
9	Transport.	RTO	Municipal Corporation
10.	Help Lines.	Department of Disaster Management/Revenue Department/ Public Relation Officer/Industrial units	Department. of Information & Publicity, AIR, Doordarshan, Private TV Channels, UNI, Press, PTI,

CHAPTER VI

Financial Arrangements

(Sh Badoni Ji ,s comments)

Immediate response and recovery will be carried out with Calamity Relief Fund, and Chief Minister's Relief Funds. However, to make the effort sustainable, the following measures will be taken-

- Allocation of the routine developmental budget for disaster management and mitigation activities.
- Incorporate risk reduction measures in routine developmental plans.
- Undertake a budgetary exercise at the State Level to raise additional resources necessary for improvement and modernizations of existing arrangements, training and other disaster management related activities which cannot be covered under routine budget.
- Making new project proposals for mobilizing additional resources from national and International agencies including the Central Government.

6.1 Arrangements for the fundings for the components of the state plan.

There are necessary Budgetary provisions for short, medium, long term activities. ('The Calamity Relief Fund') is constituted by the State of Uttarakhand for the purpose of financing natural calamity relief assistance. The Operation/Maintenance of the Fund **shall be done** through a Non - lapsable Public Ledger Account (P.L.A.) and shall be available to and

operated and utilized as per the decision of the “State Disaster Management Authority”

Copy of the GO in annexure

State Funds

S.N.	Types of Fund
1.	Calamity Relief Fund
2.	State Disaster Mitigation Fund
3.	State Disaster Response Fund
4.	District Disaster Mitigation Fund
5.	District Disaster Response Fund
6.	Chief Minister Relief Fund
7.	State Disaster Management Authority
8.	Rehabilitation of Natural Disaster affected Families
9.	District Emergency operation centre
10.	Disaster Mitigation Management Center
11.	District Disaster Management Authority

6.2 Provision of funds

*All funds are under Plan Type category excluding the Chief Minister Relief Fund.

1. CRF (Calamity Relief Fund)

2. State Disaster Mitigation Fund:-

As per Section 48 of the Disaster Management Act, 2005, the Government Constituted a Fund to be known as “State Disaster Mitigation Fund” for the purpose of the said Act. The Operation/Maintenance of the Fund shall be done through “State Disaster Management Authority”.

3. State Disaster Response Fund:-

Section 48 of the Disaster Management Act, 2005, the Government constituted a Fund to be known as “State Disaster Response Fund” for the purpose of the said Act .The Operation/maintenance of the Fund shall be done through “State Disaster Management Authority”.

4. District Disaster Mitigation Fund :-

Section 48 of the Disaster Management Act, 2005, the Government constituted a Fund to be known as “District Disaster Mitigation Fund” for the purpose of the said Act. The Operation/Maintenance of the Fund shall be done through “District Disaster Management Authority”.

5. District Disaster Response Fund:-

Section 48 of the Disaster Management Act, 2005, the Government Constituted a Fund to be known as “District Disaster Response Fund” for the purpose of the said Act. The Operation/Maintenance of the Fund shall be done through “District Disaster Management Authority”.

6. The Chief Minister Disaster Management Relief Fund :-

Includes those disasters which are not covered in the CRF Guidelines like accidents, fire accidents, forest fires etc. It is the only fund which comes under Non -Plan types of fund.

7. State Disaster Management Authority :-

It is constituted under Act (14) & subsection (2) under the Chairmanship of the Hon’ble Chief Minister of Uttarkhand. The operations are executed by the State executive committee under section 20(1).

Mismatch in flow of the topic and continuity:8,9,10,11.

8. Rehabilitation of Natural Disaster affected Families -* Policy is yet to be finalized for utilization of funds.

Can be put at the relevant place

9. All the 13 District Emergency Operation Centres (DEOC) are

functional 24X7.

10. Disaster Mitigation Management Centre :-

It is created to promote Technical Assistance, Awareness programmes, Training, Capacity building, assistance to State Disaster Management Authority/ State Government.

11. District Disaster Management Authority is constituted under Act (25) & Subsection (1) Under the Chairmanship of District Magistrate of the concerned district of Uttarkhand.

6.3 Steps taken for the constitution of funds

State Level

a) State Disaster Mitigation Fund:-

Section 48 of the Disaster Management Act, 2005, the Government Constituted a Fund to be known as “State Disaster Mitigation Fund” for the purpose of the said Act. The Operation/Maintenance of the Fund shall be done through “State Disaster Management Authority”.

b) State Disaster Response Fund:-

Section 48 of the Disaster Management Act, 2005, the Government Constituted a Fund to be known as “State Disaster Response Fund” for the purpose of the said Act. The Operation/Maintenance of the Fund shall be done through “State Disaster Management Authority”.

District Level

c) District Disaster Mitigation Fund:-

Section 48 of the Disaster Management Act, 2005, the Government Constituted a Fund to be known as “District Disaster Mitigation Fund” for the purpose of the said Act. The Operation/Maintenance of the Fund shall be done through “District Disaster Management Authority”.

d) District Disaster Response Fund :-

Section 48 of the Disaster Management Act, 2005, the Government Constituted a Fund to be known as “District Disaster Response Fund” for the purpose of the said Act. The Operation/Maintenance of the Fund shall be done through “District Disaster Management Authority”.

* Policy is yet to be finalized in this matter.

6.4 Allocation of funds in departmental SOP’s for DM Activity

G.O. circulated in all the departments for the preparation of SOP’s and to make provisions in the annual budget for funds to carry out the Disaster Management activities.

The Expenditure of the funds in Disaster Management related Activities is spent under 26 Items for 11 Calamities

* To be added as Annexure

Resources & Incentives

6.5 Resources

The continued development and application of hazard & application of hazard mitigation measures depends on the existence of stable funding sources. More Emphasize is needed on pre-event planning, action and on the development of state funding mechanisms. In order to overcome resource constraints and to be effective, the action plan for disaster reduction should be incorporated in the overall economic and social development plans.

Encouraging the formation of partnerships among private industry, state & districts to maximize resources for mitigation activities. Major business organizations should be contacted for introducing mitigation measures in all their projects and for state sponsored mitigation activities. Such activities can be provided with tax incentives if necessary.

6.6 Incentives

The application of hazard mitigation measures will depend to a great extent on effective incentives that encourage mitigation in both the public & private sectors.

Strategies for Incentives:-

- Incentives for relocation of residential & commercial structures outside the hazardous and disaster prone areas.
- Incentives for retrofitting of residential & commercial structures located in the hazardous and disaster prone areas.
- Incentives should be paid to the insurers who have followed building codes prevailing in that area.
- The State Government may provide special incentives to cover the people in that areas not yet covered by insurance and district administration.
- A review of the current incentives for undertaking both pre & post disaster mitigation measures to determine additional incentives and cost effectiveness. This should include review of certain policies.

6.7 Insurance

The introduction of disaster linked insurance should be actively pursued and insurance cover should not be just for life but also for household goods, structures, cattle and crops. Insurance brings quality consciousness in the infrastructure and a culture of safety. It would enforce safety standards by bringing accountability.

To achieve an optimum level of risk management, changes in the current institutional environment are needed.

Strategies

- Hazard areas should be notified and publicly displayed so that people would be motivated to settle in those areas and insurance be mandatory in insurance prone areas.
- Many areas are prone to multihazards; there should be multihazard insurance provisions.

- Insurance should be made against all natural and man-made disasters for houses, buildings & other important resources.
- Premiums can be changed on the basis of risk proneness.
- One of the difficulties in promoting disaster insurance is that, who are at a high risk have the least capacity to pay the premiums. Therefore, maintaining premiums at affordable price.
- Provision for group/ community insurance for the marginalized communities.
- Encourage insurance agencies to promote insurance for hazards by way of advertisement.
- Preparation of insurance policy for increasing awareness and the provisions of compensation should be taken by insurance.

To be incorporated in the plan:

1. Micro financing issues.
2. Emergency Communication System esp. interoperability between various communication systems. Communication between agencies as 108 services, BSNL, Tertiary health services, trauma center, fire, military and Para mil forces.
3. Coordination between state level NGOs and Department of Disaster Management.
4. Training of personnel in deep diving SAR and Urban SAR operations with the latest equipment in the field.
5. Trained dog unit in the state for location of victims.
6. Greater exposure to personnel's in the field of disaster management at State and District level.
7. HR policy for work force Disaster Management.
8. Highlighting the role played by SAR teams in training and community SAR programmes and the short and long-term objectives of State in strengthening the response at the community level.

We can also indicate the target for next 03 – 05 years.

SECTION –A**DAILY REPORT ON RAINFALL & FLOODS**

(To be sent to JS (DM) and DM Control Room MHA so as to reach by 10:00 hrs daily beginning from 1st June, to 30th September, on Fax No.23093750/23093465).

State-Uttarakhand

Date of reporting 1st June, Every Year

(A) Rainfall Position			
S/N	Rainfall Position (Rainfall received at)	During the last 24 hours (in mm)	Cumulative rainfall since 1st June, in mm)
1.	Dehradun		
2.	Pantnagar		
3.	Mukteshwar		
4.	New Tehri		

(B) Rivers in flood		
1.	Name of rivers flowing above warning level (specify warning level and actual water level)	
2.	Name of rivers flowing above danger level (specify danger level and actual water level)	
3.	Name of rivers flowing marginally below, at or above Highest Flood Level (HFL)	

(C) Areas affected by floods		
1.	Number and names of affected districts	
2.	Number of affected Talukas (Districts wise)	
3.	Number of affected Villages (Districts wise)	

(D) Extent of Damage			
S/N.	Details of damage/loss	During last 24 hours	Since 1st June (cumulative)
1.	Population affected		
2.	Number of human lives lost		
3.	Number of cattle livestock lost/perished		
4.	Cropped area affected (in lakh hectares)		

5.	Estimated value of damaged crop (Rs. in lakh)		
6.	Number of houses damaged		
	(i) Fully		
	(ii) Partially		
7.	Estimate value of damage to houses (in Rs. lakh)		
	(i) Fully damaged.		
	(ii) Partially damaged		
8.	Estimated value of damage to public properties (Rs. in lakh)		
9.	Estimate value of total damage (5+7+8)		
10.	Any other relevant information		
(E)	Impact on infrastructure (sector-wise)		
1.	Impact of flood on infrastructure and essential services (i.e. power supply, water supply, road transport, health sector and telecommunication etc)		
(F)	Rescue and Relief		
1	Number of persons affected		
2	Number of persons evacuated.		
3	Number of boats deployed for evacuation		
4	Number of relief camps opened		
5	Number of persons accommodated in the relief camps.		
6	Details of distribution of essential commodities (including air-dropped food packets)		
7	GR paid, if any-specify the items and amount.		
8	Number of medical teams deployed.		
9	Whether outbreak of any epidemic occurred (Details there of).		
10	Number of cattle camps opened.		
11	Number of cattle in camps.		
12	Any other relief measures taken-please specify.		

