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NATURAL DISASTERS AND THEIR IMPACTS IN INDIA – A REVIEW

Anitha Veeramani¹

Arulraj Jeyaraj²

Abstract

Disasters are mostly strike the region between the Tropic of Cancer and the Tropic of Capricorn at global level. India is located above the equator region and crossing the line of Tropic of Cancer and it has severally affected by an unfortunate and undesirable situation at every year due to disasters, because of varying climatologic and hypsographic conditions. Disasters may arise either natural or manmade which affects human community as well as their environment. India holds second place for their population in the world and its 1.2 billion people are affected by all kinds of disasters. They severely affected by the droughts and famines before three decades. Other disasters like cyclones, floods, earthquakes, landslides and avalanches are repeatedly and increasingly affected from the period 2001 onwards. The United Nations (UN) general assembly had announced in 1989 that from 1990 to 2000 as international decade of natural disaster. The UN main objectives were reducing loss of lives and property and restrict socio- economic damage through concerted international action. Due to dreadful impact of natural disasters that affect the population density and the economic status of the country. Similarly, India has set up disaster management and its action at national, state as well as district/block and village level in the country. This review article indicates the problems of natural disasters in India due to weak management efforts in tackling the natural disasters and the disaster cycle of preparedness, response, reconstruction and mitigation. This review also revealed the preventive measures that could be taken from past experiences of disasters.

Keywords: Disaster, Cyclone, flood, Mitigation.

Introduction

India is one among the country highly affected by various disasters in the world. A sudden change takes place in the earth which affects the normal pattern of life or ecosystem disturb by harmful event that are known as natural disasters. Generally disasters are classified into Geophysical, Meteorological, Hydrological, Climatologically and Biological, **Safer Homes, Stronger Communities, (2010)**. Disaster which creates abnormal losses to human beings, the destruction of property, and also degradation of environment in the affected area. At global level the most disaster- prone regions are Asia and the Pacific. Due to active tectonic plate movements takes place in this regions causes earthquakes and tsunamis. Cyclones and Typhoons are generated in the Indian and Pacific Oceans by changing Weather and Climate, (ESCAP: 2015). People are directly or indirectly responsible for the occurring of natural disasters in their surroundings, **Public health guide for emergencies**. The establishment of the International Labour Office in the year 1993 due to major accidents such as leakage of methyl isocyanate at Bhopal in India, likewise another warehouse fire accident at Basel in Switzerland. The International Labour Office n aims at the Prevention of Major Industrial Accidents No. 174 and the Prevention of Major Industrial Accidents Recommendation No. 181,

SEAPR (1972-2002). An average of 50 million people was affected vulnerably by cyclones, droughts earthquakes and floods. Avalanches, forest fire and landslides in India, **Ministry of Home Affairs, India Government of India, (2011)**; **Vinod and Kaushik (2012)**. According to **Mohammad Abdur Rob**, the Indian Ocean Region which is frequently affected by Tropical Cyclones. Hence this region is otherwise called a World's Hazard Belt. Around 50% of climatogenic and sesimogenic natural disasters are taking place in the Indian Ocean Region. This report was given by ESCAP in the year of 1995. The Northwest Pacific, over the southern end of the Bay of Bengal, east of India and south of Bangladesh are mostly affected regions by cyclones, **UNESCAP and ADB (1995)**; **Ali (1999)** **Huang (1999)**; **Kelly and Adger (2000)**. The most flood prone countries are India, Bangladesh and China in the pacific region, **Mirza and Eriksen (1996)**; **Ji et al. (1993)**. Due to deforestation some hilly regions in India, China, Nepal, Philippines and Thailand are affected and leads to landslides. These regions are known as most prone to landslides **UNESCAP and ADB, (1995)**. The current article emphasis on the impact of various natural disasters prevailing in India and precautions to be taken by the Government of India.

¹. Department of Business Administration, Jayaraj Annapackiam College for Women, (Autonomous), Periyakulam.

