

A Review on Disaster Management and its Mitigation Techniques

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Abstract- Disaster Management refers to manage disaster response in the country. India has been traditionally vulnerable to the natural disasters on the account of its unique geo-climatic conditions. Floods, droughts, cyclones, earthquakes and landslides would have been recurrent phenomena. In India most of the disasters are caused by floods. About 60% of the landmass is prone to earthquakes of various intensities, over 40 million hectares is prone to floods, about 8% of the total area is prone to cyclones and 68% of the area is susceptible to drought. In this paper a review has been made to disaster reasons and their mitigation and the effect of disaster on the lives of human being and necessary steps taken to mitigate the disaster.

Keywords- Disaster Recovery Planning, Business Continuity Planning, Risk Assessment

I. INTRODUCTION

Disaster Management as a subject essentially deals with management of resources and information as far as a disastrous event is concerned and also how effectively and seamlessly one coordinates these resources. Disaster management, at the individual and organizational level, deals with issues of planning, coordinating, communication and risk management. The earth has been an unstable proposition throughout its existence over the past couple of years; the Government of India has brought about a paradigm shift in the approach to disaster management. The new approach proceeds from the conviction that development cannot be sustainable unless disaster mitigation is built into the development process. Another corner stone of the approach is that mitigation has to be multi-disciplinary spanning across all sectors of development. The new policy also emanates from the belief that investments in mitigation are much more cost effective than expenditure on relief and rehabilitation. Disaster management occupies an important place in this country's policy framework as it is the poor and the under-privileged who are worst affected on account of calamities/disasters.

Man who entered this scene has been exploring during his exercise to unravel the various mysteries till date. These mysteries have been understood by and confined to the intellectual community.

But when the victims of mysteries are the human being then they need to know the causes of disaster.

Disasters are not totally discrete events. Their possibility of occurrence, time, place and Severity of the strike can be

reasonably and in some cases accurately predicted by technological and scientific advances. It has been established there is a definite pattern in their occurrences and hence we can to some extent reduce the impact of damage. Though, we cannot reduce the extent of damage itself.

II. MEANING OF DISASTER:

Disaster is defined as a crisis situation causing wide spread damage which far exceeds our ability to recover. Thus, by definition, there cannot be a perfect ideal system that prevents damage because then it would not be a disaster. It has to suffocate our ability to recover. Only then it can be called as 'disaster'. 'Disaster is a crisis situation that far exceeds the capabilities'.



Fig. 2. Disaster

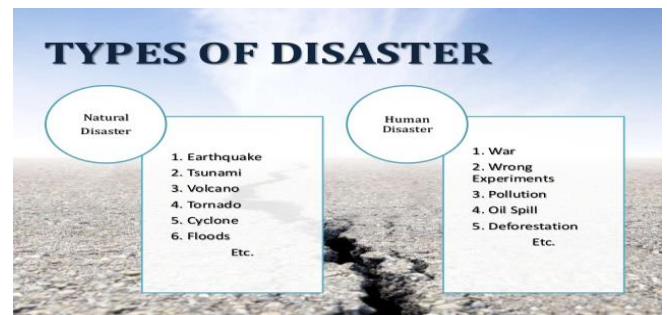


Fig. 2. Types of Disaster

III. LITERATURE SURVEY

Shubhendu S. Shukla (2011) describes severe damage to ecology and economy of a region due to disaster. With

installation of new technologies and by adopting space technology as INSAT and IRS series of satellites, India has developed an operational mechanism for disaster warning especially cyclone and drought, and their monitoring and mitigation.

Pramod Patil (2012) highlighted disaster profile of India and Disaster Management in India. He concluded that there are some points on which we have to focus like effective warning system and effective communication system etc.

Chen-Huei Chou et al (2013) presented we focus on identifying the contents of a web based disaster management system from the perspectives of multiple stakeholders (victims and aid providers), the needs the system should meet, and crisis behaviors that the system should anticipate. We propose two conceptual models to investigate how these categories of web-design elements could enhance victims' coping mechanisms and reduce impacts of natural disasters on individuals (Model 1) and businesses Extending the theories of task-technology fit and self-efficacy, we propose the concepts of need-web element fit, behavior-web element fit, and disaster self-efficacy. We formulate an assessment model for dealing with the effectiveness of the proposed design.

