THE UTTARAKHAND DISASTER 2013
NATURAL CALAMITY OR A MANMADE DISASTER

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INTRODUCTION

Uttarakhand has a total area of 53,484 km square, out of which 93% is mountains and 64% is covered by the forest. Most of the Uttarakhand part of the state is covered by high Himalayan peaks and glaciers. Two of India's largest rivers, the Ganges and Yamuna, originate in the glaciers of Uttarakhand. Uttarakhand is also well known for its 'Chota Char Dham'- Kedarnath, Badrinath, Gangotri, Yamnotri. From 14th June to 17th June 2013, Uttarakhand received heavy rainfall, which was 37% more than benchmark rainfall during a normal monsoon. On June 16, 2013, many things went wrong with the Himalayan state of Uttarakhand. Heavy monsoon rains wreaked havoc in the hill states that triggered the flash floods in the Ganga, Yamuna and their tributaries at most of the places, sweeping away a number of bridges, roads and buildings.

LITERATURE REVIEW

- **Monika Mihir (1), Bruce Malamud (1), Mauro Rossi (2), Paola Reichenbach (2), and Francesca Ardizzone**

Landslide susceptibility assessment, the subject of this systematic review, is aimed at understanding the spatial probability of slope failures under a set of geomorphologic and environmental conditions. It is estimated that about 375 landslides that occur globally each year are fatal, with around 4600 people killed per year. Past studies have brought out the increasing

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cost of landslide damages which primarily can be attributed to human occupation and increased human activities in the vulnerable environments. Many scientists, to evaluate and reduce landslide risk, have made an effort to efficiently map landslide susceptibility using different statistical methods.

- **Bala Prasad Erramilli**

Organizing administrative machinery, dealing with disasters, is a vital responsibility of governance. 1 Strong and effective emergency management has been a felt need in all corners of the world. 2 Responsiveness of governance becomes evident in the manner in which it addresses the crucial task of ameliorating suffering and reducing losses. Public servants have a responsibility for formulating policies and building capacities for dealing with such situations. 3 The public perceives governments to have learnt from experience, theirs and others. Yet, a common complaint has been that government agencies are unprepared or ill prepared for the next big crisis and are unable to prevent large-scale loss of life and damage to property. It is, therefore, important to study disaster management to locate factors that make a critical difference in effective policy outcomes.

- **National Disaster Management Authority, (Government of India)-**

Floods recur every year during the monsoon season in India. On an average every year, 1,588 lives are lost, 7.5 million hectares of land is affected, and the damage caused to crops, houses and public utilities is 18 billion Indian Rupees (Rs.) due to the floods between 1953 to 2005, a total of 84,207 lives were lost due to the floods in India, with maximum of 11,316 in 1977, and a minimum of 37 in 1953. The only other year that had less than 100 deaths was 1965.

The data regarding each year's flood damage, with totals, averages, and maximum losses from 1953 to 2005 in terms of human lives lost, cattle lost, population affected, monetary value of damage to public utilities, and total monetary damage loss, area affected, crops damaged, and houses damaged could be seen in National Disaster Management Guidelines: Management of Floods (National Disaster Management Authority 2008, 89-90).On average, 32 million people are affected due to flooding. The maximum people affected were in 70 million in 1978. The total damage due to the floods during the 1953 to 2005 period of half a century was Rs 977 billion, a

staggering figure for a poor country. The maximum damage was Rs 88 billion in 2000, and the average damage during 1953 to 2005 was Rs 18 billion. Heavy flood damages have occurred during the monsoon years of 1955, 1971, 1973, 1978, 1980, 1984, 1988, 1989, 1998, 2004, 2005 and 2008.There were wide spread floods in Gujarat in the beginning of July 2005, taking away lives and disrupting many lives. This was followed by the eighth heaviest ever recorded 24-hour rainfall figure of 994 mm (39.1 inches) which lashed the Mumbai metropolis on July 26, 2005, and intermittently continued for the next day. That day 644 mm (25.4 inches) rain was received within the 12 hour period between 8 AM and 8 PM. Apart from Mumbai, many parts of Maharashtra state were also flooded. Many people in the cars on the roads of Mumbai could not open their car doors to escape and died. Due to disruption of the transport system people could not reach their homes in the night. At least 1,000 people are feared to have passed away.

