E-MAGAZINE

MILIEU

DEALING WITH DISASTERS

PRESENTED BY

DEPARTMENT OF GEOGRAPHY

SHYAMA PRASAD MUKHERJI COLLEGE FOR WOMEN

UNIVERSITY OF DELHI

2019-2020

Message from Principal ma'am

"How you overcome a difficulty defines who you are."

There are some difficult situations which takes us by surprise. These situations are totally abnormal and may present themselves in front of us as calamities, disasters or in any other manner, for example Covid-19. Here I say that how sure or philosophical you are about the uncertainties in life, influences how you deal with it. But one has to always be prepared to manage these.

Disaster management is the art or process of dealing with natural and manmade disasters. It is to be prepared to handle the situation in order to lessen the impact of situation. According to S. Thomas, "it is better to be prepared and prevent than to repair and repent."

I am very happy and proud that Department of Geography, Shyama Prasad Mukherji College is releasing the issue of their E-Magazine on "Dealing with Disasters" which can give an insight to the people that being prepared and knowing what to do can help them immensely. Disasters affect every one, they don't discriminate, and therefore, knowing something to deal such situations can reduce fear, anxiety and losses that come with these situations. I wish you a great success in spreading awareness about disaster management.

All the best….

Dr. Sadhna Sharma

Principal

Message from Teacher-in charge

Learn everything you can, since you never know what might be useful in a disaster.

- TIM MACWELCH, SURVIVAL EXPERT

The above lines by an expert reinforce the fact that every family, institute and region should have an emergency plan that addresses the most likely disasters in their domains. These skills need to be learned and practiced before things get tough, because you simply won't have time to read a survival book or watch a how-to video in the midst of a crisis. **Prevention** and **preparedness** need to be the cornerstone of any emergency plan.

My very dear students I am writing this when the humanity is in the grip of Pandemic due to coronavirus which has brought the world to a grinding halt. Now we understand that international disasters of such enormity require collective action. Hippocrates, once said," for extreme diseases, extreme methods of cure, as to restriction, are most suitable". The crux lies in prevention and control, rather attempting to tame it after it runs wild. This stands true for any disaster.

Many of us have sat dutifully under desks for school /college earthquake drills, or lined up on playgrounds for fire drills. We are familiar with the ideas of earthquakes, wild fires, and floods. Perhaps the greatest tragedy of disaster is that we have the ability to minimize its impacts, but we often fail to prioritize mitigation before it's too late. We need to recognize the fact that natural disasters are increasing in both frequency and intensity. Their impact on human lives and livelihoods, and the economy as a whole, is also increasing, due to higher population numbers and densities. Simultaneously, disasters caused as a result of human activities are also increasing.

There are different types of disasters that have a high impact. Natural disasters include floods, tsunamis, droughts, earthquakes, cyclones, hurricanes, tornadoes, landslides, volcanic eruptions etc. Man-made disasters can include chemical accidents, oil spills, radiological accidents, conflicts/wars, mass population displacement or refugee emigration, forest fires, epidemics etc.

It's a matter of great pleasure to share with you all that in this 3rd edition of our e- magazine, our editorial team set out to examine disaster in all of its facets, from prevention to response and recovery. From a tiny sapling our department is going into a sturdy tree and this magazine is like its one branch which provides an opportunity to our young girls to showcase their talent. Continuous support and guidance from our principal Dr. Sadhna Sharma has helped us in our all endeavors. Behind the scene hard work and contribution of the faculty members cannot ever go unnoticed. The editorial Board is bringing out the articles in a commendable manner which will certainly engage the readers.

Congratulation!

Dr. Rachna Dua

Message from Faculty Advisor

It gives me great pleasure to bring out the 3rd edition of Department of Geography E- Magazine, **"MILIEU".** With modern living creating so many modifications in the environment incidences and magnitude of disasters are increasing all over the world. No landmass and no society are left untouched. Despite greater resolve after every disaster, the next event leaves behind an even greater loss and heart ache. In the light of this we decided to focus this issue on Disasters and how we deal with it. Hence, the theme of our magazine is **DEALING WITH DISASTERS**. When we started working on the magazine, we didn't know that we would be releasing it amidst a pandemic, which has affected billions of people globally and created financial losses which are so large that it would have strong ramifications once we successfully battle it.

Our articles focus on some of the important issues making news today. We have highlighted on the impacts of disasters and the role of community, media and modern technology in dealing with these extreme events. Through various articles and creative pieces, we have tried to bring out the pathos associated with them. We urge everyone to please engage themselves in this narrative and try to lend their support in times of need.

I would like to express my gratitude to our Principal Dr. Sadhna Sharma for her support and encouragement. I would also like to thank our Teacher- in- charge Dr. Rachna Dua for her continuous guidance.

I also thank the editorial team, faculty members and students for their contribution in making this magazine.

I hope you enjoy reading the magazine.

Ms. Anuradha Shankar

Message from the editorial team

Dear readers

We are pleased to release the third issue of our online magazine "**MILIEU**". There is something or the other happening every now and then in the world that causes great damage to human life and property. Hence, the theme of our magazine is "**DEALING WITH DISASTERS**".

"*we cannot stop natural disasters but we can arm ourselves with knowledge: so many lives wouldn't have to be lost if there was enough disaster preparedness* – Petra Nemcova" This quote rightly highlights our perspective. We have covered every aspect related to disaster and disaster management so that we can be more prepared and aware about the same.

Writing is a great literary expression. This magazine is a platform that exhibits the literary skills and innovative ideas of teachers and students. I would like to thank all my editorial team members for helping me pull this through. I would like to extend my sincere thanks to Ms. Anuradha Shankar Ma'am for her constant guidance and support throughout the process of planning and publication of this magazine. I express my considerable appreciation to all the authors of the articles in this magazine. These contributions have required a generous amount of time and effort. It is this willingness to share knowledge, concerns and special insights with fellow beings that has made this magazine possible. I wish all the readers a happy reading!

Pavi Beniwal

The editorial board is glad to release the current issue of the online magazine 2019.The contribution and dedication of faculty members, students and other writers has continuously helped the magazine in stepwise manner for achieving new mile stone.

The magazine provides a perfect platform to highlight the literary and artistic segments on the issue.. The purpose of this college magazine is to unlock the hidden potential within the students and helped the students for self-motivation.

I want to extend my sincere thanks to my editorial team for the support to make this magazine stand out.
I am pleased to say that the creative writers have put in their best efforts to highlight the issue and we are very happy with their work. I would like to thank students, teaching & non-teaching staff for your kind & continued support in the progress of this magazine.

enjoy reading!!!

MAITHILI PATHAK

"छिपी हुई हैं अनंत निधियाँ, इन कर्णधारों के हाथों में विभागीय पत्रिका ही आधार बनी, अपनी अभिव्यक्ति दिखलाने में।"

किसी कॉलेज की विभागीय पत्रिका का प्रकाशित होना अत्यंत ही हर्ष का विषय होता हैं। पत्रिका, मात्र कुछ पृष्ठों का प्रकाशन नहीं होती अपितु यह विभाग का दर्पण होती हैं जो विभागीय परिवार को शिक्षा के क्षेत्र में और अधिक सकारात्मक परिणाम देने के लिए प्रोत्साहन देने का महत्वपूर्ण कार्य करती हैं।

भूगोल विभागीय पत्रिका 'MILIEU' का यह तृतीय प्रकाशन हैं तथा हमारी विभागीय पत्रिका की हमेशा से यह कोशिश रही हैं कि विद्यार्थी अपने लेखन की सामर्थ्य - शक्ति को जान सकें। इस वर्ष हमारी पत्रिका का मूल विषय “आपदाओं से निपटना” हैं। मैं धन्यवाद करना चाहूँगी हमारी मुख्य - संपादिका सुश्री अनुराधा शंकर जी का, सभी शिक्षकों का, प्रमुख संपादकीय मंडल का तथा उन सभी विद्यार्थियों का जिन्होंने इस कार्य को पूर्ण करने में अपना सहयोग दिया। यह पत्रिका विभिन्न प्रकार की कलाकृतियों का समावेश हैं , जो यह प्रदर्शित करती हैं कि आज के युवा वर्ग को अपनी प्रकृति के विषय में पूर्ण रूप से ज्ञान हैं।

अंत में, मैं पूरी पत्रिका की टीम की ओर से आप सभी पाठकों का अभिनंदन करती हूँ।

अंजली
छात्र सम्पादिका

What's inside?

Trend and pattern of Natural Disaster in India

Dr. Seema
Assistant Professor, Shyama Prasad Mukherji College
University of Delhi

Abstract

This paper entitled "Trend and pattern of natural disaster in India" deals with the issue of natural Disaster affected areas in India, as we know that disaster is multifaceted and open to a range of different interpretations. Disaster synonyms used by practitioners and experts have included "calamity" and "catastrophe". Similar words are "emergency" and "crises". Disasters are abrupt shocks to the socio-economic and environmental system, involving loss of life and property. So, we need to manage these Disasters at those times otherwise they leave effects on our lives. So, this paper highlights on the major natural disaster which affects various parts of India.

Keyword: Natural Disaster, Vulnerability, Hazard, Trend and Pattern

INTRODUCTION:

The word 'Disaster' derives from Middle French desastre and that from Old Italian disastro, which in turn comes from the Greek pejorative prefix δυσ-, (dus-) "bad"+ αστήρ(aster), "star". The root of the word disaster ("bad star" in Greek and Latin) comes from an astrological theme in which the ancients used to refer to the destruction or deconstruction of a star as a disaster. The Disaster Management Act, 2005 defines disaster as "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 or damage to, and destruction of, property, or damage to, or degradation of, environment, and is of such a nature or magnitude as to be beyond the coping capacity of the community of the affected area". The United Nations defines disaster as "the occurrence of sudden or major misfortune which disrupts the basic fabric and normal functioning of the society or community". (National Department of Natural Hazard and Disaster)

The definition that is provided by the UN/ISDR (United Nations International Strategy for Disaster Reduction) is one of the most appropriate definitions: "A disaster is a sudden, calamitous event that causes serious disruption of the functioning of a community or a society causing widespread human, material, economic and/or environmental losses which exceed the ability of the affected community or society to cope using its own level of resources." (Source: UN/ISDR 2004)

For a disaster to be entered into the database of the UN's International Strategy for Disaster Reduction (ISDR), at least one of the following criteria must be met:

- A report of 10 or more people killed
- A report of 100 people affected
- A declaration of a state of emergency by the relevant government
- A request by the national government for international assistance

Table 1.1 Classification of natural disaster

Hydro meteorological Disasters	Geological Disasters	Environmental Hazards	Biological Disasters
Tropical Cyclone Tornado and Hurricane Floods Drought Hailstorm Cloudburst Landslide Heat & Cold wave Snow Avalanche Sea erosion	Earthquake Tsunami Volcanic eruption Landslide Dam burst Mine Fire	Environnemental pollutions Déforestation Désertification Pest Infection	Human / Animal Epidemics Pest attacks Food poisoning Weapons of Mass Destruction

Source: NDMC

"A disaster", as defined by the World Health Organization, "is any occurrence that causes damage, economic destruction, loss of human life, and deterioration in health and health services on a scale sufficient to warrant an life and property on a scale which overwhelms the capacity of those affected to cope unaided'.

extraordinary response from outside the affected community or area". Disasters could be natural, such as, earthquake, floods, droughts, and cyclone; or man-made (i.e. whose direct and principal causes are identifiable human actions, deliberate or otherwise), like industrial accidents, environmental fallouts of an industry or a commercial establishment, communal riots, and epidemics, etc. Globally, natural disasters account for roughly eighty per cent of all disasters affecting people.

A disaster is defined in this Study as 'a severe disruption to the survival and livelihood systems of a society or community, resulting from their vulnerability to the impact of one or a combination of hazards and involving loss of

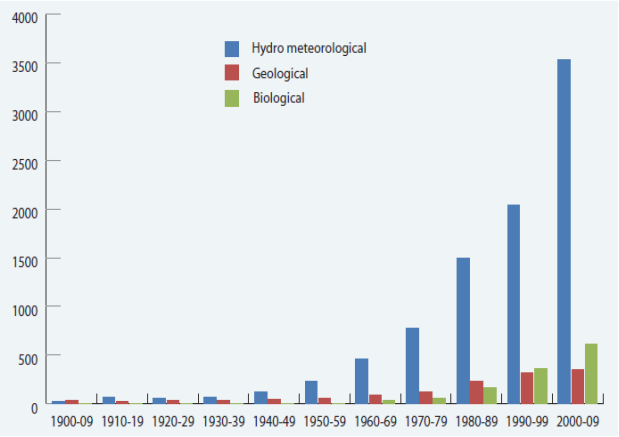
DISASTERS =

HAZARDS*VULNERABILITY

Hazard usually refers to the danger or risk associated with the occurrence of an extraordinary event of limited duration. It can be understood as any rare natural or man-made phenomenon which can inflict damage to life and property by causing a disaster. Thus, hazard is a threat, while disaster is an event. Vulnerability refers to the extent to which an individual, or a group of people or some structures in a particular area are likely to be adversely affected by a particular natural or man-made disaster.

Natural Disasters may include weather phenomena such as tropical storms, extreme heat or extreme cold, winds, floods, earthquakes, landslides and volcanic eruptions while Man Made Disasters are disasters caused by humans. These may include transportation accidents, industrial accidents, release of hazardous materials and the collapse of buildings.

FIGURE 1 : EVENTS OF DISASTERS GLOBALLY BETWEEN (1900-2009)



Source: Center for Research on Epidemiology of disasters (CRED)

NATURAL DISASTERS IN INDIA

Vulnerability Profile of India

India has been vulnerable, in varying degrees, to a large number of natural, as well as, human-made disasters on account of its unique geo-climatic and socio-economic conditions. It is highly vulnerable to floods, droughts, cyclones, earthquakes, landslides, avalanches and forest fires. Out of 35 states and union territories in the country, 27 of them are disaster prone. Almost 58.6 per cent of the landmass is prone to earthquakes of moderate to very high intensity; over 40 million hectares (12 per cent of land) are prone to floods and river erosion; of the 7,516 km long coastline, close to 5,700 km is prone to cyclones and tsunamis; 68 per cent of the cultivable area is vulnerable to drought and hilly areas are at risk from landslides and avalanches.

Hazard Profile of India

- India is one of the ten worst disaster prone countries of the world. The country is prone to disasters due to number of factors; both natural and human induced, including adverse geo climatic conditions, topographic features, environmental degradation, population growth, urbanization, industrialization, non-scientific development practices etc. The factors either in original or by accelerating the intensity and frequency of disasters are responsible for heavy toll of human lives and disrupting the life supporting system in the country. The basic reason for the high vulnerability of the country to natural disasters is its unique geographical and geological situations. As far as the vulnerability to disaster is concerned, the five distinctive regions of

the country i.e. Himalayan region, the alluvial plains, the hilly part of the peninsula, and the coastal zone have their own specific problems. While on one hand the Himalayan region is prone to disasters like earthquakes and landslides, the plain is affected by floods almost every year. The desert part of the country is affected by droughts and famine while the coastal zone susceptible to cyclones and storms.

- The natural geological setting of the country is the primary basic reason for its increased vulnerability. The geo-tectonic features of the Himalayan region and adjacent alluvial plains make the region susceptible to earthquakes, landslides, water erosion etc. Though peninsular India is considered to be the most stable portions, but occasional earthquakes in the region shows that geo- tectonic movements are still going on within its depth.

The tectonic features, characteristics of the Himalaya are prevalent in the alluvial plains of Indus, Ganga and Brahmaputra too, as the rocks lying below the alluvial pains are just

- Extension of the Himalayan ranges only. Thus this region is also quite prone to seismic activities. As a result of various major river systems flowing from Himalaya and huge quantity of sediment brought by them, the area is also suffering from river channel siltation, resulting into frequent floods, especially in the plains of Uttar Pradesh and Bihar.
- The western part of the country, including Rajasthan, Gujarat and some parts of Maharashtra are hit very frequently by drought situation. If Monsoon worsens the situation spreads in other parts of the country too. The disturbance in the pressure conditions over oceans, results into cyclones in coastal regions. The geo tectonic movements going on in the ocean floor make the coastal region prone to tsunami disaster too.
- The extreme weather conditions, huge quantity of ice and snow stored in the glaciers etc. are other natural factors which make the country prone to various forms of disasters.
- Along with the natural factors discussed in the preceding text, various human induced activities like increasing demographic pressure, deteriorating environmental conditions, deforestation, unscientific development, faulty agricultural practices and grazing, unplanned urbanization, construction of large dams on river channels etc. are also responsible for accelerated impact and increase in frequency of disasters in the country

PATTERN AND TRENDS OF NATURAL DISASTERS IN INDIA:

India due to its geo-climatic and socio-economic condition is prone to various disasters. During the last thirty years' time span the country has been hit by 431 major disasters resulting into enormous loss to life and property. According to the Prevention Web statistics, 143039 people were killed and about 150 crore were affected by various disasters in the country during these three decades. The disasters caused huge loss to property and other infrastructures costing more than US $ 4800 crore.

In India, the cyclone which occurred on 25th November, 1839 had a death toll of three lakh people. The Bhuj earthquake of 2001 in Gujarat and the Super Cyclone of Orissa on 29th October, 1999 are still fresh in the memory of most Indians. The most recent natural disaster of a cloud burst resulting in flash floods and mudflow in Leh and surrounding areas in the early hours of 6th August, 2010, caused severe damage in terms of human lives as well as property. There was a reported death toll of 196 persons, 65 missing persons, 3,661 damaged houses and 27,350 hectares of affected crop area. Floods, earthquakes, cyclones, hailstorms, etc. are the most frequently occurring disasters in India. The economic loss is accounted for 2% of the GDP due to disasters as per the study of the World Bank Vulnerability to disasters or emergencies of Chemical, Biological Radiological and Nuclear (CBRN) origin has increased on account of socio-economic development. Heightened vulnerabilities to disaster risks can be related to expanding population, urbanization and industrialization, development within high-risk zones, environmental degradation and climate change. During the last two decades of the 19th century (1982-2001), natural disasters in India had claimed a total death toll of around 1, 07,813 people (on an average more than 5,390 death toll every year). As mentioned above, India with its extended coast line is exposed to five to six tropical cyclones on an average; both from the Arabian Sea and Bay of Bengal annually India has experienced very severe natural disasters at almost regular intervals in the past. The devastation caused by the Latur earthquake of 1993-94, the Orissa super cyclone of 1999, the

Bhuj earthquake of 2001 (as also the widespread Gujarat, Himachal Pradesh, Karnataka, Kerala, Maharashtra, Odisha, Punjab, Sikkim, Uttar Pradesh, Uttarakhand, West Bengal and Union territory of Puducherry. The year 2011 started with a stampede in Kerala in which 102 Sabarimala pilgrims were killed at Uppupara on the Pullumedu-Vallakadavu forest route in Idukki district. The event took place when thousands of devotees were returning after holy darshan at the shrine of Lord Ayyappa on Maker Sankranti day. Drought of 2002-03) are etched in public memory .During the year 2011-12, 14 States and one Union Territory reported damage to various disasters like cyclonic storms, heavy rains, floods, landslides, earthquakes, etc. in varying degrees. These states were Assam, Bihar, Goa, Gujarat, Himachal Pradesh, Karnataka, Kerala, Maharashtra, Odisha, Punjab, Sikkim, Uttar Pradesh, Uttarakhand, West Bengal and Union territory of Puducherry. The year 2011 started with a stampede in Kerala on in which 102 Sabarimala pilgrims were killed at Uppupara on the Pullumedu-Vallakadavu forest route in Idukki district. The event took place when thousands of devotees were returning after holy darshan at the shrine of Lord Ayyappa on Maker Sankranti day.

The two month long pilgrimage, which had started in November 2010, had been mostly incident-free before this mishap. In heavy monsoon rains resulted in widespread flooding in Odisha. Within two weeks, a second round of floods resulting from a tropical depression in the Bay of Bengal inundated 19 of Odisha's 30 districts. In response to heavy rainfall and to prevent breakage, authorities released water from the Rengali dam on the river Brahmani, exacerbating flooding in low-lying areas. Although the death toll was 45 in number, but the floods resulted in affecting over 3.5 million people and caused extensive damage to crops

and infrastructure. This was followed by 6.9 magnitude earthquake which hit Sikkim Nepal border region at 6.10 pm on September 18. It was widely felt in north-eastern states of India, West Bengal, Bihar, Uttar Pradesh, Haryana, Rajasthan including the capital city, Delhi. Subsequently, two more aftershocks of 6.1 and 5.3 at 6:21 pm and 6:42 pm respectively were also felt. The earthquake killed 60 people, affected 719 persons and caused substantial loss of livestock. The strong tremor caused significant building collapse and mudslides. As the earthquake occurred in the monsoon season, heavy rain and landslides added to the woes of the affected community and made the rescue work more difficult. During the south west monsoon period from June to September, in September 2011 rainfall was the second worst event in south interior Karnataka since 1971, and in north interior Karnataka, third worst event since 1971. Failure of monsoon during September caused late season drought of rare severity. The dry spell in interior Karnataka during September continued till October in many districts; 77 talukas recorded deficit rainfall during the period October 1st to October 14th. Ultimately Government of Karnataka declared 99 talukas as drought affected. Though Andhra Pradesh declared 456 mandals spread over 15 districts as drought affected, yet no

memorandum was submitted to Government of India. So this is covered as an important event in the Annexure Towards the end of the year, a fire broke out in a AMRI hospital in Kolkata on The fire spread rapidly from the basement of the hospital, engulfing one ward after the other, trapping hundreds of people. About 91 patients, including three hospital staffers lost their lives. Many of the patients were rendered immobile and could not move out to safety and lost their lives subsequently. The privately owned hospital was accused of ignoring the basic safety laws and playing with lives of patients. The year ended with a hydro-meteorological disaster in the form of a 'Cyclone Thane', which pummeled India's south-eastern coastline.

