

**DISASTER MANAGEMENT PLAN (DMP)
OF
SAND, BAJRI, BOULDER MINING FROM THE
RIVER BED OF NANDHAUR/KAILASH RIVER
(MINE LEASE AREA-468HA)**

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CHAPTER-1: RISK ASSESSMENT

INTRODUCTION

Mining are associated with several hazards that pose impacts on employees & surrounding area necessitating adequate implementation of Safety and health measures. Hence, River Bed mine safety is one of the most essential aspects for associated people. M/s. Uttarakhand Forest Development Corporation (UKFDC) proposed Sand, Bajri and Boulders mining from Nandhaur/Kailash Riverbed located at District-Udham singh nagar, & Nainital Uttarakhand.

Risk assessment is essential for prevention of accidents and there is a need to be aware about the risk of an accident and steps can be taken to prevent the same before its happening.

HAZARD IDENTIFICATION

Major risk involves in riverbed mining which are as follows-

- River Bed Inundation,
- Uneven/ Irregular mining of sand or bajri,
- Damage of River bank due to access of Entry Points/Ramps,
- Fugitive Emissions,
- Diesel fumes from diesel operated mechanization,
- Accidents Due to Trucks during the loading

IMPACTS AND MITIGATION MEASURES

Possible Risks Due to Inundation & Its Control

Mining will be done during the non monsoon periods so there shall be no problem of inundation is likely to happen.

Mining will be restricted up to maximum depth of 1.5 m from surface or river water levels whichever less than prescribed.

Uneven/ Irregular mining of sand or bajri

Due to uneven/ irregular thickness of sand bed, river bed mining may result in ponds to develop. Excessive mining can change River direction & geometry altering recharging capacity of replenishment for Proper management of even excavation can overcome this.

Fugitive Emissions

Due to loading/Unloading operation Fugitive emissions create, due to loading causes impact on health of mine workers. Water sprinkling will be provided for dust settlement.

Diesel fumes from diesel operated mechanization

Health impact due to diesel particulates from emission of diesel operated vehicles which are used for transportation and loading/unloading purposes of sand, bajri and boulders. Regular check and proper maintenance of vehicles should be done.

Measures to Prevent Accidents Due to Trucks

- All transportation within the mining carried out directly under the supervision and control of the management.
- The vehicles will be maintained in good condition and checked thoroughly at least once a month by the competent person authorized for the purpose by the management.
- Road signs will be provided at each and every turning point up to the main road (wherever required).
- To avoid danger while reversing the trackless vehicles especially at the embankment and tipping points, all areas for reversing of trucks/ tippers should as far as possible be made man free.
- A statutory provision of the fences, constant education, training etc will go a long way in reducing the incidents of such accidents.

Other Possible Measures to Avoid Risks/ Disaster Due to River Bed Mining

- The collection of bajri will not be stocked on the banks of the river.
- The minerals will be mined out in a uniform way so that the river flow/course shall not get disturbed in its uniformity.
- The maximum depth can be 1.5 m from surface or river water levels whichever less than prescribed.
- River bank areas, under operation will be protected by avoiding unauthorized gravel excavation along rivers as that may cause instability to the river bank.
- Only excavated river bajri/Gravel should be used to deposit against the river bank to form access ramps.
- Water level Markers will be provided on the site.

1.4 MODEL FOR RISK ASSESSMENT

The model for risk assessment in mining is given in **Figure-1**.

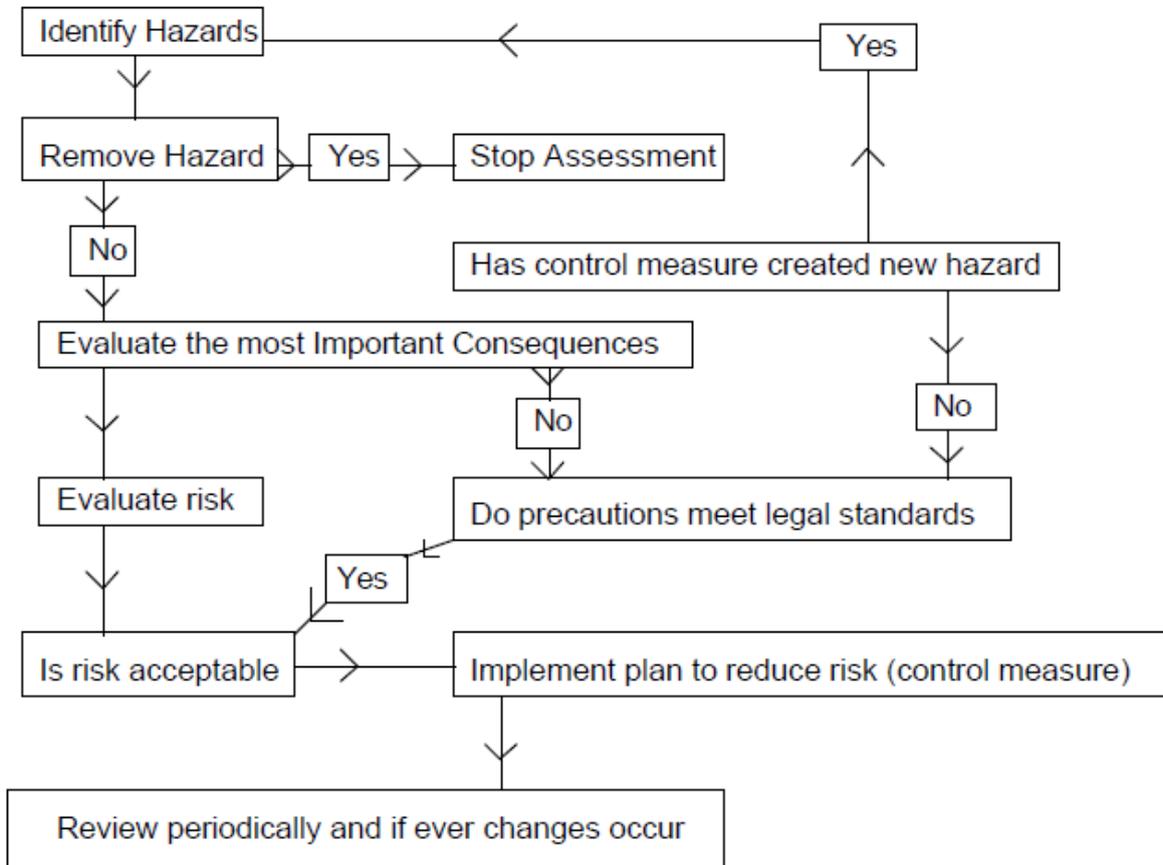


Figure 1: Model of Risk Assessment

The risk assessment for riverbed mining following steps are involved-

- Identify the hazard
- Identify activity involves in risk
- Removal of the hazard
- Evaluation of the risk
- Decide on control measures
- Record of the assessment
- Review

CHAPTER-2: DISASTER MANAGEMENT PLAN

BACKGROUND

All types of industries face certain types of hazards which can disrupt normal activities abruptly.