SECTION –B:-**Disaster Mitigation Management Centre
Secretariat, Dehradun, Uttarakhand**

Telephone: 0135-2710334

Date:

Fax: 0135-2710335

Daily Mandal**Report based on the report by Government Of India, Central Water Commission,
Himalayan Ganga Mandal**

River/Place	Danger Level (Meter)	Maximum Water Level (Meter)	Morning 8:00am Water level (Meter)	Trend (Last 03 Hours)	Rainfall in (MM) Last 24 hours	Average Rainfall (Monthly)	Flood Forecast	Remarks
1.Bhagirathi Uttarkashi								
2. Tehri								
3. Alaknanada Joshimath								
4.Rudrprayag								
5.Srinagar								
6. Pinder Karanprayag								
7. Mandakini Rudraprayag								
8.Nyar Mrora								
9.Ganga Devprayag								
10.Rishikesh								
11.Haridwar								
12.Dehradun								

Flood forecast place 1-Srinagar, 2.Rishikesh 3.Haridwar 4.Ramanagar

S No.	River/Place	Danger Level (Meter)	Morning 8:00am Water level (Meter)	Discharge (Cusec.)
1.	Ganga(BheemGoda)			
2.	Tehri			
3.	Alaknanada Joshimath			
4.	Kosi Bairaj			

(Building Bye laws/ Regulations)

संख्या-2269 / V / आ0-2007-55(आ0) / 2006 टी.सी.

प्रेषक,

शुत्रघ्न सिंह,
सचिव,
उत्तराखण्ड शासन।

सेवा में

- | | | | |
|----|---|----|---|
| 1— | उपाध्यक्ष,
विकास प्राधिकरण,
हरिद्वार/देहरादून, उत्तराखण्ड | 2— | प्रबन्ध निदेशक
राज्य औद्योगिक विकास प्राधिकरण
देहरादून, उत्तराखण्ड। |
| 3— | सचिव,
विशेष क्षेत्र विकास प्राधिकरण,
दूनघाटी/नैनीताल/गंगोत्री
उत्तराखण्ड। | 4— | निदेशक
शहरी विकास निदेशालय
देहरादून, उत्तराखण्ड। |
| 5— | नियत प्राधिकारी,
अधिशाली
समस्त विनियमित क्षेत्र,
निगम/नगरपालिका
उत्तराखण्ड। | 6— | मुख्य नगर अधिकारी/समस्त
अधिकारी, नगर
परिषद/नगर पंचायत, |

आवास विभाग

देहरादून: दिनांक 06 नवम्बर, 2007

विषय— भवन निर्माण एवं विकास उपविधियों/विनियमों में भवनों की ऊंचाई,
भू-आच्छादन, एफ0ए0आर0, भू-गेह पार्किंग संबंधी इत्यादि मानकों में संशोधन।
महोदय,

उत्तराखण्ड राज्य में भूमि की सीमित उपलब्धता के दृष्टिगत इसका ईष्टतम उपयोग वांछित है। इस दृष्टिकोण से प्रदेश के विकास प्राधिकरणों, विशेष क्षेत्र विकास प्राधिकरणों, राज्य औद्योगिक विकास प्राधिकरण, अभिकरणों व स्थानीय निकायों में प्रचलित भवन निर्माण एवं विकास उपविधियों/विनियमों के अन्तर्गत भवनों की ऊंचाई, भू-आच्छादन एवं एफ0ए0आर0 तथा भू-गेह पार्किंग में संशोधन हेतु सुझाव/अनुरोध शासन के समक्ष प्रस्तुत किये जाते रहे हैं।

उपर्युक्त पर सम्यक् विचारोपरान्त मुझे यह कहने का निदेश हुआ है कि प्रदेश में भवन निर्माण एवं विकास उपविधियों/विनियमों में भवनों की ऊंचाई, भू-आच्छादन, एफ0ए0आर0, भू-गेह पार्किंग इत्यादि से संबंधित प्राविधानों में निम्नलिखित संशोधन किये जाये।

1.0 पर्वतीय व मैदानी क्षेत्र की परिभाषा

इस शासनादेश के अन्तर्गत प्रस्तावित प्राविधानों के लिए प्रदेश को दो क्षेत्रों में विभक्त किया जाता है— (क) पर्वतीय क्षेत्र जिसमें जनपद पिथौरागढ़, अल्मोडा, बागेश्वर, चमोली, उत्तरकाशी, टिहरी, रुद्रप्रयाग का सम्पूर्ण क्षेत्र जब कि देहरादून जनपद की चकराता व

मसूरी तहसील, नैनीताल जनपद की तहसील तथा रामनगर विनियमित क्षेत्र को छोड़कर अवशेष रामनगर तहसील, चम्पावत जनपद की टनकपुर नगरपालिका सीमा को छोड़कर अवशेष क्षेत्र एवं पौड़ी जनपद की कोटद्वार नगरपालिका सीमा को छोड़कर अवशेष क्षेत्र शामिल होंगे तथा (ख) मैदानी क्षेत्र, जिसमें प्रदेश के पर्वतीय क्षेत्र को छोड़कर अवशेष क्षेत्र शामिल होंगे।

2.0 भवन की ऊंचाई:

भवनों की अधिकतम ऊंचाई निम्नलिखित प्रतिबन्धों के अन्तर्गत निर्धारित ऊंचाईयों में से न्यूनतम ही अनुमन्य होगी—

(क) मार्ग की चौड़ाई तथा निर्धारित आवश्यक अग्र सेट बैक के योग के 1.5 गुणा—एक से अधिक मार्ग पर भवन के अवस्थित होने की दशा में इस हेतु सबसे चौड़े मार्ग की चौड़ाई ली जायेगी।

(ख) पर्वतीय क्षेत्रों में अधिकतम 12 मीटर तथा मैदानी क्षेत्रों में 21 मीटर

(ग) पर्वतीय क्षेत्रों में भूतल व अधिकतम ऊपरी तीन तल तथा मैदानी क्षेत्रों में भू—तल तथा ऊपरी अधिकतम छः तल: तथा

(घ) संबंधित भू—उपयोग हेतु निर्धारित एफ0ए0आर0 की सीमा तक

3.0 अधिकतम भू—आच्छादन एवं एफ0ए0आर0

भू—आच्छादन एवं एफ0ए0आर0 का निर्धारण निम्नवत् किया जाता है—

क्र. स.	उपयोग समूह (भूखण्ड क्षेत्रफल वर्गमीटर में)	मैदानी क्षेत्र					पर्वतीय क्षेत्र			
		अधिकतम भू—आच्छादन %	जनसंख्या/निर्माण घनत्व पर आधारित अनुमन्य ए0आर0ए0				अधिकतम भू—आच्छादन %	जनसंख्या/निर्माण घनत्व पर आधारित अनुमन्य एफ0ए0आर0		
			सघन	उच्च	मध्यम	न्यून		उच्च	मध्यम	न्यून
1	2	3	4	5	6	7	8	9	10	11
1—	आवासीय (फ्लैटेड)									
	— 100 तक	70	1.00	1.20	1.30	1.30	70	1.20	1.30	1.30
	— 200 तक	65	1.10	1.20	1.30	1.30	65	1.30	1.50	1.50
	— 300 तक	60	1.20	1.30	1.40	1.40	60	1.40	1.50	1.50
	— 400 तक	55	1.40	1.50	1.60	1.60	55	1.50	1.60	1.60
	— 500 तक व उससे अधिक	50	1.50	1.60	1.70	1.70	50	1.60	1.70	1.70
	— ग्रुप हाउसिंग	33.33	X	1.70	2.10	2.10	33.33	X	1.70	1.70
2—	व्यवसायिक									
	(क) आवासीय क्षेत्र में सुविधाजनक दुकानें	50	0.60	0.80	1.00	1.00	60	1.10	1.10	1.10
	(ख) बाजार स्ट्रीट	50	0.75	1.25	1.40	1.00	55	1.40	1.65	1.40
	(ग) महायोजना में चिन्हित वाणिज्यिक क्षेत्र									
	—500 तक	50	1.10	1.65	2.00	1.80	60	1.80	2.00	2.00
	—501—999 तक	45	1.00	1.75	2.00	2.20	55	1.80	2.00	2.00

7-	संस्थागत एवं सामुदायिक सुविधायें— (क) मण्डप/बारातघर (वैडिंग प्वाइंट) (ख) धार्मिक/आश्रम परिसर (केवल शिखर, मीनारें, डोम इससे मुक्त) (ग) अन्य सामुदायिक भवन	33.30 35 40	X 0.70 X	X 1.00 0.80	0.70 1.60 1.80	1.00 1.60 1.80	35 40 40	X 0.80 0.80	0.70 1.60 1.40	0.80 1.60 1.40
8-	औद्योगिक —250 —251—350 तक —351—450 तक —451—900 तक —901—1800 तक —1800 से अधिक	60 55 55 50 45 40	X X X X X X	0.75 1.00 1.00 X X X	1.20 1.30 1.50 1.60 1.60 1.60	1.50 1.50 1.60 1.60 1.60 1.60	65 60 55 50 45 40	1.00 1.10 1.20 1.20 X X	1.30 1.50 1.60 1.60 1.60 1.60	1.30 1.50 1.60 1.60 1.60 1.60
9-	विविध (क) सूचना प्रौद्योगिकी परिसर एवं परिसरों में इकाई (ख) अन्य अनुमन्य क्षेत्रों में व्यक्तिगत सूचना प्रौद्योगिकी इकाई (ग) फिलिंग/फिलिंग—कम—सर्विस स्टेशन (घ) टैक्सी, बस एवं ट्रक अड्डा	33.50 40 15 35	X 0.80 X 0.35	X 1.00 0.15 0.70	2.30 1.60 0.25 1.25	2.30 2.00 0.20 1.40	35 45 20 40	X 0.90 X 0.80	1.80 1.50 0.20 1.20	1.80 1.50 0.40 1.20