Table 1.2 People affected live lost and economic damage due to disaster in India between 1980- 2010

Year	Types of disaster	People affected	Life lost	Economic damage (USD X1000)
1980	Flood	30,000,023		
1982	Drought	100,000,000		
1984	Flood	33,500,00		
1988	epidemic		3290	
1990	Drought	300,000,000		
	Epidemic		3000	2,200,000
1993	Storm	128,000,000		7,000,000
1994	Flood			
	Earthquake		9748	
1995	Flood	32,704,000	2001	
1996	Storm			1,500,300
1998	Storm		2871	
	Extreme temp.		2541	
	Flood		1811	
1999	Storm		9843	2,500,000
2000	Drought	50,000,000	20,005	
2001	Earthquake			2,623,000
2002	Drought	300,000,000		
	Flood	42,000,000		
2004	Flood	33,000,000	15, 389	2,500,000
	Earthquake			
2005	Flood			3,330,000
2006	Flood			2,300,000
	Flood			3,390,000
2009	Flood			2,150,000
2013	Cyclone	236700	342	123000

The cyclone hit Andhra Pradesh, Tamil Nadu and Puducherry. However, it took a decidedly southern turn as it made landfall, severely affecting the Tamil Nadu district of Cuddalore, south of the city of Chennai on with winds gusting at almost 90 miles per hour at its peak. The cyclone resulted in death of over 53 people and caused severe damage to infrastructure and environment.

TABLE 1.3: Year wise damage caused due to flood, cyclone, storms and landslides from 2000-2010

year	lives lost	cattle lost (no)	house damaged	cropped area affected in lakh (hectare)
2001-02	834	21,269	3,46,878	18.72
2002-03	898	3,729	462700	21
2003-04	1,992	25,393	682209	31.98
2004-05	1,995	12,389	6,82,209	32.53
2005-06	2,698	1,10,997	16,03,300	35.53
2006-07	2,402	4,55,619	21,20,012	70.87
2007-08	3,764	1,19,218	19,34,680	85.13
2008-09	3,405	53,833	35,27,041	35.56
2009-10	1,677	128452	16,46,905	47.13
10-11	2,310	48778	13,38,619	46.25

Source: Ministry of Home Affairs

Table 1.3 shows that year wise damage caused due to floods, cyclonic storms, and landslides during past years. It shows that life lost is maximum in year 2007-08,cattle lost is maximum in 2006-07 and cropped affected area is maximum in year 2007-08.

Conclusion

These are hazards which are caused because of natural phenomena (hazards with meteorological, geological or even biological origin).Hazards pose threats to people and assume serious proportions in the under developed countries with dense population. During the second half of the 20th century, more than 200 worst natural disasters occurred in the different parts of the world and claimed lives of around 1.4 million people. Losses due to natural disasters are 20 times greater (as % of GDP) in the developing countries than in industrialized one. Asia tops the list of casualties due to natural disasters. India has been vulnerable, in varying degrees, to a large number of natural, as well as, human-made disasters on account of its unique geo-climatic and socio-economic conditions. It is highly vulnerable to floods, droughts, cyclones, earthquakes, landslides, avalanches and forest fires. Out of 35 states and union territories in the country, 27 of them are disaster prone.

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Bio-logical Disasters: Natural or Man induced? - An Analysis

Dr. Gargi Kar Majumdar
Assistant Professor, Shyama Prasad Mukherji College
University of Delhi

The term 'Disaster' is often associated with sudden occurrence of natural phenomenon such as earthquake, floods, droughts, landslides etc. causing widespread damages to the society, environment and economy at large. However as we know disasters are not only caused by natural phenomenon but also due to man-made reasons.

Natural disasters can be geophysical (such as earthquake, volcano, etc.) biological (such as epidemics, pandemics), climatic (such as floods, drought etc.) or even meteorological such as cyclones, storms etc. Manmade disasters could be due to unplanned urbanizations, accidents such as industrial or pollution related damages, etc.

Occurrence of many of the natural phenomenon may not be predicted always in advance but learning from experiences and preparedness are the possible ways to deal with disasters. Studies of historical data from around the world shows that over the years the number of disaster deaths globally have gone down due to preparedness, better response and rehabilitation systems, still if we look at less developed nations the number of disaster deaths on an average is still high than the global rate.

As per WHO, every year natural disasters kill around 90,000 people and affect close to 160 million people worldwide and the number is higher in developing countries. Apart from immediate impact of natural disasters often the outbreak of diseases or epidemics after the natural disaster takes a toll on human health.

Besides, the spread of communicable diseases, the biological disasters caused by pathogen based diseases, which are becoming pandemics in short span of time has become an issue of great concern in the last couple of decades.

Diseases like Ebola, SARS, Swine flu, Nipah, Corona etc. are pandemics spreading across the globe impacting million lives. Hence, like the need of preparedness for other natural disasters biological disasters also requires proper research, planning and preparedness.

If we look at global scenario in the last two decades, pandemics such as SARS in 2002, Swine Flu (H1N1) in 2009, MERS in 2012, Ebola in 2014, 2018, Nipah 1998, 2018 and Corona in 2019 have caused huge number of fatalities along with economic instability across the world. Though the birth centre of these diseases have been mainly the third world countries but these diseases have spread across the world due to human to human or animal to human transmission, which have been a common factor in all these pathogen based diseases. Another common factor in all these

outbreaks except Swine Flu in which pig is the prime suspect, for all the rest it is the flying mammal 'Bat, which is suspected to be the carrier of these viruses. Bat is said to contain the highest number of mammalian viruses, which have infected people. Bats feed on fruits and insects and when they sit on trees to eat fruits or enters an animal shelter to eat insects they leave their body fluid and genetic materials in those places. And when humans or other animals unassumingly come in contact with such places where bats had left their body fluids they unsuspectingly become victims of deadly viruses that the bats might have left there. Starting from SARS, MERS to Nipah and now *evidence that emergence of bat-related viral infection communicable to humans and animals has been attributed to the loss of natural habitats of bats."*

It further reads, *"As the flying fox habitat is destroyed by human activity the bats get stressed and hungry, their immune system gets weaker, their virus load goes up and a lot of virus spills out in their urine and saliva."*

The problem with most of these pathogen based diseases is that their host can be any animal and as often human come in contact with animal; the spread of such diseases will become uncontrollable. Though biological disasters are considered to be natural disaster but if one delve deep into factors or causes behind the birth of biological disasters, one would often find the role of human beings behind the birth of these diseases. It is primarily because of the intrusion of human beings into the natural habitats of the animals, which is forcing the animals to come out of their habitats and enter our habitats and in this process they transfer many diseases.

Corona, the host of the viruses has been found to be the Bat; however other animals like civet cats in SARS outbreak or Camel in MERS outbreak, or snake/ pig in case of Corona virus are the transitory host animals that have carried these viruses from Bat to humans. Nipah virus is suspected to have reached to humans by their direct contact with fruit bats or by consuming infected fruits.

Research shows that the bat related viral infection has increased over the years due to loss of their natural habitats, which is attributed to human expansion into their habitats such as forests. WHO factsheet states, *"There is strong*

At present Corona virus has become a global concern. This virus has not only killed thousands in China but already have made inroads in other countries such as Italy, Iran, India, USA etc. besides impacting majorly the world's economy.

Research and evidence suggests that pathogen based diseases turning pandemics have increased in the past couple of decades due to increased urbanization, destruction of natural environment, changing land usages, global integrations and travels. The challenge with these man-made induced natural biological disasters is that these will continue to intensify due to increasing modernization, globalization and destruction of natural environment. Also, many outbreaks are becoming pandemics due to unpreparedness of people and authorities.

Globally and country wise significant policy attention needs to be given to identify and restrict emerging outbreaks that might lead to pandemics.

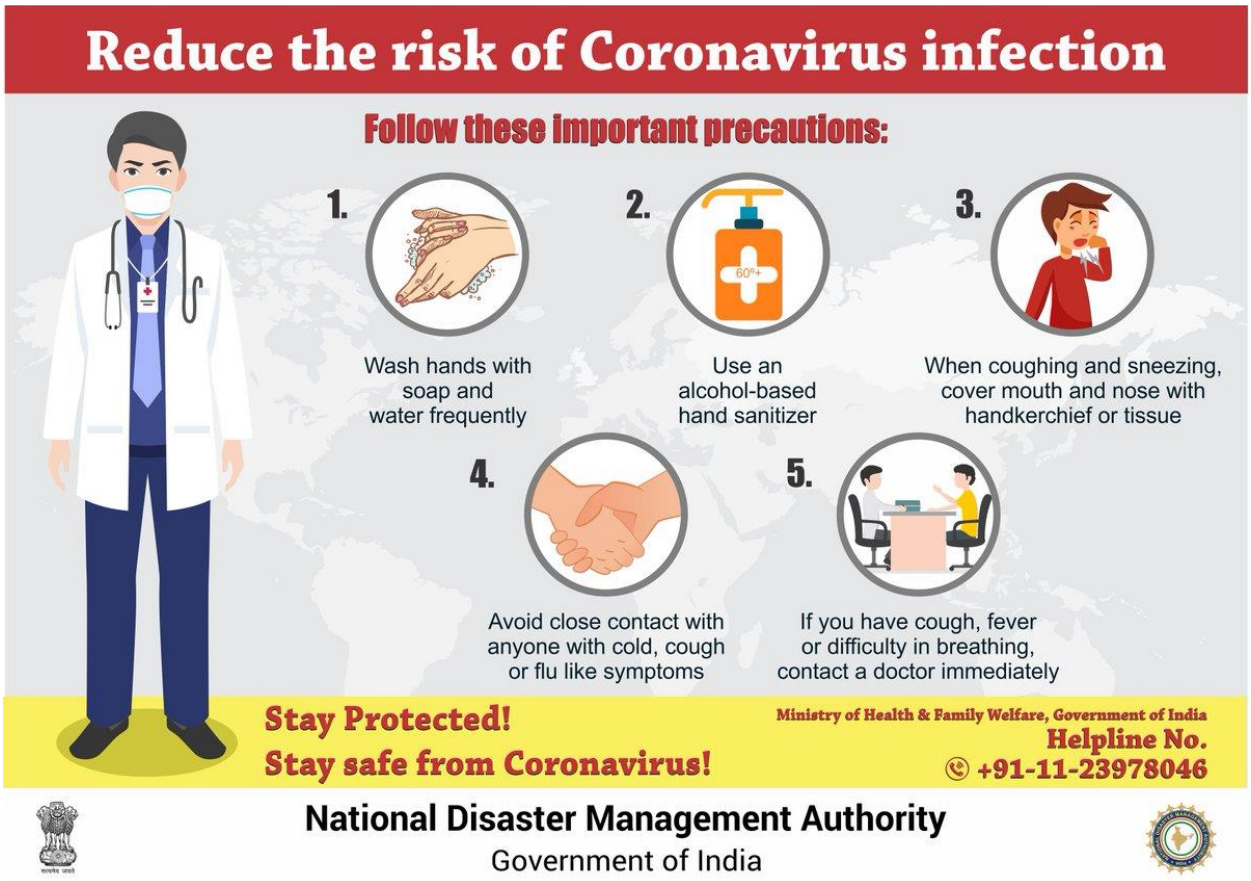
Health preparedness should be expanded at all level from local, to regional and global to mitigate impacts of pandemics. Most importantly awareness should be spread

amongst all about ‘what to do and not do’ during a localized outbreak to restrict its global spread.

Also all countries should work towards proper and timely detection, reporting and respond to an outbreak. During an outbreak availability of basic care, proper quarantine procedures, proper coordination in all sectors and at all levels should be ensured to limit the spread of diseases.

The preparedness to prevent the spread of diseases should not only lie on the country of their origin but also in other countries.

Last but the least, countries all over the world should work on restoring natural habitat of animals and birds and the focus should be on sustainable development.



Dealing with Disasters: Environmental Stewardess

Ms. Maansi Malik
Assistant Professor, Shyama Prasad Mukherji College
University of Delhi

Geographically speaking, human beings and the environment they inhabit are co-existing and mutually reinforcing entities of the same biological realm. Our existence is entirely dependent on the resources generated by our surrounding environment and not only this, our future or may be the survival of our future generations is equally dependent on these. However, with time we have transformed into an army of "opportunists" – an extreme version of the possibilists. We have ransacked our own homes in a non-replenishable manner. Our technology-driven economies are run by promissory notes of legal tender and there can be no negotiation on minimizing profits or maximizing costs for the sake of improving our surrounding environment.

Cutting this discussion short, we are striving to build homes stuffed with worldly pleasures by destroying our homes, which we inherited from nature. Our lifestyle practices have given birth to "New Age Disasters" which may not wreak havoc at once may not affect infrastructural facilities but slowly pave way to an existential crisis for mankind without an actual "home". A common such example that has captured global attention is the usage of plastic in different forms be it polythene bags or plastic bottles which prove to be a cheaper but an environmentally unsound alternative that have disrupted our food chains and generated heaps of non-biodegradable waste. The tech-savvy generation is so engrossed in their laptops that they fail to acknowledge the impending crisis of E-waste generation and its disposal. The material minded industrialist doesn't bother about the environment while flouting rules and regulations for small costs. We easily bypass laws, rules more easily than trying to learn about them. These simple looking issues may overtime transform into much larger risks of "Biodiversity Loss" and "Environmental Degradation" which may be irreversible and irreconcilable. It is important to remind

ourselves continuously of the boom that would befall us given our negligent attitude towards our own being.

The need of the hour is to become active participants and make conscious decisions to protect "our" environment. The selfish, self-centered being needs to be enveloped by the selfless steward who is well-informed and can contribute towards environmental conservation and preservation. Environmental Stewardess is a participatory and collaborative approach to aid in collective decision making and reinforces the principle of "community ownership" of resources. Since, we all have a right to harness the resources from the environment; it is also our duty to work for its betterment. This approach can be easily adopted at the local level in villages and towns to create an army of "Volunteers" who would be harbingers of societal transformation. This approach would foster the creation of a more vigilant stakeholder in the process of conservation besides the government and the non-governmental sector. These Environmental Stewards can contribute in effective implantation of programmes targeting aspects of environmental conservation at the grassroots level and also generate awareness through conscious decisions and smaller amendments in daily lifestyles which would inspire societies to become more ecological and economical as well. This approach could work like the dynamo effect and create subsequent levels of transformation and engage more and more people over time, thereby re-building the harmonious co-existence of mankind and its environment as well creating sustainable societies. In today's gloomy situation where misery prevails, this positive approach not only lends hope but will also create a more responsible and eco-sensitive citizenry which are more capable and capacitated to deal with these "New Age Disasters"

Extreme Events and Adaptation in Himalayan Region, Issues and Strategies

Md. Arif Husain
Research Scholar
Department of Geography
Delhi School of Economics, University of Delhi

Introduction

Mountains are among the most fragile environments on Earth. They are also rich repositories of biodiversity and water and providers of ecosystem goods and services on which downstream communities sustain. The Himalayas is one of the youngest mountain of the world, geologically the most fascinating panorama of India, is essential for sustenance of life in this subcontinent as well as for nurturing geological investigations in this setting (ICIMOD).

Climate change is widely acknowledged to be having a profound effect on the biosphere with many and diverse impacts on global resources. It is also true, mountains are hotspot of the climate change and very sensitive's to disasters like flood, landslides and earthquake. Himalaya's ecosystems are highly sensitive to climate change. Climate change is a change in the distribution in weather patterns when that change lasts for an extended period of time. Climate change is caused by factors such as biotic processes, variations in solar radiation receives by earth, plate tectonic and volcanic eruption.

Climate Change and Issues in Himalaya Rising temperatures

IPCC‟s Fourth Assessment Report (IPCC, 2007a; 2007b) concludes that there is more than a 90% chance that the observed warming since the 1950s is due to the emission of greenhouse gases from human activity. Temperature projections for the 21st Century suggest a significant acceleration of warming over that observed in the 20th Century (Ruosteenoja et al., 2003). Based on regional climate models, it is predicted that the temperatures in the Indian sub-continent will rise between 3.5 and 5.5˚C by 2100, and on the Tibetan Plateau by 2.5 ˚C by 2050 and 5 ˚C by 2100 (Rupa Kumar et al., 2006). However, because of the extreme topography and complex reactions to the greenhouse effect, even high resolution climatic models cannot

give reliable projections of climate change in the Himalayas. Various studies suggest that warming in the Himalayas has been much greater than the global average of 0.74 ˚C over the last 100 years (IPCC, 2007a; Du et al., 2004).

Precipitation trends

During the last few decades, inter-seasonal, inter annual and spatial variability in rainfall trends have been observed across Asia. In the Himalayan region, both increasing and decreasing trends have been detected. Increasing trends are found on the Tibetan Plateau in the north-east region (Zhao et al., 2004) and eastern and central parts (Xu et al., 2007), while the western Tibetan region exhibits a decreasing trend; northern Pakistan also has an increasing trend (Farooq and Khan, 2004); Nepal showed no long-term trend in precipitation between 1948 and 1994 (Shrestha et al., 2000; Shrestha, 2004).

There is a major need for more research on Himalayan precipitation processes, as most studies have excluded the Himalayan region due to the region's extreme, complex topography and lack of adequate rain-gauge data (Shrestha et al., 2000).

Glacial retreat

The IPCC Fourth Assessment Report (IPCC, 2007a; 2007b) states that there is a high measure of confidence that in the coming decades many glaciers in the region will retreat, while smaller glaciers may disappear altogether. Various attempts to model changes in the ice cover and discharge of glacial melt have been made by assuming different climate change scenarios. One concludes that with a 2 ºC increase by 2050, 35% of the present glaciers will disappear and runoff will increase, peaking between 2030 and 2050 (Qin, 2002).

Runoff over time and space

The effects of climatic change are of tremendous importance to the often densely populated lowland regions that depend on mountain water for their domestic, agricultural, and industrial needs (e.g., Barnett et al., 2005; Graham et al., 2007). Changes in precipitation type (rain, snow) and its amount, intensity, and distribution over time and space have a direct impact on total and peak river runoff, potentially moving it away from agricultural and dry season demands and towards monsoon flash floods. Climate change induced glacial melt could seriously affect half a billion people in the Himalayan region overall and a quarter of a billion people in China, who all depend on glacial melt for their water supply (Stern, 2007). In South Asia, hundreds of millions of people depend on perennial rivers such as

the Indus, Ganges, and Brahmaputra – all fed by the unique water reservoir formed by the 16,000 Himalayan glaciers. The current trends in glacial melt suggest that the low flow will become substantially reduced as a consequence of climate change (IPCC, 2007a).

Climate change vulnerability

The Himalayan region contains one of the most dynamic and complex mountain systems in the world. This mountain system is extremely vulnerable to global warming (Bandyopadhyay and Gyawali, 1994). Climate change creates disaster on large scale. Flash flood, landslide, avalanche and earthquake are common cause of disaster in Himalayan region. We have seen several disasters in recent year like disaster in Uttarakhand state (2013) is a wakeup call for development planners. There is a need to look at ecological sensitivity of the place before starting any development project. There is a very significant role of foresters and ecologist in planning development in eco -sensitive regions.

Earthquakes

The Himalayan mountain ranges are considered to be the world's youngest fold mountain ranges. The subterranean Himalayas are geologically very active. In a span of 53 years four earthquakes exceeding magnitude 8 have occurred in this region. The main cause of earthquakes in these regions is due to the movement of the Indian plate towards the Eurasian plate, at the rate of about 50 mm per year. For instance, in a short span of about 50 years, four such earthquakes occurred: Assam earthquake of 1897 (magnitude 8.7), Kangra earthquake of 1905 (magnitude 8.6), Bihar-Nepal earthquake of 1934 (magnitude 8.4), and the Assam-Tibet earthquake of 1950 (magnitude 8.7).

Nepal earthquake (magnitude7.8) on 25 April 2015 with an epicenter 77 km (48 miles) northwest of Kathmandu, the capital city of Nepal, that is home to nearly 1.5 million inhabitants, and at a focal depth of approximately 10-15 km. This earthquake was the one of the most powerful earthquakes to strike Nepal since the 1934 Nepal-Bihar earthquake (magnitude 8.1). Based on the information by the United Nations, eight million people have been affected by the massive 2015 earthquake in Nepal, more than a quarter of the Nepal's population.

This earthquake induced many mass movements in mountainous areas and

resulted in landslide lakes, which could be another cause of secondary disasters. The mass movements and deformation of weathered soft soil cover are the main causes of the collapse or heavy damage to buildings and heavy casualties in mountainous areas. In addition, the earthquake also triggered a major avalanche on the south slopes of Mt. Everest, located approximately 160 km east-northeast of the epicenter. The avalanche destroyed the base camp of climbers. According to reports, the avalanche killed at least 17 people and injured 61 others. The earthquake also triggered avalanches in Himalayas, killing some people. Some other adjoining countries such as India, China and Bangladesh were also affected by the earthquake with causalities.

Landslides

The Northeast hill of Himalaya ranges experience considerable landslide activity of varying intensities. River erosions, seismic movements and heavy rainfalls cause considerable landslide activity. The rock and debris carried by the rivers like Kosi originating in the Himalayas cause enormous landslide in the valleys. The seismic activity in the Himalayan region also results in considerable landslide movement. The Government of India is collaborating with a wide range of Indian academic institutions on hill research. One of the worst tragedies took place at Malpa, Uttarakhand on 11th and 17th August1998 when nearly 380 people were killed when massive landslides washed away the entire village. This included 60 pilgrims going to Lake Mansarovar in Tibet. Consequently various land reform measures have been initiated as mitigation measures.

Avalanches

Avalanches constitute a major hazard in the higher elevations of Himalayas. Parts of the Himalayas receive snowfall round the year and adventure sports are in abundance in such locations. Severe snow avalanches occur in Jammu & Kashmir, Himachal Pradesh and the Hills of Uttarakhand. The population of about 20,000 in Nubra and Shyok valleys and mountaineers and trekkers face avalanche hazard on account of a steep falls. Losses of life and property have been reported due to avalanches.

Flash-Flood

Generally, flood occurs in a river when the flow rate exceeds the capacity of the river channel. Water flow can be increased in rivers due to several reasons such as sudden

excessive rainfall, melting of glacier, increase of river load, landslide etc. In plain land flood is occurred comparatively slowly but in high altitude it happened suddenly. This short of sudden flood is known as Flash Flood which associated with landslide and earth flow.

Though, initially flood is a natural hazard but due to excessive human interference in river courses such as deforestation, divert of river course, construction of bridge, dams and hydro projects, transforming it to a quasi-natural hazard. The Flash Flood of Uttarakhand in 2013 is the best example of it. The main cause of flash flood is cloud bust. Cloud bust is an extreme amount of precipitation over a smaller area within a shorter period. Sometime hail and thunderstorm are associated with it and can create flood or flash flood conditions causing loss of life and properties. It is observed that during the Cloud Bust the rate of rainfall can be reached up to 10 cm/hr. It is a localized phenomenon affecting an area not more than 20-30 square km but some time it may be 50 square km. There are several man made cause excavation (particularly at the toe of slope), loading of slope crest, drawn-down (of reservoir), deforestation, irrigation, mining, artificial vibrations and water impoundment and leakage from utilities.

