

A Disaster management case study report on “Uttarakhand devastating river flood 2013”.

¹Sajid Hundekar and ²Zaid Ahmed,

¹Associate Professor and ²Graduate of Arts - Special Geography

¹Department of Geology, Poona College of Arts, Science and Camp,
Pune - 411 001, Maharashtra, INDIA.

Abstract: Disaster or catastrophe or any such accident is inevitable. Almost all the nation witnesses such misfortune. Therefore, planning and organizing of rapid forces which can work during such mishaps have been developed by all the nations in the form of the natural disaster management. India which has different types of vegetation and geography witnesses almost all the kind of disasters most common among them all being floods. Therefore, a National Disaster Management Authority has been established. It is apex body which looks after the management and control of such accident. It has been established under Disaster Management Act, 2005. Its responsibility is like that of a state which is also helped by central government through the Ministry of Home Affairs. Any disaster be it manmade or natural, always leads the loss of life and property. For instance, the recent floods in the state of Uttarakhand led to loss of 30% of economy. Many international organizations like Red Cross, United Nations, World Bank also work in this field. They collaborate with domestic agencies to work. Therefore, it is concluded that a strong and effective management system is a must for prevention and control of such disasters.

1. Introduction:

What has so often excited wonder is the great rapidity with which countries recover from a state of devastation; the disappearance in short time, of all traces of the mischief's done by earthquake, floods, hurricanes, and the ravage war.

Disaster:

The word “Disaster” means a catastrophe, mishap, calamity, or grave occurrence in any area, arising from natural or manmade causes, or by accident or negligence which results in substantial loss of life or human suffering, destruction of property, damage / degradation of environment.

2. Types of Disaster:

a) Natural Disaster

A natural disaster is a consequence when a natural hazard affects humans, Infrastructure and the environment. Human vulnerability, and lack of appropriate emergency management, leads to financial, environmental, or human impact. The resulting loss depends on the capacity of the population to support or resist the disaster; their resilience.

Various phenomena like landslide, volcanic eruptions, earthquake, floods and cyclones are all natural hazards that kill thousands of people and destroy billions of dollars of habitat and property each year.

b) Man Made Disaster

Manmade disasters are the consequences of technical or human hazards. The examples of manmade disasters include stampedes, fires, transport accidents, industrial accidents, oil spills and nuclear explosion/ radiation, War and deliberate attacks.

What is Disaster Management?

“Disaster management” means a continuous and integrated process of planning, organizing, coordination and implementing measures which are necessary or expedient for

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

According to NIDM Disaster Management can be defined as the organization and management of resources and responsibilities for dealing with all humanitarian aspects of emergencies, in particular preparedness, response and recovery in order to lessen the impact of disasters.

Disaster Management in India

Natural disasters in India cause massive loss of life and property. Flash Floods, cyclones, avalanches, droughts, landslides, brought on by torrential rains, and snowstorms pose the greatest threats. Others are including frequent summer dust storms, which usually track from south to north to south; they cause extensive property damage in North India and deposit large amount of dust from arid regions. Hail is also common in parts of India, causing severe damage to standing crops such as rice and wheat. But floods are most common natural disaster in India. The heavy Southwest monsoon rains cause the Brahmaputra and other rivers to distend their banks, often flooding surrounding areas.

As the apex Body or as an authoritative body for Disaster Management in India, mandated by the Disaster Management Act, 2005, is the National Disaster Management Authority (NDMA). Prime Minister of India is the chairman of NDMA, and the Vice Chairman is S Reddy. Under the vice chairman are eight members, all superannuated officials, who have the status and entitlements of ministers of state. Also there is a National Disaster Response Force (NDRF) of 12 Battalions, under the NDMA. It is organized on paramilitary lines, and is manned by persons on deputation from the Central Armed Police Forces of India.

The responsibility for Disaster Management in India’s federal system is that of the state Government with the supporting role of the National Government. The ‘Nodal Ministry’ in the central government for management of natural disasters, is the Ministry of Home Affairs (MHA). In the MHA this function is discharged by the Disaster Management Division (DMD). When Calamities of severe nature such as the natural disaster in Uttarakhand occur, the central government is responsible for providing aid and assistance to the affected state, as may be needed, including the deploying, at the state’s request, of Armed Forces, Central Armed Police Forces (CAPF), National Disaster Response Force (NDRF), and such communication air and other assets, as are available and needed.