Disaster Management planning is an integral and essential part of loss prevention strategy. Although a great deal of efforts and money is spent to reduce the scale and probability of accidents, there always remains a finite but small possibility that disaster may occur. Effective action has been possible due to existence of pre-planned and practiced procedures for dealing with emergencies.

This disaster management plan sets out the procedures and measures to be taken into account in the event of loss of containment and consequence thereof in the riverbed mining.

TYPES OF EMERGENCIES

The type of emergency primarily considered here is the major emergency which may be defined as one which has the potential to cause serious danger to persons and/or damage to property and which tends to cause disruption inside and/or outside the site and may require the co-operation of outside agencies.

An emergency in the river bed mine site can arise due to certain undesired incidents as floods, landslides, flash floods etc.

2.2.1 Definition of On-Site Emergency and Off-site Emergency

An On-site emergency is one where the consequences of an undesired incident remain confined within the mine site. Emergencies at the mine site shall be On-Site Emergencies if the consequences remain confined within the premises of mine site.

An emergency, which is likely to develop or has developed such as to pose a threat to members of public outside the mine site, is termed as an off-site emergency.

Classification of Emergencies

Emergencies have been broadly classified into three levels:

- Level 1** : The incident at mine site is confined to a small area and does not pose an immediate threat to life or property.
- Level 2** : An incident at mine site involving a greater hazard or larger area which poses a potential threat to life or property.
- Level 3** : An incident at mine site involving a severe hazard or a large area which poses an extreme threat to life or property.

Priority in Emergency Handling

The general order of priority for involving measures during the course of emergency would be as follows:

- Safeguard life
- Safeguard environment
- Safeguard property

SPECIFIC OBJECTIVES OF THE DISASTER MANAGEMENT PLAN

A formal planning for managing disasters is therefore necessary to ensure reduction in times of occurrence of any disaster or on its result. 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.
- To assess their adequacies and short falls if any in providing a meaningful disaster response.
- Monitoring & evaluation of actions taken during disasters and providing relief.
- Minimize damage to property and the environment.
- Initially contain and ultimately bring the incident under control.
- Identify casualties.
- Provide authoritative and factual information for the news media.

The main objectives of the Disaster Management Plan would be:

- Ensure that loss of life and injuries to persons are minimized.
- Damage to environment is minimized.
- Property loss is minimized.
- Relief and rehabilitation measures are effective and prompt.
- Minimize the outage duration of the facilities.

STRUCTURE OF THE DISASTER MANAGEMENT PLAN

This Disaster management plan basically comprises of the following elements:

- Outline of Disaster Management Plan
- System of Communication
- Consultative Committee
- Facilities and Accommodation
- First Aid & Medical facilities

- Transport Services
- Functions of Public Relations/ Responsibility of Mine Management

Outline of Disaster Management Plan

The purpose of disaster management plan is to restore the normalcy for early resumption of mining operation due to an unexpected, sudden occurrence resulting to abnormalities in the course of mining activity leading to a serious danger to workers or any machinery or the environment. The following factors will play major role in the management strategy. The outline of DMP is summarized in chapter 3.

The disaster management plan may be broadly divided into following steps as:

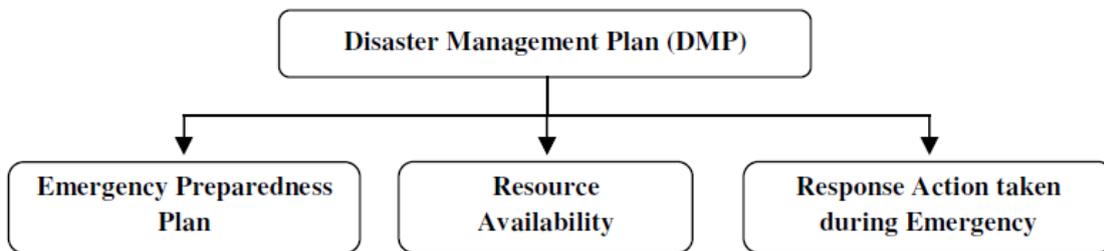


Figure 2: Objective of Disaster Management Plan

System of Communication

Where is an internal communication system for the department head and to their line of command with telephone. The telephone numbers and addresses of adjoining mines, rescue station, police station, fire service station, local hospital, electricity supply agency and standing consultative committee members are also maintained for any emergency requirement.

The system of communication has been described in Chapter 4.

Consultative Committee

A standing consultative committee will be formed under the head of mines manager. The members consists of safety officer/medical officer/Asst. manager/ public relation officer/ Foreman/ and environmental engineer.

Facilities & Accommodation

Accommodation and facilities for medical centre, rescue room and for various working groups will be provided.

First Aid & medical facilities

The mine management will have first aid/ medical centre for use in emergency situation. All casualties would be registered and will be given first aid. The centre will have facilities for first aid & minor treatment, ambulance and transport. It will have proper

telephone/wireless set for quick communication with hospitals where the complicated cases are to be sent.

Transport services

A well defined transport control system will be provided to deal with the situation.

Functions of Public Relations/ Responsibility of Mine Management

- To make a cordial relation with government officials and other social service organization and working groups.
- To liaise with representatives of the mine to ameliorate the situation of panic, tension, sentiments, grievances and misgivings created by any disaster.
- To ameliorate the injured, survivors and family members of affected persons by providing material, moral support and establishing contact with relatives of victims.

2.5 OFF-SITE EMERGENCY PLAN

Off-site emergency plan defining the various steps to tackle any off-site emergencies which may affect surrounding areas of the project has to be prepared after due final discussion with local panchayat and revenue officials. As per this plan, actions have to be promptly initiated to deal with any off-site disastrous situation, with help of collector and other officials.