Impacts of climate change

Climate change effects both environment and human life on large scale. These impacts are closely interlinked, ranging from biodiversity impacts and related effects on ecosystem goods and services, through impacts on water balance and availability and hazards, to socioeconomic and health impacts on the population. The impacts are embedded in and affected by a range of other global and local drivers of change. The impact of climate change on biodiversity will occur in concert with well-established stressors such as habitat loss and fragmentation, invasive species, species exploitation, and environmental contamination, to name just few (Chase et al. 1999). Problems associated with modernization like greenhouse gas (GHG) emissions, air pollution, land use conversion, deforestation, and land degradation, are slowly creeping into mountain regions (Pandit et al. 2007). The out-migration of the rural workforce has decreased economic activities in rural areas. Thus, landscapes and communities in mountain regions are being simultaneously affected by rapid environmental and socioeconomic threats and perturbations.

Adaptation and Strategies

The government at various levels too, has responded by taking appropriate measures for prevention and mitigation of the effects of disasters. While long term preventive and preparedness measures have been taken up, the unprecedented nature of the disasters has called in for a nationwide response mechanism wherein there is a pre-set assignment of roles and functions to various institutions at central, state and the district level.

Community Participations

Community participations are emerging as powerful tools to mitigate the impacts of disaster. It has great importance; local people are familiar to their area rather than others. In the event of actual disasters, the community, if well aware of the preventive actions it is required to take can substantially reduce the damage caused by the disaster. Awareness and training of the community is particularly useful in areas that are prone to frequent disasters.

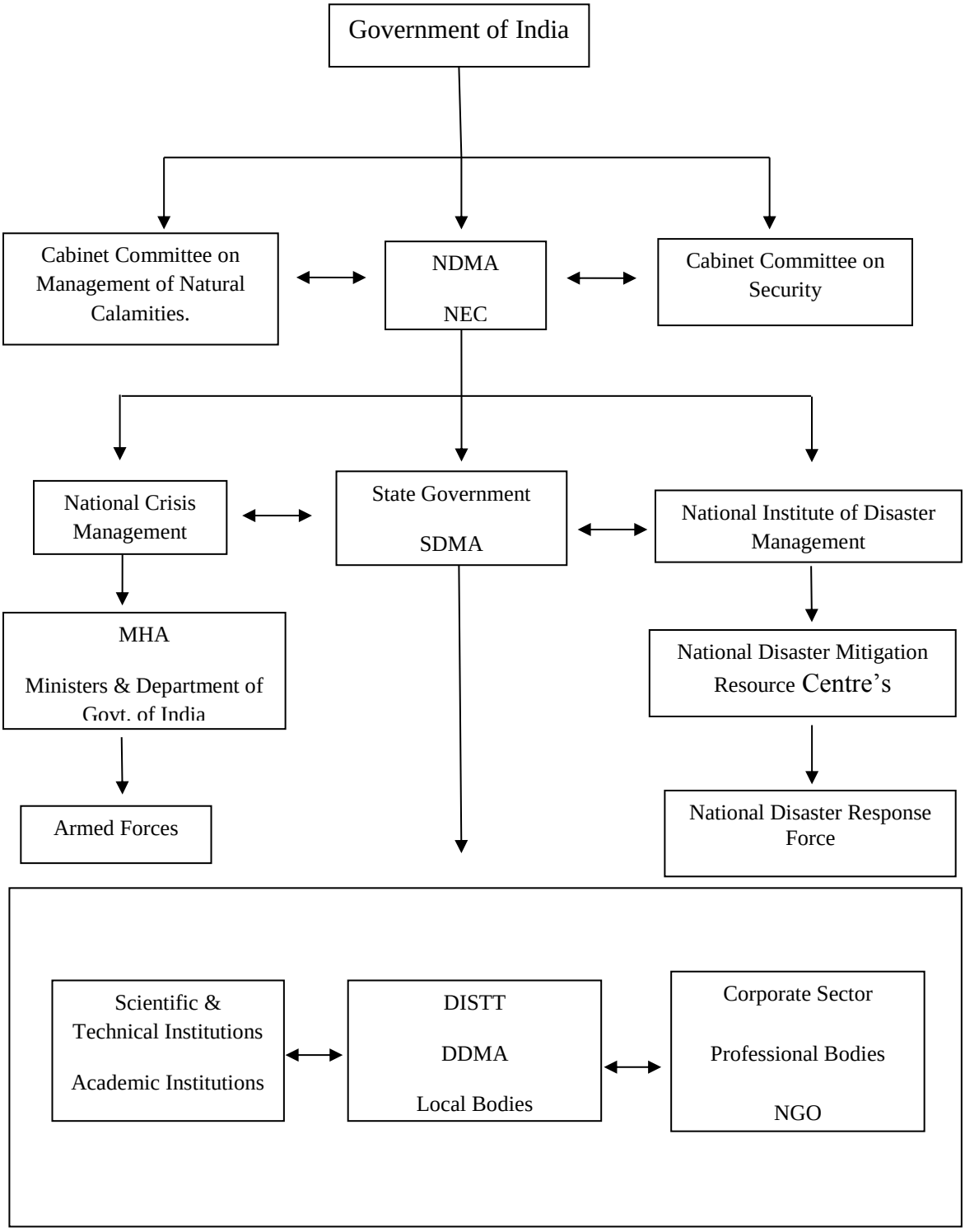
Non-Governmental Organizations

NGO is another emerging player in managing impacts of disaster and one of the most effective alternative means of achieving an efficient communication link between the Disaster Management agencies and the affected community. Many different types of NGOs are already working at advocacy level as well as grassroots level; in typical disaster situations they can be of help in preparedness, relief and rescue, rehabilitation and reconstruction.

Preparedness

The frequency of disaster indicates that we will have to prepare before the disaster. Preparedness measures such as training of role players including the community, development of advanced forecasting systems, effective communications, and above all a sound and well networked institutional structure involving the government organizations, academic and research institutions, the armed forces and the non-governmental organizations have greatly contributed to the overall disaster management in the country (Vinod K Sharma and D Kaushik Ashutosh, 2012). This can clearly be seen from the various instances of reduced damages from disasters due to better preparedness and coordinated inter-agency response.

Figure 1, National Disaster Management Structure



Government Programs and Policies:

Government puts effort to reduce effect of disaster on national level. The Ministry of Home Affairs is the nodal Ministry for all matters concerning disaster management. The Central Relief Commissioner (CRC) in the Ministry of Home Affairs is the nodal officer to coordinate relief operations for natural disasters. The CRC receives information related to forecasting/warning of a natural calamity from India Meteorological Department (IMD).

Emergency Operation Room:

An Emergency Operations Center also known as Control Room exists in the nodal Ministry of Home Affairs, which functions round the clock, to assist the Central Relief Commissioner in the discharge of his duties. The activities of the Control Room include collection and transmission of information concerning natural calamity and relief, keeping close contact with governments of the affected States, interaction with other Central Ministries, Departments, Organizations in connection with relief, maintaining records containing all relevant information relating to action points and contact points in Central Ministries etc., keeping up-to-date details of all concerned officers at the Central and State levels.

State Relief Manuals:

State Government has relief manuals/codes which identify that role of each officer in the State for managing the natural disasters. These are reviewed and updated periodically based on the experience of managing the disasters and the need of the State.

Calamity Relief Fund:

A Calamity Relief Fund (CRF) has been set up in the State as per the recommendations of the Eleventh Finance Commission (Centre contribute 75 percent whereas State 25 percent). State can get assistance through National Calamity Contingency Fund (NCCF) and also through Prime Minister's Fund

Departments of Relief & Rehabilitation:

At the State level, response, relief and rehabilitation are handled by Departments of Relief & Rehabilitation. The State Crisis Management Committee is set up under the Chairmanship of Chief Secretary in the State. All the concerned Departments and organizations of the State and Central Government Departments located in the State are represented in this Committee. This Committee reviews the action taken for response and relief and gives guidelines/directions as necessary. The district level is the key level for disaster management and relief activities. The Collector/Dy. Commissioner is the chief

administrator in the district. He is the focal point in the preparation of district plans and in directing, supervising and monitoring calamities for relief.**National Disaster Management Act 2005**

The National Disaster Management Act has been passed in November 2005, which brings about a paradigm shift in India's approach to disaster management. The centre of gravity stands visibly shifted to preparedness, prevention and planning from earlier response and relief centric approach. The Act provides for establishment of National Disaster Management Authority (NDMA), State Disaster Management Authority (SDMA), and District Disaster Management Authority (DDMA). In general the chief mitigatory measures to be adopted for Himalayan region are drainage correction, proper land use measures, reforestation for the areas occupied by degraded vegetation and Creation of awareness among local population etc.

Conclusion

Climate change is one of the most complex and difficult challenges for the Himalayan countries. Scientific data to monitor climate and environment change are lacking in the Himalayas region. For example IPCC has identified Hindu-Kush Himalayas region as the data deficient. Long-term research and comprehensive data are needed to plan adaptation and mitigation program to deal with future changes. Uncertainties about the rate and magnitude of climate change and potential impacts prevail, but there is no question that climate change is gradually and powerfully changing the ecological and socioeconomic landscape in the Himalayan region, particularly in relation to water. The whole eco-system of Himalayas will be disturbed if water system will get disturb. Most of disasters are occurred due to water in mountain region like flood, landslide, flash flood, lake out bust etc. It is imperative for environmental decision makers and managers to revisit and redesign research agendas, development policies, and management and conservation practices, and developed appropriate technologies. Local participation is most important to mitigate the impact of disaster and make them aware about the impact of climate change.

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What if we Humans are Virus to this Earth and Corona is the Vaccine?

Mr. Aakash Upadhyay
Research Scholar
Department of Geography
Delhi School of Economics, University of Delhi

Coronaviruses (CoV) or popularly known as COVID-19, is a large family of viruses that cause illness ranging from the common cold to more severe diseases such as Middle East Respiratory Syndrome (MERS-CoV) and Severe Acute Respiratory Syndrome (SARS-CoV). It is a new strain that was discovered in 2019 and was previously unknown to humans (WHO, 2019). This is believed to have originated from Wuhan Province of China.

They are zoonotic, meaning they are transmitted between animals and people. Common signs of infection include respiratory symptoms, fever, and cough, shortness of breath and breathing difficulties. In more severe cases, infection can cause pneumonia, severe acute respiratory syndrome, kidney failure and even death.

This corona virus pandemic that has paralyzed not only the Chinese economy but also economies across the world, majorly Europe may have a silver lining for the environment and earth as a whole. Just to cite an example from the recent observation and findings it has been observed that China's carbon emissions have dropped by least 100 million metric tonnes over the past 2-3 weeks

(Centre for Research on Energy and Clean Air, CREA), which is nearly about 6% of global emissions during the same period last year.

To make things worse it has killed over 2050 and infected around 75000 people in China alone, which has led to a drop in demand for coal and oil, resulting in the emissions slump (Carbon Brief). Power generation at coal power plants was lowest in last 5 year and declining steel production.

As a response various measures were undertaken by Chinese authorities who immediately resulted in reductions of 30% in industrial output, which wiped out a quarter or more of the country's CO_2 (carbon dioxide) emissions over the past two weeks and nitrogen dioxide emissions fell by 35% in a week’s time but the environmentalists have warned that the reduction is temporary.

Though temporary it's a respite at the Natures Helm.

To quote it aptly **"Nature just hit the reset button"** and restoring its lost wealth is what people are calling looking at the some of the visuals like clean water of Venice Canals and off coast coming from world most hit country, Italy. "The water now looks clearer (with dolphins visible) because there is less traffic on the canals, allowing the sediment to stay at the bottom," just because there are no human elements like boats and streamers operating after lock down. Air has become less polluted since there are less vaporetto and boat traffic than usual.

Reports from live sciences suggest that there has been a dramatic decline in air pollution not only in corona hit china and Italy but across the Globe, which is a sign that nature is going back to itself.

Although it is still early for a definitive view, the challenge to governments and international organizations may not be the militaristic one of fighting a war against the virus but in helping people adjusts to a "new normal." Perhaps they should spend more time communicating that the coronavirus may be just another virus that will circulate in human populations for a number of years and that eventually there will be a vaccine and reasonably effective therapies. The coronavirus may be broadly comparable in risk to a bad seasonal influenza, or, at worst, the 1918 influenza pandemic. In the latter scenario, the number of deaths could run into millions, and we should not take that lightly. At the same time, the proportion of the population lost to deaths from 2019-nCoV would be relatively small. Moreover, the costs of disruption may well exceed the benefits. Quarantines and other preventive measures can create food and medicine shortages and depressed economic activity that result in many deaths. None of this is good news, but it is news that we should be able to live with.

As a social scientist we can better help to understand this as any new infectious diseases disrupt our sense of order, trust, and stability as they do not distinguish between animals and humans. Natural co-existence of humans and animals has a history on earth. These processes have been going on for as long as humans, animals, and viruses have coexisted and coevolved. We are simply noticing them more quickly, although increasing interactions between humans and wildlife, a result of pressures on habitats, are creating new opportunities for viruses to move between species. Such co-existence intensified with time where presence of human existence accelerated the risks bio-security and earths security. The incidents of virus attacks from Bats, Pigs, Monkey and Chickens are some of its indicators. Here comes the fundamental of

bio-security whereby humans and animals are both protected from each other.

Humans have a history of dealing badly with chance and contingency, taking stability for granted thinking every day is Sunday. But, some natural events are common enough to have management plans that rapidly re-impose order on chaos: Hurricanes, tornadoes, floods, and blizzards may not be wholly predictable but occur frequently enough that we've developed largely predictable relief responses. Unlike these reoccurring phenomena, new infectious diseases come out of the blue, each with its own idiosyncrasies that militate against detailed advance planning. Public health agencies take down a playbook from the last event and try to improvise around it, but when next infectious disease attacks we are clueless with all these level of development and advancement. It can be said that in future if there a loss of million live that would not be by the war or military operation but from biological wars which we are very less prepared for. Climate change, Amazon Fires, Australian Bush fires are some of the indicators of decreasing earth's resilience over our increasing pressure. Though we are, though, constantly battling against societal epidemics expecting that nature can be boxed and controlled, but it would certainly find a way to regenerate itself.

In short we can say that with the present way of life we should be ready for such men made disasters every next year, but are we equipped to deal with such uninvited disasters.

NOTE: Data have been compiled from different sources and interpreted as per authors understanding.

From the student's pen

Disaster

NAVYA GARG, B.A. GEOGRAPHY HONS, 2ND YEAR

We hurt the nature and erode the soil,

But after a landslide humans face the toil.

We cut the trees and sea level rise,

The land gets flooded and affects several lives.

It's been a long tale of nature's pain,

Now start the journey on the safer lane.

Identify, assess, and reduce the risk,

Stay prepared and respond with actions which are brisk.

Be aware of danger every season,

Make your choices but have good reasons.

Recover with the disaster and make it fast,

Give help to everyone first and last.

Social media is a new great space,

Mobilize billions at the fastest pace,

Stay ahead and know first aid,

Stay safe and away until disasters fade.

These steps should be done to make it sure,

That precaution is better than cure.

Flood Disaster Management in India –

A case study on Chennai Floods

CHETNA SHARMA, B.A. GEOGRAPHY HONS 2ND YEAR

1. INTRODUCTION

A disaster is a serious disruption of the functioning of a community or a society involving widespread human, material, economic, or environmental losses and impacts, which exceeds the ability of the affected community or society to cope using its own resources. Disasters are seen as the consequence of inappropriately managed risk.

Flood is the most destructive natural disaster which extensively damages life and property in India. There are basically three types of floods, they are flash, river and coastal. One of the major effects of floods is that millions of people are forced to be homeless as their houses collapse and their property is inundated. Floods due to locally heavy rainfall are caused by insufficient or poor drainages. Floods due to river overbank flow occur when the river level rises above river banks. Most of India is most frequently hit by the severe flood, but now the severity

is increasing since land use is becoming denser. In urban areas where population growth is high and residential areas become more expensive, settlements have started to develop in flood risk area increasing the threat of an extreme event.

2. DESCRIPTION

Chennai, the capital of Tamil Nadu, was established in 1639 and is the fourth largest metropolitan city in India. According to Census 2011, the population of Chennai city is 46, 46,730 persons and it covers an area of 426 sq. Km. The city is greatly affected by the rapid urbanization causing pressure on the outdated infrastructure. The coastal front of Chennai is divided into three geomorphological types:

- Sheltered bay
- Seafront beach
- Coastal marshes

The sheltered bay consists of breakwaters and a reinforced shoreline whereas seafront beach and the coastal

marshes have a low elevation and fine sediment soil condition. The combination of densely populated areas in Chennai and increasing risks of climate-related hazards

make the city specifically vulnerable to disasters. The major type of disasters that the city is susceptible to are cyclones, a tsunami in the Indian Ocean, flooding due to rainfall and other such coastal disasters. In this context, the city officials have started developing disaster Management plans by

starting with the installation of the early warning system. Solving the issue from the neighbourhood level will further help in the equitable and collective development of the whole city.

In 2015, retreating monsoon in the months of November- December generated unusually heavy rainfall affecting the Coromandel coastal region of the south Indian states of Andhra Pradesh and Tamil Nadu and parts of Puducherry, with Tamil Nadu and the city of Chennai particularly hard hit. More than 500 people were killed and 18 lakh people were displaced. With estimates of damages and losses ranging from nearly 200

billion to over 1 trillion these floods were among the costliest natural disasters of the year in India.

Although incessant rainfall attributed to El-Nino event was responsible for the event it was the man-made reasons that actually multiplied the effects. Lack of regulatory frameworks; unplanned urbanization, old building stocks, and at-risk infrastructure; inadequate capacities of municipal councils; lack of funding; corruption and unlawful activities were some major challenges which impeded creation of a disaster resilient built environment within Chennai.

3. IMPACTS

- Loss of lives. 500 people were reported dead
- Displacement of population. 1.8 million people were reported displaced
- At least 57,000 homes in the city

AERIAL VIEW OF SUBMERGED CHENNAI AIRPORT TAKEN BY INDIAN AIR FORCE HELICOPTERS.....

suffered structural damage,

- Supplies of necessities, including milk, water, and vegetables, were affected due to logistical difficulties.
- Huge economic losses as industrial activities were halted.
- Commercial losses stemmed from the fact that port activities had to temporarily stalled

4. RELIEF EFFORTS

- Tamil Nadu Chief Minister announced an initial allocation of 500 crore rupees for relief and relocation, with 4 lakhs rupees for each family who had lost relatives in the floods.
- 12 cyclone shelters were built in Nagapattinam district,
- The National disaster response force (NDRF) and many civil defense volunteers joined in evacuation, rescue and relief operations
- The Indian Coast Guard and the three other branches of the Indian Armed Forces conducted rescue operations across Tamil Nadu, Air dropping 5000

  kg of supplies.
- 40 medical camps, 70 relief camps and 121 special camps for cattle stocks were constructed.
- Also, the Chief Minister of Tamil Nadu requested Prime Minister to develop a credit and soft loan programme through the Finance Ministry to aid families who had lost personal belongings and household appliances.

5. DISASTER MANAGEMENT PLAN

After this extreme event, Chennai now has a Disaster Management Plan which is partially implemented. The plan includes:

1. A climate Disaster Resilience Index prepared for Chennai based on the data collected on five elements

   - Physical
   - Social
   - Economic
   - Institutional
   - Natural

2. Rezoning of corporations

3. Mapping of vulnerabilities- The plan for disaster Management will have a list of low lying areas, slums, persons with a disability, senior citizens, pregnant ladies etc.

4. Mapping of infrastructure available- hospitals, schools, all human resources available who can be mobilized during exigent circumstances.

6. SUGGESTIONS

To mitigate the impact of floods structural and non- structural measures can be adopted.

Structural measures are associated with creating infrastructures which would effectively store and drain water away from the settlements. It would include flood proofing the habited region. Non- structural measures would include flood plain management and zoning, community participation, creating awareness, timely

warning, evacuation plans, involvement of media, NGOs etc.

Floods in India, 2019

GAURIKA ARORA, B.A. GEOGRAPHY HONS, 1ST YEAR

Disaster is a serious disruption occurring over a short or long period of time that causes a widespread human material, economic or environmental loss, which exceeds the ability of the affected community or society to cope using its own resources. More than 95% of all death caused by hazards occurring in developing countries and losses due to natural hazards are 20 times greater (as the % of GDP) in developing countries than in industrialized countries.

Flood is a natural hazard which involves inundation of land which is usually dry. India witnesses floods almost every year during the monsoon season. The 2019 Indian flood, were a series of flood that affected over 13 states including Kerala, Gujarat, Karnataka, Maharashtra, Madhya Pradesh, Tamil Nadu, Goa, Odisha, Andhra Pradesh, Punjab, Assam, and Bihar between late July and early August 2019 due to incessant rain. It was the heaviest monsoon in the last 25 years. Several people died and about a

million people were displaced. Karnataka and Maharashtra were the most severely affected states.

In Gujarat, 18 teams of National Disaster Response Force (NDRF) and 11 teams of state disaster response force (SDRF) were deployed. 500 people died in the Nilgiri district of Tamil Nadu and the government announced a relief of 1 lakh to each of their families. Tamil Nadu was the first to deploy an intelligent flood warning system, which will enable officials to get area-wise inundation details during the monsoons. The technology called CFLOWS is India's first coastal flood warning system. The link to the fully operational CFLOWS will be formally handed over state disaster management cell by the National Center for Coastal Research. The system is designed for a core urban area of the city spread across 426 km. A complete web GIS-based decision support system has been built with 6 modules as per the requirement of Tamil Nadu government and the system will be tested the next monsoon.

Earth is the only planet which is so beautiful and it's when disaster strike, the time to prepare has passed.

The Great Famine in World

MEGHA, B.A GEOGRAPHY HONS. 2nd Year

Famine is defined as the "food shortage accompanied by a significant number of deaths". The world has a vast history of famines that has led to the starvation of a large number of people. Many of these were caused by the failure of monsoon, which led to droughts and failure of crops. Almost the whole world suffers from drought, which if it prolongs, ultimately leads to the big disaster. Famine is also identified with "excess deaths"– deaths that otherwise would not have occurred and deaths which could be attributed to morbidity as well as to seriously reduced consumption.