CONCEPTUAL BACKGROUND

Disasters in Uttarakhand till 2012 (Flood and Landslide)

1978- Bhagirathi- Devastating impact on the region

1980- Gyansu Nala landslide- Claimed 24 lives and destroyed several houses

1991- Uttarkashi Earthquake- Caused the loss of 653 human lives, injuries to about 6000 people and the death of 1300 head of livestock in addition to damage to buildings, other structures and the infrastructure

1998- Malpa landslide- Devastating impact on the region

2001- Phata landslide- Devastating impact on the region

2003- Landslide triggered by a cloud burst in Uttarkashi- Engulfed three 4-story hotels and damaged several in buildings, roads and other infrastructure. The estimated damages were to the tune of about 50 million dollars

2009- Landslide disaster- wiped out two villages namely Jhakhla and Lah, claiming 43 lives

2010- Landslides and cloudbursts- Har-Ki-Pauri region was submerged under 3-4 feet of water. 42 people died in Almora alone

2012- Cloudbursts and Landslides- Kedarnath, Rudraprayag, Bhatwari and Dunda, all of these were affected and damage was caused by debris, damage to the road network, death of 73 people.

RESEARCH METHODOLOGY

The Research Methodology used in writing this paper is by the collection of secondary data through web, printed media. I have studied and analyzed the data available on the official sites of disaster management in India and the reports generated officially in context of the disaster in Uttarakhand on the Government sites, NGO's. The data was also collected through news updates, news papers etc.

ANALYSIS AND INTERPRETATION

In 2013, the whole nation was hit by monsoons, one month early. It reached Uttarakhand almost two weeks in advance. The glaciers melt faster when water falls on ice, causing the heavier flow in the river. These early rains combined with other factors, man-made and natural hazards were responsible for the disaster. The flood was a result of heavy rains and a massive landslide which unfortunately occurred at the same time. A block was formed by the debris which did not allowed the water to flow so a small lake was formed. After the extreme pressure created by the water it busted out and resulted to cause The Himalayan Tsunami.

- 822 Deaths occurred in flood (Official Estimates)
- 2,232 houses were fully damaged
- 1,800 persons were missing
- 1,520 roads got damage

- 4,200 villages were affected
- Over 70,000 people got struck in various regions of damaged or blocked roads
- National Highway 58, an important artery near region Jyotimarth was also washed away

Prime Minister of India undertook an aerial survey of the affected areas and announced an aid package of Rs 1000crore for disaster relief.

Several state governments announced financial assistance-

- **Uttar Pradesh Government** - 25 crore
- **The government of Haryana** - 10 crore
- **The government of Maharashtra** - 10 crore
- **The governments of Tamil Nadu, Odisha, Gujarat, Madhya Pradesh and Chhattisgarh** - 5 crore each.
- The US Ambassador extended a financial help of USD $150,000 through The United States Agency for International Development (USAID) to the NGOs and announced that the US will provide further financial aid of USD $75,000.

Nature unleashed its wrath on Uttarakhand, leading to massive destruction and deaths of human lives. The land of God was turned into the town of ghosts. The analysis of the experts says that the disaster in Uttarakhand was not only a natural but a manmade disaster. The experts say that unplanned development and rampant destruction of forests is the some of the main reasons behind the nature's fury. Then, unabated construction of hydro-electric (hydel) power projects, roads, hotels have also compounded the problem and made the State prone to such disaster.

Uttarakhand Disaster a Manmade Calamity?

- **Unplanned Construction-**

  A sum of 427 dams are planned to be built on river of which 70 projects are proposed or built on River Ganga alone. Since long, these are considered as one of the reasons why flood turned so devastating in the state of Uttarakhand in 2009, 2010, 2012 and 2013. Experts

advise urgent reassessment to the need of hydropower in the state and to make hydro-energy sustainable.

The poorly planned construction of hydro power projects causes reduced ecological flow of rivers. Ecological flow is defined as the water that should be left in the river for ecosystem protection and livelihood.

According to "Uttarakhand Jal Vidyut Nigam Limited" (UJVNL) website, a total of 244 hydro-projects of different capacity developed by various state/private agencies are going on in the State. A research paper entitled "Potential Effects of Ongoing and Proposed Hydropower Development on Terrestrial Biological Diversity in the Indian Himalaya", authored by Mahara Pandit and Edward Grumbine, highlight the colossal impacts of maniacal hydro power development in the Himalayas on terrestrial diversity, forest cover and rates of species extinctions.

- **Deforestation-**

The forest cover in Uttarakhand in 1970 was 84.9% which got reduced to 75.4% in 2000. Deforestation is also one of the most important factors of Uttarakhand disaster, which causes landslides frequently. The forest eco system has been severely damaged due to large number of development projects. As per reports from the Union Ministry of Environment and Forests (MOEF), 44,868 hectares of forest land have been diverted to non-forest use in Uttarakhand since 1980.

"When you change the course of a river by mining, cutting of trees indiscriminately and building roads in a haphazard manner, such a calamity is bound to take place," said PP Dayani, director of the GB Pant Institute of Himalayan Environment and Development.

- **Increase in the number of vehicles-**

In 2005-06, around 83,000 vehicles were registered in the state that rose to around 1,80,000 in 2012-2013. It has increased the vulnerability of the state towards accidents and apparently, in this rise of the number of vehicles, on one hand polluted the environment and on the other hand aggravated the landslides.