CHAPTER-3: OUTLINE OF DISASTER MANAGEMENT PLAN

INTRODUCTION

- Uttarakhand was carved out of Himalayan and adjoining districts of Uttar Pradesh on 9 November 2000 becoming the 27th state of the Republic of India.
- Uttarakhand borders Tibet to the north, Nepal to the east, and the states of Himachal Pradesh and Uttar Pradesh in the west and south respectively. The region is traditionally referred to as Uttarakhand in Hindu scriptures and old literature, a term which derives from the Sanskrit for Northern Country or Section. Uttarakhand by virtue of its geographical setting is vulnerable to minor ecological changes. Hence any activity disapproved by mountain ecosystem triggers a disaster. We cannot stop disaster to happen but can certainly take some steps to reduce its effects. Disasters are synonymous to damage of property, life and psyche of the people. If disasters cannot be averted, then reduction of losses of any type, caused by disaster becomes a focal point of the policy for disaster management. So far, in the recent years (1990 onwards) Uttarakhand has experienced two major earthquakes (magnitude >6) in Uttarkashi (1991) and Chamoli (1999) and a series of landslides/cloud burst such as Malpa (1998), Okhimath (1998), Fata (2001), Gona (2001), Khet Gaon (2002), Budhakedar (2002), Bhatwari (2002), Uttarkashi (2003), Amparav(2004), Lambagar (2004), Govindghat (2005), Agastyamuni (2005) Ramolsari (2005). Latest flash flood in Rudraprayag, Chamoli, Tihari and many more.
- Uttarakhand is a disaster prone state. Landslides, forest fires, cloudbursts and flash-floods are seasonal in nature and these strikes at a certain period of the year with high frequency. Earthquake is the most devastating disaster in the mountains and is unpredictable.
- The state is affected by disaster like floods, epidemics, fire, hailstorm, lightening, road accidents, etc. The state 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 IV and V.
- In the disaster prone map of the country, Uttarakhand 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.

VULNERABILITY TO EARTHQUAKES

The State has experienced many earthquakes of small and large scale with their epicenters located within the Himalayan region. These earthquakes have demonstrated that the seismic vulnerability of the building stocks in the region is primarily responsible for a large number of human casualties.

The State has witnessed two major earthquakes in the recent past i.e. the Uttarkashi earthquake in 1991 and the Chamoli earthquake in 1999. About 768 people died in Uttarkashi and 106 died in Chamoli earthquake. The districts of Bageshwar, Chamoli, Pithoragarh, Rudraprayag and Uttarkashi, which fall within Seismic Zone V. The entire state divided into two zones, i.e. Zone IV and Zone V. Partially the mine site location falls under Zone IV and Zone V.

The district Nainital & Udham Singh Nagar falls under seismic zone-IV. Hence, the site falls under seismic zone-IV.

The earthquake zone map of India and Uttarakhand is shown in **Figure-3** & **Figure-4** respectively.

What to Do Before an Earthquake

- Repair deep plaster cracks in ceilings and foundations. Get expert advice if there are signs of structural defects.
- Anchor overhead lighting fixtures to the ceiling.
- Follow BIS codes relevant to your area for building standards
- Fasten shelves securely to walls.
- Place large or heavy objects on lower shelves.
- Store breakable items such as bottled foods, glass, and china in low, closed cabinets with latches.
- Hang heavy items such as pictures and mirrors away from beds, settees, and anywhere that people sit.
- Brace overhead light and fan fixtures.
- Repair defective electrical wiring and leaky gas connections. These are potential fire risks.
- Secure water heaters, LPG cylinders etc., by strapping them to the walls or bolting to the floor.
- Store weed killers, pesticides, and flammable products securely in closed cabinets with latches and on bottom shelves.
- Identify safe places indoors and outdoors.
- Under strong dining table, bed

- Against an inside wall
- Away from where glass could shatter around windows, mirrors, pictures, or where heavy bookcases or other heavy furniture could fall over
- In the open, away from buildings, trees, telephone and electrical lines, flyovers and bridges
- Know emergency telephone numbers (such as those of doctors, hospitals, the police, etc)
- Educate yourself and family members
- Awareness Generation Resources for Earthquake Disaster Management
- Disaster(Earthquake) Resistant Construction Practice
- Techno Legal Regime for Safe Construction Practice (Model Amendment in Town & Country Planning Legislations, Regulation for Land Use Zoning and Building Byelaws for Structural Safety)
- Past Programmes/Projects, Resource Materials on Earthquake Risk Management.

Have a disaster emergency kit ready

- Battery operated torch with extra batteries
- Battery operated radio
- First aid kit and manual
- Emergency food (dry items) and water (packed and sealed)
- Candles and matches in a waterproof container
- Knife
- Chlorine tablets or powdered water purifiers
- Can opener.
- Essential medicines
- Cash and credit cards
- Thick ropes and cords
- Sturdy shoes

Develop an emergency communication plan

- In case family members are separated from one another during an earthquake (a real possibility during the day when adults are at work and children are at school), develop a plan for reuniting after the disaster.

- Ask an out-of-state relative or friend to serve as the 'family contact' after the disaster; it is often easier to call long distance. Make sure everyone in the family knows the name, address, and phone number of the contact person.

Help your community get ready

- Publish a special section in your local newspaper with emergency information on earthquakes. Localize the information by printing the phone numbers of local emergency services offices and hospitals.
- Conduct week-long series on locating hazards in the home.
- Work with local emergency services and officials to prepare special reports for people with mobility impairment on what to do during an earthquake.
- Provide tips on conducting earthquake drills in the home.
- Interview representatives of the gas, electric, and water companies about shutting off utilities.
- Work together in your community to apply your knowledge to building codes, retrofitting programmes, hazard hunts, and neighborhood and family emergency plans.

What to Do During an Earthquake

Stay as safe as possible during an earthquake. Be aware that some earthquakes are actually foreshocks and a larger earthquake might occur. Minimize your movements to a few steps that reach a nearby safe place and stay indoors until the shaking has stopped and you are sure exiting is safe.

If indoors

- DROP to the ground; take COVER by getting under a sturdy table or other piece of furniture; and HOLD ON until the shaking stops. If there is no a table or desk near you, cover your face and head with your arms and crouch in an inside corner of the building.
- Protect yourself by staying under the lintel of an inner door, in the corner of a room, under a table or even under a bed.
- Stay away from glass, windows, outside doors and walls, and anything that could fall, (such as lighting fixtures or furniture).
- Stay in bed if you are there when the earthquake strikes. Hold on and protect your head with a pillow, unless you are under a heavy light fixture that could fall. In that case, move to the nearest safe place.

- Use a doorway for shelter only if it is in close proximity to you and if you know it is a strongly supported, load bearing doorway.
- Stay inside until the shaking stops and it is safe to go outside. Research has shown that most injuries occur when people inside buildings attempt to move to a different location inside the building or try to leave.
- Be aware that the electricity may go out or the sprinkler systems or fire alarms may turn on.

If outdoors

- Do not move from where you are. However, move away from buildings, trees, streetlights, and utility wires.
- If you are in open space, stay there until the shaking stops. The greatest danger exists directly outside buildings; at exits; and alongside exterior walls. Most earthquake-related casualties result from collapsing walls, flying glass, and falling objects.

If in a moving vehicle

- Stop as quickly as safety permits and stay in the vehicle. Avoid stopping near or under buildings, trees, overpasses, and utility wires.
- Proceed cautiously once the earthquake has stopped. Avoid roads, bridges, or ramps that might have been damaged by the earthquake.