X अर्थात् निर्माण अनुमन्य नहीं।

— जनसंख्या/निर्माण घनत्व के अनुसार क्षेत्र विशेष का वर्गीकरण संबंधित महायोजना/महायोजना प्रारूप में इंगित वर्गीकरण के अनुरूप होगा, महायोजना/प्रारूप महायोजन विद्यमान न होने की दशा में मुख्यालय, नगर एवं ग्राम नियोजन विभाग, देहरादून द्वारा अलग से एतद्विषयक वर्गीकरण किया जाएगा।

4.0 ऊंचाई संबंधी अन्य प्राविधान

4.1 मसूरी के माल रोड पर गॉंधी चौक से क्लेयरेंस हाऊस तक दूनघाटी या खड्ड की ओर स्थित किसी भी भवन शिखर मार्ग तल से 03 मीटर नीचे तक ही अनुमन्य होगा। नैनीताल झील परिक्षेत्र में विद्यमान सभी झीलों के तट ग्राम नियोजन विभाग, देहरादून द्वारा कोई भी नव निर्माण अनुमन्य नहीं होगा।

4.2 मसूरी एवं नैनीताल विकास क्षेत्र में भवनों की अधिकतम ऊंचाई 11.0 मीटर या भूतल व ऊपरी

तीन तल अथवा इनमें से जो भी कम हो, अनुमन्य होगा, यह अनुमन्यता मसूरी क्षेत्र में वन व पर्यावरण मंत्रालय, भारत सरकार एवं नैनीताल क्षेत्र में माननीय उच्च न्यायालय द्वारा निर्देशित व निहित प्रक्रिया की परिधि में ही मान्य होगा। बदरीनाथ, केदारनाथ एवं गंगोत्री में सीमित उपलब्ध भूमि के सापेक्ष प्रति वर्ष यात्रियों के दबाव की दृष्टि से भवनों की अधिकतम ऊंचाई क्रमशः बदरीनाथ व केदारनाथ में 8.5 मीटर या भूतल एवं ऊपरी दो

तल तथा गंगोत्री में 6.5 मीटर या भूतल एवं प्रथम तक तक इनमें से जिसकी भी ऊंचाई कम हो, अनुमन्य होगी।

4.3 भवनों की ऊंचाई प्लिंथ लेबल से आकलित की जायेगी। इस हेतु भूतल से अधिकतम प्लिंथ लेवल

0.45 मीटर ही अनुमन्य होगा, अर्थात् प्लिंथ लेबल 0.45 मीटर से कम होने की दशा में ऊंचाई का

आकलन वास्तविक प्लिंथ लेबल से तथा उससे अधिक की स्थिति में ऊंचाई का आकलन भू-तल

से 0.45 मीटर की ऊंचाई से किया जायेगा।

5.0 एफ0ए0आर0 व ऊंचाई में छूट:

उक्तानुसार अनुमन्य एफ0ए0आर व ऊंचाई में निम्नलिखित के अनुसार छूट अनुमन्य होगी:—

5.1 ढालदार छत की स्थिति में, ढाल की रिज की ऊंचाई 2.00 मीटर से अधिक होने पर 2 मीटर तक

तथा इससे कम होने पर ढाल के रिज की वास्तविक ऊंचाई तक:

5.2 वास्तुकलात्मक फीचर, पैरामिट वॉल रूफ—टॉप वाटर टैंक, डिस्क एण्टिना चिमनी अधिक तक 1.5 मीटर ऊंचाई तक, एयर कन्डिशनिंग एक्यूपमेन्ट, लिफ्ट—मशीन रूम

भवन में लिफ्ट होने पर अधिकतक 4.20 मीटर ऊंचाई तक, मस्ती 2.40 मीटर तक को मुक्त रखा गया है। औद्योगिक इकाईयों की चिमनियों की ऊंचाई को एतद्संबंधी गणना से मुक्त रखा गया है।

5.3 उक्त समस्त निर्माण के अन्तर्गत आच्छादन छत के 20 प्रतिशत क्षेत्रफल के अन्दर ही अनुमन्य होगा। इससे अधिक का आच्छादन पूर्णतः अश्वनीय होगा अर्थात् ऐसा निर्माण केवल तोड़ा ही जायेगा तथा ऊंचाई में वर्णित सभी छूट सम्बन्धी प्राविधान एकमुश्त स्वतः ही समाप्त हो जायेगी।

6.0 भकम्प, अग्नि इत्यादि से सुरक्षा संबंधी प्राविधान :

6.1 भूकम्प से सुरक्षा हेतु भूकम्परोधी प्राविधान सभी प्रकार के भवन निर्माण में किया जाना अनिवार्य है।

इस हेतु भवन निर्माण से पूर्व सम्बन्धित आर्किटेक्ट, इंजीनियर एवं आवदेक द्वारा सम्मिलित रूप से इस आशय का प्रमाण पत्र प्रस्तुत करना आवश्यक होगा कि स्ट्रक्चरल डिजाइन नेशनल बिल्डिंग कोड ऑफ इण्डिया के भाग—IV के प्राविधानों के अनुरूप है।

6.2 ऊंचे भवनों के निर्माण हेतु स्थल की उपयुक्तता व सुरक्षा सुनिश्चित करने हेतु पर्वतीय क्षेत्र में 7.5 मीटर तथा मैदानी क्षेत्रों में 9 मीटर से ऊंचे सभी भवन अधिक ऊंचाई वाले भवन की परिभाषा में आयेंगे। अधिक ऊंचाई वाले भवनों के निर्माण से पूर्व, इस आशय का प्रमाण पत्र प्राप्त करना आवश्यक होगा कि निर्माण स्थल भूगर्भीय दृष्टिकोण से प्रस्तावित निर्माण के लिए उपयुक्त है।

- 6.3 अधिक ऊँचाई के भवनों के लिए नेशनल बिल्डिंग कोड ऑफ इण्डिया के भाग— IV (स्ट्रक्चरल डिजाइन) के अनुसार स्ट्रक्चरल डिजाइन करना आवश्यक होगा, इस हेतु प्रमाण पत्र प्रदान करने के लिए आई.आई.टी. रुड़की/ पन्तनगर विश्वविद्यालय के 'स्ट्रक्चरल डिजाइन' विशेषज्ञ विभाग से अथवा उनके द्वारा प्राधिकृत स्ट्रक्चरल इंजीनियर (जिनकी सूची शासन द्वारा पृथक से जारी की जायेगी) ही अधिकृत होंगे। अधिक ऊँचाई के भवनों के मानचित्र पर इनके हस्ताक्षर व मुहर सहित प्रमाण पत्र प्राप्त करना अनिवार्य होगा। भवन का निर्माण पूर्ण होने पर इसके अधिभोग से पूर्व भी सूची में वर्णित संस्था/स्ट्रक्चरल इंजीनियर द्वारा प्रदत्त इस आशय का प्रमाण पत्र प्रस्तुत करना अनिवार्य होगा कि उक्त प्राविधानों के अनुसार ही भवन का निर्माण किया गया है।
- 6.4 भवन का डिजाइन व निर्माण 'फायर एण्ड लाईफ सेफ्टी' प्राविधान जैसा कि नेशनल बिल्डिंग कोड ऑफ इण्डिया के भाग—IV में वर्णित है, के अनुसार होगा। इसके अतिरिक्त समस्त गैर आवासीय भवनों, ग्रुप हाउसिंग के मानचित्र पर स्वीकृति से पूर्व यह सुनिश्चित किया जायेगा कि फायर एण्ड लाईफ सेफ्टी सम्बन्धी नेशनल बिल्डिंग कोड ऑफ इण्डिया के भाग—IV में वर्णित प्राविधानों के अनुसार आवश्यक **अनापत्ति प्रमाण-पत्र** स्थानीय अग्नि शमन विभाग के सक्षम अधिकारी द्वारा आवेदक के मानचित्र पर उपलब्ध है। इसी प्रकार सम्बन्धित भवन के निर्माण के पूर्ण होने पर उसके अधिभोग से पूर्व भी अग्नि शमन विभाग से इस आशय का अनापत्ति प्रमाण-पत्र प्रस्तुत करना अनिवार्य होगा कि इन प्राविधानों के अनुरूप व्यवस्था की जा चुकी है।
- 6.5 9.0 मीटर से ऊँचे भवनों में भवन के चारों ओर न्यूनतम 4.50 मीटर व तत्पश्चात प्रत्येक 3.00 मीटर या अंश की ऊँचाई वृद्धि पर 1.00 मीटर अतिरिक्त तक की दूरी के क्षेत्र को निर्माण मुक्त रखते हुये खुले क्षेत्र के रूप में रखा जाना आवश्यक होगा। यदि भूखण्ड के क्षेत्रफल अनुसार सेट बैक अधिक निर्धारित है तो उस स्थिति में खुला क्षेत्र के रूप में जो भी अधिक हो, उसका प्राविधान आवश्यक होगा।
- 6.6 अधिक ऊँचाई के भवनों हेतु निम्न प्राविधान भी किये जाने आवश्यक होंगे –
- 1 अग्निशमन उपकरणों की सुगम पहुंच व वाहनों के घुमाववृत्त का स्पष्ट अंकन तथा भवन के चारों ओर वाहनों के आवागमन हेतु स्पष्ट मार्ग व्यवस्था। (Access to fire appliances/vehicles with details of vehicular turning circle and clear motorable accessway around the building)
 - 2 बालकोनी/कारीडोर में पहुंचने हेतु मुख्य व वैकल्पिक सीढ़ी की चौड़ाई सहित सवांतनयुक्त लौबी द्वारा बालकोनी व कौरीडोर में सम्पर्क मार्ग हेतु समुचित व्यवस्था (Size (width) of main and alternate staircase alongwith balcony approach, corridor, ventilated lobby approach)
 - 3 लिफ्ट सहायृत की स्थिति व विवरण (Location and details of lift enclosures)
 - 4 फायर लिफ्ट की स्थिति एवं माप (Location and size of fire lift)
 - 5 धुआं रहित लौबी/दरवाजा जहाँ भी दिये गये हों (Smoke stop lobby/door, where provided)
 - 6 अवशिष्ट निस्तारण हेतु अवशिष्ट शूट व चेम्बर एवं सर्विस डक्ट आदि (Refuse chutes, refuse chamber, service duct, etc)
 - 7 वाहन पार्किंग स्थल (Vehicular parking spaces)
 - 8 अवशिष्ट निस्तारण का स्थल यदि कोई हो (Refuse area, if any)