For Example, the famines in India resulted in more than 60 million deaths over the course of the 18th, 19th, and early 20th centuries. It had a substantial impact on the long-term population growth of the country in the 19th and early 20th centuries.

Indian agriculture is heavily dependent on climate. In India, a large number of people are engaged in primary activities. So, any disaster in agriculture leads to the loss of farmers. There are several factors which can cause a famine-

- natural causes such as flood, typhoons, plant diseases, and various biological and environmental reasons etc.
- man made causes such as war, inflation, crop failure etc.

Notable famines in India: -

- Deccan famine of 1630
- Great Bengal famine of 1770
- Chalisa famine of 1783
- Skull famine of 1791
- Agra famine of 1837
- Orissa famine of 1866
- Bihar famine of 1873
- Bengal famine of 1943

Every inhabited continent in the world has experienced a period of famine throughout history. But some countries, especially in Sub- Saharan Africa continue to experience extreme cases of famines.

South Sudan in 2017 experienced famine. There was instability in the country's food supply caused by war and drought. The famine, largely concentrated in the northern part of the country, affected an estimated five million people. In May 2017, the famine was officially declared to have weakened to a state of severe food insecurity. The Food and Agriculture Organization of the United Nations (FAO), the United Nations Children's Fund (UNICEF) and the World Food Programme (WFP) also warned that urgent action is needed to prevent more people from dying of hunger.

Famine also occurred in 2019 in South Sudan, more than 60 percent of its population faced severe hunger. The worsening situation was attributed to food shortages exacerbated by delayed rainfall, an economic crisis and years of strain from a conflict that killed almost 400,000 people. Every year,

hunger reaches new and unprecedented levels in South Sudan with millions of people unsure where their next meal will come from. The Food and Agriculture Organization (FAO) and the UN children's fund (UNICEF) said about 1.8 million people in South Sudan were in an "emergency", or level four, which means large gaps between meals, acute malnutrition and excess deaths.

Causes of famine: - There are many causes of famines occurred in the country-

Famines are thought to be caused by a reduction in food output or a population outgrowing its regional carrying capacity. Famine implies that some people do not have adequate access to food; it does not imply that food itself is in short supply. Man-made causes related to food shortage, no proper distribution of food amongst people of different regions coupled with poor governmental policies, political and economic instability, armed conflict, corruption, mismanagement in handling food supplies, and trade policies that harm agriculture are also important causes.

Effects of famine: -

- Starvation and malnutrition occurs on a mass scale.
- Various diseases occur in the human body like-cholera, dropsy, dysentery, etc.
- It leads to lower fertility rates, poor living conditions, fewer income

options, various social-political issues, etc.

Prevention of famines: - Since it is caused by natural reasons, it is difficult to prevent it. However, since its effects are exacerbated by manmade causes these can be modified to a certain extent. Some ways to control its effects are –

- Improved agriculture practices to increase production
- The surplus production of agricult

ure to fulfill basic requirements.
- The well-developed transportation and communication systems between rural and urban areas.
- There should be proper health care, clean drinking water, and sanitation facilities to prevent any diseases.

भूकंप

कविता कुमारी मीणा, *बी ऐ, भूगोल द्वितीय वर्ष*

भूमिका : भूकंप या भूचाल पृथ्वी की सतह के हिलने को कहते हैं। यह पृथ्वी के स्थलमंडल में ऊर्जा के अचानक मुक्त हो जाने के कारण उत्पन्न होने वाली भूकंपीय तरंगों की वजह से होता है। भूकंप बहुत हिंसात्मक हो सकते हैं और कुछ ही क्षणों में लोगों को गिरा कर चोट पहुंचाने से लेकर पूरे नगर को ध्वस्त कर सकने की इसमें क्षमता होती है।

इस आपदा का शिकार अनेक प्राणी होते रहते हैं इससे होने वाली जन धन की हानि का केवल अनुमान ही लगाया जा सकता है। ऐसा इसलिए की इसके प्रभाव असीमित और अनिश्चित होते हैं। फलतः इसके विषय में निश्चित रूप से कुछ कहना कठिन होता है।

भूकंप के विषय में लोगों के भिन्न-भिन्न मत है। भूगर्भ शास्त्रियों का मत है की "धरती के अंदर तरल पदार्थ है ये जब अंदर की गर्मी के कारण तीव्रता से फैलने लगते हैं तो पृथ्वी हिल जाती है"। भूकंप आने के अन्य कारण है:-

• धरती लगातार ठंडी होकर सिकुड़ जाती है और धरती के सिकुड़ने से इसके शैलों में अव्यवस्था उत्पन्न हो जाती है जिससे कंपन पैदा होता है और भूकंप आ जाता है।

• जब ज्वालामुखी विस्फोट होते हैं तो उनके नजदीक के क्षेत्र में हलचल पैदा हो जाती है जिससे भूकंप आता है।

• भूकंप आने का कारण वैज्ञानिकों ने अनेक बताए हैं उनमें दो कारण मुख्य रूप से हैं: विवर्तनिक कारण और अविवर्तनिक कारण।

भूकंप का कारण कोई भी क्यों ना हो पर अत्यधिक विनाश के कारण यह जानलेवा ही नहीं बल्कि मनुष्य की शताब्दियों की मेहनत के परिणाम को भी नष्ट कर देता है।

भारत में भूकंप :-

सन् 1935 में केटा ने भूकंप का प्रलयकारी नृत्य देखा था। भूकंप के तेज झटके के करण देखते ही देखते एक सुंदर जगह नष्ट हो गई। हजारों स्त्री, पुरुष जो रात की सुखद नींद ले रहे थे क्षण भर में मौत का ग्रास बन गए।

देश के इतिहास में सबसे भयानक भूकंप 11 अक्तूबर 1737 में कोलकाता में आया था जिसमें लगभग 3 लाख लोग मौत के मुंह में समा गए।

20 अक्तूबर सन 1991 में आया भूकंप गढ़वाल और कुमाऊं मंडल का नुकसान कर गया।

30 सितंबर 1993 की सुबह मराठवाड़ा क्षेत्र के लातूर एवं उस्मानाबाद में भयानक भूकंप से हजारों लोग मरे और घायलों की संख्या भी पर्याप्त थी करीब 90 गाँवों में भयानक तबाही हो गई।

26 जनवरी 2001 को गुजरात सहित पूरे भारत ने भूकंप का कहर देखा। भुज सहित संपूर्ण गुजरात में भारी जन- धन की हानि हुई।

8 अक्तूबर 2005 को पाकिस्तान के कब्जे वाले कश्मीर और उससे सटे भारतीय कश्मीर में दिल दहला देने वाला जो भूकंप आया उसमें जहां हज़ारों लोग मौत के मुंह में समा गए वही लाखों लोग घायल हुए, अरबों की संपत्ति की हानि हुई।

२००९ से भारत ने कई भूकंप देखे हैं जो रिक्टर स्केल पर बहुत तीव्र रहे हैं। ये सभी देश की उत्तरी सीमा से जुड़े क्षेत्रों में आये हैं। लाखों लोग इसमें घायल हुए, अरबों की संपत्ति की हानि हुई, लाखों लोग बेघर हुए हैं और प्रकृति की हानि हुई है।

भूकंप से बचने के उपाय :-

• भूकंप का हल्का सा झटका महसूस होते ही घरों या अन्य इमारतों से निकलकर खुली जगह चले जाएं।
• किसी भी गहराई वाली जगह जैसे- कुएं तालाब आदि से दूर चले जाएं।
• वैज्ञानिकों के द्वारा दी गई भविष्यवाणी पर अमल करें।
• किसी बिल्डिंग के पास खड़े न हो।
• घर की मुख्य बिजली को बंद कर दें।
• यदि बिल्डिंग ऊंची हो और तुरंत उतरना मुश्किल हो तो किसी मेज या बैंच के नीचे छुप जाएं।

वास्तव में भूकंप एक प्राकृतिक आपदा है, जो इस वैज्ञानिक मानव की अद्भुत शक्ति को अपने प्रलयकारी शक्तियों और प्रभाव से चुनौती देने में हर प्रकार से सफल रही है।

यह आपदा हमें यह पाठ पढ़ाती है कि हमें प्राकृतिक शक्तियों के प्रभावों को स्वीकारते हुए उससे बचने के लिए निरंतर प्रयास करते रहना चाहिए। क्योंकि, "कामायनी" महाकाव्य के रचयिता श्री जयशंकर प्रसाद ने प्रकृति के भयंकर प्रकोप का वर्णन करते हुए कहा है:

"हा हा कार हुआ कन्दमय कठिन कुलिश होते थे चर, हुत दिगंत बधिर भीषण सर्व बार-बार होता था कूर ।"

DID YOU KNOW?

Earthquake
The Valdivia Earthquake (also known as the great Chilean Earthquake) in 1960 is to date the most powerful earthquake ever recorded on Earth. It was rated 9.5 on the moment magnitude scale, and generated a tsunami that caused damage to southern Chile, Hawaii, Japan, the Philippines, eastern New Zealand, southeast Australia, and the Aleutian Islands.

Falling Snow
It only takes about 5seconds for an avalanche to reach speed of 80mph.

Ring of Fire
The string of volcanoes, sites of seismic activity or earthquakes around the Pacific Ocean is known as the ring of fire. Approximately 90% of all earthquakes occur along the ring, and it contains 75% of all active volcanoes on Earth.

Disaster Management: An overview

ASHIMA GOYAL, GEOGRAPHY HONS, 1ST YEAR

Disaster management has become very important and necessary in the world that we live in today. A disaster can simply be said to be the extreme disruption of the functioning and workings of a habitat which causes varying degrees of environmental, material or human losses that are way more than the capacity and capability of the population that is affected to cope with employing its very own resources. Earthquakes, landslides, cyclones, tsunamis, floods, and droughts are all some of the many examples of the disruptions know as disasters.

Disaster management is a discipline through which human beings do their very best to limit the feel of the damage caused by disasters. A disaster can sometimes be said to mean a situation that is very catastrophic where the usual pattern in life and the ecosystem is disturbed and there is a need for an emergency intervention to preserve and save lives or the environment.

It is important to note that natural disasters can happen at any time and this means that adequate measures and tools must be put in place to help battle or ease the effects and impact of disasters when they happen.

Types of Disasters: Disasters are widely divided into two types namely:

1. Natural disasters

2. Manmade disasters

Natural Disaster: This is a natural occurrence or a process that leads to the loss of many lives, causes injuries and other forms of health hazards, leads to the damage and loss of properties, loss of means of livelihood, causes great damage to the environment and causes serious disruption to economic and social activities. Natural disasters include landslides, earthquakes, hurricanes, volcanic eruptions, blizzards, floods, cyclones, and tsunamis.

Manmade Disaster: Is a complex man-

made emergency and it is a result of major events like oil spills, fires, looting, transport accidents, nuclear radiations or explosions, terrorist attacks wars and so many more. Manmade disasters are sometimes the outcome of various technological hazards

The indirect or direct impact or effect of disasters is always very dangerous, damaging and destructive. Human lives are lost,

infrastructures that are in place are either damaged or destroyed, livestock and plants that are sources of food are destroyed during disasters. The losses and impacts of disasters can be felt for a lot of years and it might take a long period of time to move on from a

particular disaster.

Scientists and researchers have discovered and put forward that urbanization, industrialization, and modernization are negatively affecting the environment. As a result of the exploitation of the environment (nature), a lot of natural disasters like landslides and earthquakes are being created and their levels are being increased to a stage where they cause a large amount of loss of properties, animals and most importantly human life. Due to this, we need to take care of our environment and take measures

to battle global warming and climate change which are the primary causes of some natural disasters like flooding and drought.

This is a non-stop act of trying to reduce the effect of disasters. Disaster management needs coordinated and collective efforts as just one person can't do it. Some of the steps that should be taken when a disaster occurs include control and command, coordination, power restoration, quick assessment of the perceived damage, surface transport, and telecommunication, the deployment of teams for search and rescue, availability of Para-medical and medical team, provision of food material and good drinking water, making temporary shelters available, hygiene and sanitation identification and the setting asideof resources, most importantly is the total maintenance of the given laws and also order.

The group of people most affected by and most susceptible to disasters is those who are poor. Therefore, it is of utmost importance to always be

prepared for disasters and swiftly move into action any time they happen because we must give rescue operations and immediate relief that can go a long way in saving a number of human beings and stop further damages to lives and properties as a result of the disaster.

Disaster management has become most of the most important things today as it enables us to handle and curtail unforeseen situations effectively and efficiently. We must be ready and well equipped with all of the latest

technologies and developments. Even though disaster management and all of its steps and processes can't help prevent a disaster, they can go a long way to ensure that the effect and impacts of the disaster are not really felt.

DISASTER MANAGEMENT AGENCIES IN INDIA

MUSKAN RAJPUT, BA GEOGRAPHY HONOURS (2ND YEAR)

Disaster management efforts aim to reduce or avoid the potential losses from hazards, assure prompt and appropriate assistance to the victims of a disaster and achieve rapid and effective recovery. There are various government agencies for the management and mitigation of natural disasters. Some of them are:

- National Disaster Management Authority (NDMA)
- National Institute of Disaster Management (NIDM)
- National Disaster Response Force (NDRF)
- All India Disaster Mitigation Institute (AIDMI)
- National Disaster Management Authority (NDMA)

On 25 December 2005, the government of India enacted the disaster management act, which envisaged the creation of NDMA headed by the Prime minister and state disaster management authorities (SDMAs) headed by respective Chief

Ministers to implement a holistic and integrated approach to disaster management in India

Vision is "to build a safer and disaster resilient India by a holistic, pro-active, technology-driven and sustainable development strategy that involves all stakeholders and fosters a culture of prevention, preparedness, and mitigation."

NDMA as the apex body is mandated to lay down the policies, plans, and guidelines for disaster management to ensure timely and effective responses to disasters. Approve plans prepared by the ministries or departments of the government of India in accordance with the national plans. Coordinate the enforcement and implementation of the policy and plans of disaster management. Recommend the provision of funds for mitigation. Take such other measures for the prevention of disaster, mitigation or preparedness and capacity building for dealing with threatening disaster situation or disasters, as it may consider necessary.

Lay down broad policies and guidelines for the functioning of the national institute of disaster management.

NIDM was constituted under an act of parliament with a vision to play the role of a premier institute for capacity development in

India and the region. Under the disaster management act 2005, NIDM has been assigned nodal responsibilities for human resource development, capacity building, training, research, and documentation of policy advocacy in the field of disaster management.

Training and research on disaster risk mitigation and management in India and to be recognized as one of the leading institutions at the international level in the field. To strive relentlessly towards making a disaster-free India by developing and promoting a culture of prevention and preparedness at all levels.

To work as a think tank for the government by assisting in policy formulation and to facilitate in reducing the impact of disasters through research, documentation, and development of national level information base. Networking and facilitating the exchange of information, experience, and expertise. Promote awareness, enhances the knowledge and skills of the stakeholders.

The disaster management act has statutory provisions for the constitution of natural disaster response force (NDRF) for a specialized response to a natural and man-made disaster. Accordingly, in 2006 NDRF was constituted with 8 battalions. As present, NDRF has a strange of 12 battalions with each battalion consisting of 1149 personnel.

The practice of “proactive availability" of this force to the states and that of "pre-positioning", in a threatening disaster situation has immensely helped minimize damage, caused due to natural calamities in the country. The first major test of disaster for NDRF was Kosi floods in 2008. As a result, over 1, 00,000 affected people were rescued. The chief minister of Bihar appreciated the prompt and timely response of NDRF. In a multi-story factory building collapse at Jalandhar (Punjab) in April 2012, the NDRF successfully rescued 12 live victims trapped under huge rubble of debris. When cyclone Hudhud pounded to the eastern Indian coast in October 2014, NDRF personnel were present there to save the lives of the affected people. Since its inception, NDRF has continued to win the hearts of millions of countrymen by demonstrating its expertise and compassion while handling disaster situations.

Today NDRF is a distinguished, unique force across the country functioning under the ministry of home affairs, the government of

India, within the overall command, control and leadership of the director general, NDRF.

The All India Disaster Mitigation Institute (AIDMI) is a registered public charitable trust based in Ahmedabad Gujarat, India. It is a community- based action planning, action research, and policy support organization, working towards bridging the gap between policy, practice, and research related to disaster mitigation and climate change adaption as laid out in the national disaster management plan of government of India of 2016.

AIDMI's focus is on promoting a practice of community-based disaster risk reduction (DRR) through building capacities of multiple humanitarian stakeholders in all stages of disaster risk reduction response and discovery. Providing timely and targeted relief to disaster-affected communities in a gender-sensitive way, thus supporting human security through shelters, livelihood, water and food projects. Protecting and promoting rights of disaster-affected victims with special focus on women, children, Dalits and minorities.

AIDMI covers the states of Andhra Pradesh, Assam, Bihar, Chhattisgarh, Delhi, Gujarat, Himachal Pradesh, Jammu and Kashmir, Maharashtra, Odisha, Rajasthan, Sikkim, Tamil Nadu, Telangana, Uttarakhand, Uttar Pradesh, West Bengal, and union territories.

Disaster management requires government intervention and proper planning as well as funding.

To conclude, Disasters are events that have a huge impact on humans and the environment. These are inevitable and we cannot do anything to prevent these but preparedness is only way forward

PRINCIPLES OF DISASTER MANAGEMENT

NEHA KUMARI, B.A. GEOGRAPHY HONS, 2nd year

INTRODUCTION

India has been traditionally vulnerable to natural disasters on account of its unique geo-climate conditions. Floods, droughts, cyclones, earthquakes, and landslides have been recurrent phenomena. About 60 percent of the landmass is prone to earthquakes of various intensities.

The principles of disaster management are;

1. Disaster management is the responsibility of all spheres of government. No single service or department in itself can achieve comprehensive disaster management. Each affected service or department must have a disaster management plan, which is coordinated through the Disaster Management Advisory Forum.
2. Disaster management should use resources that exist for day-to-day purposes. There are limited resources available specifically for disasters, and it would be neither cost-effective nor practical to have large holdings of dedicated disaster resources. However, municipalities must ensure that there is a minimum budget allocation to enable an appropriate response to incidents as they arise and to prepare for and reduce the risk of a disaster occurring.
3. Individuals are responsible for their own safety. Individuals need to be aware of the hazards' that could affect their community and the countermeasures, which include the Municipal Disaster Management plan that is in place to deal with them.
4. Organizations should function as an extension of their core business. Disaster management is about the use of resources in the most effective manner. Organizations should be
5. employed in a manner that
   reflects their day-to-day role. But it should be done in a coordinated manner across all relevant organizations so that it is multidisciplinary and multi-agency.
6. Disaster management planning should focus on large-scale events. It is easier to scale down a response than it is to scale up if arrangements have been based on incidents scale events. If you are well prepared for a

major disaster you will be able to respond very well to smaller incidents and emergencies, nevertheless, good multiagency responses to incidents do help the event of a major disaster.

7. Disaster management planning should recognize the difference between incidents and disasters. Incidents, e.g., fires that occur in an informal settlement, floods that occur regularly, still require multi-agency and multi-jurisdictional coordination. The scale of the disaster will indicate when it is beyond the capacity of the municipality to respond, and when it needs the involvement of other agencies.
8. Disaster management operational arrangements are additional to and do not replace incident management operational arrangements. Single service incident management operational arrangements will need to continue whenever practical during a disaster operation.
9. Disaster management arrangements must recognize the involvement and potential role of non-government and agencies. Significant skills and resources needed during disaster operations are controlled by non-government agencies. These agencies must be consulted and included in the planning process.

Answer of Quiz-

1. b	2. c	3. d	4. c	5. b	6. d	7. b	8. a	9. a	10. b
11. c	12. b	13. b	14. d	15. b	16. b	17. b	18. b	19. a	20. b
21. d	22. a	23. d	24. c	25. b	26. d	27. b	28. d	29. c	30. d
31. a	32. c	33. c	34. d	35. d	36. c	37. c	38. a	39. a	40. a

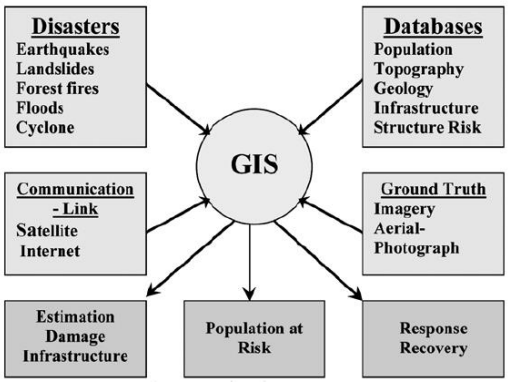
ROLE OF REMOTE SENSING & GIS IN DISASTER MANAGEMENT

RITU CHOUDHARY, B.A. GEOGRAPHY HONS, 2nd year

"We cannot stop natural disasters but we can arm ourselves with knowledge: so many lives wouldn't have to be lost if there was enough disaster preparedness" (Upendra Joshi)

It is true that life is unpredictable but for those who don't prepare themselves for their uncertainty. The combination of human and economic losses, together with reconstruction costs, makes natural disasters both a humanitarian and an economic problem. Thousands of people lose their lives during natural disasters and calamities which can be saved when there exist previously planned policies and programmes to fight these disasters. Usually, it happens when humans become aware and proactive only after the tragedy strikes which results in nothing. Basically, disaster management is the production of arrangements through which groups minimize the risks and adapt to disasters.