If trapped under debris

- Do not light a match.
- Do not move about or kick up dust.
- Cover your mouth with a handkerchief or clothing.
- Tap on a pipe or wall so rescuers can locate you. Use a whistle if one is available. Shout only as a last resort. Shouting can cause you to inhale dangerous amounts of dust.

What to Do After an Earthquake ?

DO'S

- If any damage is suspected, turn the system off from the main valve or, switch.
- Clean up household chemical spills, toxic and flammable materials to avoid any chain of unwanted events.
- Gather information and necessary instructions from battery operated radios.

- Obey Public safety precautions.
- Leave a message stating where you are going if you must evacuate your residence.
- Take your earthquake survival kit with you.
- It should contain all necessary items for your protection and comfort.
- Check your water and electrical lines for defects.

DON'T s

- Do not fill the overhead tank completely.
- Do not carry out haphazard repairs.
- Repairs should be done only under the supervision of a structural engineer.
- Do not put additional supports without the guidance of an experienced/qualified structural engineer.
- Do not use the lift until it has been checked and certified by the lift company.

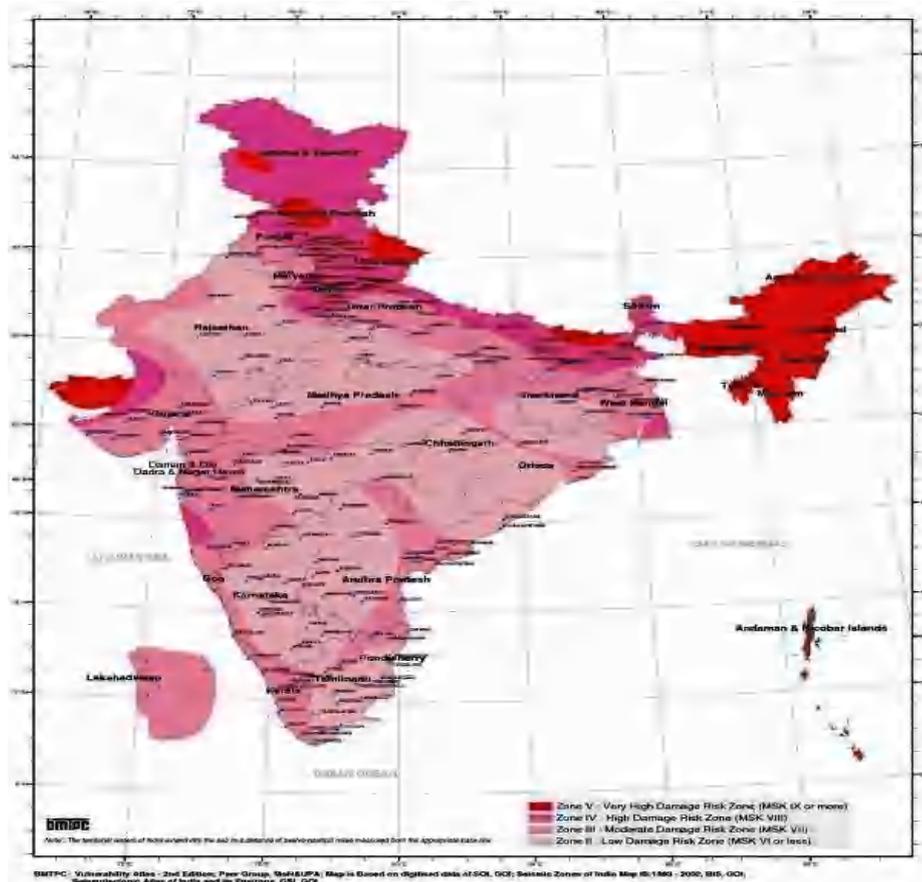


Figure 3: Seismic Zone Map of India(IS : 1893,2002)

Source:-NDMA



Figure 4: Uttarakhand Earthquake Zone

Source:-NDMA

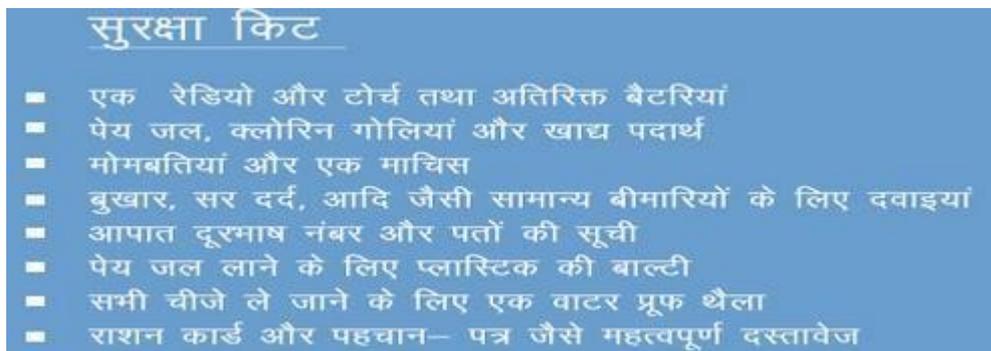


Figure 5: Emergency Kit

Source:-NDMA

VULNERABILITY TO LANDSLIDES

During the rainy season, the landslides are very common and frequent, which take a considerable toll of human lives and cause irreparable loss to roads, agricultural land and damages to buildings, houses and other built-up structures. For this, the state is affected as because there is no other means of transport except roads. Problem of landslide is very common and frequent in Uttarakhand. Almost every year the state is affected by one or more major landslides affecting the society in many ways.

The frequency of landslides has increased in the recent past due to extensive road construction and other haphazard developmental activities.

The landslide is moderate to low in mine site area.

The landslides zone map of India and Uttarakhand is shown in **Figure-6** & **Figure-7** respectively.