3) Analysis:

We had experience in Uttarakhand flood. What the role did Union and state Governments played to manage the catastrophic flood disaster from its impacts on human beings, infrastructure and economic loss in Uttarakhand.

Rivers Flooding at Uttarakhand: A timeline events

- 13 June 2013: Meteorological Department, Dehradun, forecast “heavy to very heavy rainfall in the upper regions of Uttarakhand in the next 48 to 72 Hours”. The Central Government, Uttarakhand Government, and National Disaster Management Authority, ignored the warning.

- 14-16 June 2013: Heavy unseasonal monsoon rain in north India, which triggered floods, and landslides, in the north western mountain states of Uttar Pradesh, Uttarakhand, and Himachal Pradesh. But State of Uttarakhand was highly affected.
- 17 June 2013: An Army helicopter conducts aerial reconnaissance of Kedarnath. Army orders an infantry unit to send a foot column to establish contact with the temple town. Next day, early morning, after a night march, an infantry column, under its Commanding Officers reaches Kedarnath, Indian Army's Central Command starts deployment of 5000 troops in the flood affected areas in response named 'Operation Ganga Prahar'. Indian Air Force (IAF) helicopters conducts relief and rescue missions. Medium lift helicopters including MI-17 and V5 helicopters, moved to Jolly grant helipad, Dehradun. Late in the evening, Defence Minister A.K Antony, alerts the Armed Forces for relief and rescue mission.
- 18 June 2013: Lt-General Navtej Singh Bawa, the General Officer Commanding Uttar Bharat Area, moves to Dehradun, to lead the Army disaster response and coordinate with the state government, and other agencies. Indian Air Forces's started humanitarian mission, named Operation Rahat. MHA, outlines response to unfolding disaster. On 15 June, the Inspector General, Indo-Tibetan Border Police (ITBP), Uttarakhand, ordered to get in touch with chief secretary and provide whatever assistance was required by the state Government as ITBP posts and troops are already there in affects areas and are working and rescuing the people from day one; Border Road Organization (BRO) asked to "facilitate restoration of road communication across the different routes" 12 additional teams of the NDRF ordered to be deployed to Uttarakhand, and 34 deaths confirmed in Uttarakhand.
- 19 June 2013: Prime Minister Manmohan Singh, who has also Chairman of the NDMA and the Indian Congress Party President Sonia Gandhi, carry out an aerial survey of affected area. The PM calls the situation in Uttarakhand a "disaster" and directs "all central agencies to render all possible assistance in their domain to the state". Army's names its response to the natural disaster in Uttarakhand as Operation Surya Hope. Army carries out aerial reconnaissance of Kedarnath, Jungle Chatti, and other inaccessible areas where people are stranded. Army plans paratroop operations, and the establishment of heli-bridge to rescue, and evacuate the stranded people. Responders in affected area include 5500 Army man's 3000 BRO persons's, ITBP-600, NDRF 13 teams-422, 18 helicopters (IAF, army and civil) and 1 Hercules C-130.
- 20 June 2013: Official Communication from the Government of Uttarakhand, for Army assistance reaches Home ministry.
- Disaster toll: Districts affected-09; deaths-71; Injured-53; missing-23; Lives stock lost-1157; houses 'fully' damaged-366; houses partially damage-272; bridges damaged-21 stranded pilgrims-62,122; persons rescued-22,392.
- 21 June 2013: One of the eight members of the NDMA with status of Minister of State, designated as nodal officer, to coordinate rescue, relief, and assistance mission Uttarakhand Government posts 12 officers to disaster affected areas as nodal officers to coordinate the response. The officers reach their respective post on 22 and 23 June.
- 25 June 2013: IAF Mi-17 V5 helicopter on a relief and rescue mission from Gauchar to Guptkashi and Kedarnath on return leg from Kedarnath crashed. 20 persons on board killed [5 IAF crew members, and 15 ITBP soldiers, including 9 on deputation with NDRF]. But even after this incident rescue operation is going on by military on Operation.
- 26 June 2013: Central Command launches a web site for reporting progress on Operation Surya Hope in Uttarakhand. The site provides location wise list of stranded and rescued persons, and press

releases issued by Central Command. Government imports 25 satellite phones from Hong Kong for the ill-prepared NDMA, and NDRF.