². Department of Microbiology, Annai Dora College of Nursing, Seva Nilayam, Rajathani Aundipatty Taluk, Theni

Major disasters found in India

Droughts and Famines

A long period of time when there is little or no rain in any parts of the world takes place is called as Drought. Similarly, a lack of food during a long period of time takes place at different parts in the global level is denoted as Famine. **Vinod K Sharma**, states that, the time period from 1970s to 1980s are severely affected the Indian people both the droughts and the famines. This was one of the major disasters found in India. After that several measures were taken by Government of India to eradicate the problems caused by the disasters. We have two main monsoons, one is North-East monsoon and other is South-West monsoon, these are very useful for our irrigation system for our agriculture purpose. About 16% of the region is drought prone area in the country as well as 50 million people in India, that who were affected annually due to irregular monsoon and it led to droughts and famines, **Vinod and Kaushik, (2012)**.

Earthquakes

A sudden, vigorous shaking of earth surface or earth's crust is called an earthquake. According to **Vinod K Sharma**, Earthquake had occurred at different parts of the world either by natural or man-made actions. This disaster was vulnerably affected Iran and India in the year 1990 and 2001 respectively. The two major earthquakes were taken place in India at the state of Maharashtra on September 30, 1993 of magnitude 6.4 on Richter scale and another incident in Gujarat 2001 of magnitude 6.9 on the Richter scale. The impact caused very loss of human population and damage their infrastructure. India had experienced major earthquakes and it resulted in more than 35,000 deaths occurred last 20 years. The earthquakes are frequently occurring in the region of Andaman and Nicobar Islands, Kutch, Himachal and the North-East. These are particularly prone to earthquakes in India, **Shridhar Sharma**.

Cyclones

A violent tropical storm in which strong winds move in a circle this storm is called Cyclones. They are two types of cyclones such as Tropical Cyclones and Temperate Cyclones. India has been severely damaged by tropical cyclones in the coastal areas. It caused great loss to human life and their property. The drastic effect of tropical cyclones has found in Indian states like Andhra Pradesh, Orissa, West Bengal and Tamil Nadu, National Centre for Disaster Management. (1999).

Flood

Heavy discharges of rainfall due to monsoon period occurred in India. Which occurred in all parts of the Indian states except Goa, Karnataka, Madhya Pradesh, Chhattisgarh, Rajasthan, Sikkim, Chandigarh, Dadar &

Nagali Haveli, Daman Diu, Delhi and Lakshadweep, **National Centre for Disaster Management, (1999)** Flood is less catastrophic event than other disasters which occurs regularly in low lying areas suddenly and strongly affecting, day to day human life as well as damaging their properties during flood time. The last century records have shown that there were several catastrophic flooding in Chennai and other parts of Tamil Nadu, India in 1943, 1976, 1985, 2002, 2005 and 2015 respectively caused by heavy rainfall related with cyclonic activity, **The Hindu, (2015)**.

Landslides

A mass of earth surface, rock, etc. that falls down the slope of a mountain or cliff is called as Landslides. Due to heavy monsoon rainfall which associated with cyclones results in moderate to heavy landslide takes place in the region of Himalayan, the North-east hill and the Western Ghats, **Vinod and Kaushik, (2012)**. **Shridhar Sharma** said that, Around 380 people were killed and also entire village was washed away due to terrific landslides took place at Malpa Uttarkhand in India dated on 11th and 17th August 1998. It was one of the worst landslides in the history of India.

Tsunami

The ferocious (aggressive or violent or very strong) rise and fall of sea tides or surges are known as Tsunami. On 26th December 2004 a dreadful maritime disaster occurred near the island of Sumatra, Indonesia and India in the Indian Ocean Region. Tsunami which mainly affects in the coastal regions as well as and their associated parts. This vulnerable disaster caused 10,749 deaths in India, **Shridhar Sharma**.