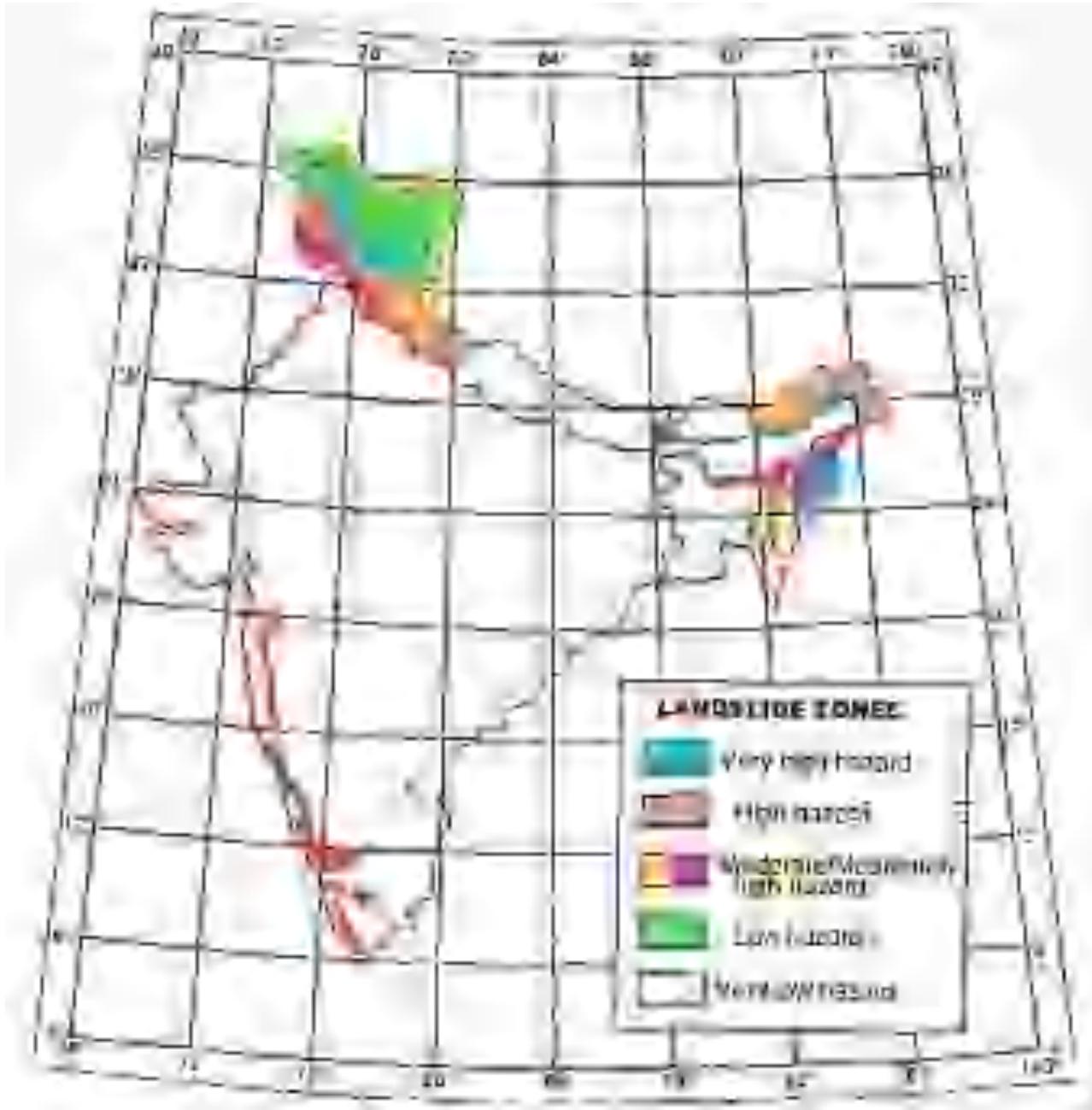


Figure 6: Landslide Zones of India

Source:-NDMA

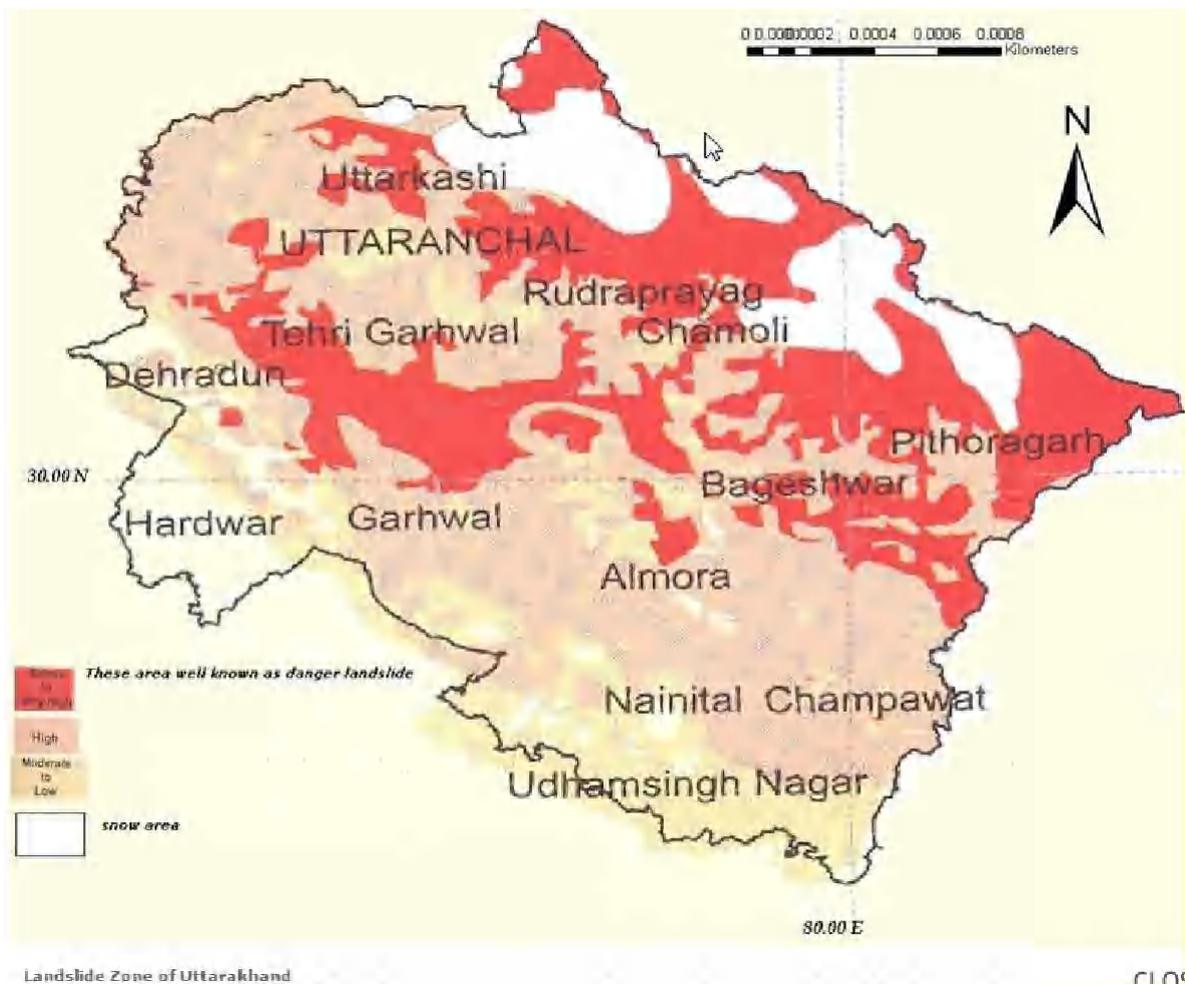


Figure 7: Landslide zone of Uttarakahand

Source:-NDMA

Do's

- Prepare tour to hilly region according to information given by weather department or news channel.
- Move away from landslide path or downstream valleys quickly without wasting time.
- Keep drains clean,
- Inspect drains for - litter, leaves, plastic bags, rubble etc.
- Keep the weep holes open.
- Grow more trees that can hold the soil through roots,
- Identify areas of rock fall and subsidence of buildings, cracks that indicate landslides and move to safer areas. Even muddy river waters indicate landslides upstream.
- Notice such signals and contact the nearest Tehsil or District Head Quarters.
- Ensure that toe of slope is not cut, remains protected, don't uproot trees unless re-vegetation is planned.
- Listen for unusual sounds such as trees cracking or boulders knocking together.
- Stay alert, awake and active (3A's) during the impact or probability of impact.
- Locate and go to shelters,
- Try to stay with your family and companions.
- Check for injured and trapped persons.

