NATURAL AND MANMADE DISASTERS: A COMPARATIVE STUDY IN THE PERSPECTIVE OF SECURITY THREAT TO INDIA

Dr. Ranvir Singh
Lect. in Geography
GMSSSS Sisai ((Hisar), India

Abstract: From past few years disaster has emerged as security threat to India. India is vulnerable to both natural and manmade disasters. Such disasters include tsunamis, earthquakes, the current ongoing financial crisis, terrorism, riots, and wars. As per the report of National Disaster Management Authority of India , India has experienced many disasters during the period of 2001-2014. This paper assesses and compares the impacts of various natural and man-made disasters(terrorist attacks) quantitatively for the period 2001-2014. The purpose of this paper is to provide an overview on the statistics of various disasters in India. The disasters data for the covered region have been collected from several sources such as the National Disaster Management Authority of India, technical reports, general and research articles, internet web sites and Indian government reports.

Index Terms- Disasters, Natural disasters, man-made disasters, risks.

I.INTRODUCTION

According to disaster management Act.2005 of Government of India [19], "disaster means a catastrophe, mishap, calamity of grave occurrence in any area, arising from natural or manmade causes, of 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 of magnitude as to be beyond the coping capacity of the community of the affected area". Center for Research on the Epidemiology of Disaster i.e. CRED defines a disaster as "a situation or event which overwhelms local capacity, necessitating a request to a national or international level for external assistance; an unforeseen and often sudden event that causes great damage, destruction and human suffering". The situation should fulfill at least one of the following criteria then only the situation can be called as disaster: a) 10 or more people reported killed b) 100 or more people reported affected; c) Declaration of a state of emergency d) call for international assistance. From a larger perspective, no natural process can be a disaster by itself; it just occurs as a result of the causal effects. For example, the movement of plates gives rise to earthquakes and tsunamis; climate processes give rise to cyclones, floods and droughts. These have been occurring and will keep occurring through time. When such a resultant process interacts with the human populations and their belongings so as to cause a widespread loss of lives and property, we call that a disaster. If an earthquake or tsunami occurs in the middle of an ocean and we are not affected by it, we don't consider that a disaster. Hence, disaster is purely from an anthropogenic point of view, and thus all disasters are "manmade" to a certain extent, as it is we who decide to settle down in the path of a natural process.

II.TYPES OF DISASTERS

Disaster is mainly divided in Natural disaster and man made disaster. The term natural disasters refers to the disasters that are triggered because of natural phenomenon like earthquake, cyclones, flood, tsunami etc. The term man made disaster refers to the disasters resulting from manmade hazards. Manmade disasters can be divided into three categories: armed conflict, technological and chemical disasters, and disasters that are not caused by natural hazards but that occurs in human sentiments. According to the definition and types of man made disaster, terrorist attacks also come under the type of manmade disaster.

Due to its highly diversified range of natural features and unique Geoclimatic and Socio-economic conditions, India has been vulnerable in varying degrees, to various disasters like floods, droughts, Cyclones, tsunamis, earthquakes, landslides, avalanches and forest fire. Out of 35 States and Union

Territories (UTs) in the country, 27 are disaster prone. Almost 58.6% landmass is prone to earthquakes of moderate to very high intensity; 12% land is prone to flood and river erosion; out of 7,516 km. coast line, 5,700 km. is prone to cyclones and tsunamis;68% of the cultivable land is vulnerable to drought and hilly areas are at risk from landslides and avalanches[8]. Fire incidents, industrial accidents and other manmade disasters involving chemical, biological and radioactive materials are additional hazards.

III. NATURAL DISASTERS VS MANMADE (TERRORIST ATTACKS) DISASTERS

If we compare the natural and manmade disaster i.e. terrorist attacks specifically in India we can understand the vulnerability of the problem of disaster. As per the report of National Disaster Management Authority of India and the reports of other agencies a year wise death toll due to natural is being prepared. The table shows the details from the year 2001. This table contains mainly the deaths due to some major natural disasters.