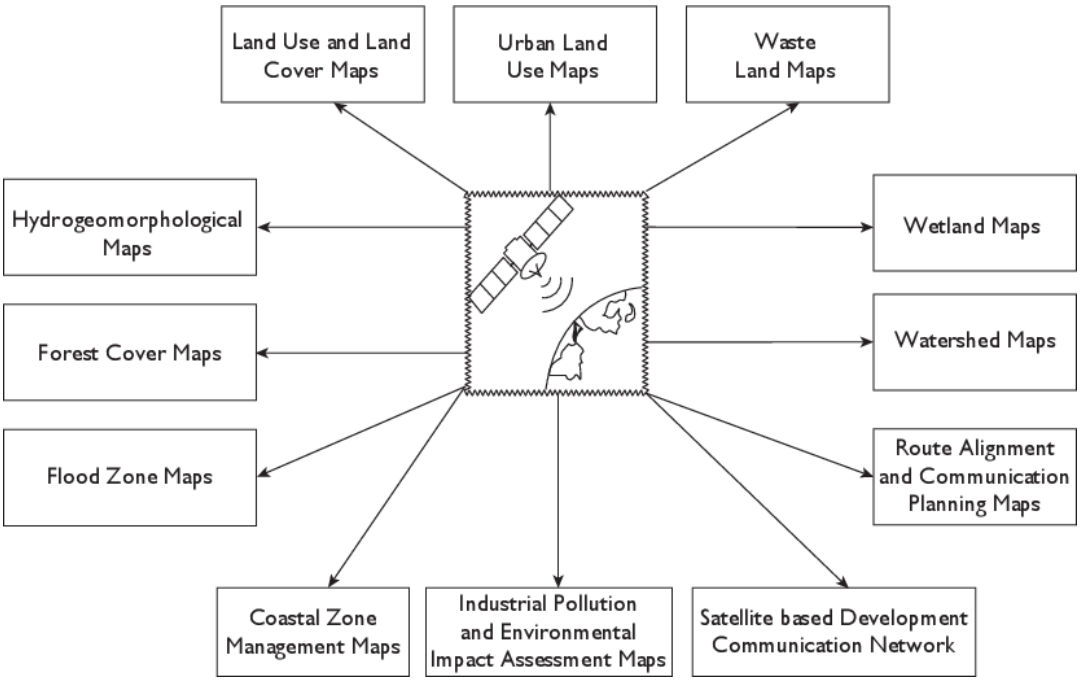
Disaster management doesn't deflect dangers; rather, it concentrates on making arrangements to minimize the impact of calamities. There are no countries or communities that are currently immune to the impact of natural disasters. It is, however, possible to reduce the effects of these events through management strategies focused on risk reduction. On the other hand, the inability to make arrangements could prompt human mortality, lost income and harm to natural resources.



Natural disasters can be tackled if proper warning and safety measures are taken in advance. With technological advancements, it can be made possible now to predict natural disasters well in advance. The weather satellites revolving earth play a vital role in saving the lives of millions of people. Remote Sensing & GIS applications can be effectively used in

disaster management. They can be used for/to

- disaster mapping
- monitor, simulate, predict suggest appropriate contingency plans and prepare spatial databases
- used very effectively for quickly assessing severity and impact of damage
- vulnerability and hazard assessment
- planning evacuation routes, centres for emergency operations, and disaster warning systems



"आपदा नियंत्रण में गैर सरकारी संगठनों की भूमिका"

काजल, बी ऐ, भूगोल द्वितीय वर्ष

भारत हमेशा से प्राकृतिक आपदाओं का शिकार होता रहा है। भारत की अधिकांश जनसंख्या नदी, घाटियों व मैदानी भागों में रहती है जो मानसून के समय में बाढ़ जैसी आपदाओं का सामना करती है। भौगोलिक स्वरूप और जलवायु विशेषताओं के कारण देश का कोई ना कोई भाग हर साल बाढ़ से प्रभावित होता है । इससे बड़े पैमाने पर जनधन की हानि होती है।

भारत में सर्वाधिक बाढ़ प्रभावित क्षेत्र की दृष्टि से पूर्वी खंड जो पश्चिम में घाघरा नदी से लेकर ब्रह्मपुत्र तक फैला हुआ है, इस क्षेत्र में तीव्रता व भयावहता अधिक है तथा जनसंख्या का सर्वाधिक घनत्व भी पाया जाता है। इसलिए यहां क्षति भी सर्वाधिक होती है। बाढ़ जैसी आपदा को रोका नहीं जा सकता है किंतु समुचित प्रबंधन द्वारा इससे होने वाली क्षति को कम किया जा सकता है। 1954 में भारत में भीषण बाढ़ के बाद, बाढ़ नियंत्रण के सुनियोजित कार्यक्रम आरम्भ किये गए । इस नीति का उद्देश्य नदियों के किनारे तटबंध बनाकर बाढ़ बचाव करना था। बाढ़ नियंत्रण के प्रारंभिक चरण में संरचनात्मक उपायों के माध्यम से बाढ़ नियंत्रण के प्रयास किए गए। इसके अंतर्गत बाढ़ एवं जलाशय निर्माण, तटबंध निर्माण, ड्रेनेज सुधार जैसे उपाय किए गए।

सरकार द्वारा किए जा रहे प्रयासों के साथ ही गैर- सरकारी संगठनो की भूमिका को भी प्रोत्साहित किया जा रहा है। ताकि प्रभावित समुदाय तक राहत एवं बचाव कार्य सुगमता से पहुंच सके। गैर-सरकारी संगठन वर्तमान समय में बाढ़ आपदा न्यूनीकरण में महत्वपूर्ण भूमिका निभा रहे हैं। यह पहले भी आपदा के समय परंपरागत राहत व बचाव कार्य ही कर

रहे थे, किंतु पिछले कुछ समय से इनकी भूमिका का विस्तार हुआ है। बाढ़ आपदाग्रसत क्षेत्र में सरकार गैर सरकारी संगठन के सहयोग से परंपरागत कार्य के साथ ही एकीकृत बाढ़ प्रबंधन हेतु शोध आधारित दीर्घकालीन कार्यक्रम का संचालन कर रही है

आपदा प्रभावित क्षेत्र में आपदा के समय आजीविका के मूल संसाधन नष्ट हो जाते हैं, जिससे प्रभावित क्षेत्रों में प्रभावित परिवारों के समक्ष आजीविका का संकट उत्पन्न हो जाता है। गैर सरकारी संगठन इस समय पर उचित मदद करके समुदाय को सम्बल प्रदान करती हैं। इस कार्यक्रम के अंतर्गत बाढ़ आपदा प्रभावित क्षेत्र के विभिन्न विकास खंडों के क्षेत्रों का चयन कर ग्राम पंचायत स्तर पर, विशेषकर लघु एवं सीमांत कृषक, दलित एवं अल्पसंख्यक तथा कम आय वर्ग वाले लोगों का चयन कर उनके आजीविका संवर्धन का प्रयास कर रही है ताकि उनमें आपदा को सहने की क्षमता विकसित हो सके।

गैर सरकारी संगठन बाढ़ आपदा प्रभावित क्षेत्र में बाढ़ न्यूनीकरण हेतु निम्न कार्यों का संचालन कर रहे हैं:

1. आजीविका संवर्धन एवं सशक्तिकरण।
2. कृषि में नए विचारों का प्रसार।
3. धान की उन्नत बाढ़ रोधी प्रजातियों का प्रसार।
4. दलित एवं अल्पसंख्यकों के वर्गों के लोगों को बागवानी हेतु प्रोत्साहन।
5. किसान विद्यालय का संचालन।
6. जन स्वास्थ्य जागरूकता।
7. शुद्ध पेयजल आपूर्ति हेतु हैंडपंप उच्ची करण।
8. जन क्षमता का विकास।
9. सरकार द्वारा चलाए जा रहे सामाजिक सहायता कार्यक्रमो से लोगों को जोड़ना।
10. श्रमदान के लिए प्रभावित क्षेत्रों में लोगों को जागरूक करना।

उपर्युक्त माध्यम से गैर सरकारी संगठन न केवल प्रत्यक्ष रूप से वरण परोक्ष रूप से भी आपदा न्यूनीकरण में महत्वपूर्ण

योगदान दे रहे हैं। जिससे चयनित लक्षित समूह को सीधा लाभ मिल रहा है ।

हे मानव प्रबंध कर

बेबी लिपिका कुमारी, बी ऐ, भूगोल द्वितीय वर्ष

हे मानव क्या तूने सोचा?

हे मानव क्या तूने सोचा!

कि प्रगति के पथ पर चलते-चलते तूने प्रकृति माँ का ही गला दबोचा।

तू इस कदर धरती को मसलता गया,

और मानो आंसुओं का सैलाब उसकी आँखों से निकलता गया।

तू बेखौफ़ होकर अपनी राह पर चलता गया,

हर कठिनाई से भी लड़ता गया,

आखिर क्यों यही उन्नति तेरी ही जाति को खलता गया?

लेकिन फिर भी क्या तूने अपनी गलती मानी?

हे मानव क्या तूने अब भी न सोचा?

प्रकृति के प्रकोप ने तुझे भी छुआ है अभिमानी,

फिर यह कोशिश क्यों न करता कि तेरे कारन पर्यावरण में ना हो कोई हानी।

तेरे ज्ञान को जगत ने सर्वश्रेष्ठ है माना,

हे मानव क्या तूने सोचा?

तू करता ही रहता है अपनी मनमानी

आखिर क्यों करता है प्रकृति से छेड़ख़ानी?

अभी भी वक़्त है सोच समझ कर, काम में आसानी,

इस मंज़र ने मिटा दी हजारों मासूमों की कहानी,

वरना देखेगा मंज़र “भोपाल गैस त्रासदी” जैसा जो था अति तूफ़ानी

फिर क्यों न करता ऐसा प्रबंध जो घटा दे त्रासदी की निशानी।

अब तू उठ और शुरू कर अपना रास्ता,

जिसमें इलाज नहीं निवारण की हो दास्ताँ।

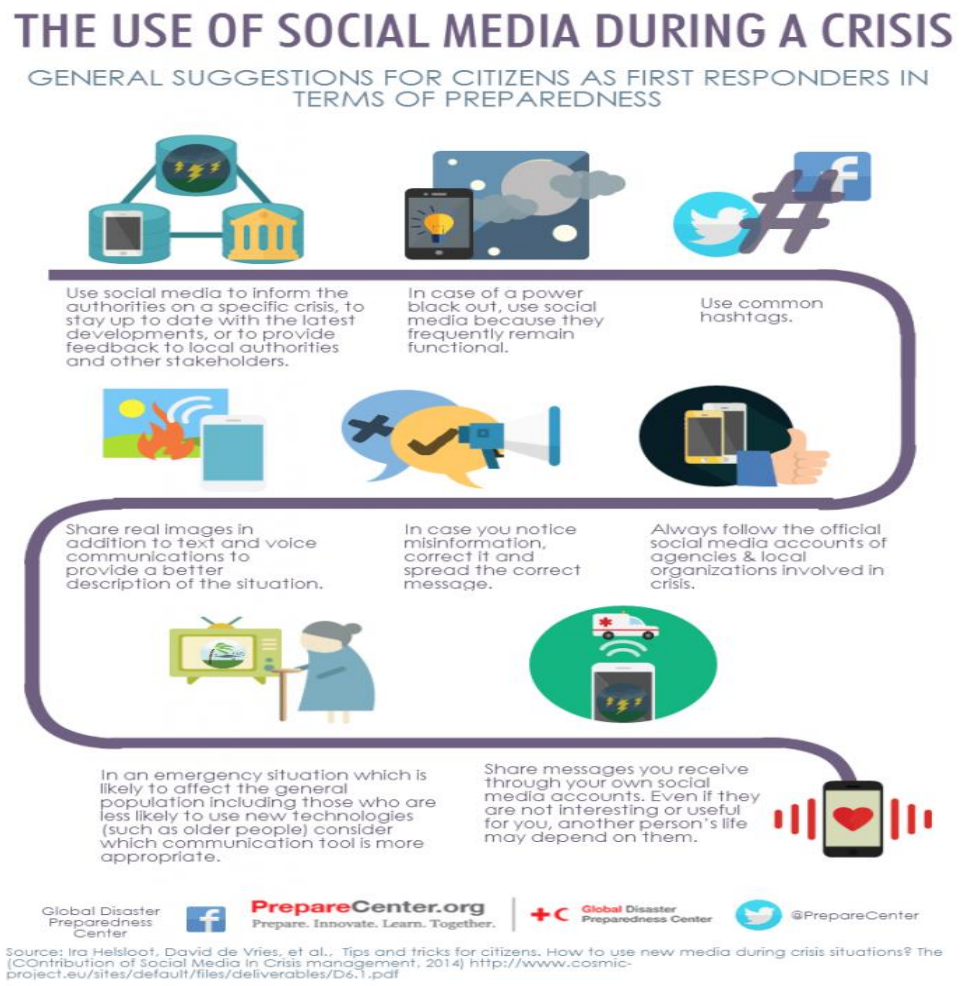
पेड़ लगा, प्रदूषण घटा, नये तरकीब तू अपना,

खुद ही बन जगत कल्याणी, वरना पछतायेगा तू अभिमानी

की हे मानव आखिर तूने क्यों नहीं सोचा?

SOCIAL MEDIA AS A TOOL IN DISASTER MANAGEMENT

ADELINE ABHA, B.A. GEOGRAPHY HONS, 2nd year



A Natural Disaster is an unforeseen occurrence of an event that causes harm to society. It is the effect of a natural hazard such as floods, earthquakes, landslides, volcanic eruptions, tsunamis, storms, and other processes. It leads to financial, environmental losses and takes the lives of thousands of people. The loss depends on the vulnerability of the affected people to resist the hazard also called as resilience. All-natural disasters cause a loss in some way. However, science

and technology are making it more possible to predict, aid is faster at coming and people are learning how to rebuild in safer areas.

In today's world social media is becoming an effective tool for disseminating information

about disasters by allowing people to share information and ask for help. The extensive reach of social networks allows people who are recovering from disasters to rapidly connect with needed resources. There are a lot of social networking sites which allow

individuals involved in various aspects of emergency awareness and preparedness to connect, discuss and share knowledge.

Real-time reports on disasters, information on what to do before a disaster and information on recovery efforts can easily be disseminated to the public through Social Media. It helps in fast broad casting of the ground realities to a wider audience without waiting for news or government agencies. It helps in raising relief material and funds by encouraging donations by facilitating the supply of support. For eg: by providing packed food items and blankets or safe places to stay.

Prior to a disaster it is important to be as prepared as possible. Social media gives disaster management organization a means with which to communicate with the public to give them a plan for what to do if an emergency develops. Informing the public on how to be prepared if a disaster occurs, keeping the public

informed on the locations and movement of any hazards, conducting emergency response when the time comes and helping the public where to look for information on a disaster if one were to occur these are how Social media can be used **before** a disaster. Whereas **during** a disaster, it opens communication lines between government authorities, disaster organization and the public. Information on road closures, making public aware of regions that they should avoid and informing the areas or places being affected by the disaster and the actions being taken to assist them etc. can be passed on using social media. Whereas **after** the disaster event has ended and the process of normalization begins information on recovery efforts can be provided. Providing the public with information and links to a charitable organization that is helping the people affected, reuniting family and loved ones who have been separated from each other, assuring the people they will be supported etc. can be done through it.

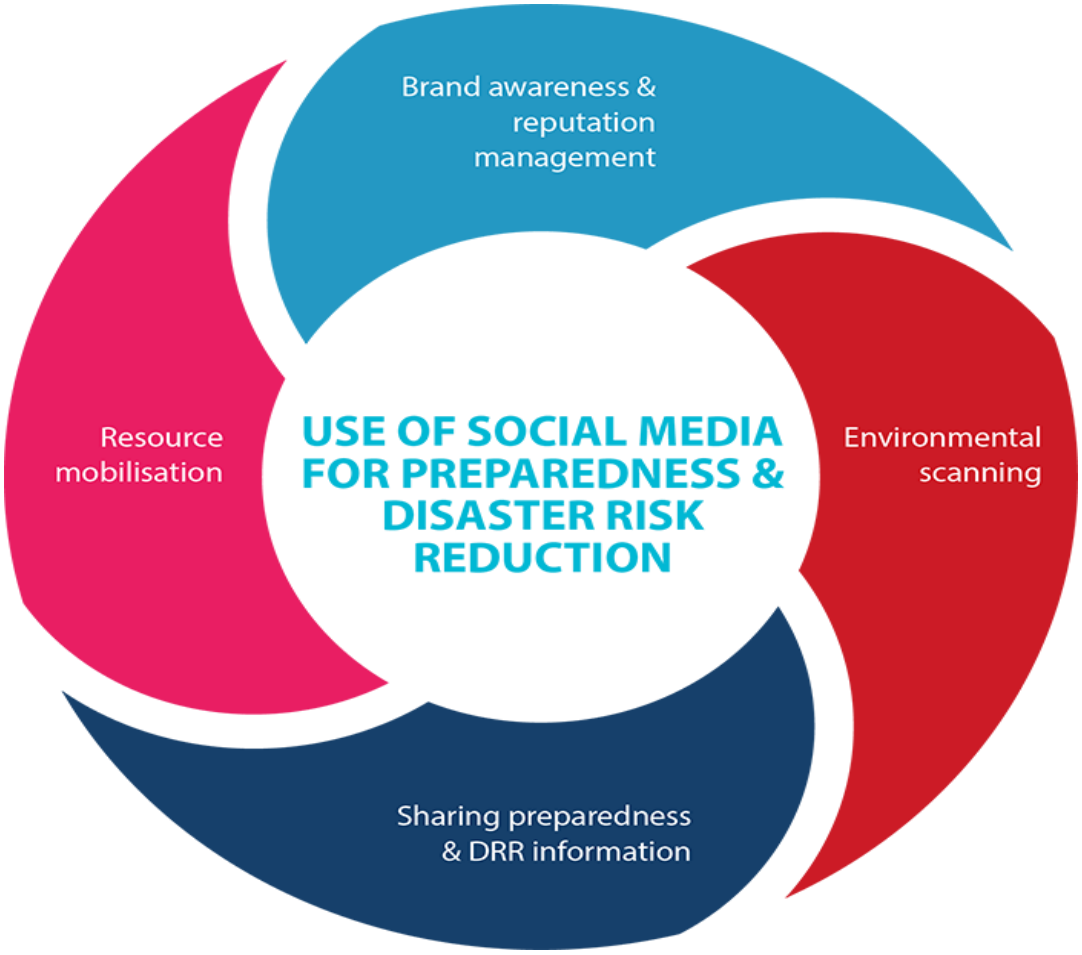
Thus, social media is a valuable tool that can reach millions within a second

and helps the people in need **before**, **during** and **after** a disaster. It enables quick responses, rescue measures and helps in adapting to a vulnerable situation.

Similarly, along with the benefits of using social media in an emergency, there are also some **limitation**s or **weaknesses** of the technology such as- 1. Older generations may not be as familiar with Social media as young generations.

2. Rumors or false information spread very quickly over Social media. This leads to confusion during an emergency situation.

In conclusion, Social media has the potential to be a lifesaving asset during a disaster. As it helps users to communicate, spreading awareness and share information directly with the public and keep them informing on a disaster situation.



ROLE OF MEDIA IN DISASTER MANAGEMENT

AYESHA KHAN, B.A. GEOGRAPHY HONS, 2nd year

"Much has been learnt from the creative disaster prevention efforts of poor communities in developing countries. Prevention policy is too important and international agencies alone to succeed, must engage the Media." *said Kofi Annan Former, Secretary General, United Nations*.

The media plays an important role in disaster management. It helps in monitoring, preventing panic and confusion, of establishing contacts, of identifying the needy spots and focusing attention on them, and generally by assisting the authorities, voluntary organizations and volunteers in reaching, informing and assuring the affected ones of the assistance and the measures taken, for their relief. The media can help in many ways in ensuring these conditions. The rescue, relief and rehabilitation measures need an integrated approach and for that purpose, all agencies, government and non-government, have to pool their resources together for efficient work on all fronts.

The collection of material resources and the enlisting of man-power are as much important as their efficient utilization. The depiction of devastation and human misery through the media many times by itself acts as an appeal to the people to come forward to render help in various ways. Some disasters like floods, cyclones, and droughts have become a periodic feature of our national life. The vulnerable spots and the sections of the populace also stand identified over the years. Almost always, the worst sufferers are the weaker sections of the society. They are unable to shift from these places because there lay their sources of livelihood and all that they have in life to preserve and protect.

They constitute a vast section of our society, and in normal conditions, they contribute in sizeable proportion to our national wealth. Yet, except in the times of disaster, they are rarely remembered and the measures for the

permanent solution of their plight are hardly ever discussed in the media. The media can also focus its attention on this problem. On some occasions in the past, the media fulfilled its duties in full measure while on other occasions it was found wanting. However, if the media has to discharge its role properly on such occasions, it is also necessary to have complete cooperation between it and all governmental and non-governmental

agencies.

PM applauds media role in tsunami disaster
11 Jan 2005

KOLKATA: Complimenting the media for playing the role of an "early warning system" during the tsunami disaster, Prime Minister Manmohan Singh on Tuesday said that it was the press that had first brought the world's attention to the disaster. "Media is the best early warning system which helps in acute crisis," Prime Minister said, inaugurating the diamond jubilee celebrations of Kolkata Press Club, here. "Although I have appealed to the scientists to address the problem, there is no substitute for the learned and energetic media," Singh said. Applauding the media's role in the tsunami tragedy, Singh said that it was the press that had first captured the world's attention to the disaster and that prompted the local administration and the government to act quickly. "I greatly value and salute the media in this situation," the Prime Minister said. "I pay special tribute to you (media persons)," Singh said.

During crises such as cyclones or earthquakes or man-made disasters, there is a role for mass media to play. Mass media have the right to safeguard citizens' lives. Natural disasters are unavoidable, so early warnings and precautionary measures would help in minimizing the loss to life and property. The extent of the co-ordination and co-operation between them determines the nature, the degree and the scale of the preparation to prevent and meet the disaste

आपदा ? हल हमारे भीतर !