- Mark path of tracking so that you can't be lost in middle of the forest.
- Know how to give signs or how to communicate during emergency time to flying helicopters and rescue team.

Don'ts

- Try to avoid construction and staying in vulnerable areas.
- Do not panic and loose energy by crying.
- Do not touch or walk over loose material and electrical wiring or pole.
- Do not built houses near steep slopes and near drainage path.
- Do not drink contaminated water directly from rivers, springs, wells but rain water if collected directly without is fine.
- Do not move an injured person without rendering first aid unless the casualty is in immediate danger.

VULNERABILITY TO AVALANCHES

Generally, avalanches are common in Himalayan region with altitude more than 3500 m and slope more than 30 degree. 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.

FLOODS AND FLASH FLOODS

The average rainfall in the State is 1229 mm, with rainy season normally from mid April to September and higher rainfall is from June to September results into floods in low lying areas and erosion of land.

The low lying areas are more prone to both flood and flash flood hazard. Flash Floods are very common hydro-meteorological hazards due to excessive rainfall or snowmelt, bursting of dams, cloud burst, etc. Such floods are common due to the high velocity of water with much energetic capacity to carry away everything in its way. The cloudbursts are also responsible for flash floods.

The districts of Bageshwar, Chamoli, Pithoragarh, Rudraprayag and Uttarkashi which were most severally affected in the 2013 flash flood.

The flood zone map of India and Uttarakhand is shown in **Figure-8** & **Figure-9** respectively.



Figure 8: Flood Zone map of India

Source:-NDMA

What to do before a flood

To prepare for a flood, you should:

- Avoid building in flood prone areas unless you elevate and reinforce your home.
- Elevate the furnace, water heater, and electric panel if susceptible to flooding.
- Install "Check Valves" in sewer traps to prevent floodwater from backing up into the drains of your home.
- Contact community officials to find out if they are planning to construct barriers (levees, beams and floodwalls) to stop floodwater from entering the homes in your area.

- Seal the walls in your basement with waterproofing compounds to avoid seepage.

If a flood is likely to hit your area, you should:

Listen to the radio or television for information.

- Be aware that flash flooding can occur. If there is any possibility of a flash flood, move immediately to higher ground. Do not wait for instructions to move. Be aware of streams, drainage channels, canyons, and other areas known to flood suddenly. Flash floods can occur in these areas with or without such typical warnings as rain clouds or heavy rain.

If you must prepare to evacuate, you should:

- Secure your home. If you have time, bring in outdoor furniture. Move essential items to an upper floor.
- Turn off utilities at the main switches or valves if instructed to do so. Disconnect electrical appliances. Do not touch electrical equipment if you are wet or standing in water.

If you have to leave your home, remember these evacuation tips:

- Do not walk through moving water. Six inches of moving water can make you fall. If you have to walk in water, walk where the water is not moving. Use a stick to check the firmness of the ground in front of you.

Do not drive into flooded areas. If floodwaters rise around your car, abandon the car and move to higher ground if you can do so safely. You and the vehicle can be quickly swept away.

Emergency kit:

- Battery operated torch
- Extra batteries
- Battery operated radio
- First aid kit and essential medicines
- Emergency food (dry items) and water (packed and sealed)
- Candles and matches in a waterproof container
- Knife
- Chlorine tablets or powdered water
- Important documents (Ration card, Voter ID card, Aadhar Card etc.)
- Cash, Aadhar Card and Ration Card
- Thick ropes and cords
- Shoes

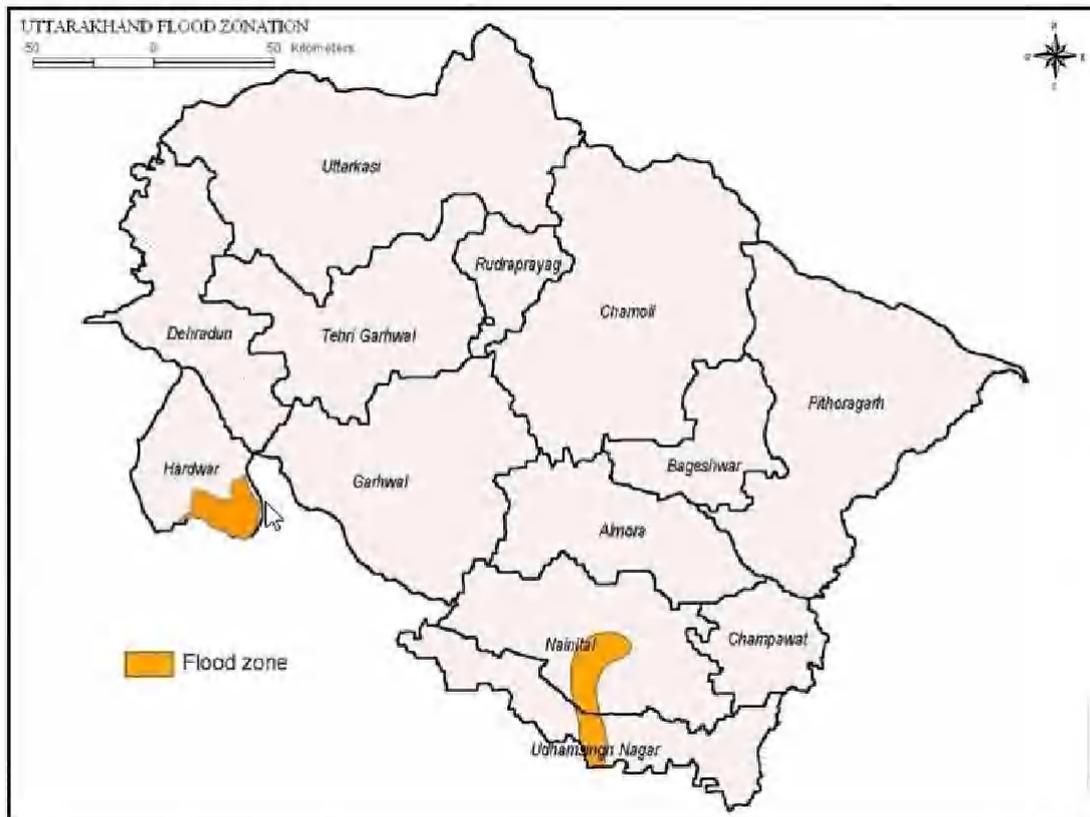


Figure 9: Flood Zone map of Uttarakhand

Source:-NDMA

VULNERABILITY TO CLOUDBURSTS

Cloudburst is an extreme amount of precipitation, sometime with hail and thunder storm, which normally lasts for minutes and usually cause huge sudden flash floods. Occasional cloud bursts in the state result into devastation due to flash floods, breaching of river banks and overflowing of dams in hilly parts of the state.