Biologically Related Disasters

Disaster which caused by the exposure of pathogenic micro organisms and their toxic products in the people is known as Biodisaster. Mass mortality due to the entry of virulent pathogenic microorganisms into the human beings. The widespread infection is caused by pathogens or parasites such as virus, bacteria, fungi, protozoa and worms etc. for example small pox, Typhus and Plague. These are harmful organisms are spread and transmitted by the way of air, water, soil, infected persons and vectors. **Bupesh, et al., (2014)**.

Disaster Management systems in India

The National Disaster Management Act has enacted on December 23, 2005, and also transparency measures could be taken for victims of disasters. The Act will provide for making Disaster Response Fund and Disaster Mitigation Fund. This Act should take action against obstruction, false claims, misappropriation etc. This act strongly states that there is no discrimination on the ground of sex, caste, community, descent or religion in

providing compensation and relief, after, this act that, The Disaster Management Policy framed in 2009 under the influence of this Act. This policy mechanism for response, relief and rehabilitation. **Vinod and Kaushik, (2012); Ministry of Home Affairs, Government of India, (2011).** In recent years, the magnitude of the disasters increased as well as their impacts was vigorously damaged people life and their property in affected regions. The various measures have undertaken by the Government of India to mitigate the impact of disasters, **Shivananda, and Gautam, (2012).**

Disaster Management act contains Basic Disaster Management Plan (Basic Plan) which was created by the National Commission under Section 5(3) of this Act. Similarly State commission which clearly indicates State Commission for Disaster Management constituted under section 4(2) of this Act, **Jacob P Alex, (2006).** The bad impacts of disasters due to weak management efforts from various agencies and all parts of the society. These weak managements are Inadequate Early Warning System, Lack of Pre-disaster Preparedness, Inadequate and Slow Relief, Lack of Co-ordination, Slow Rehabilitation and Reconstruction, Improper Administration, Poor Management of Finances for Post-disaster Relief, Symbolism Rather than Relief and No Instruction for Pre-seismic Period.

Daya Kaul and Lohitkumar stated that, the government of India decided to remove the inadequacies to maintain preparedness after the impact of Bhuj earthquake, 2001. This decision made after rapid response to disaster. Major response initiatives include Preparation of Special Response Teams, Incident Command System, Standard Operating Procedure, Trigger Mechanism and Emergency Operation Centre. Similar precaution measures especially Technology Developments such as India Disaster Resource Network, Development of GIS based National Data base for Disaster Management and Installation of Early Warning and Hazard Detection Equipment. **According to Vinod Sharma,** those measures would be taken from policy made by Central Government, strategies and planning at state level, implementation and Coordination at District level, actual Implementation of ground level activities through Village and Urban Local Bodies. After the impacts of various natural disasters, we have learnt lessons that are applied for mitigating or totally preventing the effects of future disasters events, **Public health guide for emergencies.**

Discussion

Around 56 million people are affected in many states in India by disasters at every year. Out of these 35 States and Union Territories in the country, 25 states are disaster prone area and 139 districts are identified as disaster

hazard prone regions. **Jacob P Alex, (2006).** We can prevent and avoid the major disaster impacts through prediction and warning. The prediction process involves finding out disaster problems will be based on scientific observation. In this process in order to identify some kind of precursor events. For example Hurricanes and Volcanic eruptions etc. similarly the other prediction event is forecast refers to short term prediction in terms of the magnitude, location, date and time of an event will happen in the future based on information that is available now. Early warning statement telling that something bad or unpleasant event may happen in the future so that we can try to avoid from disasters impacts. This statement includes the timeliness of the warning, effective communication and public information systems to inform the public and credibility of the warning sources, **Stephen, (2014).** It is really an unexpected worst event, disaster that occurred in our country which leads to make severe hazards among the people. The Government of India should take proper preventive measures through disaster response initiative steps as well as technological developments to avoid major hazards arise from the impact of disasters.