आस्था भारती, बी ऐ भूगोल द्वितीय वर्ष

सभ्यताएं दफन हैं कई इस सुरसा के मुख के अंदर,

मोहनजोदड़ो बिलख रहा अपनी दीवारों में जीर्ण-शीर्ण हो,

कहा नजूमी ग्रह- दोष है, धर्मांध हो गई है धरा,

अब होगा प्रकृति का तांडव,

असंख्य आपदाएं आएंगी,

पूर्ण विनाश कर जाएंगी,

इतिहास बनेगा सारा वर्तमान

या फिर रहस्य बन रह जाएगा,

भूकंप, भू- स्खलन, चक्रवात,

बाढ़, सुनामी, झंझावात,

न जाने क्या-क्या आएगा,

मानव के सारे कर्मों को,

झटके में विफल कर जाएगा।

पर मानव इतना भी न दुर्बल,

वो चांद की दूरी जानता है,

वो सूरज से मिलने को आतुर,

मान्धाता का वंशज है,

वो सुरेश को आंख दिखा दे,

वो दे-दे चुनौती ब्रह्म को,

वो सिम्त को पिघला दे,

वो ईश्वर तक बन सकता है।

ये आपदाएं प्राकृतिक रोष है,

या तो मानव-निर्मित है,

हम धैर्य, विवेक रख जाएं अगर,

हम परस्पर सहयोग एवं प्रबंधन कर जाएं अगर,

रणनीति बना लें पूर्व एवं पश्चात,

असमय कहर से लड़ जाएंगे,

राजमहल ही नहीं, झोपड़े भी बचे रह जाएंगे।

है ये रण सा जिसमें क्षति अपार,

पर हम रण भेदने को सशक्त करें सूचना और संचार,

हम चक्रव्यूह बनाएँ रख पूर्ण ज्ञान,

विज्ञान को बनाए ढाल,

नए युद्ध आयामों को बनाए कृपाण,

शिक्षण-प्रशिक्षण से बने दक्ष,

संस्कृति का रख सके ध्यान,

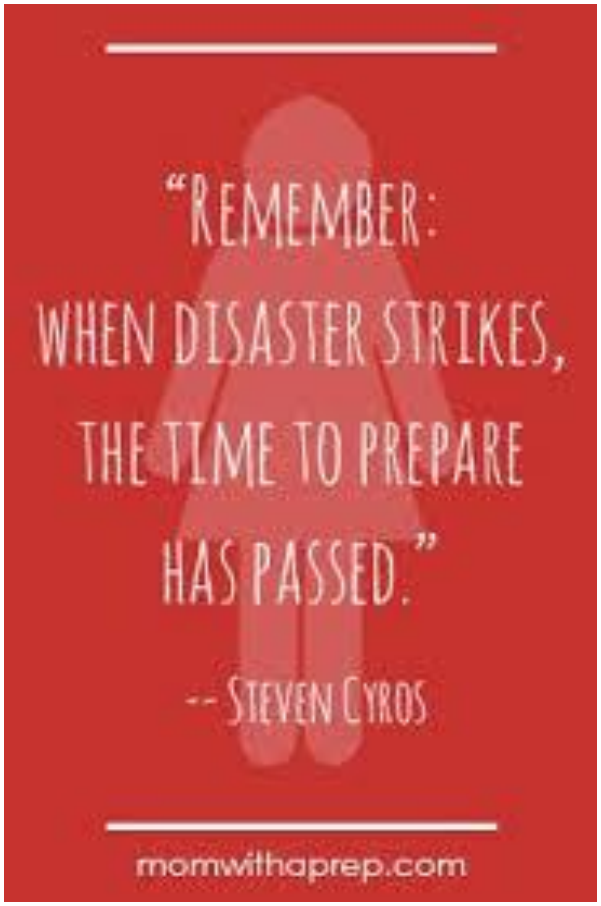
ये धरा क्षुब्ध न हो जाए कहीं,

हे कर्णधारों ! उठ करो जतन,

करो क्षतिपूर्ति का लोक गठन,

रख कर ये हृदय में, तुम अगर सबल,

तुम्हारे होते न हो जाए कोई निर्बल।



आपदा का प्रबंधन

रविना, बी ऐ भूगोल प्रथम वर्ष

सदियों से प्राकृतिक आपदायें मनुष्य के असितत्व के लिए चुनौती रही है | जंगलों में आग, बाढ, हिमस्खलन, भूस्खलन, भूकम्प, ज्वालामुखी, सुनामी, चक्रवाती तूफान, बादल फटने जैसी प्राकृतिक आपदायें बार बार मनुष्य को चेतावनी देती है | वर्तमान में हम प्राकृतिक संसाधनों का अधांधुध इस्तेमाल कर रहे है| जिससे प्राकृतिक संतुलन बिगड रहा है| प्राकृतिक आपदा अपने साथ बहुत सारा विनाश लेकर आती है| इससे धन-जन का भारी नुकसान होता है| मकान, घर, इमारते, पुल, सडके टूट जाती है| करोडो रूपये का नुकसान हो जाता है| फोन सम्पर्क टूट जाता है| लेकिन जब भी प्राकृतिक आपदा आती है मनुष्य उस आपदा से भी बचने के भी प्रबंधन करता है| ऐसी ही एक प्राकृतिक आपदा लेह-लद्याख मे आई थी|

6 अगस्त 2010 लेह-लद्याख में आधी रात में बादल फटने के कारण दो घण्टे में 14 इंच तक बारिश आई जिसके कारण सिंधु नदी एंव उसकी सहायक नदियों में पानी की मात्रा अधिक होने के कारण जिले में बाढ आ गई| हर तरफ पानी ही पानी दिख रहा था| 234 मनुष्यों की मृत्यु हो गई 800 लोग घायल हो गऐ थे| उस क्षेत्र का नेटवर्क भी पुरी तरह से नष्ट हो गया था| लेह का हवाई अड्डा भी प्रयोग करने योग्य नहीं रहा| हस्पताल भी पूरी तरह से नष्ट हो गया था| तब लेह के थल सेना हस्पताल मे लोगों को लाया गया| भारतीय सरकार ने तुरंत वहाँ हवाई जहाज लोगो की रक्षा करने के लिऐ भेजे| लोगों को बाढ से निकालने का कार्य राज्य की सरकार और भारतीय थल सेना ने जारी किया| जिले में सिर्फ दो ही हस्पताल थे एक थल सेना का हस्पताल और दुसरा सिविल हस्पताल | लेह का हवाई अड्डा साफ किया गया ताकि हवाई गतिविधियों को इस्तेमाल किया जा सके| सरकार द्वारा प्रयास करने के कारण और लोगों के साथ के साथ आपदा पर प्रबंधन कर लिया गया|

मनुष्य अगर अपनी पुरी कोशिश करे तो हर आपदा पर प्रबंधन कर सकता है, यह एक उदाहरण था और भी ऐसी कई घटनाएं हैं जिस पर मनुष्य ने काबू पाया है

प्राकृतिक आपदा या मनुष्य के विकास का परिणाम

निशा पहाड़वा, , बी ऐ भूगोल द्वितीय वर्ष

"प्राकृतिक आपदाओं से डरने की आवश्यकता नहीं अपितु उनसे निपटने की आवश्यकता है।"

एक प्राकृतिक आपदा पृथ्वी की प्राकृतिक प्रक्रियाओं से उत्पन्न बहुत बड़ी घटना है जिसके कारण बड़े पैमाने पर जनधन की हानि होती है। परंतु आज के समय में प्राकृतिक आपदाएं मनुष्य की भूल द्वारा निर्मित घटना बन गई है। मनुष्य अपने अत्यधिक आर्थिक विकास के कारण पर्यावरण को भूल गया है। उसकी दृष्टि में आर्थिक विकास ही सर्वोपरि है। जिसका परिणाम उसे विभिन्न प्राकृतिक आपदाओं, नई बीमारियों से भुगतना पड़ रहा है। प्राचीन समय में भी प्राकृतिक आपदाएं आती थीं परंतु आज के समय में उनकी संख्या कई ज्यादा है। मनुष्य अपने आर्थिक विकास के लिए पर्यावरण का अत्यधिक दोहन कर रहा है जैसे अंधाधुंध वनों की कटाई, पहाड़ों में रोड की कटाई, प्रदूषण इत्यादि जिससे प्रकृति का संतुलन बिगड़ रहा है। ग्लोबल वार्मिंग के कारण बर्फ पिघल रही है समुद्र का स्तर बढ़ रहा है जिसके कारण तटीय क्षेत्र डूब रहे हैं और ऊपर से जनसंख्या का बढ़ता दबाव। एक तरफ से देखा जाए तो विकास के सारे परिणाम विपरीत आ रहे हैं। तो मनुष्य की भलाई इसी में है कि वह विकास की परिभाषा को बदलने और उसे प्रकृति के साथ जोड़कर चलें। यदि मनुष्य प्रकृति को नुकसान पहुंचाए बिना विकास करेगा तो वह सही मायने में विकास कहलाएगा।

इसी विचार को ध्यान में रखते हैं-`सतत विकास' शब्द का पहली बार प्रयोग `वर्ड कन्वरसेशन स्ट्रेटजी' द्वारा किया जिसे प्रकृति और प्राकृतिक साधनों के संरक्षण के लिए `अंतरराष्ट्रीय संघ' ने 1880 में प्रस्तुत किया। सतत विकास का अर्थ है पर्यावरण तथा मनुष्य की पीढ़ियों को हानि पहुंचाए बिना वर्तमान की आवश्यकताओं की पूर्ति करना। इस विचार को अमल में लाना किसी देश के लिए कठिन है परंतु असंभव नहीं क्योंकि इसके कारण उनके आर्थिक विकास की गति मंद हो जाती है तथा आज के प्रतिस्पर्धा के समय में हर देश आगे रहना चाहता है।

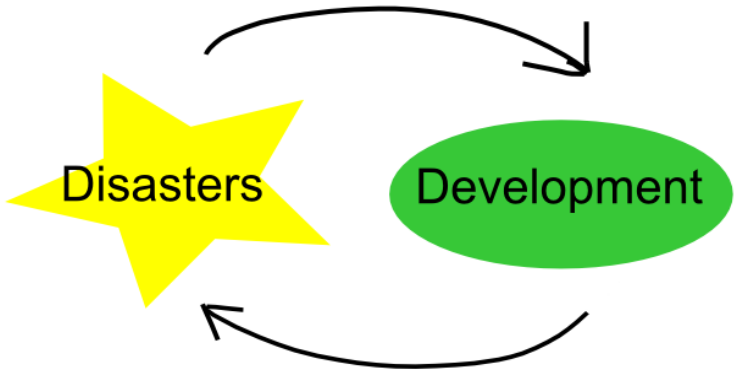
कुछ हद तक विज्ञान ने मनुष्य को, नुकसान की मात्रा सीमित करके, प्राकृतिक आपदाओं से निपटने में मदद की है परंतु यह उसे पूर्ण रूप से नियंत्रण नहीं कर पाता है। इस बिंदु पर आकर

मनुष्य को भी प्रकृति के सामने घुटने टेकने पढ़ते हैं। जहां एक ओर बाढ़ प्रवण क्षेत्रों की पहचान करने और बाढ़ से पहले इन क्षेत्रों को निकलने के लिए उपकरण उपलब्ध है तो वहीँ दूसरी ओर ज्वालामुखी के विस्फोट और चक्रवात के आने का पता लगाया जा सकता है। नुकसान को कम किया जा सकता है परंतु रोका नहीं जा सकता । इस बात का अंदाजा इस प्रकार से लगाया जा सकता है कि जापान जैसे वैज्ञानिक और तकनीकी रूप से उन्नत देश भी बड़े भूकंप से निपटने में असमर्थ है।

प्राकृतिक आपदाएं भी अकेले नहीं आती। वे अपने साथ ख़राब अर्थव्यवस्था, ख़राब स्वास्थ्या और कई अन्य समस्याएं ले आती हैं। आपदाएं किसी भी देश के लिए घातक होती है। यह किसी भी राष्ट्रीय को धकेल कर उसी जगह लाकर खड़ा कर सकती है जहां से पुनः उस राष्ट्र को वापसी करना बेहद मुश्किल है।

भारत सरकार ने इसके प्रबंधन के लिए 23 दिसंबर 2005 को `आपदा प्रबंधन' अधिनियम लागू किया है। यदि वास्तव में हमें आपदाओं का प्रबंधन करना है तो हमें प्रकृति में से ही इसका उपाय खोजना पड़ेगा। हमें ऐसे उपाय ढूंढने होंगे जिसे अमल करने में आसान अथवा प्रकृति के अनुकूल हो।

"पर्यावरण का सम्मान ही है प्राकृतिक आपदाओं का समाधान है ।"



कहर का आगाज़

सुरभि, , बी ऐ भूगोल द्वितीय वर्ष

प्रकृति की आँखों में धूल झोंकता,

तू कब तक सफलता पाएगा।

कुदरत की अटखेलियों के आगे,

तू स्वयं नतमस्तक हो जाएगा।

आसमाँ के आड़े आकर,

तू कब तक काले बादल बिछाएगा।

गगन चुम्बी इमारतें बनाकर,

तू कब तक अम्बर भेंदता जाएगा।

क्यों सोचे बैठा तू,

उसके कहर से यूँ ही बच जाएगा।

मत भूल ऐ मूर्ख!

यह आसमाँ भी उसका संवादक बन जाएगा।।1।।

प्रकृति सोच,प्रलय को न्यौता दिया है तूने,

अपने अंत को करीब बुलाया है तूने।

तेरी हर नादंगी का बोझ समस्त जीव जंतु उठाता आया है,

तू धीमान् है भी या केवल समझता है।।2।।

कुदरत से कर्ज लेकर,

तू कब तक उसे ठगता जाएगा।

पर्यावरण को कुचलता,

तू कब तक बुलंदियाँ छू पाएगा।

कभी न कभी तो कुदरत भी करिश्में दिखलाएगी,

जब कड़कती बिजलियाँ खून चूस ले जाएगी।

फिर आँखे मींचने से,

तू न बच पाएगा।

तेरे कुकर्मों का फल यही अदा हो जायेगा।

मत ले इम्तेहां उसके सब्र का,

दृश्य, तैरती लाशों और धधकते अंगारों का,

तेरे दो झरोखों को ना भाएगा।

संभाल जा ऐ मूर्ख!

क्योंकि तेरा भी वक्त जल्द ही आएगा।

FURY OF FLOODS

SANIA BORA, B.A. GEOGRAPHY HONS, 1ST year

It rushes through the streets of towns
The water flows above the safe grounds....
It explodes in fury, sounds like a gun
If you're near it, you'd better run....

It destroys buildings, big or small
And it kills people short or tall.....
The huge waves flow through the street
There isn't any region that it doesn't eat.....
Houses and animals are swept away
Rain or shine, night or day....

Your house and your life, you will lose
If you will take too long a snooze…

Don't get scared with these tales of strife,
You must remember that appropriate preparedness is the only way to survive

CATACLYSM

EUREKA, B.A. GEOGRAPHY HONS, 2nd year

Shivers ran down my spine as I stood in front of my house, or rather – what was left of it.

Only yesterday, I sat on the same roof, lost in a reverie of the future I will no longer get to live in.

Less than 24 hours later… It feels like last everything was a nightmare I'd rather forget.

The books I always resented; the vegetables that once tasted bland; the clothes that were never stylish enough; Felt like close friends from a parallel universe.

Chaos surrounded me.

My people were nowhere around and I was too numb to care and too cold to cry.

An anxious rush; Disaster woes; Longing cries;

Parents looking around for their kin;

Young widows cursing their fates…

Bodies swept off by mighty waves like puppets in the pawns of time.

Buildings that stood taller than the skies were now mere debris.

I wanted peace, serenity. I wanted to crawl back into the womb of Mother Nature and never leave.

Helicopter buzzing, monotonous refuge calls, loud sobbing, calls for help. None of these bugged me in the least. For routines, felt redundant. Existence felt meaningless. I had never been as aware of my absurdism.

Trucks hoarding out survivors came and went. I boarded one too.

I sat facing the window of the truck as I once again glanced at the surroundings. I remember feeling this strange longing dawn upon me. Suddenly, the trees that once were ordinary stood out as if they were waving me a goodbye, the cranky old women, who once sat in the old verandah on evenings and bickered about their families, felt like close friends and the thought of never seeing them again was tearing at my heart. I looked at all the things that have kept me company in this otherwise secluded place, for years.

The almighty sea, always underestimated, always tortured by man, had finally stood to its true height and avenged its plight. There was nothing mortal man could do.

Even the sun was scared to rise on this cursed day. Birds chirped somewhere far east and the winds were strong.

Suddenly and somehow, a stranger was humming to a folk melody. His voice was cutting through the silence like a double edged sword. Another voice joined and then another. Soon enough the caravan was singing to a foreign

tune and I found myself musing. Things were distraught. I was heartbroken. But somewhere at the back of my head, deep inside my conscience, a voice said, "It'll be alright"

फिर होगा नया सवेरा

योगिता बी ऐ भूगोल प्रथम वर्ष बीए आनर्स भूगोल,

हसते, खिलखिलाते, महकते, आँगन

उछलते, कूदते, चहचहाते जीव

कब एक पल में

गुम हो गये

तरसती आँखे पाने को पनाह

सोचते आखिर कब मिलेगी जगह

ना जाने किस पल में

वो उम्मीद खो गये॥

खो गये वो आँगन

जो महकते थे,

विरान हो गयी वो राहें

जहाँ जीव उछलते, कूदते थे,

विरान हो गई वो धरती

जहाँ सबके बसेरे थे,

पर जीवन कभी रूकता नहीं

शायद फिर जोश में महकेगा आँगन

शायद फिर उछलेंगे जीव

फिर महेंगी कलियाँ

फिर होगा एक नया सवेरा

और सब बसायेंगे नया बसेरा ॥

बचाओ ...कॉई है?

शिल्पी कुमारी, बी ऐ प्रोग्राम, द्वितीय वर्ष

"अरे मेरा सामान".....हे भगवान!

चारो तरफ से आ रही चीखने रोने और छटपटाने की आवाज़ो के बीच बारह वषे का रोहित सहमा सा चुपचाप एक कोने मे खड़ा था ।आज उसके गाँव और कोशी नदी का अंतर समाप्त सा लग रहा था। घरो मे पानी था या पानी मे घर बसे हुए थे। मालूम नही पड़ रहा था। बूढे बाबा कह रहे थे, शिव जी ने गुस्सा किया है, प्रलय आएगी!

उसके गाँव मे बाढ जैसी स्थिति आते उसने यूँ तो हर साल देखा था,परंतु जीवनदायी कोशी का यह विकराल आकार पहली बार अपनी सारी विडमबनाओ के साथ उसके सामने थी। औरते अपने सीने से अपने बच्चों को चिपकाये और मर्द अपना बचा - कुचा संसार थामे अफरा तफरी मे ईधर-उधर भाग रहे थे। कागज़ की नाव पानी मे तैराकर उसे जो मज़ा आता था, आज अपना छोटा सा ही सही, पर पूरा संसार तैरता देख वह हर्ष नरादर था।

कुछ लोगो को मानो खबर ही नही थी कि कया हुआ है।वह खामोश ,बिना रोए-बिलखे उस मलबे पर बैठे थे, जो कभी उनका आसरा था, जिसके बारे मे सोचकर उनहे हिममत मिलती थी कि दिन भर चाहे दुनिया की कितनी ही थपेड़े खानी पडे , उनके पास लौटने के लिए उनका घर है।

रोहित भरे गले और नम आखँ से यह सब देख ही रहा था कि अचानक उसे एक भीड़ दिखाई दी। शहर जा रहे थे शायद ।भीड़ मे उसे अपने बाबा नज़र आए। उसने लपककर उनका हाथ थाम लिया और साथ - साथ चलने लगा। वे गाँव से बाहर निकलने को ही था कि सहसा उसे एक करुण स्वर सुनाई दिया । कॉई है ?मुझे निकालो! उसने आवाज़ की ओर देखा तो देखता है एक बूढा बाबा गढढे मे फँसे हुए थे। डर के मारे उसने बाबा को यह बताया । बाबा उसे खीचकर बोले । तेज़ चला! हम भी फँस जाँएगे। पर रोहित का धयान उधर ही था । उसे मासटर जी कि पढ़ाई कविता याद आई ।

'यही पशु प्रवृत्ति है कि आप -आप ही चरे, वही मनुषय है जो मनुषय के लिए मरे।' वह बाबा का हाथ छुड़ाकर उस ओर भागा । उसने अपने सुकुमार हाथो से पूरी शक्ति लगाकर उस वृधद को बाहर निकाला। उससे यह पूछकर कि वह ठीक है? वह बाबा के पास लौट गया ।

सहमी आँखों से जब उसने बाबा को देखा तो उनकी आखँ मे डर की जगह अजीब सा सुकून था। शायद गर्व था। रोहित की खुशी जो ना जाने कब से गायब थी, धीरे-धीरे लौटने लगी।

मानवीकरण: एक राह

प्रियंका तंवर , बी ऐ भूगोल द्वितीय वर्ष

अजय, एक जाना- माना किसान जिसने अपनी पूरी ज़िदंगी उपज व किसानी करने मे व्यतीत की। वह एक ऐसे गाँव से है जिसके बारे मे लोग जानते तो थे पर यह नही पता था कि यह गाँव एक ऐसा गाँव है जहाँ बाँड़ मे हज़ारो लोगो की जान आए दिन जाती है। जिससे न केवल ज़िदंगी दाँव पर लगती है बल्की जीव, पौधै,पशुओ कि मौत जैसी अनंत समस्याओं सामना करना पड़ता है। अजय उसी गाँव के एक छोटे सी ज़मीन के हिससे की किसानी करता है। परंतु एक दिन उस गाँव मे कुछ

ऐसा हुआ जो किसी ने सोचा न था। दरसल, इस उस गाँव मे एक बाँध था जो न केवल सिचाई मे काम आता था बल्की उससे हाइड्रोइलेक्ट्रिसिटी भी भारी माञा मे बनाई जाती थी। इस बाँध मे दरारे आने की वजह से ,वह टूट गया जिससे इस गाँव मे हर तरफ पानी - पानी हो गया। लोग लाचार व बेबस नज़र आए।

इस तकलीफ के चलते लोगो की इमारते उनका साथ छोड़ने लगी, जिस कारण लोग मलबे के नीचे दबकर बेबस व लचार नज़र आने लगे। इन सब दिककत का मज़र अजय अपनी आँखो से देख रहा था । वह यह नही जान पाया कि इसके पीछे कारण क्या हो सकता है? हो सकता है कि बारिश आने से दरार आई हो? या यह सब एक अनहोनी हो? या फिर यह सरकार की लापरवाही हो? मामले का पता न चलने पर वह सोच- विचार करने मे असफल नज़र आया। लोगो की मजबुरी सी हो गई कि वह अपना गाँव, अपना घर छोड़ कर कही सुरक्षित जगह पर डेरा डालें।