9. भवन में सुविधाओं का विवरण यथा— वातानुकूल प्रणाली में आद्र अग्नि शमकों की स्थिति का अंकन, यांत्रिक संवातन प्रणाली, विद्युत आपूर्ति सुविधा, वॉयलर, गैस पाईप आदि (Details of Building Services- Air-conditioning system with position of fire dampers, mechanical ventilation system, electrical services, boilers, gas pipes etc)
 10. सभी सामुदायिक संग्रह सम्बन्धित, संस्थागत व अस्पताल एवं विशेष संवेदनशील भवनों में निकासियों का विवरण, रैम्प आदि सहित (Details of exits including provision of ramps, etc, for all public/ institutional buildings, hospitals and special risks)
 11. जनरेटर, ट्रान्सफार्मर व स्विच गियर कक्ष की स्थिति (Location of generator transformer and switchgear room)
 12. धुआं निकास हेतु एग्जास्ट व्यवस्था यदि कोई हो (Smoke exhaust system, if any)
 13. अग्नि सूचक ध्वनि यंत्र प्रणाली का विवरण (Details of fire alarm system network)
 14. अग्नि सूचक ध्वनि यंत्रों के केन्द्रीय नियंत्रण कक्ष की स्थिति एवं सम्बद्धता, अग्नि रोधक उपकरणों की व्यवस्था तथा जन सूचना प्रणाली आदि (Location of centralized control, connecting all fire alarm systems, built-in fire protection arrangements and public address system, etc)
 15. जल भण्डारण टैंक की माप व स्थिति, अग्नि सुरक्षा हेतु पम्प कक्ष की चालित पम्प सहित जल भण्डारण टैंक में जल भण्डारण की सुचारु व्यवस्था (Location and dimensions of static water storage tank and pump room alongwith fire service inlets for mobile pump and water storage tank)
 16. नियत अग्नि सुरक्षा उपकरण जैसे स्प्रिंगलर्स बेट सर्जिजेर्स, हाउस रील्स, ड्रेन्चर, कार्बनडाई-आक्साईड आदि की स्थिति एवं उसका विवरण (Location and details of fixed fire protection installations such as sprinklers, wet risers, house-reels, drenchers, CO₂ installation, etc, and)
 17. प्राथमिक उपचार सम्बन्धी अग्नि शमन सुरक्षा उपकरणों की व्यवस्था, उसकी स्थिति एवं विवरण (Location and details of first-aid fire fighting equipment/ installations).
- 7.0 ग्रुप हाउसिंग — मानक :
- 7.1 ग्रुप हाउसिंग में निम्न प्राविधानों को किया जाना आवश्यक होगा :-
- ग्रुप हाउसिंग के लिये न्यूनतम भूखण्ड पर्वतीय क्षेत्रों में 1000 वर्गमीटर एवं मैदानी क्षेत्रों 2000 वर्गमीटर होगा।
 - मैदानी क्षेत्रों में न्यूनतम 9.00 मीटर चौड़े मार्ग एवं पर्वतीय क्षेत्रों में न्यूनतम 6.00 मीटर चौड़े मार्ग पर ही ग्रुप हाउसिंग के लिए प्रस्तावित भूखण्ड अवस्थित होगा।
 - ग्रुप हाउसिंग के लिए प्रस्तावित भूखण्ड की न्यूनतम चौड़ाई मैदानी क्षेत्र में 24 मीटर एवं पर्वतीय क्षेत्र में 18 मीटर होगी।
 - ग्रुप हाउसिंग हेतु अधिकतम घनत्व मैदानी क्षेत्र में 125 आवासीय इकाई प्रति हैक्टेयर तथा पर्वतीय क्षेत्रों में 90 आवासीय इकाई प्रति हैक्टेयर तक सीमति होगी।

- ग्रुप हाउसिंग के भूखण्ड का न्यूनतम 15 प्रतिशत क्षेत्र व्यवस्थित पार्क व वृक्षारोपण क्षेत्र में आरक्षित करना आवश्यक होगा।
- भूखण्ड के क्षेत्रफल के अनुसार आन्तरिक मार्गों की चौड़ाई निम्नानुसार होगी:—

		<u>मैदानी क्षेत्र</u>	<u>पर्वतीय क्षेत्र</u>
4000 वर्गमीटर तक	—	6.5 मीटर	4.5 मीटर
4001 से 10000 वर्गमीटर तक	—	7.5 मीटर	6.5 मीटर
10000 वर्गमीटर से अधिक	—	9.0 मीटर	7.5 मीटर

7.2 ग्रुप हाउसिंग हेतु भवन मानचित्र आवेदन के साथ निम्न विवरण भी प्रस्तुत करने आवश्यक होंगे—

1. अपना पैन नम्बर तथा फर्म/कम्पनी/ट्रस्ट का आयकर नम्बर एवं फर्म/कम्पनी/ट्रस्ट का रिजोल्यूशन एवं मेमोरैंडम ऑफ आर्टीकिल्स का विवरण तथा ग्रुप हाउसिंग के रेजीडेंट्स के सुरक्षा एवं अनुरक्षण के सम्बन्ध में RWA (Resident Welfare Association) से सम्बन्धित नियम/उपनियम।
2. विद्युत, जलापूर्ति व सीवेज से सम्बन्धित सभी ड्राईंग वास्तुविद से हस्ताक्षरित जो कि बी0आई0एस0 मानकों के अनुसार हो एवं निर्धारित प्रारूप पर भवन निर्माण के सम्बन्ध में विशिष्टियाँ।
3. अग्नि शमन सम्बन्धी प्राविधानों के सम्बन्ध में स्थानीय अग्नि शमन अधिकारी का ड्राईंग पर अनापत्ति प्रमाण-पत्र आवश्यक होगा।
4. इस आशय का एक पंजीकृत शपथ-पत्र कि संबंधित अभिकरण से कार्यपूर्ति प्रमाण-पत्र लेने के उपरान्त ही आवासीय इकाइयों का अधिभोग होगा।
5. ग्रुप हाउसिंग में प्रस्तावित कुल निर्मित क्षेत्र के 8 प्रतिशत मुख्यतः इनफार्मल सर्विस प्रोवाइडर, जिसका न्यूनतम एक चौथाई ई0डब्ल्यू0एस0 हाउसिंग निर्माण हेतु उसी भूखण्ड में जिसमें ग्रुप हाउसिंग प्रस्तावित है, प्राविधारित करना आवश्यक होगा।

8.0 भू-गेह (बेसमेन्ट) पार्किंग-मानक:

- 8.1 मैदानी क्षेत्रों में अधिक ऊंचाई के भवनों में भू-गेह (बेसमेन्ट) पार्किंग अनिवार्य होगी।
- 8.2 बिल्डिंग लाईन से 3.6 मीटर छोड़ने के उपरान्त (निर्धारित सेट बैक के) अवशेष क्षेत्र का केवल 33 प्रतिशत खुले पार्किंग के उपयोग में लाया जा सकेगा।
- 8.3 प्राकृतिक आपदा एवं भूकम्पीय दृष्टिकोण से स्टिल्टस के प्राविधान की अनिवार्यता को समाप्त किया जाता है तथापि यदि आवेदक केवल पार्किंग हेतु स्टिल्टस का प्राविधान स्वयं करना चाहता है तो ऐसी स्थिति में स्ट्रक्चरल व भू-क्षमता सम्बन्धी आवश्यक प्रमाण-पत्र एवं तत्आधरित आवश्यक प्राविधानों की अनिवार्यता होगी, परन्तु उन्हें एफ0ए0आर0 व ऊँचाई में कोई छूट अनुमन्य नहीं होगी।

- 8.4 पार्किंग हेतु प्रयुक्त भू-गेह को पूर्णतः एफ0ए0आर0 व ऊँचाई गणना से मुक्त रखा जायेगा। बेसमेन्ट का निर्माण भू-आच्छादन की परिधि में किया जा सकेगा यदि यह निर्माण
- बगल की सम्पत्ति की स्ट्रक्चरल सेप्टी हेतु 3.00 मीटर की दूरी पर स्थित हो।
- 8.5 मैदानी क्षेत्र में यदि भूखण्ड की चौड़ाई 24.00 मीटर या अधिक हो तो उस स्थिति में ही पार्किंग हेतु भू-गेह में दो तल (डबल बेसमेन्ट) के पार्किंग का निर्माण अनुमन्य होगा।
- जबकि पर्वतीय क्षेत्र हेतु यह 18.00 मीटर व अधिक चौड़ाई के भूखण्डों पर यह अनुमन्य होगी।
- 8.6 भू-गेह प्रत्येक पार्किंग में किसी भी स्थान पर फर्श से सिलिंग (बीम सहित) की ऊँचाई न्यूनतम 2.40 मीटर एवं अधिकतम 2.60 मीटर अनुमन्य होगी।
- 8.7 भू-गेह के सिलिंग के चारों ओर के भू-भाग की सतह से न्यूनतम आवश्यक ऊँचाई 0.90 मीटर एवं अधिकतम 1.20 मीटर होना आवश्यक है।
- 8.8 भू-गेह पार्किंग में सामने की ओर से ही समान्यतः प्रवेश एवं निकासी पृथक-पृथक होगी तथा प्रत्येक प्रवेश व निकास रैम्प की न्यूनतम चौड़ाई 3.00-3.00 मीटर आवश्यक होगी।
- प्रवेश एवं निकास एक होने के स्थिति में रैम्प की चौड़ाई 6.50 मीटर आवश्यक होगी।
- 9.0 सेट बैक-मानक:
- 9.1 आवासीय:

भूखण्ड का न्यूनतम आवश्यक क्षेत्रफल मैदानी क्षेत्र में 75 वर्गमीटर एवं पर्वतीय क्षेत्र में 45 वर्गमीटर।

भूखण्ड का क्षेत्रफल (वर्गमीटर)	सेट बैक (मीटर में) न्यूनतम आवश्यक			
	अग्र भाग	पृष्ठ भाग	पार्श्व-1	पार्श्व-2
—100 तक	2.0	—	—	—
—200 तक	2.0	1.5	—	—
—300 तक	3.0	3.0	1.5	—
—450 तक	4.5	3.0	2.0	2.0
—500 तक व अधिक	7.5	5.0	3.0	3.0
ग्रुप हाउसिंग				
4000 तक	7.5	6.0	4.5	4.5
10000 तक	9.0	7.5	5.0	5.0
10000 से अधिक	12.0	9.0	6.0	6.0