Action Plan:-

Flash floods forecasting and warning systems using Doppler radars will be installed by the India Meteorological Department (IMD) by September 2009.

As a preventive measure, the inhabitation of low-lying areas along the rivers, nallas and drains will be regulated by the state governments/State Disaster Management Authorities (SDMAs)/ District Disaster Management Authorities (DDMAs).

Landslides and blockages in rivers will be monitored by the Central Water Commission (CWC)/National Remote Sensing Agency (NRSA)/state governments/SDMAs with the help of satellite imageries and in case of their occurrence, warning systems will be set up to reduce losses. If possible, appropriate structural measures to eliminate the damage in case of sudden collapse of the blockages will also be taken up.

CHAPTER-4: EMERGENCY SYSTEM OF COMMUNICATION

EMERGENCY ORGANIZATION & RESPONSIBILITIES

In case of an emergency at Mine site, the On-site Emergency Plan will come into action.

Effective emergency plan requires that, in the event of an accident, nominated functionaries to be given specific responsibilities, often separate from their day-to-day activities.

Emergency control organization has been designed by identifying the safe transition from normal condition to emergency condition. For this purpose an emergency response organization with appropriate lines of authority with succession planning and actuating the response management has been formed.

Emergency Organization

Overall objectives of the emergency control organization are as follows:

- To promptly control problems as they develop at the scene.
- To prevent or limit the impact on other areas and offsite.
- To provide emergency personnel, selecting them for duties compatible with their normal work functions wherever feasible.

The organization Chart for Disaster Management Plan is shown in **Figure-10**.

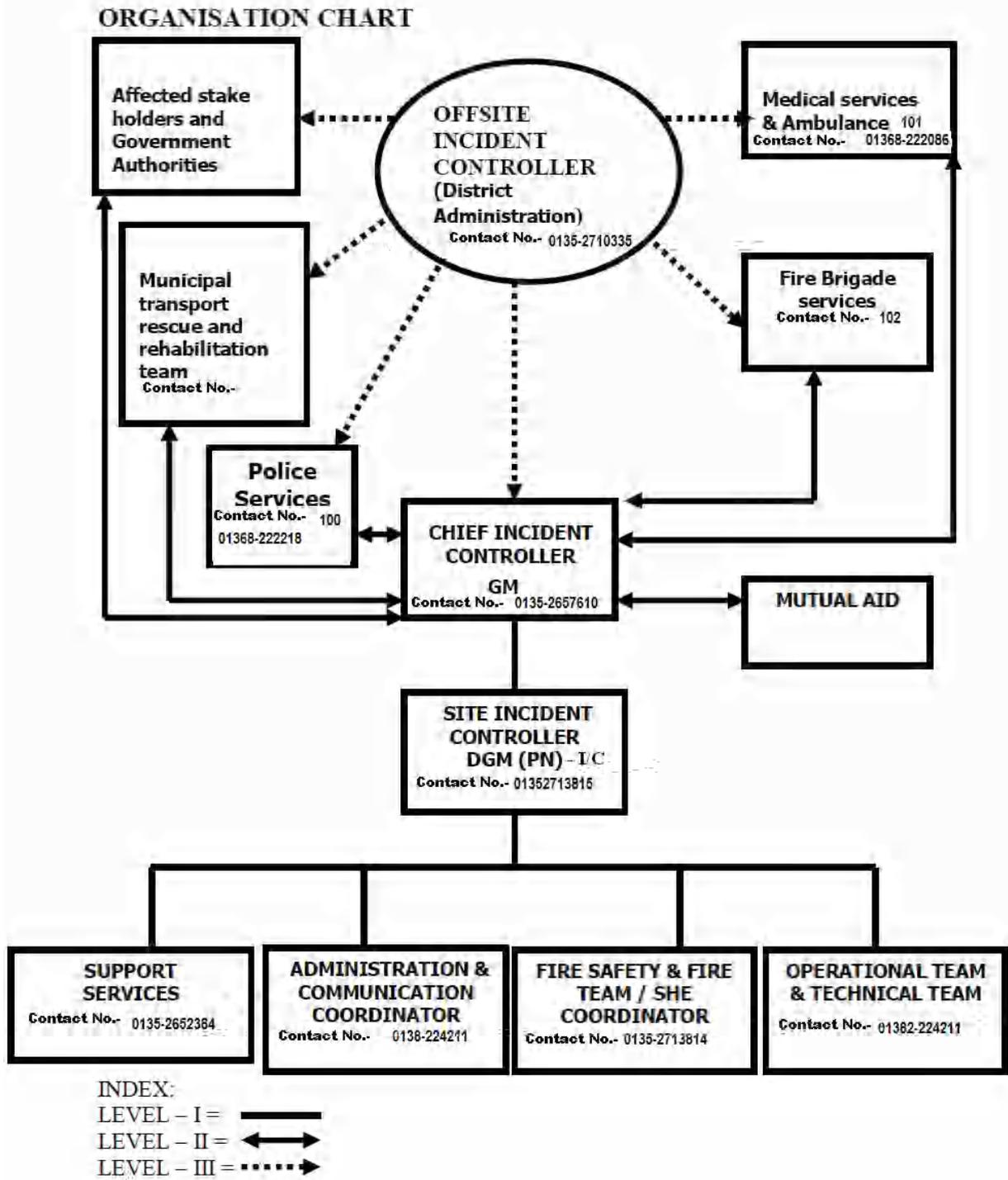


Figure 10: Organizational Chart for DMP

IMPORTANT CONTACT DETAILS

Contact Details for High Authorities of UKFDC

The contact details are given in **Table-1**.