Table1: Natural Disasters (2001-2014)

Sr. No.	Year	Deaths/Killings
1	2001	13,805
2	2004	10,749
3	2005	2494
4	2008	731
5	2009	300
6	2010	1640
7	2011	111
8	2012	150
9	2013	5,748
10	2014(up to September)	351
	Total	**36,079**

As previously stated the table shows death toll of some major disaster from 2001 to September 2014. Year 2001 and 2004 shows more deaths accordingly due to Gujarat earthquake and the effect of tsunami on the southern coast of India. In the year 2013 Uttarakhand, Himachal Pradesh, Uttarpradesh were affected by flood approximately 5748 people were killed. Recently in 2014, 1st August a small village named 'Maline' near Pune in Maharashtra went under Mud due to land slide killing approximately 151 people and on September 2014 only flood in Jammu & Kashmir killed approximately 200 people. That is from 2001 to till date approximately 36,079 people lost their lives because of major natural disasters. If we check the killings in between the year 1980 to 2010 in 431 events 1,43,039 people lost their lives and 152,17,26,127 people got affected due to natural disasters.

High magnitude floods during the monsoon season are considered to be India's recurring and leading natural disaster [13]. The country has to face loss of life and damage to property due to severe floods time and time again. Heavy flood damages were experienced in the country during the monsoons of 1955, 1971, 1973, 1977, 1978, 1980, 1984, 1988, 1989, 1998, 2001 and 2004. Central Water Commission has compiled the damage figures due to flood from 1953 to 2004 on the basis of which yearly average loss to life is reported to be about to 1590 and the damage to public utilities Rs. 8068 billion[6].

Severe losses were also caused by floods in recent past, e.g. heavy monsoon rains triggered landslides and flooding in India in July, 2006, specifically in the regions around Mumbai. Over 1,100 people lost their lives, and the insured property damage amounted to USD 0.8 billion[6].

Fifty-seven percent of the country is prone to seismic activity. During the international decade of natural disaster reduction, India suffered the adverse impact of several earthquakes, the most significant being in Uttarkashi, Latur and Jabalpur. Some of the most devastating earthquakes which India has faced in the past include the Kutch earthquakes of 2001 and 1819, the Shillong earthquake of 1897, the Kangra earthquake of 1905, the Bihar-Nepal earthquake of 1934, the North-East and Assam earthquake of 1950 the Anjar earthquake in Gujarat of 1956, etc.

If we put a light on manmade disasters specifically on the fatalities due to terrorist activity in between the year 2001 to 2014 we get following results:

Table 2: Manmade (terrorist attacks) Disasters (2001-2014)

Year	**Civilians**	**Security force personnel**	**Total fatalities**	**Terrorists Killed**
2001	1067	590	1657	2850
2002	839	469	1308	1714
2003	658	338	996	1546
2004	534	325	859	951
2005	521	218	739	1000
2006	349	168	517	599
2007	164	121	285	492
2008	69	90	159	382
2009	55	78	133	242
2010	36	69	105	270
2011	34	30	64	119
2012	16	17	33	84
2013	20	61	81	100
2014	13	28	41	67
Total	**4375**	**2602**	**6977**	**10416**

The table shows from the year 2001 to 2014 total fatalities due to terrorist attacks amongst the civilians were 4375 and total fatalities of Security Force Personnel were 2602 i.e. total fatalities 6977 amongst the Indian. In the terrorist violence's in between the year 2001 to 2014, total 10416 terrorists were killed by our security forces. Other than the terrorist attack on June 22, 2003, in the first major accident on the Konkan Railway, 53 people were killed. This was considered as major manmade disaster of the year 2003.

IV. CONCLUSION

From the above mentioned data natural disaster had most adverse effect on the people of India as compare to manmade disasters. The disaster is natural or manmade it had its evil effect on human life and environment. As a biggest internal security challenge we should focus on the management of disaster. It has seen most of the times intensity of disaster makes us and the government serious to think about the

problem. The time has come that every Indian should think and act seriously about the challenge of disaster. Educational institution can play an active role by making the training of disaster compulsory for the students. After the training those students would be able to survive and save the lives of others during disaster. Now the time has come that nation should think and treat the problem of disaster seriously by making extra arrangements andtraining programs for the management of disaster.

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