9.2 व्यवसायिक/कार्यालय:

भूखण्ड का न्यूनतम आवश्यक क्षेत्रफल मैदानी क्षेत्र में 175 वर्गमीटर तथा पर्वतीय क्षेत्र में 125 वर्गमीटर। किन्तु मोटल, रिजोर्ट्स हेतु न्यूनतम क्षेत्रफल मैदानी क्षेत्र में 4000 वर्गमीटर एवं पर्वतीय क्षेत्र में 3000 वर्गमीटर। मल्टीप्लेक्स हेतु न्यूनतम क्षेत्रफल मैदानी व पर्वतीय क्षेत्रों में 2500 वर्गमीटर होगा।

भूखण्ड का क्षेत्रफल (वर्गमीटर)	सेट बैक (मीटर में) न्यूनतम आवश्यक			
	अग्र भाग	पृष्ठ भाग	पार्श्व-1	पार्श्व-2
250 तक	4.5	—	1.5	—
500 तक	6.0	2.0	1.5	—
1000 तक	9.0	3.0	3.0	—
1000 से अधिक	12.0	6.0	3.0	3.0
मोटल, रिजोर्ट्स व मल्टीप्लेक्स	15.0	7.5	6.0	6.0
10000 से अधिक	12.0	9.0	6.0	6.0

9.2 हॉस्टल/बोर्डिंग/गेस्ट हाउस/लॉजिंग हाउस/धर्मशाला/मुसाफिरखाना/होटल:-

भूखण्ड का न्यूनतम आवश्यक क्षेत्रफल मैदानी क्षेत्र में 750 वर्गमीटर तथा पर्वतीय क्षेत्र में 600 वर्गमीटर। होटल हेतु न्यूनतम आवश्यक भू-खण्ड का क्षेत्रफल मैदानी क्षेत्र में 1500 वर्गमीटर एवं पर्वतीय क्षेत्र में 1000 वर्गमीटर।

भूखण्ड का क्षेत्रफल (वर्गमीटर)	सेट बैक (मीटर में) न्यूनतम आवश्यक			
	अग्र भाग	पृष्ठ भाग	पार्श्व-1	पार्श्व-2
800 तक	9.0	4.5	3.0	3.0
1500 तक	9.0	6.0	4.5	4.5
1500 से अधिक	12.0	6.0	5.0	5.0

9.3 सामुदायिक भवन तथा शिक्षण संस्थाओं/चिकित्सा/सामाजिक एवं सांस्कृतिक/धार्मिक व आश्रम परिसर:-

भूखण्ड का न्यूनतम आवश्यक क्षेत्रफल मैदानी क्षेत्र में 1000 वर्गमीटर व पर्वतीय क्षेत्र में 850 वर्गमीटर।

भूखण्ड का क्षेत्रफल (वर्गमीटर)	सेट बैक (मीटर में) न्यूनतम आवश्यक			
	अग्र भाग	पृष्ठ भाग	पार्श्व-1	पार्श्व-2
1000 तक	6.0	3.0	3.0	—
1001 से 3000 तक	7.5	4.5	3.0	3.0
3001 से 8000 तक	9.0	6.0	4.5	4.5
8001 से 15000 तक	9.0	6.0	6.0	6.0
15001 से 35000 तक	12.0	9.0	7.5	7.5
35000 से अधिक	15.0	9.0	9.0	9.0

9.4 औद्योगिक :

भूखण्ड का क्षेत्रफल (वर्गमीटर)	सेट बैक (मीटर में) न्यूनतम आवश्यक			
	अग्र भाग	पृष्ठ भाग	पार्श्व-1	पार्श्व-2
300 तक	4.5	3.0	—	—
301 से 600 तक	5.0	3.0	3.0	—
601 से 1000 तक	6.0	4.5	4.5	2.0
1001 से 3000 तक	7.5	4.5	4.5	3.0
3001 से 6000 तक	9.0	6.0	5.0	5.0
6001 से 15000 तक	15.0	7.5	5.0	5.0
15000 से अधिक	20.0	9.0	7.5	7.5

भूखण्ड का न्यूनतम आवश्यक क्षेत्रफल मैदानी क्षेत्र में 450 वर्गमीटर एवं पर्वतीय क्षेत्र में 300 वर्गमीटर, जबकि सर्विस उद्योग में इनके 40 प्रतिशत कम का भूखण्ड।

केवल 600 वर्गमीटर से अधिक के भूखण्डों में स्थापित औद्योगिक भवनों में प्रवेश द्वार के निकट बाउण्ड्रीवाल से सटे हुये गार्ड रूम का निर्माण अनुमत्य होगा जिसका क्षेत्रफल अधिकतम 10 वर्गमीटर होगा।

10.0 सामुदायिक सुविधायें – मानक:0

भू-आच्छादन, एफ0ए0आर0 एवं भवनों की ऊँचाई संबंधी संशोधन के क्रम में सामुदायिक सुविधाओं में न्यूनतम भूखण्ड क्षेत्रफल की आवश्यकता निम्नानुसार होगी— पर्वतीय क्षेत्र में निम्नानुसार निर्धारित क्षेत्रफल से 30 प्रतिशत कम क्षेत्रफल का भूखण्ड आवश्यक होगा:—

शैक्षिक

आवासीय हाईस्कूल
इण्टर कॉलेज
डिग्री कॉलेज या प्राविधिक
आवासीय इण्टर कॉलेज/डिग्री/प्राविधिक

न्यूनतम आवश्यक क्षेत्र

3.00 हैक्टेयर
3.00 हैक्टेयर
3.50 हैक्टेयर
4.50 हैक्टेयर

चिकित्सा

डिसपेन्सरी
नर्सिंग होम
प्राइमरी स्वास्थ्य केन्द्र
अस्पताल
हैक्टेयर

0.12 हैक्टेयर
0.20 हैक्टेयर
0.70 हैक्टेयर
200 शैय्याओं तक 2.75

200 से अधिक 3.50 हैक्टेयर
(एनसिलरीज व कर्मचारियों के
आवास सहित)।

आयुर्वेद कॉलेज
कॉलेज हेतु

1.25 हैक्टेयर (आवासीय

विविध

एम0सी0ए0 या एम0बी0ए0 या बी0एण्ड	1.00 हैक्टेयर
वास्तुकला व टाउन प्लानर्स	2.00 हैक्टेयर
फार्मेसी या एप्लाइड आर्ट्स व क्राफ्ट फैशन	1.00 हैक्टेयर
डिजाइन या एच0एम0सी0टी0	
शारीरिक रूप से अक्षम व्यक्तियों सम्बन्धी स्कूल— (एक नगर स्तर पर)	1.00 हैक्टेयर
शारीरिक रूप से अक्षम व्यक्तियों सम्बन्धी आवासीय स्कूल— (एक नगर स्तर पर)	1.50 हैक्टेयर

11.0 वर्षा जल संग्रहण – मानक :

- 11.1 विभिन्न भू-उपयोगों के अन्तर्गत उन सभी अनुमन्य निर्माण कार्यों पर, जिनका भू-आच्छादन 125 वर्गमीटर या अधिक हो वर्षा जल संग्रहण का प्राविधान अनिवार्य होगा।
- 11.2 वर्षा जल संग्रहण हेतु मानक का निर्धारण करते हुये 250 वर्गमीटर तक के आच्छादन पर न्यूनतम 2 घनमीटर रेन वाटर हारवेस्टिंग भण्डारण की व्यवस्था अनिवार्य होगी, जबकि इससे अधिक व 400 वर्गमीटर तक 3.5 घनमीटर तथा उसके उपरान्त प्रत्येक 50 वर्गमीटर अथवा उसके आंशिक भाग की आच्छादित वृद्धि पर न्यूनतम 1 घनमीटर अतिरिक्त की दर पर वर्षा जल भण्डारण का प्राविधान आवश्यक होगा।
- 11.3 यदि 400 वर्गमीटर से अधिक के भूखण्डपर बोर वेल/रिचार्ज गड्ढा/कुआ- हैण्ड पम्प/ ट्रेन्च द्वारा भूगोह रिचार्जिंग का प्राविधान किया जाता है तो उस स्थिति में उक्त मानक में निर्धारित गणना का एक तिहाई भाग भण्डारण हेतु रखना आवश्यक होगा।
- 11.4 इसके प्रभावी क्रियान्वयन हेतु आन्तरिक वर्षा जल भण्डारण (रेन वाटर हारवेस्टिंग) के प्राविधान की पुष्टि, प्रश्नगत भवन मानचित्र में करने के उपरान्त ही सम्बन्धित अभिकरण द्वारा स्वीकृति सम्बन्धी कार्यवाही की जायेगी। इस प्रयोजनार्थ जल निकास एवं भण्डारण/ सम्भरण से सम्बन्धित निर्माण कार्यों के क्षेत्रफल को भूतल आच्छादन हेतु अनुमन्य क्षेत्रफल में शामिल नहीं किया जाएगा।

12.0 निर्माण कार्य की पूर्णता/अधिभोग प्रमाण-पत्र:

सभी गैर आवासीय भवनों एवं 250 वर्गमीटर व उससे अधिक आच्छादित आवासीय भवनों के लिये सम्बन्धित अभिकरण क सक्षम अधिकारी स्तर से निर्माण कार्य की पूर्णता/अधिभोग प्रमाण-पत्र प्राप्त करना अनिवार्य होगा।

राज्य के समस्त विनियमित क्षेत्र, विकास प्राधिकरण, विशेष क्षेत्र विकास प्राधिकरण, राज्य औद्योगिक विकास प्राधिकरण, अन्य अभिकरण एवं स्थानीय निकाय से सम्बन्धित क्षेत्र में उक्त समस्त प्राविधान तत्काल प्रभाव से क्रियान्वित करने आवश्यक है। इन प्राविधानों में कोई भी शिथिलता शासन द्वारा ही प्रदान की जा सकती है।

उपर्युक्त के क्रम में आवश्यकतानुसार बिल्डिंग बायलॉज/विनियमों में संशोधन कर उसके अनुपालन की सूचना संबंधित अभिकरण के मुख्य कार्यपालक अधिकारी द्वारा एक माह के अन्दर प्रस्तुत की जायेगी।