Table 1: Emergency Contact no. UKFDC

Designation	Name	Telephone No.	a.) Mobile No.	b.) Mobile No.
Honorable Chairman	ShriHarish Dhami	0135-2714311	-	-
M.D. (UKFDC)	Mr. S.T.S. Lepcha	0135-2657610	9412054439	9568003200
GM Production, Dehradun	Shri Vineet KumarPangtey	0135-2713815	9412058613	9568003202
RM (H.Q), Dehradun	Shri B.K.Gangte	0135-2652384	9412057606	9568003210

Emergency Contact Details

The emergency contact details are given in **Table-2**.

UttaraKhand - Official website - <http://dmmc.uk.gov.in/>

Hazard Profile - Landslide, Earthquake, Flood

Control Room - 0135-2710335, Fax - 0135-2710334

Table 2:Emergency Contact no.

— वन विभाग —

डी. एम. सि.	मुळ वन विभाग (मुंबई), उमाखण्ड, महाराष्ट्र।	206016	—	9812060167
डी. एम. मुंबई	मुळ वन विभाग (मुंबई), उमाखण्ड वन विभाग (मुंबई) इत्यादी।	234892, 234319, 233863	—	—
डी. एम. मुंबई	मुळ वन विभाग (मुंबई) उमाखण्ड विभाग (मुंबई) इत्यादी।	234047	—	—
डी. एम. मुंबई	मुळ वन विभाग (मुंबई), वन विभाग (मुंबई) इत्यादी।	205891	—	—
डी. एम. मुंबई	मुळ वन विभाग (मुंबई), वन विभाग (मुंबई) इत्यादी।	—	—	—
डी. एम. मुंबई	वन विभाग, वन विभाग (मुंबई) इत्यादी।	205032	—	98117-2048
डी. एम. मुंबई	वन विभाग, वन विभाग (मुंबई) इत्यादी।	231080, 200007	—	—
डी. एम. मुंबई	मुळ वन विभाग (मुंबई), उमाखण्ड, इत्यादी।	205040	—	98117-2048
डी. एम. मुंबई	मुळ वन विभाग (मुंबई), उमाखण्ड, इत्यादी।	204309, 207208	—	9812060171
डी. एम. मुंबई	मुळ वन विभाग (मुंबई), उमाखण्ड, इत्यादी।	207718, 207307	—	9458160737
डी. एम. मुंबई	मुळ वन विभाग (मुंबई), उमाखण्ड, इत्यादी।	280125	—	978104888
डी. एम. मुंबई	वन विभाग, उमाखण्ड, महाराष्ट्र।	206070	—	988193180
डी. एम. मुंबई	मुळ वन विभाग (मुंबई), उमाखण्ड, इत्यादी।	20106	—	98117-20430
डी. एम. मुंबई	मुळ वन विभाग (मुंबई), उमाखण्ड, इत्यादी।	20400	—	979019917
डी. एम. मुंबई	मुळ वन विभाग (मुंबई), उमाखण्ड, इत्यादी।	251002	—	900533708
डी. एम. मुंबई	मुळ वन विभाग (मुंबई), उमाखण्ड, इत्यादी।	201873	—	98117-20411
डी. एम. मुंबई	मुळ वन विभाग (मुंबई), उमाखण्ड, इत्यादी।	251558	—	9458160146
डी. एम. मुंबई	मुळ वन विभाग (मुंबई), उमाखण्ड, इत्यादी।	211179	—	98117-20410
डी. एम. मुंबई	मुळ वन विभाग (मुंबई), उमाखण्ड, इत्यादी।	200000	—	9881930070
डी. एम. मुंबई	मुळ वन विभाग (मुंबई), उमाखण्ड, इत्यादी।	200000	—	9880000000
डी. एम. मुंबई	वन विभाग, उमाखण्ड, महाराष्ट्र।	251217	—	—
डी. एम. मुंबई	मुळ वन विभाग (मुंबई), उमाखण्ड, इत्यादी।	204439	—	988001241
डी. एम. मुंबई	मुळ वन विभाग (मुंबई), उमाखण्ड, इत्यादी।	231021	—	988001222
डी. एम. मुंबई	मुळ वन विभाग (मुंबई), उमाखण्ड, इत्यादी।	205000	—	988001240
डी. एम. मुंबई	वन विभाग, उमाखण्ड, महाराष्ट्र।	215136	—	—
डी. एम. मुंबई	मुळ वन विभाग (मुंबई), उमाखण्ड, इत्यादी।	207170	—	9810000013
डी. एम. मुंबई	मुळ वन विभाग (मुंबई), उमाखण्ड, इत्यादी।	205001	—	988193120
डी. एम. मुंबई	मुळ वन विभाग (मुंबई), उमाखण्ड, इत्यादी।	204149, 204150	—	9812060012
डी. एम. मुंबई	वन विभाग, उमाखण्ड, महाराष्ट्र।	234148, 201150	—	98117-20490

Disaster Awareness

Public Awareness System

The safety measures to be taken in the event of an emergency shall be made known to the general public who are likely to be affected.

For disclosure of information to the public of the mine site they are briefed about our preparedness and measures taken to face any disaster situation. They are also explained about the Disaster Warning Signals and measures to be taken in case of any disaster in the location and any possible emergency.

On disclosure of the information, particularly during the disaster situation, the Public announcements are being done by Communication Department. To avoid any panic, it is been considered that the necessary announcement will be made for working personnel on-site/off-site of mine lease area and nearby villagers too.

The use of Electronic Media

For bringing the awareness among the external public at large, the use of electronic media like TV, Air & Press coverage is used. The Welfare & Media co-ordinator prepares the Press release to be issued for the local press & other important dailies.

CHAPTER-5: EMERGENCY RESPONSE PROCEDURES

BACKGROUND

Disaster management committee plays a crucial role during emergency in systematic and proper way. In addition, the implementation of an Emergency Response Plan relies on a number of response functions, which deals with different aspects given as follows-

- Communication and co-ordination
- Medical Services
- Security
- Administration (Logistics and Welfare)
- Co-ordination with external agencies

EMERGENCY CONTROL CENTRE

The Emergency Control Centre (ECC) is established for emergency operations which will be directed and co-ordinated. The ECC will be activated as soon as emergency is declared. During emergency all emergency staff will gather in ECC.

The ECC staff is as follows-

- Site Main Controller (SMC)
- Assistant to SMC
- Telephone Attendant
- Messengers
- Key Personnel & Team (Monitoring & Warning Committee Manager, Incident controller & Rescue Team Manager, Relief Team) as per the Disaster Management Committee.

5.2.1 Emergency Control Centre's planning during disaster

The ECC will always be ready for operation and provided with the equipment and supplies necessary during the emergency, which is given as-

- Rescue Tubes & Rescue Cans
- Rescue Ring Buoys
- Dive Bricks & Dive Rings
- Swim Safety Buoys & Pool

- Lifelines
- Spin boards & Head
- Immobilizers
- First Aid Kit

Except all these facility, ECC will have its own lightning facility during emergency.