- 28 June 2013: General Bikram Singh, the chief of the army staff, on a visit Gauchar, in Uttarakhand, while speaking to journalist, says Operation Surya Hope was “aid to civil authorities” to “strengthen the hands of the civil administration”. Army confirms that all people stranded in Kedarnath had been evacuated, and that the road the Badrinath was open.
- 30 June 2013: Ministry of Defence update, notes that IAF from 17-30 June 2013, airlifted 18,424 persons, in 2,137 sorties, and delivered 3,36,930 kg of relief supplies.
- 2 July 2013: Evacuation of all stranded pilgrim complete. BBC described it as “ One of the world’s largest air rescue operation”.
- 10 July 2013: Army Engineers started work on a new 20 km route to restore land communication with Kedarnath, which has remained cut off since the 16 June. An advance of four officers and 21 soldiers reached Gomkar on 11 July.
- 15 July 2013: Officials confirmed that the disaster toll was 580 dead, and 5,748 missing (924 from Uttarakhand and 4824 are from other Indian states) and that a total of 108,653 people have been evacuated from affected area by air and foot.
- September 2013: Subhash Kumar, Chief Secretary of Uttarakhand, issued revised figures for missing persons from 5100 to 4,120 including 421 children. The revised figures, compiled by Dehradun-based Missing Persons Cell are based on a review of the First Information Reports recorded in the state’s 13 districts.

State wise list of missing Persons:

Sr. No.	Name of the State	Missing Persons
1	Uttar Pradesh	1150
2	Uttarakhand	846
3	Madhya Pradesh	542
4	Rajasthan	511
5	Delhi	216
6	Maharashtra	163
7	Gujarat	129
8	Haryana	112
9	Andhra Pradesh	086
10	Bihar	058
11	Jharkhand	040
12	West Bengal	036
13	Punjab	033
14	Chhattisgarh	028
15	Odisha	026
16	Tamil Nadu	014
17	Karnataka	014
18	Meghalaya	006
19	Chandigarh	004
20	Jammu & Kashmir	003
21	Pondicherry	002
22	Assam	001

23	Kerala	001
Total		4021

Operation Surya Hope:

It is the name that Indian Army Central Command gave to its response in Uttarakhand following the June 2013 North India floods. Operation Surya Hope was conducted by Indian Army's Lucknow based Central Command.

Operation Surya Hope is successor to Operation Ganga Phalar. Operation Surya Hope was commanded by Lieutenant General Anil Chait, General Officer Commanding in Chief Central Command. Over 10,000 troops participated in Operation Surya Hope. It was conducted in tandem with the response by IAF (Operation Rahat), the BRO, NDRF, ITBP, and other para military forces under the Ministry of Home.

The floods and landslides in Uttarakhand, the worst natural disaster in the area in a hundred years, has been called a Himalayan Tsunami by the Government of India. According to the Indian Metrological Department, the total rainfall in Uttarakhand was the highest in the last 80 years. The rainfall was 440% above the normal.

The total number of aircrafts involved in the evacuation, relief, rescue, and search tasks, according to government sources, was 83 (IAF-45, Army-13, and Hired Helicopters-25). The helicopters carried out their mission in hazardous mountain conditions, often in rain and fog.

For relief and rescue operations, the army divided the affected areas into four axis, or sub sectors. On 19-20 June the army conducted reconnaissance, and stranded people. By 20 June evening the army reported that it had rescued more than 11000 people, and was sheltering, feeding, and providing medical assistance to about 10,000. As follow up to aerial reconnaissance of inaccessible areas on 19 June, army plans heliborne operations by paratroopers and special forces to rescue stranded people, in Jungle Chatti, Kedarnath, and Other areas. On 20 June the army started work on the maintenance and improvement, and expansion of helipad at Gagaria on Hemkund Sahib axis to make it ready to accommodate the larger MI-17 helicopter to allow for speedier aerial evacuation.

On 23 June relief, recue, search, and evacuation operations were started by Indian army. Army works on securing, marking, and improving helipads repairing and installing bridges; improving and restoring tracks; establishment staging areas, transit areas, reception centers, medical aid posts; escorting and guiding people; providing food, water, shelter, and medical aid to the affected population and most importantly providing through their presence, example and leadership, hope and encouragement to the stranded population.