भवदीय,

(शत्रुघ्न सिंह)
सचिव।

संख्या-2269 (1)/V -आ0 2007..... तददिनांक।

- प्रतिलिपि निम्नलिखित को सूचनार्थ एवं आवश्यक कार्यवाही हेतु प्रेषित।
- 1- अध्यक्ष, मसूरी-देहरादून/हरिद्वार विकास प्राधिकरण।
 - 2- अध्यक्ष, विशेष क्षेत्र विकास प्राधिकरण, दूनघाटी/नैनीताल/गंगोत्री।
 - 3- समस्त जिलाधिकारी, उत्तराखण्ड।
 - 4- प्रबन्ध निदेशक, सिडकुल, न्यू कैन्ट रोड देहरादून, उत्तराखण्ड।
 - 5- एस0टी0सी0पी0, नगर एवं ग्राम नियोजन विभाग, उत्तराखण्ड।
 - 6- निदेशक, एन0आई0सी0, उत्तराखण्ड सचिवालय परिसर, देरादून।
 - 7- गार्ड बुक।

(शत्रुघ्न सिंह)
सचिव।

Annexure –III**SECTION –A ITBP, NDRF****INDIAN TIBETAN BORDER POLICE IN UTTARAKHAND**

S. N	Name	Designation	Department	Numbers		
				Office	Fax	Mobile
1	Shri Ranjit Kumar Bhatia IPS	Director General (DG)	ITBP, Force Headquarter ITBP, Block-2, CGO Complex, Lodhi Road New Delhi	011-24360618 011-26117585	26715303	9717771248
2	Shri Lal Chand Arora	P.S. To DG	ITBP, Force Headquarter ITBP, Block-2, CGO Complex, Lodhi Road New Delhi	011-24360618 011-24361918 0124-255161 (R)		
3	Shri Anirudh Uppal, IPS	Additional DG	ITBP, Force Headquarter ITBP, Block-2, CGO Complex, Lodhi Road New Delhi	011-24369945 011-24633500 (R)		
4	Shri K.B.Singh	OPS/ PROV/AD MIN	ITBP	011-2436414		
5	Delhi Control Room	—	ITBP	011-24363940 011-24368237	011-24360427 24360268	
Uttarakhand (Northern Frontier)						
6	Shri Mohan Chandra Bhatt	IG	Northern Frontier Dehradun	0135-2767622	2767644	
7	Shri Nagendra	DIG	Northern Frontier Dehradun	0135-2761754	2764949	
8	Shri D.P Dhankar	DIG(ENGR)	Northern Frontier Dehradun	0135-2763705	2762620	
9	Main Officer Number Control Room	-	-	0135-2761750 0135-2762976	-	

SHQ Dehradun						
10	Shri Sanjay Singhal, IPS	DIG	ITBP Seemadwar D.dun	0135-2767698	2760369	9411113973
11	Shri Satpal	DIG	ITBP Seemadwar D.dun	0135-2769029	2721224	
12	CMO	SG	ITBP Seemadwar D.dun	0135-2760282	-	-
13	Control Room		ITBP Seemadwar D.dun	0135-2760406 0135-2766098	0135-2760406	
ITBP Ist BN in Joshimath, Distt- Chamoli, Uttarakhand						
14	Shri Rajendra Singh Chandel	Comdt.	ITBP, Ist BN Joshimath, Chamoli	01389-222141 01389-222143 EX-222140	01389-222029	
15	Transit Camp Kothiyal Sain	-	ITBP, Ist BN Joshimath, Chamoli	01372-262308	-	
<u>ITBP, 8th BN, Gaucher, Distt-Chamoli, Uttarakhand</u>						
16	Shri S.R. Roy	Comdt	-	01363-240627 01363-240627 Ex-240626	-	-
<u>ITBP, 12 th BN, MATLI, Distt,Uttarkashi, Uttarakhand</u>						
17	Shri Girish Upadhaya	Comdt		01374-235491 01374-235490 Ex-235413	01374-235491	94111 13970
18	CMO(SG)			01374-234208	-	-
<u>ITBP, 14 th BN, Pithoragarh Uttarakhand</u>						
19	Shri P.N. Prasad	Comdt.		05964-256100 05964-256101 Ex-256076	05964-256062	
20	FWD post Supply point Munsiri			05961-222204		

	<u>ITBP, 7 th BN, Mirthi Distt, Pithoragarh Uttarakhand</u>					
2 1	Shri A.P.S. Nimbadia	Comdt.		05964-232127 05964-232134 Ex-232143	05964- 232220 232838	94111 13434
	<u>ITBP, 34 th BN, Haldichour, Ranikhet, Almora, Uttarakhand</u>					
2 2	Shri Pawan Malik	Comdt.		05945-269410 05945-269411	05945- 269407	
	<u>ITBP, 35 th BN, Bimola Camp Katarmal Distt, Almora Uttarakhand</u>					
2 3	Shri Chhota Ram Jat	Comdt.		05962-233085	05962- 233108	
		SHQ Almora				
2 4	Shri. V.K. Upreti	DIG		05962-254332 05962-254336	05962- 241125	
	<u>ITBP, 23 th BN, RHQ Dehradun</u>					
2 5	Shri Ashok Kumar	Comdt.		0135-2761873 0135-2764032 (R) Ex-2761912, 2766098	0135- 2761160	

NATIONAL DISASTER RESPONSE FORCE(NDRF)

S.N.	Name	Phone Number	Mobile No.
1.	Shri Prakash Mishra, IPS Director General, NDRF & Civil Defence DG Head Quarters NDRF & Civil Defence East Block-7, Level-VII, Sector-01, R.K. Puram, New Delhi	(O) 011-26712851 26715303 (F) 011- 26105912 (R) 011-23386566 011-26107953 Control Room Email id- <u>dg-ndrf@nic.in</u>	09818916161
2.	Shri J.P. Yadav Commandant, 8th Bn NDRF MHA/ Govt of India Sector- 19 Kamla Nehru Nagar, P.O. Kamla Nehru Nagar, Distt-Ghaziabad (U.P) Pin Code- 201002	(O) 0120-2766017 2766012 (F) 2766618 , (Exchange)-2351105	09968610011
3.	Shri R.K. Verma Commandant, 7th Bn ITBP Bhatina (Punjab) For U.K	(O) 0164-2246030, (F) 2246570 (Exchange) 2246570 Control Room 0164-2246570	09417802032
4	Commandant, 6th Bn, CISF Vellore, (TN)	(O) 04177-246269 04177-246233 (F) 04177-246269	09442105069
5	Commandant, 4th CISF, Mundali (Orrisa)	(O) 0671-2879710 (F) 0671-2879710	09437964571
6	Commandant, 106 Bn, BSF Kolkata (WB)	033-25264394 033-25264394 (F)	9434742836
7	Commandant, 128 BSF Kamrup Assam	0361-2841464 0361-2840284(F)	09435545951
8	Commandant, 145 Bn CRPF Pune Maharashtra	02114-231245 02114-231509 02114-231245 (F)	09423506765
9	Commandant, 146 Bn CRPF, Gandhinagar(Gujarat)	079-23262540 079-23262587 (F)	09427304100 09427304218

Annexure –III

SECTION–B NDMA,IMD,CWC

NATIONAL DISASTER MANAGEMENT AUTHORITY

S.N.	Name	Phone Number	Mobile
1	Shri M Shashidhar. Reddy (Vice Chairman)	(O) 011-26701704 (R) 011-23793128	
2	Shri T. Nand Kumar Member	(O) 011-26701775 (R) 011-24629330	
3	Dr. Muzaffar Ahmed	(O) 011- 26701777 (R) 011-26193746 011-26107095	
4	Shri K.M. Singh Member	(O) 011-26701735 (R) 011-23385175	09810203406
5	Shri B.B. Bhattacharya Member	(O) 011-26 701780 (R) 011-23070145	09971147620
6	Maj (Gen) J.K pant	(O) 011-26701778 (R) 011-23792026 -23011244	
7	Shri J.K.Sinha, Member	(O) 011-26701740 (R) 011-24122310	09818384040
8	Shri Noor Mohammad Special Secy & Secy NDMA	(O) 011-26701710 (Telefax)-26161106 (R) 011-26876622	-
9	Smt. Sujata Saunak Joint Secreatary & Advisor	(O) 011-26701817 (R) 011-26492295 (F) 011-26701820	09818198853
10	Shri P.K Tripathi (Mitigation)	(O)011-26701816	09958867155
11	Col. Shashi Bhushan Joint Advisor	(O) 011-26701815 (F) 011-26701729	
11	S.Suresh Kumar JS (PP)	(O) 011-26701817 (R) 011-26182839	09999048418
12	Shri Sunil Kohli,FA	(O) 011-2670709 (R) 011-26133297	09868151472
13	Control Room	011-26701700 Control Room 011-26701723 to 728	

Indian Metrological Department		
1	AVM (Shri Ajit Singh) DG (M)	011-24611842, 9313982396
2	Shri A. K. Bhatnagar ADG(M)	(0)011-24619943, (R) 011-24654939, 09891399114
3	Shri R.S. Dattatrayam Dir. In-charge Seismology	(O) 011-24611305, (R) 24622827, 9868109671
Earthquake Control Room		
1	Seismology Control Room	011-24619943,24624588,24618241
2	Flood Control Room	011-24631913

Central Water Commission

1	Director C. Lal, (FMP)	(O) 011-261828236, 011-26102935, (F) 011-26106523,	9811054117
2	CWC, Control Room	(O) 011-26106523	
3	CWC, Dehradun	(O) 0135 -2745882	Fax-0135 2742418

**SECTION-C IDS, ARMY HQR, AIR HQR,
Requisition for Air Force Helicopter**

INTEGRATED DEFENCE STAFF			
Col.Bakshi Logistics)	Dir(Operations	23005126(O) 23005226(F)	9868462806
Joint Director (Operations Logistics)		23005133(O) 23005226(F)	9891422396
Operations Room (Headquarters IDS)		23005131(O) 23005114(O)	23005137(fax)

ARMY HQR (EXCHANGE NOS)- 011- 23010131, 23018197

Name, Designation & Address of the officer	Telephone Number			
	Office	Resi.	Mobile	Fax
DGMO	011-23011506	011-23011506		011-23011506
ADGMO (A)	23011611	24615208		23011617
ADGMO (B)	23014891	26142269		23011617
Dir MO-6	23018034			23011617
GSO-I MO-6	23019739			23011617
Dir OL-2	23335218	23339055		

AIR HQR (EXCHANGE NOS) - 011-23010231

Name, Designation & Address of the officer	Telephone Number			
	Office	Resi.	Mobile	Fax
ACAS (Ops)	011-23014424, 23010231/ 7528	011-24672974		011-23017627
PD Ops (Off) (T&H)	011-2311023/7556, 23016354	011-24642195		23016354
Dir Ops (T)	23010231/7545, 2305857	23098030		23016354
Dir Ops (H)	23010231/7551	25674806		
JD Ops (Ls)	23010231/7546			23016354
JD Ops (H)	23010231/7552			23792973

REQUISITION FOR AIR FORCE HELICOPTER

L.No-

/SEOC/49(2011-2012)

To

Mr. Subash Chandra

Joint. Secretary

G/A Support

MoD New Delhi.