कुछ सालो बाद जब अजय अपने परिवार के साथ अपने घर,अपने गाँव जाने का मन बनाता है तो उसे पता चलता है कि उसके खेत ,उसका गाँव सब एक शहर बन बैठा है, जिसकी इमारते उसकी जीवणी से मेल नही खाती । उसका खेत जहाँ वह मेहनत करता था,वहाँ एक शापिंग मॉल बन गया है। जहाँ उसका गाँव था, वहाँ एक सोसाइटी वाला घर बन गया है। जहाँ आने-जाने पर रोक-टोक। इन सब को देखकर वह बहुत दुखी होता है, वह रोते-रोते भावुक मन से एक ही बात कहता है- लोगो जिंदगी चली जाती है दिलो को मनाने मे, शहर के लोगो की बात ही अलग है। [कहना का अश्या है कि गाँव के लोग एक दुसरे के साथ रहना जानते है पर शहर के लोग चमकीली बनावटो मे मगन है।वह इकठे नही रहना चाहते।

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शरणार्थी

रीमा, बी ऐ भूगोल प्रथम वर्ष

राहुल की आँखें जब नींद से खुली तो उसने देखा कि उसके परिवार वाले घर से पानी बाहर फेक रहे थे। राहुल हैरान था कि उसके घर मे इतना सारा पानी आया कहाँ से? तभी उसकी माँ ने उससे सारा सामान बाहर निकालने को कहा, राहुल समझ नही पा रहा था कि उसकी माँ उससे ऐसा किसलिए बोल रही है? तभी राहुल के भाई ने उसे बताया की उनके गाँव मे बाढ आ गई है और घर छोडने की नौबत आ गई है। राहुल भी हड़बड़ी मे अपने परिवार वालो की मदद करने लगा और वे अपना सारा सामान घर- बार छोडकर चल पडे। राहुल का गाँव उस समय बांग्लादेश मे था।

तभी राहुल के पिता ने उन्हे यह सलाह दी कि जब तक हालात ठीक होते है क्यों न वे अपने मित्र के घर पर रहे। लेकिन रास्ता इतना आसान न था। पानी उनके मुहँ तक पहुँच चुका था। जैसे-तैसे करके वे समतल ज़मीन पर पहुँचे। तभी राहुल को एक दिल दहला देने वाली आवाज़ सुनाई दी, राहुल जब तक पीछे मुड़ता, किसी ने उसे ज़ोर से धक्का दिया, राहुल के हाथ पर गहरी चोट आई पर जब उसने उस दिल दहलाने वाली आवाज़ का सच अपनी आँखो से देखा तो वो अपने आँसू को रोक उसने उस दिल दहलाने वाली आवाज़ का सच अपनी आखों से देखा तो वह अपने आसूं रोक नहीं पाया क्योंकि भूस्खलन की वजह से वह अपने पिता को खो चुका था और वो धक्का राहुल को उसके पिता ने ही दिया था ताकि राहुल भूस्खलन के दायरे से बच जाए।

जब तक राहुल अपने पिता को खोने के दुख से उभर पाता उसे पता चला की कई शहरो मे दंगे चल रहे है। और दंगे का निशाना वे लोग है जो हिंदु है कयोकि बांग्लादेश एक मुस्लिम प्रमुख देश है और वे लोग बांग्लादेश से हिंदुओ को बाहर निकालने रहे थे या फिर मौत के घाट उतार रहे थे। राहुल के पास कोई चारा नही था उसे अपनी और अपने परिवार की जान बचाने के लिए हिन्दुस्तान की तरफ रुख करना पड़ा ।उसने सोचा की हिन्दुस्तान मे तो हिंदु है तो वे लोग तो उसे और उसके परिवार को अपनाएंगे ही। राहुल हिन्दुस्तान मे अच्छी ज़िंदगी की चाह मे आया था। लेकिन उसे हिन्दुस्तान मे भी शरणार्थी शिविर मे रहना पड़ रहा है। राहुल सोच रहा था कि उसकी ज़िंदगी में अचानक इतना बड़ा बदलाव क्यों? उसका कया गुनाह था? राहुल अपने घर की याद मे डूबा था लेकिन वो अच्छ बीता कल उसके आने वाले कल मे वापिस न आ सका । वह सोचता रहा था कि व्यक्ति ही व्यक्ति का दुश्मन कयो बन गया? और ये दुश्मनी कब तक चलेगी?

FIELD TRIP TO NAINITAL

PRAGYA, B.A, GEOGRPAHY HONOURS, 2ND YEAR

As part of our academic paper "Fieldwork and Research Methodology" we the students of 2nd year honors went for a study trip to Nainital.

Nainital is a hill station situated around the Naini Lake. It is situated at an altitude of 6837 ft. above sea level. It is a beautiful hill station with tourists visiting in large numbers for its pleasant weather and the beauty of its majestic hills. Nainital District is located in Kumaon district and is bounded in the north by the Almora district and in the south by the Udham Singh Nagar District. Haldwani is the largest town in the district.

We started our journey on 27th February from our college premises at around 9 p.m. The students were asked to reach around 8 p.m. sharp but of course we were late because we are students, never on time. The entire bus journey was full of typical things like playing antakshari, inside jokes, merriment, shouting on top of our lungs. We were awake the entire night and were sleepy just when we reached Nainital. It was around 5 in the morning when we reached and I must admit, you need to be present here to feel the experience it is just so soothing to see the morning light covering the whole of the city, the sun was glowing to no bounds and the sky looked serene, it would be not ethical to describe its beauty.

We stayed at "Dynasty Resort "near Khurpatal village. On reaching the resort we were served our breakfast and then within an hour we were asked to get ready and report at the reception, from there we went for conducting the surveys in the nearby villages. We were divided in groups of 4-5 and each one of us had to complete at least 3 surveys .We straight off started with our surveys from a nearby government school and then we talked to some of the construction workers in the same area, the teachers and the workers were kind enough to answer our questions regarding the water scarcity in Nainital, some of them even offered us tea and snacks. The same day we also visited another village named Pangot, wherein we

talked to the hotel owners and what is their opinion on the water problem. Visiting these two villages gave us an idea about the status of water problems in both household ad commercial contexts. We gathered the following information after the first day of our survey:

- The houses are very low from the ground level, so tankers cannot reach them.
- The main source of water is rain.
- Storage facilities related to water is inadequate
- The management of lakes is poor
- Women have to walk to far off places to fetch water because the nearby government taps were not working.
- Construction of hotels, resorts has blocked the supply of water to many areas.
- The teachers believed that the water from lakes and rain should be collected and recycled through outlets so that it can be used during summer season when there is a shortage of water
- The supplied water contains large amount of silt so they have to strain it and then use it.
- There were rarely any cases of caste discrimination in order to get water.
- The hotel owners told us that the main water problem occurs during the summer months of May, June, July.
- The supply is limited
- The bore well is of no use to hotels because it is under the villagers and they don't allow them to use it.
- Seasonally tankers are brought. There are more problems at the hotels and resorts than in households.
- The "Pradhan" of the area manages the basic water problem

After the successful completion of our surveys we returned to the resort and to our surprise we were welcomed by a bonfire arranged by our lovely teachers. After being out in the freezing weather since morning this was a welcoming sight. We enveloped ourselves in blankets of warmth, brought our scarves across our faces as a naqab.

Arms were thrown around each other not exactly for warmth, but for the hope that we stay as close to one another as we were. Our eyes stung and teared up, half from the frosty air, half from the fact that we were together. Weak and tenacious, deep and clumsily we sang and danced in unison. It was not for people to judge, it was not for the tune, it was for fun

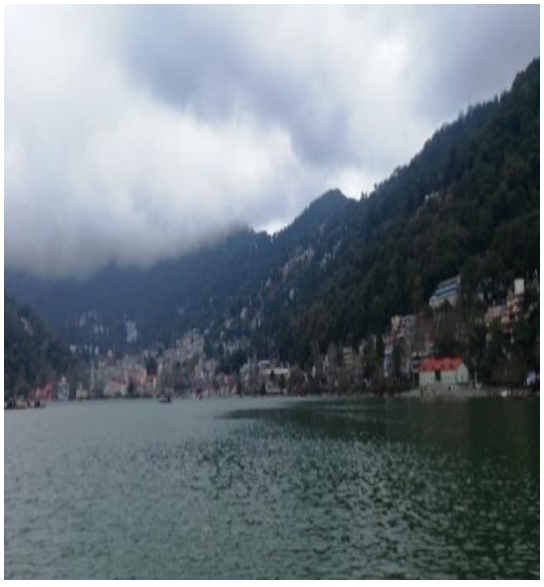
The next day we were ready for another round of surveys and interaction with the people of Nainital. The next day we were taken to the "Central Institute of Temperate Horticulture "located in Mukteshwar, Kumaon, Distt. Nainital (Uttarakhand). Over there we were briefed about the cultivation of various fruits like apples, peaches and the rearing of sheep's. We also saw the plants reproduced through the process of "vegetative propagation" and water collected through rainwater harvesting. From there we visited the Mukteshwar hills, snow view point; we had a little trek to the snow view point where our lunch was also arranged. For lunch we had traditional "kadhi chawal ", the place had various stalls selling Maggi and juices. After lunch we had another trek to "Mukteshwar Dham Temple "a temple of lord Shiva. The second day came to an end and we returned to the resort. After dinner we had a small gathering with our three teachers, we discussed about our interactions with the people, the water problem in Nainital, then we had a little talent round where in everyone was asked to showcase their talents, some of us danced, some of sang, some of us shared stories about our beautiful friendships and then we dozed off.

"Central Institute of Temperate Horticulture "located in Mukteshwar, Kumaon, District Nainital

The third and the last day of our trip was planned for Charkha village and then for an excursion to Mall Road and sightseeing of Naini lake. We drove to Charkhet around 11 a.m. and it took us about two hours to reach over there. We started off with our pending surveys; we talked with some of the villagers, some local drivers and one civil engineer. Following was the information we garnered:

- The demand for water is more than the supply as they have cattle plus their households' needs.
- There are very few water policies by the government.
- There is no proper water connections in households in Charkhet, first come first served.
- The summers are the most difficult time for the local people because the water problem becomes very conspicuous.
- The supplied water is not enough for their daily use.
- They have conflicts due to water problem.
- There are days when they go without water so water is collected throughout the year.

We then headed for the beautiful Naini Lake, where we enjoyed boating. The weather was mesmerizing, the clouds were dancing on their own beat, the wind was flowing with an unfathomable zeal, and the water was chilled just like we were. Our next stop was the Mall Road, we were asked to assemble after 3 hours, until then we could roam the streets of Nainital. Everyone just dispersed, visiting shop to shop, buying presents for their loved ones. We went to a gaming parlor, ate corn and enjoyed whatever time we had left in Nainital.



Picturesque Nainital

We returned to the resort, had dinner and left for Delhi around 8 p.m. Even after traveling for 3 days there was no trace of tiredness in any of us, we sang the entire way back. This trip to Nainital was an educational trip and we learned a lot about the water problems in Uttarakhand, which was our main agenda but it also turned out to be a reason for our bonding, the entire batch is more connected now than ever, we feel for each other, we look out for one another. We may belong to different backgrounds, our cultures are different, our way of living is different but those 3 days we lived together as a family and at the end "family is all that matters."

Report of Departmental Activities

ORIENTATION PROGRAMME-2019

DATE: 22nd July, 2019

The day saw enthusiastic bunch of girls coming to the college as students for the first time. They were filled with joy, a pinch of nervousness and a series of questions in their mind. The Faculty and the seniors were more than happy to welcome them. All of us settled in Hall2 to start our orientation program.

The program began by introduction of the Department to the new students. They were told that they are the second batch of our newly established department and we as a community have a great responsibility on our shoulder to prove ourselves. The following points were discussed with the girls-

- Attendance rules
- Discipline in the department & in college
- Syllabus & Library
- Co-curricular and extra-curricular activities available in the college
- Departmental activities
- Participation in interdepartmental activities

Navya Garg and Ayesha Khan, the two senior students, took the program forward by showing them a PPT & a video about our college.

Navya's presentation focused on-

- Introduction & career options in Geography
- Overview of the college
- Introduction to timetable
- Various societies- volunteers representing various societies, NSS, NCC and Sports spoke to the students
- Map of the college

Later Ayesha showed them a video of their journey through the first year of Geography Department. The program ended with a college tour.

LECTURE ON APPLICATION OF REMOTE SENSING WITH REFERENCE TO ATMOSPHERIC STUDIES

Guest Speaker: Mr. Amit Kumar, Scientist C, Satellite Meteorology, India Meteorological Department (IMD), Lodhi Road, New Delhi.

Date: 4th September, 2019

A lecture was organised by the Department of Geography in order to brief and enlighten students about the vast and ever-widening scope of Remote Sensing Technology and its subsequent applications in the modern world.

The event was divided into segments-

1. Lecture by Mr. Amit Kumar
2. Q & A session,

His lecture covered a range of various topics namely, definition, components and types of Remote Sensing, platforms, sensors, detectors, instruments used, classification of satellites on the basis of orbits etc. He explained in detail EMR and its interaction with the Earth surface and Atmosphere.

The highlight of the lecture was 'Real-time analysis of products in information dissemination' or RAPID, which is a web-based quick visualization tool for satellite data on time basis. He showed several videos which was captured during the current cyclone, floods in Kerala, Amazon fire etc.

The last segment of his lecture focused on applications of remote sensing in various aspects of modern day.

The lecture came to an end with Q&A session. It was an informative session and saw participation of large number of students from both Honours and Programme students of the department.

Outcome-

1. Students can apply for internships which are open the entire year, these would be project based and no remuneration will be given. Students should have some working knowledge of RS & GIS.
2. IMD is working towards organizing Workshops/ Training for faculty members on GeoInformatics.

DOODLE OUT NATURE

Date: 18th September, 2019

Student Council, Department of Geography organised a creative intra college competition called "Doodle out Nature" and the theme of the event was "Environment Sustainability". The event was organised in the foyer and was held from 11:30 to 1 pm. Nearly 40 students participated in the event. The students were given an hour to doodle out their compositions.

The winning DOODLES

The event was judged by Dr. Veena Kapoor, Associate Professor, Department of Education, SPM College. The students were judged on the basis of creativity in their vision, its execution, following rules of making doodle and timely submission.

The event turned out to be a huge success as it was beautifully organised and very well coordinated. Everyone enjoyed the event and dispersed with the sincere hope that such events would be organised time and again giving students a chance to display their talents.

Principal ma'am Dr. Sadhna Sharma and Dr Kapoor gave away prizes to the students. 1st position was won by B. Ritika (BA programme), 2nd position was won by Ritu Choudhary (Geography Hons. 2nd year) and the 3rd position was won by Tarushi Tandon (BA programme 3rd year). The winners were awarded with cash prizes and trophies.

Winners with Principal mam, Dr. Veena Kapoor and faculty members of the Department

WORKSHOP ON GEOSPATIAL TECHNOLOGIES COLLABORATION WITH NETRA FOUNDATION

Date: 3-4 October, 2019

Department of Geography organised a 2 day Workshop on 'Geospatial Technologies' on 3rd -4th October in association with Netra Institute of Geo-informatics Management and Technologies Foundation, Dwarka, a premier institute imparting industry-focused, employment-oriented training.

The workshop was divided into 4 sessions-

1. Introduction to GIS & its Application
2. Introduction to Mapping via Google Earth
3. Drone Mapping
4. Practical exercises with QGIS software

First day- Session 1
The theoretical aspects of GIS and its application were explained, namely, GIS-definition, components, elements of GIS, types of data, data structure, methods of input & output etc. Applications of GIS were also explained by them.

In the Second session, students were shown how mapping can be done on Google Earth. Students were then given a small project- Mapping the trees in SPM College premises. They were asked to enable GPS location on their smart phones and go around the college and click photos of all the trees on the campus. Once this was done they came back to the Lab and the photos were uploaded on Google Earth with their Botanical names and locations clearly mentioned. This was an interesting exercise. The day ended with the resource persons giving a small overview about the career prospects in this field.

Second day- Session 1
This session was all about using Drone technology for mapping purposes. After a brief introduction on Drone Technology students were taken in the field where a live demonstration of Drone was given to students, teachers and principal mam. Drone is slowly becoming a very valuable tool for surveying purposes, especially in remote areas where accessibility is a challenge.

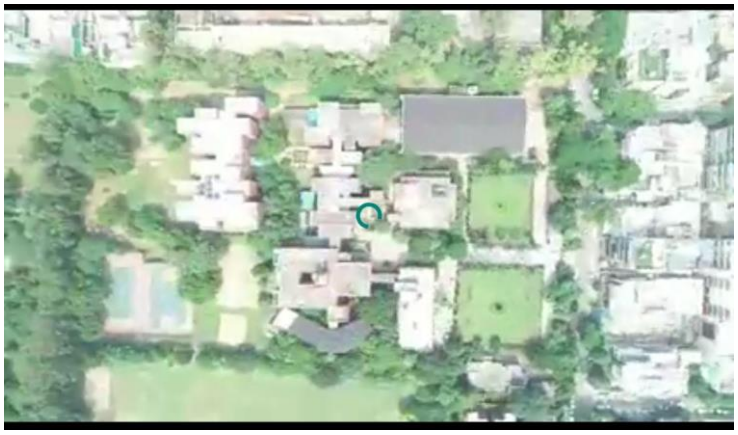
Session 2 was related to hands-on training. Students were taught exercises of Georeferencing, Digitisation, Overlay, Buffering and creation of Thematic Maps via QGIS software. They were provided data to work on.

The two day session ended with a valedictory session where students were given certificates of participation by NETRA institute. A verbal feedback was taken by the students.

Feedback:
The students agreed it was a constructive two day event which gave them an insight into this rapidly expanding field.
Outcome:

1. Project on Mapping of Trees in SPM College campus will be taken up by the department.
2. We are working on the modalities and logistics of starting on an Add-on course on Remote Sensing & GIS in the near future.

Mapping College using DRONE



LECTURE ON "THE CONSEQUENCES OF URBANIZATION: THE CASE IN DELHI"

Guest Speaker: Dr. DR.V. Tyagi, Academic coordinator, DD College, Dehradun

Date: 23rd October, 2019

A lecture was organised by the Department of Geography on "The Consequences of Urbanization: The Case in Delhi, in order to brief and enlighten students about the consequences of urbanization. The talk was presented by Dr. Tyagi, Academic coordinator, DD College, Dehradun. Sir is retired Associate Professor, Shaheed Bhagat Singh College. He has a long and wide range of National & International experience in the field of education and research.

The lecture was divided into segments-

1. An interactive session with Dr. Tyagi
2. Q & A session

Sir started with introducing urban expansion in India- both temporal & spatial. He then gave a brief historical background of Delhi and its growth. Then he spoke about rapid and haphazard urbanisation of Delhi and its periphery. His focus here primarily was on various causes behind this growing issue.
Through his presentation he showed pictures of various sites in Delhi and engaged students in a discussion on several problems rampant Delhi-

1. Urban growth
2. Land encroachment in the Yamuna basin
3. Illegal constructions
4. Poor solid waste management
5. Air pollution
6. Traffic congestion
7. Disaster

The next segment focused on how all the stakeholders need to be proactive in order to find possible solutions to these problems. Sir, also spoke of the fringe areas and the need to re-channelize our focus on these areas.

The lecture came to an end with Q&A session. It was an informative session and saw participation of large number of students from both Honours and Programme students of the department.

Outcome-

1. Department has applied to UGC for funds to organize a National Conference on theme RURAL URBAN FRINGE OF LARGE CITIES.

MOCK DRILL: SCENARIO- EARTHQUAKE & STAMPEDE IN COLLABORATION WITH DDMA

Date: 1st October, 2019

A mock drill on Earthquake and Stampede was conducted in Shyama Prasad Mukherji College in collaboration with District Disaster Management Authority (West), on 1st October 2019. Project officer, Ms. Sunanda De along with her team of around 50 members from DDMA & Civil Defense Personnel, and all the students, teaching and Non-Teaching staff of SPM College participated in the Mock Drill.

The college Nodal Officer Ms. Anuradha Shankar made a call at #1077 and #100 to inform about the Mock Drill for Earthquake & Stampede and simultaneously rang the sirens of the college to declare the emergency situation. Prior to that, 20 dummy casualties were laid in the college by the DDMA team.

After receiving a call regarding the Mock Drill, several teams rushed to college for evacuation, rescue and providing relief. The schedule of arrival of rescue teams from different bodies as received from DDMA is as follows:

SN	Rescue Teams	Time of Arrival
1.	Sh. Deepak Drall, Driver, DDMA QRT (West)	11.24 am
2.	Police Control Room	11.27 am
3.	Sh. Ojas S. Walia (St. John Ambulance) Sh. Avtar Singh (Addl. Nodal Officer)	11.27 am
4.	Sh. Pratam Singh Gulati (DW, Civil Defense) Sh. Bal Kishan, (DW) Sh. Sudarshan Kapoor, (SW)	11.27 am
5.	Fire Control Room	11.28 am
6.	CATS	11.28 am
7.	Sh. Pradeep Kumar (T.I) Traffic	11.39 am
8.	Sh. Radhe Kishan, ASI, D.P. Spl. Cell	11.48 am
9.	Sh. Dalbir Singh (SE-DJB)	12.08 pm
10.	Dr. Sunita Prasad (CDMO) Dr. Sudha Sachdeva (Addl. CDMO)	12.09 pm
11.	Sh. Gajender Singh (BSES-DGM) Punjabi Bagh	12.12 am

After the alarm, the volunteer teams namely Rescue Team and Guide Team consisting of students from NCC and NSS immediately rushed to their designated places for the evacuation of the students and staff from the college building. The

numbers of volunteers were 50 accompanied with 10 teaching staff each in the Rescue Team and Guide Team.

A Medical Post was established immediately after the alarm and certified Nurse of the college along with the first aid boxes and medical supplies set up the medical post along with her team for giving first aid treatment to the injured persons.

An Incident command post was set up simultaneously, from where the entire drill was coordinated.

Guide team evacuated the college building in a disciplined manner very effectively. There was no stampede or chaos and all students and staff (approx. 3000 students and 200 Teaching and non-teaching staff members) gathered in the college lawns through different exit routes within five minutes.

Simultaneously, the Rescue Team members went to rescue various casualties and injured on stretchers and wheel chairs with the help of Civil Defense. They rescued all the injured and helped them reach the medical post for treatment where they were given appropriate treatment by volunteers at Medical post, Nurse and Doctors. Depending upon the injury casualties were moved in Ambulances who had responded to our call.

Fire fighters also gave a demonstration of their activity.

The entire operation came to an end at 12:10 pm and the situation was declared normal and the college resumed its normal functioning.