Medical aid formed an important component of the mission. Doctors from Army Medical Corps, and nurses from the Military Nursing Service were amongst the lead elements to be deployed in the area. By 19 June, it was reported, 12 self-sufficient medical teams were deployed in the area. An emergency medical helpline was opened, and military communication channels were provided to affected people to speak with their families and friends. In addition the IAF deployed Air Force Rapid Action Medical Teams, with the air stations and detachments. On 26 June 13, A team of two psychiatrists from Army Medical Corps, opened a post disaster and trauma counselling at Badrinath and Kedarnath. On 26 June 2013, veterinary teams from the Army Veterinary Corps consisting of a veterinary doctor and two paramedics were inducted by helicopter to establish Animal Aid Posts along the Hemkund axis to take care of ponies and mules stranded in the area.

4) Economical Hit:

After river flood economy of Uttarakhand whose major part comes from tourism was badly affected. As people are threatened to come in Uttarakhand, around 30% of the economy suffered. Many people became jobless and moreover almost all the tourist places were destroyed. There was a huge loss of infrastructure and man power. Around 1000 crore is the money which is decided to be given as a compensation part which is not sufficient at all as loss is much more than that for example a person who lost his 1 family member and

around 20 lacs of property is getting only 10 lacs which is not in any kind of comparison and for that also; he had to wait.

So at the end one can clearly say that economical condition of affected people as well as of state is in very bad condition. To overcome the situation state of Uttarakhand had demanded a special package from union government.

From the happening of river floods in Uttarakhand the clear picture of seriousness of state and union towards Disaster management was displayed. All the work done including rescue operations and relief camps were done by localities and military forces and official agencies for this work responded after 3 days with a lot of confusion in their mind.

The Extent of damage as reported by the state government:

Sr. No	Item	Details
1	Number of affected districts	13
2	Number of dead and missing persons (Presumed to be dead)	169 + 4021
3	Number of House damaged	
	I. Fully damaged pucca houses	2,119
	II. Severely damaged pucca houses	3,001
	III. Partially damaged pucca houses	11,759
	IV. Fully damaged Kuchha houses	0394
	V. Severely damaged Kuchha houses	360
	VI. Number of Kuccha houses partially damaged	1,676
	VII. Number of huts damaged	0471
	VIII. Cowsheds damaged	0361
4	Animal lost	
	I. No. of Big Animal lost	3,280
	II. No. of Small Animal lost	7,811

5) Conclusion:

Some of significant natural disasters in India over the last two decades are as follows.

- 1993 Latur Earthquake, Killed 20,000, injured 30,000 and destroyed about 52 Villages.
- 1999 Odisha Cyclone, Killed almost 10,000, left over 2 million homeless and disrupted 20 million lives.
- 2001 Kutch earthquake, killed 20,000, injured 1,67,000 and left over 6 lakh people homeless. Bhuj was devastated.
- 2004 Indian Ocean Tsunami affected over 2,200 kms of coastline, killed over 15,000 people rendered lakhs of people homeless.
- 2005 Mumbai Floods killed 5,000.
- 2013 Uttarkhand as per reports 10000 deaths and about 4500 village's damage.

- 1) And all these disasters there has been loss of crores and crores of Indian money. These incidents and disasters are sufficient to tell that what union and states are doing when it comes to disaster management, our union territory and states are completely failure in ensuring the safety or prevention from disaster.

- 2) Because of the failure in properly implementing the disaster management act, we are facing a heavy loss of capital and human life over the years.
- 3) If we see the Uttarakhand Floods, we will get a lesson that due to lack of proper management and preventive methods we were lost around 10,000 lives and a huge chunk of money invested as in capital form or infrastructure, which tells that we are completely failure on the economic front and system failure on taking proper steps in controlling natural disaster.
- 4) There is lack of seriousness and right approach towards each disaster management event which results in the hefty economic losses. We cannot stop natural disaster but, Yes we can prevent them and we can take appropriate measures for lowering down the losses and minimize the human casualties.
- 5) We have to educate and aware people right from schools to universities and common lay man about the disasters in their areas. Give them practical training conduct on regular basis mock drills, keep poster competition and continuously put a safety tips and lifesaving techniques from various disasters in future on TV channels and local cable operators. It has to give specific information like shelter places, medicine stores and pure water storage tank in each places during each type of disaster occurring in specific areas.
- 6) Disaster topic to be added in the curriculum form 1st standard to higher studies. In colleges and Universities, a compulsory 30 to 40 hours training sessions on disaster Management has to be regularly conducted. In that syllabus right from the definition, types of disaster, causes, disaster mapping of each event, first aid training, precautions, preparedness and How they can survive and help the other during any disaster in future. The funding of this type of courses will be sponsored by the Municipal corporation and universities with the help of central and state government.

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