011-23011410 (O) 011-23013709 (F)

1. Name of affected area_____, District_____.
2. GPS Coordinates of Location-_____E, _____N.
3. Dimension of prepared/ Helipad/air field- Stadium-
 - i) Co-ordinates of _____E, _____N.
 - ii) Elevation- _____feet.
 - iii) Place- _____.
 - iv) Size of Helipad:
 - v) Nationality of persons- _____.
 - vi) Paying Agency- _____.
 - vii) State- Uttarakhand, District- _____.
4. **Name of contact person (s) Telephone No.**

DM-

SP-

5. Appointment of contact person DM/ADM, SSP/SP---As above
6. Accommodation Arrangements-
7. Dining Arrangements-
8. Mobile No to Crew for Communication with their superiors in Air Force------(Y/N).
9. Refueling arrangements -----Barrel or IOC Bowser (-----Details)
May be made in NAINI-SAINI AIR FIELD
10. Hanger for parking and security of Helicopters- Yes in NAINI SAINI.

Event-

Helicopter required ON -----Time - At the earliest.

Contact Number of State-

1. Secretary No-
2. State Emergency Operation Centre (SEOC), Uttarakhand
Secretariat, Dehradun.-
(O) 0135-2710334, 2710335 (F), 9897890981 (M)
3. Executive Director, Disaster Mitigation and Management Centre,
Uttarakhand Secretariat, Dehradun.
(O) 0135-2710233, 2710199 (F), 9412054085 (M)

Date

Secretary
Disaster
Management

Copy to:-

- 1 Director, OP/Air HQ (O) 011-23060231. Extn. 7551, Fax No. 011-23016354
New Delhi
- 2 Deputy Secretary, Air-1 (O) 011-23011842, (F) 011-23016304,
Mo.09811305431
New Delhi.
3. Under Secretary, Air-I (O) 011-23010231. Extn. 5369 New Delhi.

Secretary

Disaster
Management

Annexure –IV

State Level Designated Nodal Officers, Name & Contact No & Other Important Nos

State Level Designated Nodal Officers Name & Contact No

S.No	Department	Name/Designation/Addresses	Tele Phone No.	Mob. No./Email-id
1	PWD	Shri. R.K. Jain Suptd. Engineer Office- Chief Eng. Level-1 PWD, Yamuna Colony, .	(O) 2531331 2530788	
	RES Deptt.	Shri Ajay Kumar Pant Suptd. Engineer (Departmental)	(O) 0135- 2780290	9997511441
		Shri Kavindra Singh Under Secretary (Uttarakhand Secretariat)	-	9412018802
		Shri Vikram Singh, BDO, Pauri Garhwal	(O) 01368- 222543	9837029594
		Shri M.S. Negi, RES Rudraprayag	(O) 01364- 233968	9412982986
2	Food & Civil Supplies Bhesh Eekae	Dr. B.S. Pandey Training Officer Bhesj Vikas 8-A, Bangali Library Road D.Dun	(O) 2744789	9358123051
3	Food & Civil Supplies	Shri Rajendra Singh (Deputy Secretary) from secretariat	(O) 2711374	9997513991
		Shri P.S. Pangti, Asstt. Commissioner from Department	(O) 2740765	9410561225
3**	Health Department	Dr. Bharat Kishore Additional Director 107, Chander Nagar, Uttarakhand, D.Dun	(O) 2720170 2729897 (Fax) 2520384	9557634557 dg-health- ua@nic.in
4	UJVN	Shri. T.M. Bhardwaj, General Manager (Incharge) Ganga Bhawan, Yamunna Colony, Dehradun	(O) 2630783 (R) 2631411	9411101205 Bhardwaj_55 @rediffmail com

5**	Uttarakhand Peyjal Nigam	Shri Rajeshwar Prasad, Suptd. Engineer 2 Guru Nanak Road, Subhash Nagar, D.Dun.	(O) 2751879 (Fax) 2751879 (R) 2641929	9412920966 se9circle10@ yahoo.com
6	Information Department	Shri B.P. Ghindiyal Information Officer 12, E.C, Road, Dehradun	(O) 2742223 2742224 (F) 2742226	9412950057 <u>directorinfo</u> <u>rmation@ya</u> <u>hoo.com,</u>
7	BSNL	Shri Balbeer Singh Rauthan Astt. General Manager	(O) 2650404	9412000769
8**	Transport Department	Shri . Vinod Sharma, Additional Secr etary 169/2, Rajpur Road Dehradun.	(O) 2714105 M.D. Office- 2761655,6 (Fax) 2761916	9837410459
9	Tourism Department	Additional Secretary. Ex- Officio (from secretariat)	(O) 2713534	9458350100
		Shri A.K. Singh, Joint Secretary, Uttarakhand Tourism development Board.	(O) 2559988	9412998503
9	Uttarakhand Sub Area	Col. R. Wadhawan Col G.S, Sub Area Uttarakhand	2753024 (Extn) 2706202 2751842 (R) 2706202	7830700403
10**	Home Department			
11	Urban Department	Shri Subash Chandra Deputy Secy. Urban (From Secretariat)	(O) 2713553	9012399153 9759818162
		Shri Subash Gupta, Deputy Director, Urban	(O) 2669541	9412050008
11**	Uttarakhand Power Corporation Limited	Shri Sayeed Ahmed Executive Engineer, 1/4, Urja Bhawan (Behind) Kanwali Road.	(O) 2679495	9412075950 eedr@yahoo. com
12	Fire Services	Shri Chandan Singh Jeena, Chief Fire Officer, H.No. 02 Fire Station, Kutchery, Road, Dehradun.	(O) 2654900	9837571069 (R) 2654800
13	Irrigation Department	Shri S.S. Tolia Under Secretary, Irrigation deptt. Secretariat		9412050532 (M)

14	Police Department	Shri Deepam Seth, DIG, PAC/Law and Order 4-B Subash Road, Dehradun	(O) 2712597 (O) 2712082	9411101310
15**	Uttarakhand Jal Sansthan	Shri N.C. Attri, General Manager, Dehradun (State Level) Uttarakhand Jal Sansthan, Jal Bhawan, Nehru Colony- B Block, D. Dun	(O) 2676260 (R) 2627111	9411113817 gmho-ujs- uk@nic.in
16**	Uttarakhand Jal Sansthan	Shri Gopal Dutt Raturi, General Manager, Pauri Garhwal	(O) 01368- 221828	9412053030 gd.raturi@g mail.com
17**	Uttarakhand Jal Sansthan	Shri H.S. Pant, General Manager, Kumaon Mandal	(O)05942-235382 (F) 05942-235434	(R) 05942- 236873 9412085517 gmkumn-js- ua@nic.in
18-	PTCUL	Shri Sudhir Bhatnagar Chief Engineer, Garhwal region, 26-Civil Lines , Roorkee, PTCUL	01332-272256 (O) 01332- 272315 (Fax)	9411101753 sudhir_bhatn agar@ptcul.
19-	Sugar cane development board	Dr. Vinod Kumar Joint sugarcane & sugar commissioner	05947-262179 (O)	9412663214
	Additional Secretary Sugar cane development board	Shri. Vinod Sharma Additional Secretary	0135-2714105 (O)	9837410459
20	Fishery Department	Shri Kavindra Singh, Under Secretary		9412018802
	Fishery Department	Dr. R.C. Pokhriyal, Additional Director		9411114712
21	Jalagam Department	Shri B.P. Gupta, Additional Director	(O) 2764244	9412057475
22	Uttarakhand State Seed Certification Agency	Dr. Hemchandra Sangata	(O) 2760861	9411780459
19**	Basic Education Department	Shri Govind Ram Jayaswal Dy. Director	0135-2781828	9412058172 jaiswalgovin d@yahoo.co. in
	Education Department	Dr. Sohan Singh Majila	0135-2781828	9412991514 drssmajila@r ediffmail.