References

1. Vinod K. Sharma and Kaushik Ashutosh.D. (2012). *Natural Disaster Management in India, Over view Indian Institute of Public Administration & National Institute of Disaster Management, New Delhi Pg.No.30.*
2. United Nations Economic and Social Commission for Asia and the Pacific (2013). *Building Resilience to Natural Disasters and Major Economic Crises: Bangkok, Thailand: United Nations.Pg.No.07.*
3. State of the Environment and Policy Retrospective *Disasters, 1972–2002. Pg.No. 274.*
4. Mohammad Abdur Rob, *Natural Disasters in India Ocean region and its Impact on Socio- Economy of the Countries Bangladesh,* Department of Geography and Environment Dhaka University, Bangladesh.
5. Mirza, M.Q. and Ericksen, N.J. (1996). Impact of Water Control Projects on Fisheries Resources in Bangladesh. *Environmental Management, 20(4), 527-539.*
6. Ji, Z.X., Jiang, Z.X and Zhu, J.W. (1993). Impacts of Sea Level Rise on Coastal Erosion in the Changjiang Delta Northern Jiangsu Coastal Plain. (in Chinese with English Abstract), *Acta Geographica Sinica 48 (6), 516–26.*
7. UNESCAP and ADB (1995). *State of the Environment in Asia and the Pacific, United Nations Economic and Social Commission for Asia and the Pacific and the Asian Development Bank, United Nations, New York.*

8. Ali, A. (1999). Climate Change Impacts and Adaptation Assessment in Bangladesh. *Climate Research*, special 6, 12 (2/3), 109–16.
9. Huang, Z.G. (1999). Sea Level Changes in Guangdong and its Impacts. *Guangdong Science and Technology Press (in Chinese)*, Guangzhou, China.
10. Kelly, P.M. and Adger, W.N. (2000). Theory and Practice in Assessing Vulnerability to Climate Change and Facilitating Adaptation. *Climate Change*, 47, 325-52.
11. Public health guide for emergencies, Disaster definitions, The Johns Hopkins and the International Federation of Red Cross and Red Crescent Societies, Pg.No.24-43.
12. Vinod K Sharma, Natural Disaster Management in India- Environment and development view point, Disaster Management, Indian Institute of Public Administration, New Delhi, India. Pg.No.1-23.
13. *National Centre for Disaster Management*, (1999). Government of India.
14. The Hindu, India Daily News Paper, State News, December, 9, 2015.
15. Safer Homes, Stronger Communities, (2010). A Handbook for Reconstructing after Natural Disasters, The World Bank, Washington DC 20433, U.S.A. Pg.No. 339-345.
16. Shridhar Sharma, Disasters – An Indian Experience, National Academy of Medical Sciences & Institute of Human Behaviour & Allied Sciences, Delhi-110 095. India.
17. Bupesh, G. Sivasubramanian, S.Sakthivadivel, P.Gunasekeran, P. and Raman, KRK. (2014).
18. Biological Disaster, Prevention and Rescue, *Journal of Management and Science*, (4):4, Pg.No. 33-37.
19. Shivananda, H. and Gautam, P.K. (2012). Reassessing India's Disaster Management Preparedness and the Role of the Indian Armed Forces, *Journal of Defence Studies* (1):6, Pg.No. 102-113.
20. Government of India, Ministry of Home Affairs, (2011.). *State Level Programmes for Strengthening Disaster Management in India*, available at <http://ndmindia.nic.in>
21. Jacob P Alex, (2006). Disaster Management: Towards A Legal Framework, Indian Institute of Public Administration, I.P. Estate, Ring Road, New Delhi 110 002.
22. Stephen A. Nelson (2014). Natural Hazards and Natural Disasters, *Natural Disasters*, Tulane University, Pg. No. 1-9. http://www.tulane.edu/~sanelson/Natural_Disasters/introduction.htm.
23. Daya Kaul, Md. Ayaz , Lohitkumar S N, Disaster Management In India, Department of Civil Engineering, IIT Kanpur-208016, India.



Prof. T. Rajeswari
Managing Editor

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