- **Landslides more frequent now-**

  Due to increased tourism, deforestation, development projects unplanned construction, and carelessness of the government number of landslides has increased apparently causing more disasters.

- **Ignorance of the Government-**

  According to a report in *Times of India*, CAG had said that State Disaster Management System has never met since it was formed in October, 2007. It is quite obvious, when they have not met even once in six years, then there must have no polices, guidelines, rules, regulations in place to deal with such a catastrophe.

FINDINGS

- Uttrakhand is a state highly prone to disasters. Flash floods are disasters that are seasonal in nature and strike during a certain period of the year in certain pockets of the state with high frequency.
- Human ignorance towards nature was the major reason for this disaster leading to so many deaths of humans, animals and damage of the infrastructure.
- Unplanned construction of dams, infrastructure, roads, have increased the frequency of landslides in the state.
- Increased tourism has affected the ecology of the state, leading to vast increment of vehicles in the state.
- The ignorance of the government towards preparedness of the disaster, their inactivity and irresponsibility became the main reason for the helplessness and damage to the society and human lives.
- The poorly planned construction of hydro power projects causes reduced ecological flow of rivers. Ecological flow is defined as the water that should be left in the river for ecosystem protection and livelihood purposes at all times.
- Under NDMA guidelines, every state has to frame its own Disaster Management Act and State Disaster Management Authority (SDMA) keeping local conditions and dangers in

mind. The SDMA was formed in 2007 in Uttrakhand. But they did not have any plan even till 2013. Due to which District Magistrates did not knew the standard operating procedure.

CONCLUSION

From the past Uttarkashi district has been affected by the various disasters time to time. Basically it suffers from earthquake, flash floods and landslides. And for these disasters, there is no permanent solution, because this area comes under seismic zone and thrust line which caused earthquake. Rapid change in climate caused the flash floods and both flood and earthquake resulting in the land slides. So we cannot stop them, but by a proper disaster management action plan we can minimize the loss of lives and properties and can control the intensity of any disaster. For a proper district disaster management action plan, the planning should be implemented according to the geographical, geological, climatic, demographic, administrative setting and available resources. Adaptation, improvisation and optimization are corner stone's of any planning pertaining to disaster

Disasters both manmade and natural are one of the most challenging problems faced by the state of Uttaranchal. It is true that we cannot avert or prevent the occurrence of many of the disasters. But by taking appropriate steps, we can definitely reduce their effects. The focus should be on all areas including connectivity in form of road, telecommunication and air connectivity. It is here that the role of a proper mechanism to guide and coordinate comprehensive disaster preparedness programmers becomes relevant. Some of the initiatives have been taken in the right direction but still there is a long way to go.

SUGGESTIONS

- **Optimal land use planning-**

  Land use planning around the new and old settlements should be based on land suitability and the local knowledge/ wisdom for optimum returns.

- **Strengthening emergency communication systems-**

  SRO/DOS has developed Satcom-based early warning and emergency communication systems, such as portable satellite phones (MSS Type-D terminals), DTH-based system,

Satellite based Virtual Private Network (DMS-VPN), etc. which can be deployed in critical areas of the state to make satellite communication an integral part of the disaster management.

- **Landslide inventory-**

  During the recent disaster, many new landslides have taken places and many of the old landslides have been reactivated. Therefore, landslide mapping is needed immediate using the latest (post-disaster) satellite images.

- **Strict scrutiny and implementation mechanism for EIA and EMP-**

  Environmental impact assessment (EIA) carried out for hydropower, industrial and other infrastructure projects must be based on scientifically sound data and methods and should be subject to strict scrutiny before granting clearances. Further, effective implementation of environmental management plans (EMP) in developmental projects must be enforced through a monitoring and regulatory mechanism.

REFERENCES

- http://scholarworks.gsu.edu/political_science_diss
- http://www.ukessays.com/essays/history/study-on-literature-reviews-and-disasters-history-essay.php
- http://meetingorganizer.copernicus.org/EGU2014/EGU2014-9814.pdf
- http://www.niticentral.com/2013/06/24/nature-unleashes-wrath-on-dev-bhoomi-94442.html
- http://www.governancenow.com/news/regular-story/cag-had-warned-last-year-about-uttarakhand-crisis-making
- http://www.downtoearth.org.in/content/man-made-reasons-uttarakhand-disaster
- http://planningcommission.gov.in/reports/genrep/snt_uk0402.pdf
- http://www.ijstr.org/final-print/August2012/Ddmap-District-Disaster-Management-Action-Plan-For-Hill-District-Uttarkashi-%28Uttarakhand%29.pdf
- http://indiatoday.intoday.in/story/uttarakhand-floods-disaster-devastation-kedarnath-isro/1/287083.html

- http://mujournal.mewaruniversity.in/JIR3/10.pdf