				<u>com</u>
20**	Sarv Shiksha Abhiyan (State Project Office)	Shri Kunwar Singh Rawat,	0135-2781941 0135-2781942(F) 0135-2781943 (Adm)	9837205059, Mr Sumit (JE) 9259022945
21**	Forest Department	Shri A.K. Samant, Chief Forest Conservator Vigilance and legal Cell Haldwani	05946-234759 (O) 05946-235474 (Fax)	9412084769 ccf_env_uta @sify.com
22**	Animal Husbandry	Dr. R.S. Yadav	(O) 01372- 252267	9458387530 (M)
23**	Govind Ballabh Pant University, of Agricultural & Technology Pant Nagar	Dr. K.K. Singh DEAN	(O) 05944- 233326, 05944-233360 (Adm) 05944-233640(F) (R) 05944- 233099	9412807009
24**	Mining Unit, Directorate of Industries, Uttarakhand	Shri Gangadhar Prasad	(O) 2761854 (F) 2761854	9412973561 gangadharuo r@yahoo.co.i n
25**	Monsoon Season Kumaon Irrigation Deptt, Almora	Shri J.P.Singh, Executive Engineer	(O) 05962- 230135 233351	9897463075

** to be updated

Some Other Important Numbers

1. **Relief Commissioner of Uttarakhand**
(Tel No-0135-2712096)
2. **Relief Commissioner of Delhi**
(Tel No-011-23931269, 23914805)
3. **Relief Commissioner of Haryana**
(Tel No-0172-2703753)
4. **8th BN National Disaster Response Force, Ghaziabad**
(Tel No- 0120-2766017, Fax No-0120-2766618)

Annexure –V

Funds Expenditure in Disaster Management Activities

Cod e No.	Items	Avalanche	Cloud Burst	Cyclone	Drought	Earthquake	Fire	Flood	Hailstorm	Landslide	Pest Attack	Tsunami
1	2	3	4	5	6	7	8	9	10	11	12	13
(a)	Gratuitous Relief											
	Ex-Gratia payment to families of deceased persons											
	(i) As per CRF/NCCF norms											
	(ii) Outside the norms											
	(iii) Total No. of Beneficiaries											
(b)	Ex-Gratia payment for loss of a limb or eyes											
	(i) As per CRF/NCCF norms											
	(ii) Outside the norms											
	(iii) Qty. of Materials											
	(iv) Total No. of Beneficiaries											
(c)	Grievous injury requiring hospitalization											
	(i) As per CRF/NCCF norms											
	(ii) Outside the norms											
	(iii) No. of Beneficiaries											
(d)	Relief for the old ,infirm and destitute, children											
	(i) As per CRF/NCCF norms											
	(ii) Outside the norms											
	(iii) Total No. of Beneficiaries											
(e)	Clothing and utensils/household goods for families whose houses have been washed away/fully damaged/severely inundated for more than a week due to a natural calamity											
	(i) As per CRF/NCCF norms											
	(ii) Outside the norms											
	(iii) Total No. of Beneficiaries											
(f)	Gratuitous Relief for families in dire need of immediate sustenance after a calamity											
	(i) As per CRF/NCCF norms											
	(ii) Outside the norms											
	(iii) Total No. of Beneficiaries											

Code No.	Items	Avalanche	Cloud Burst	Cyclone	Drought	Earthquake	Fire	Flood	Hailstorm	Landslide	Pest Attack	Tsunami
1	2	3	4	5	6	7	8	9	10	11	12	13
2	Supplementary Nutrition											
	(i) As per CRF/NCCF norms											
	(ii) Outside the norms											
	(iii) Total No. of Beneficiaries											
3.	Assistance to small and Marginal Farmers (SMF) for											
(a)	Desilting of agriculture land											
	(i) As per CRF/NCCF norms											
	(ii) Outside the norms											
	(iii) Total eligible area (Ha.)											
	(iv) No. of S & M farmers											
(b)	Removal of debris on agriculture land in hilly areas											
	(i) As per CRF/NCCF norms											
	(ii) Outside the norms											
	(iii) Total eligible area (Ha.)											
	(iv)) No. of S & M farmers											
(c)	Desilting/Restoration/Repair of fish farms											
	(i) As per CRF/NCCF norms											
	(ii) Outside the norms											
	(iii) Total eligible area (Ha.)											
	(iv)) No. of S & M farmer											
(d)	Loss of substantial portion of land caused by landslide,avalanche,change of course of rivers											
	(i) As per CRF/NCCF norms											
	(ii) Outside the norms											
	(iii) Total No. of Beneficiaries											
(e)	Agriculture input subsidy where crop loss was 50% & above For agriculture crops, annual plantation & perennial crops											
	(i) As per CRF/NCCF norms											
	(ii) Outside the norms											
	(iii) Total eligible area (Ha.)											
	(iv)) No. of S & M farmer											

4	Input subsidy to farmers other than Small & Marginal Farmers											
Code No.	Items	Avalanche	Cloud Burst	Cyclone	Drought	Earthquake	Fire	Flood	Hailstorm	Landslide	Pest Attack	Tsunami
	(i) As per CRF/NCCF norms											
	(ii) Outside the norms											
	(iii) Total eligible area (Ha)											
	(iv)) No. of S & M farmer											
5	Assistance to small and marginal sericulture farmers											
	(i) As per CRF/NCCF norms											
	(ii) Outside the norms											
	(iii) Total eligible area (Ha.)											
	(iv) No. of S & M farmers											
6.	Employment Generation											
(a)	Desilting of agriculture land											
	(i) As per CRF/NCCF norms											
	(ii) Outside the norms											
	(iii) No. of man days generated											
	(iv) Quantum of food grain distributed as part of wage component											
7	Animal Husbandry Assistance to small and marginal farmers /agriculture labourers											
(i)	Replacement of draught/milch animals or animals used for haulage											
	(i) As per CRF/NCCF norms											
	(ii) Outside the norms											
	(iii) No. of Beneficiaries											
(ii)	Provision of fodder/feed in cattle camps											
	(i) As per CRF/NCCF norms											
	(ii) Outside the norms											
	(iii) number of cattle camp											
	(iv) Number of cattle kept in camps											
	(v)Qty. of fodder (qtls.) supplied in camp											
(iii)	Water supply in Cattle Camps											
	(i) As per CRF/NCCF											

	norms												
	(ii) Outside the norms												
	(iii) Total No. Tanker load												
	(iv) No. of cattle camps and Cattle kept therein												
(iv)	Additional cost of medicines and vaccine (calamity related requirements)												
	(i) As per CRF/NCCF norms												
	(ii) Outside the norms												
(v)	Supply of fodder outside Cattle Camps												
	(i) As per CRF/NCCF norms												
	(ii) Outside the norms												
	(iii) Total qty. of fodder transported (Qtls.)												
(vi)	Movement of useful cattle to other areas												
	(i) As per CRF/NCCF norms												
	(ii) Outside the norms												
	(iii) No. of cattle Moved												
8.	Assistance to Fishermen												
(a)	For repair/ replacement of boats, nets(damaged or lost)												
	(i) As per CRF/NCCF norms												
	(ii) Outside the norms												
(b)	Input subsidy for fish seed farm												
(i)	Replacement of draught/milch animals or animals used for haulage												
	(i) As per CRF/NCCF norms												
	(ii) Outside the norms												
	(iii) Total eligible area (Ha.)												
	(iv)No. of fish farmers												
9	Assistance to artisans in handicrafts/handloom sectors by way of subsidy for repair/replacement of damaged equipments												
(a)	Traditional Crafts (Handicraft)												
(i)	For replacement of damaged tools/equipments												
	(i) As per CRF/NCCF norms												
	(ii) Outside the norms												
	(iii) No. of equipments												
	(iv)No. of beneficiaries												
(ii)	For loss of raw material/goods in process/finished goods												
	(i) As per CRF/NCCF norms												
	(ii) Outside the norms												

	(iii) Quantity of materials											
	(iv) No. of beneficiaries											
(b)	For handloom Weavers											
(i)	Repairs/replacement of loom equipments and accessories											
	(i) As per CRF/NCCF norms											
	(ii) Outside the norms											
	(iii) No. of equipments/accessories											
	(iv) No. of beneficiaries											
(ii)	Purchase of yarn and other materials like dyes and chemicals and finished stocks											
Code No.	Items	Avalanche	Cloud Burst	Cyclone	Drought	Earthquake	Fire	Flood	Hailstorm	Landslide	Pest Attack	Tsunami
	(i) As per CRF/NCCF norms											
	(ii) Outside the norms											
	(iii) Quantity of materials											
	(iv) No. of beneficiaries											
10	Assistance for repair /restoration of damaged houses											
(a)	Fully damaged/destroyed Pucca houses											
	(i) As per CRF/NCCF norms											
	(ii) Outside the norms											
	(iii) Number											
(b)	Fully damaged/destroyed Kutcha houses											
	(i) As per CRF/NCCF norms											
	(ii) Outside the norms											
	(iii) Number											
(c)	Severely damaged houses											
(i)	Severely damaged Pucca houses											
	(i) As per CRF/NCCF norms											
	(ii) Outside the norms											
	(iii) Number											
(ii)	Severely damaged Pucca houses Kutcha houses											
	(i) As per CRF/NCCF norms											
	(ii) Outside the norms											

	(iii) Number											
(d)	Partially damaged houses (both Pucca & kutcha)											
	(i) As per CRF/NCCF norms											
	(ii) Outside the norms											
	(iii) Cumulative length of roads repaired											
(b)	Drinking water supply											
	(i) As per CRF/NCCF norms											
	(ii) Outside the norms											
	(iii) Total no. of schemes											
(c)	Irrigation											
	(i) As per CRF/NCCF norms											
	(ii) Outside the norms											
	(iii) Total no. of schemes											
(d)	Power supply(only limited to immediate restoration of electricity supply in the affected areas)											
Code No.	Items	Avalanche	Cloud Burst	Cyclone	Drought	Earthquake	Fire	Flood	Hailstorm	Landslide	Pest Attack	Tsunami
	(i) As per CRF/NCCF norms											
	(ii) Outside the norms											
(e)	Primary Education											
	(i) As per CRF/NCCF norms											
	(ii) Outside the norms											
	(iii) No. of primary schools buildings repaired											
(f)	Primary Health Centres											
	(i) As per CRF/NCCF norms											
	(ii) Outside the norms											
	(iii) No. of Primary Health Centres buildings repaired											
(g)	Community assets owned by panchayats											
	(i) As per CRF/NCCF norms											
	(ii) Outside the norms											
	(iii) No. of community											

	assets repaired											
19.	Replacement of damaged medical equipments and lost medicines of Govt. hospitals/health centres											
20	Operational cost (of POL only) for Ambulance Service , mobile Medical teams and Temporary Dispensaries											
	(i) As per CRF/NCCF norms											
	(ii) Outside the norms											
21	Cost of clearance of Debris											
	(i) As per CRF/NCCF norms											
	(ii) Outside the norms											
22	Draining off flood water in affected areas											
23	Cost of search and rescue and measures											
	(i) As per CRF/NCCF norms											
	(ii) Outside the norms											
24	Disposal of dead bodies /carcasses											
	(i) As per CRF/NCCF norms											
	(ii) Outside the norms											
	(iii) Total no. of dead bodies disposed											
	(iv) Total no. of carcasses disposed											
Code No.	Items	Avalanche	Cloud Burst	Cyclone	Drought	Earthquake	Fire	Flood	Hailstorm	Landslide	Pest Attack	Tsunami
25	Training to specialist multi-disciplinary groups/teams of the state personnel drawn from different cadres/services/personnel involved in management of disaster in the State.											
	(i) Number of trainings organized											
	(ii) Number of persons trained											
(26)	Procurement of essential Search, Rescue and Evacuation equipments including communication equipments											
	(i) cost of equipments procured											