This was then followed by a debriefing session where the Project officer, Ms. Sunanda De briefed the complete scenario. She praised the Rescue, Guide and Medical teams of the college for their prompt response to the emergency situation. She emphasized the college should now prepare the Disaster Management Plan for preparing for any kind of disasters in future.

Dr. Sadhna Sharma, Principal, SPM College praised the DDMA, Civil Defense and other officials who were instrumental in conducting the Mock Drill in the college.


MEDICAL
FIRST AID
POST

STORYTELLING AND SHUTTERBUGS

Date: 5th February 2020

Storytelling and shutterbug is the conveying of events, images and feelings into words, often by improvisation or embellishment and the person enjoys taking photographs and takes a lot of theme.

Student union , department of geography organized a creative intra college competition called storytelling and shutterbugs and the theme of the event was " disaster". The event was organized in room no-311 and was held from 12pm -1pm. nearly 50 students participated in the event. The student were given an hour to write a story on the given images.

This event was judged by Dr. Superna Gupta, Associate Professor, Department of ….SPM College. The students were judged on the basis of creativity in their vision, its execution, positive attitudes towards any situation and following rules of word limits and creating innovative story with timely submission.

Dr. Superna Gupta madam gave prize to the students 1st position was won by Shilpi Kumari B.A (Programme), 2nd position won by Priyanka Tanwar B.A (Hons) 2nd year, 3rd position was won by Rima B.A (Hons) 1st year. The winners were awarded with cash prizes and a certificate.

SHORT TERM COURSE ON RIO PROGRAM ON WATER ACTION

The Short term course based on the Rio Program on Water Action was organized by the Department of Geography for the entire college across all disciplines. 48 Students from different departments including Commerce, History, Economics, Political Science, BA (Program), and Geography participated in the course. 4 faculty members from Department of Geography also enrolled for the course.

The course was conducted by UN Centre of Excellence, International Astrobiology Research Centre. The centre organizes Short-term certificate courses for undergraduate students to raise awareness on critical environmental issues. Their principal aim is to raise awareness on sustainable development. A college participating in the course is certified for introducing the course and it can also be included as Good Practice for NAAC Evaluation. Students are able to build their resume through these courses and Faculty members can include this course in evaluation of API score.

The course covered water related challenges including limited access to safe water and sanitation, increasing pressure on water resources and ecosystems and increasing risk of droughts and floods. The issues were highlighted through short stories, poems and case studies.

Students were evaluated for the course through an online examination held during January 4-14, 2020 the results for which are awaited.

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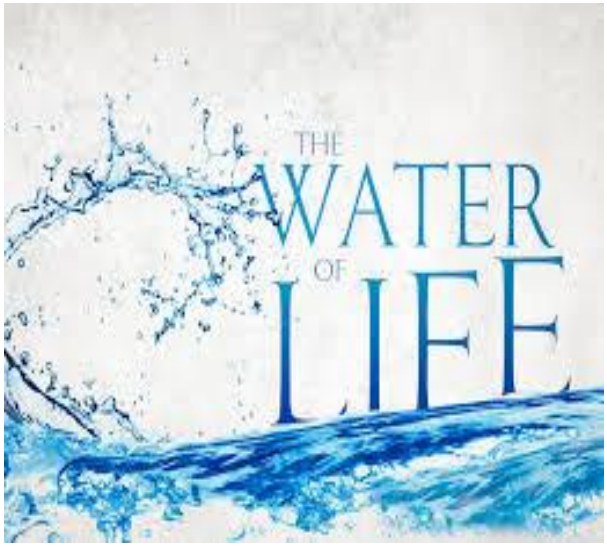

QUIZ

NAZNEEN SULTANA & PRAKSHI RANA

B.A. GEOGRAPHY Hons, 2nd Year

1. A place where an earthquake originates is called?

a. Epicenter b. Focus

c. Fault Line d. Crust

2. National Institute of Disaster Management is located at?

a. Punjab b. Manipur

c. New Delhi d. Hyderabad

3. Which of the following districts in Tamil Nadu is/are drought prone area?

a. Pudukottai b. Sivagangi

c. Vilupuram d. all the above

4. As the magnitude of natural disaster increases their frequency of occurrence will

a. Increase b. Decrease

c. Remain Same d. None

5. The Disaster Management Act was made in

a. 2004 b. 2005

c. 2007 d. 2008

6. Tsunamis are waves generated by

a. Underwater Landslides b. Earthquake

c. Volcanic Eruption d. All the above

7. How much percentage of Indian land is prone to Earthquake?

a.52% b. 59%

c. 60% d. 62%

8. International Tsunami Information Centre is in?

a. Honolulu b. New Delhi

c. Japan d. Goa

9. Area of Indian Coastline which is vulnerable to Strom Surges, Cyclone and Tsunamis is?

a. 5700 km b. 4700 km

c. 3700 km d. 2700 km

10. The Chairman of the National Disaster Management Authority is?

a. Human Resource Development B. Prime Minister

c. Home Minister d. Vice President

11. The recent Garhwal region Earthquake was due to the

a. Himalayan Fold Mountains b. landslide and heavy rain

c. Clash of Indian Plate and Chinese Plate d. Glacier movement

12. Indonesian forest fire in 1997 was caused by

a. Greenhouse effect b. EL NINO effect

b. Depletion of Ozone layer d. None of these

13. What is the rank of India in the World for Natural Disasters after China as per to UNISDR?

a. 3^{rd} b. 2^{nd}

c. 7^{th} d. 8^{th}

14. Which of the following types of Volcanic Eruptions associated with Lacroix?

a. Hawaii Eruption b. Strombolian Eruption

c. Vulcanian d. All of the above

15. The Volcanic Eruption in Iceland falls under which Volcanic Belt in the World?

a. Belts of Convergent Boundaries b. Divergent Plate Boundaries

c. Hot Spots d. None of the above

16. In Australia, the most expensive Natural Disaster is

a. Drought b. Floods

c. Bush Fire d. Cyclone

17. Which of the following Volcanoes is known for its most destructive Volcanic Eruption in recorded history?

a. Mount Kilimanjaro b. Mount Tambora

c. Mount St. Helens d. None of them

18. Which Country is known as the most forest fire prone Country in the World?

a. India b. Australia

c. Uganda d. New Zealand

19. About 2/3rd of the Cyclones that occur in the Indian Coastline occur in the

a. Bay of Bengal b. Coastal area of South India

c. Coastal area of West d. None of the Above

20. The State Disaster Management Authority is headed by

a. Chief Secretary of the State b. Chief Minister

c. Governor d. None of them

21. A geophysicist who studies earthquakes and the mechanical characteristics of the Earth is called _____.

a. Archaeologist b. Geologist

c. Geographer d. Seismologist

22. Which part of disaster management involves predicting a possible crisis before it occurs?

a. Mitigation b. Response

c. Preparedness d. Recovery

23. What is the speed of tsunami waves?

a. 40 meters/ hour b. 100 km / hour

c. 400km/hour d. 800km/hour

24. What does the acronym ISDR stands for?

a. International Significant Disaster Resource

b. International Sustainable Development Report

c. International Strategy for Disaster Reduction

d. Intergovernmental strategy for Developing Recreation

25. When was Asian Disaster Preparedness center established?

a. 1980 c. 1986

b. 1990 d. 1996

26. When do we celebrate International day for Natural Disaster Reduction?

a. March 1 b. April 15

c. September 12 d. October 13

27. Who heads the National Crisis Management Committee?

a. Prime Minister b. Cabinet Secretary

c. President d. Ministry of Environment

28. Under which Ministry National Disaster Management Authority comes?

a. Ministry of Environment

b. Ministry of Foreign Affairs

c. Ministry of Pollution

d. Ministry of Home Affairs

29. Uttarakhand lies in zone _____ of Earthquake prone areas.

a. 5 b. 3

c. 4 d. 2

30. The annual flood peaks in India are recorded in months of:

a. June, July b. July, August

c. July, September d. August, September

31. What are the manuals that identify the role of each officer in State for managing the natural disasters called as?

a. State Relief Manuals b. State Environmental Protection Manuals

c. State Disaster Manuals d. State Protection Manuals

32. Vibrations radiate from focus in all direction as

a. Longitudinal waves b. Transverse waves

c. Seismic wave's d. Tympanic waves

33. Just prior to a tsunami coming ashore, sea level appears to fall quickly. This phenomenon is called?

a) Sea level drop b. Draw fall

c. Drawdown d. Dip in sea level

34. The Indian Tsunami Early Warning Centre (ITEWC) established at Indian National Centre for Ocean Information Sciences is located in

a. Chennai b. Goa

c. Kochi d. Hyderabad

35. Magnitude of earthquake indicates amount of?

a. vibrations per second b. vibrations per minute

c. oscillations d. energy released

36. Where will be the second BIMSTEC Disaster Management Exercise-2020 held?

a. Kolkata b. Bangalore

c. Bhubaneshwar d. Sikkim

37. Tsunami detectors are placed in sea at _____ kms from shore.

a. 25 b. 100

c. 50 d. 85

38. What does the term Mitigation mean in terms of Disaster Management?

a. The effort to reduce loss of life and property by lessening the impact of disaster
b. The measures taken to Prepare and reduce the effect of disaster.
c. Process of returning an organization, society, or system to a state of normality after the occurrence of the disaster
d. None of the above.

39. During hurricane due to which force a whirling motion is caused?

a. Coriolis Force

b. Frictional Force

c. Contact Force

d. Gravitational Force

40. When did Tsunami struck the east coast of India in most recent?

a. December 26, 2004 b. December 26, 2014

c. December 24, 2004 d. January 26, 1997

A	S	Y	T	M	S	I	N	A	I	R	A	T	I	N	A	M	U	H
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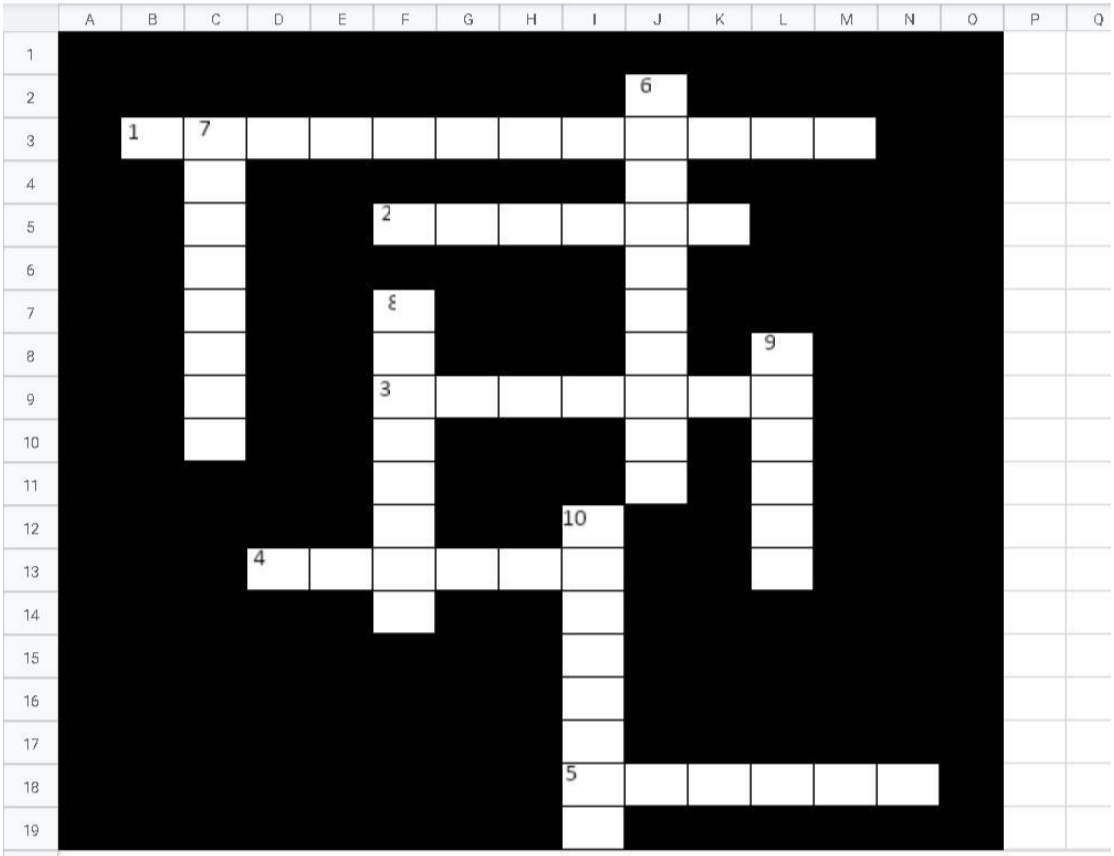
*WORDS TO FIND

SURVIVAL	RISK	PROTEST
HUMANITARIANISM	EVACUATION	CONSEQUENCE
PREPAREDNESS	FAMINE	CO-OPERATION
THREAT	VULNERABILITY	JEOPARDY
EMERGENCY	RESILIENCE	MITIGATION

VANSHIKA AMOLI, B.A. GEOGRAPHY HONS., 2ND YEAR



ACROSS

1. A measure taken to prepare for and reduce the effect of disaster
2. An emotional response to a terrible event
3. A place giving temporary protection from bad weather or danger
4. An operation organized to free people during disaster
5. An dangerous phenomena that may cause loss of life

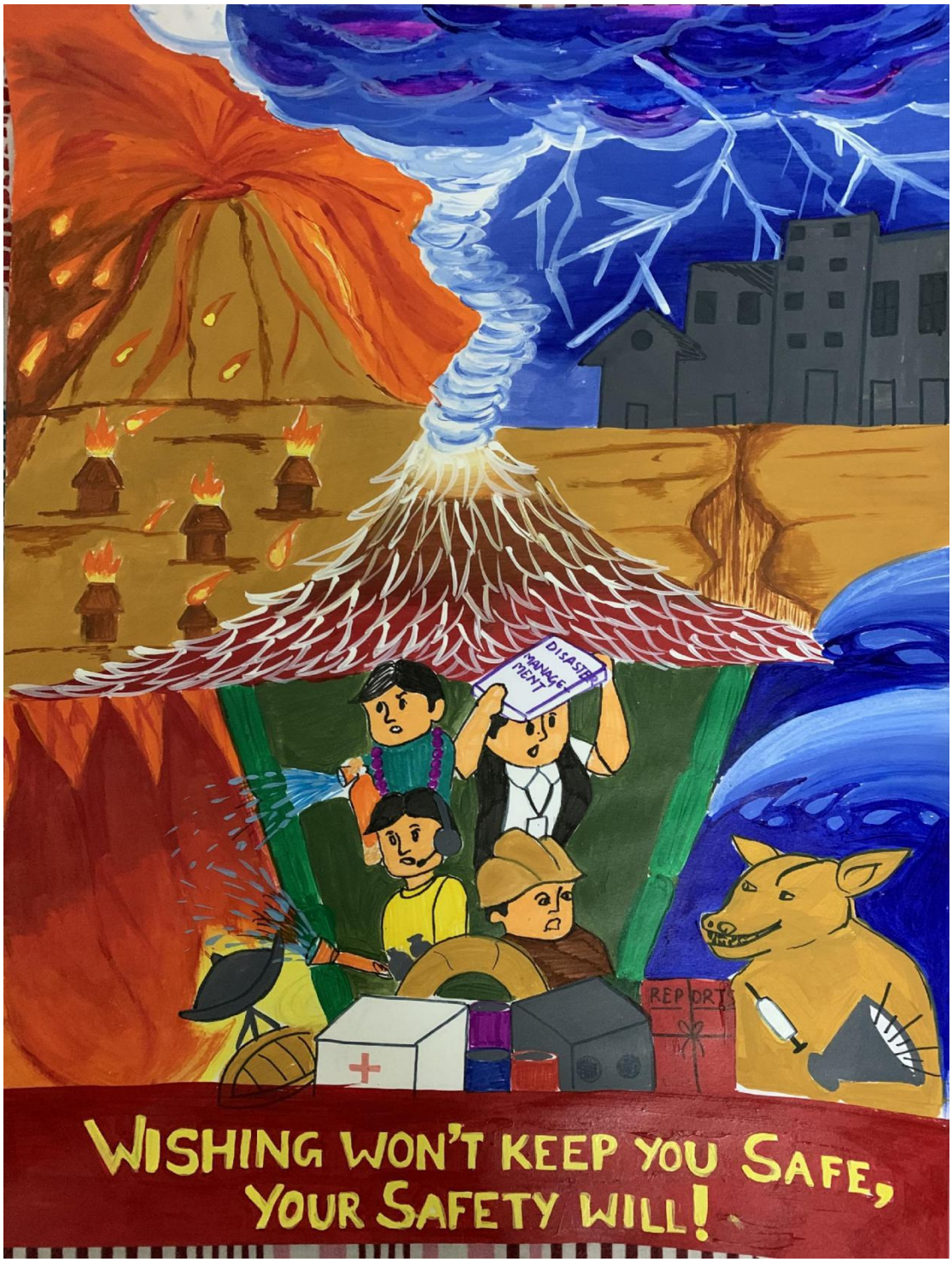
DOWN

6. An instrument to measure the speed of wind
7. Action taken after a didaster to restore service and reconstruct communities
8. Provision of emergency services and public assistance during or immediately after a disaster
9. classifying the injured on the basis of severity of injuries
10. In india National institute of disaster is located at.

ANSWERS

1.Preparedness 2.Trauma 3.shelter 4.Rescue 5.Hazard 6.Anemometer 7.Recovery 8.Response 9.Triage 10.New Delhi

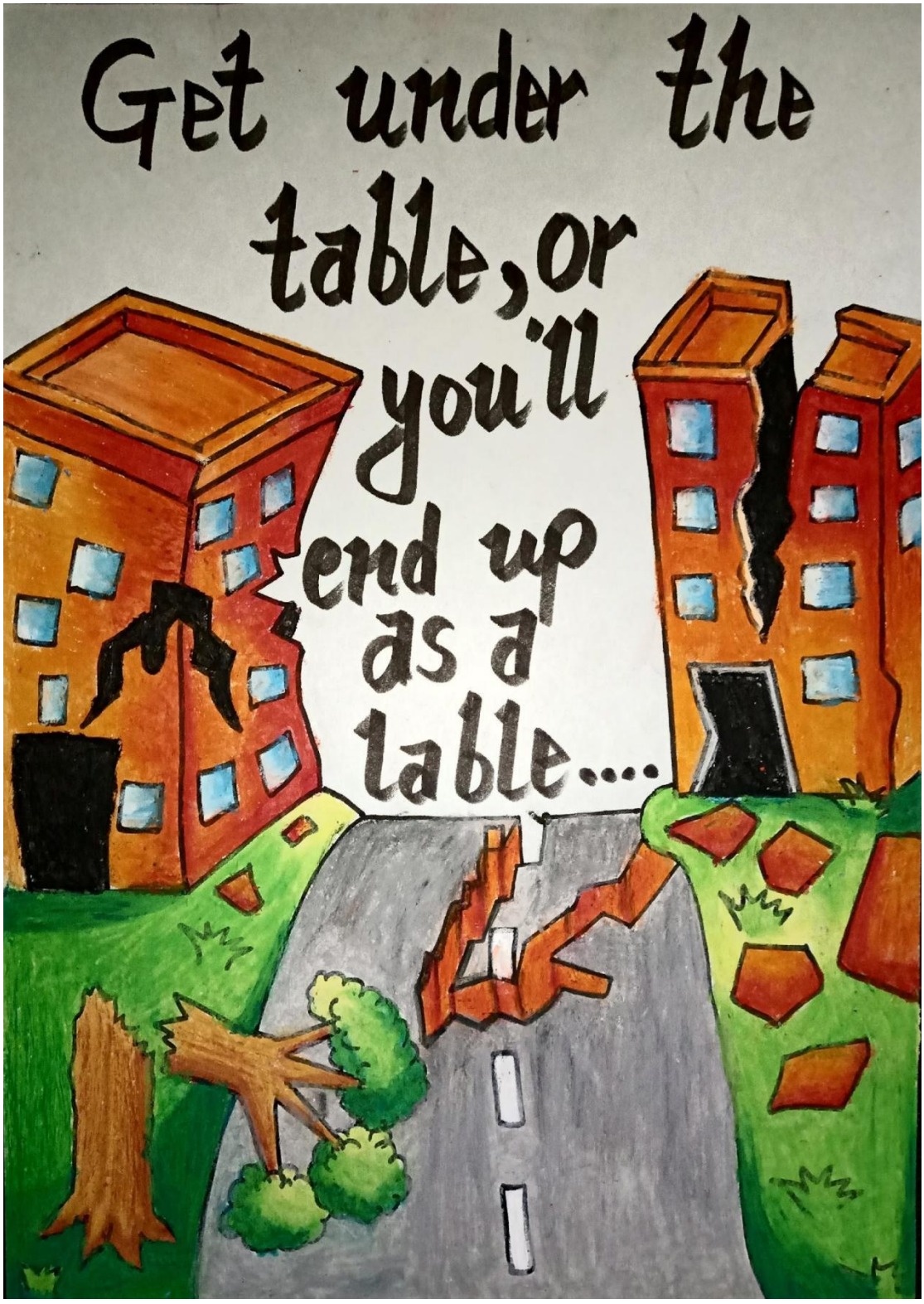
OME MINAM PADUNG, B.A. GEOGRAPHY HONS., 2ND YEAR



PAVI BENIWAL, B.A. GEOGRAPHY HONS 2ND YEAR

RAUNAK SAHNI B.A. GEOGRAPHY HONS 2ND YEAR

MAHIMA MAJUNDAR B.A. GEOGRAPHY HONS 1ST YEAR



ANJALI SOLANKI B.A. GEOGRAPHY HONS 2ND YEAR

MAHIMA DABAS B.A. GEOGRAPHY HONS 1ST YEAR

MAHIMA DABAS B.A. GEOGRAPHY HONS 1ST YEAR

Here's Thanking

Principal Mam	*Dr. Sadhna Sharma*
Head of the Department	*Dr. Rachna Dua*
Faculty Members	*Ms. Anuradha Shankar, Dr. Gargi Kar Majumdar, Dr. Seema, Mr. Aakash Upadhyay, Ms. Maansi Malik and Md. Arif*
Faculty Advisor	*Ms. Anuradha Shankar*
Editorial Team	*Pavi Beniwal, Maithali Pathak, Anjali Eureka, Priyanka*

All the institutions & people whose images we have used in the magazine at various places