Dr. Priyanka Banerji (2013) studied a comparison between Disaster Management in India and Japan and concluded that There is fast recovery growth in Japan after disaster as compare to India.

Vicky Walters et al (2014) presented focuses on the linkages between the multi-faceted marginalisation of homeless people and their various vulnerabilities to disaster associated with both everyday small-scale hazards and large-scale natural hazards. Highlighting the complexity and acute vulnerability of homeless people to disaster from a multitude of man-made and natural hazards at different scales, it argues for more attention and integration of homeless people's needs and everyday hazards in disaster research and policy.

Ben Wisner (2015) in his paper presented the challenges during disaster. There have been key events that have motivated people to seek IDRIM such as the Indian Ocean Tsunami and Haitian earthquake and their aftermaths. New institutions have been created that have the potential to move us toward IDRIM such as UN-ISDR. Finally, a series of concepts have emerged from many reports, evaluations, and research. These ideas are discussed, and the challenge for the next 5-10 years mapped out.

Scott Manning et al (2016) presented a review of the international literature on disaster social work and case management was conducted. These results shed light on the roles and processes of social work, the use of psychosocial interventions, and the barriers to service delivery in the international disaster context.

Shohid Mohammad Saidul Huq (2016) presented analysis on the disaster management by grassroots community

participation in Bangladesh and concluded that the people should be participated for disaster management. To aware people the social workers should provide training and seminars to the people time to time.

Deeptha V Thattai et. al. (2017) researches about two case studies – cyclones and floods – are taken up for comparison of disaster management strategies adopted in the country.

Chandana S.A. Siriwardana et. al. (2018) investigated the efficiency and effectiveness of the existing disaster management frameworks in Sri Lanka and found that only minor alignments with the global standards are present, and that the existing framework has not been able to manage previous disaster incidents properly. There are considerable inefficiencies in the “whole of government” response, coherence and integration as well as in the resource allocation.

IV. COMPARISON OF PAST STUDIES

Year	Studies	Results
Shubhendu S. Shukla (2011)	Describes severe damage to ecology and economy of a region due to disaster	With installation of new technologies and by adopting space technology as INSAT and IRS series of satellites, India has developed an operational mechanism for disaster warning
Pramod Patil (2012)	Highlighted disaster profile of India and Disaster Management in India	Focus on effective warning system and effective communication system
Dr. Priyanka Banerji (2013)	Comparison of Disaster Management in India and Japan	There is a fast recovery growth in Japan as compare to India
Ben Wisner (2015)	Presented the challenges during disaster	Key events that have motivated people to seek IDRIM such as the Indian Ocean Tsunami and Haitian earthquake
Shohid Mohammad Saidul Huq (2016)	Presented analysis on the disaster management by grassroots community participation in Bangladesh	To aware people the social workers should provide training and seminars to peoples.
Deeptha V Thattai et al (2017)	Discuss two case studies – cyclones and floods	Taken up for comparison of disaster management strategies adopted
Chandana S.A. Siriwardana et al (2018)	Investigated the efficiency and effectiveness of the existing disaster management frameworks in Sri Lanka	There are considerable inefficiencies in the “whole government” response, coherence and integration as well as in the resource allocation

V. CONCLUSIONS

In their exhaustive study, it is concluded that the disaster is a big problem and the necessary preventive measures should be taken for this. Losses due to disasters have shown growing trend in terms of lives and property throughout the

world due to urbanization, increasing population and increasing degradation of environment. The global efforts to manage disasters are not matched with the frequency and magnitude of disasters. NDMA (National Disaster Management Authority) runs various programs for mitigation and responsiveness for specific situations. These include the National Cyclone Risk Management Project, School Safety Project, Decision Support System and others. India Disaster Response Summit recently held on 9 November 2017 held at New Delhi. This Summit was jointly organized by the National Disaster Management Authority (NDMA) and social networking site Facebook. India has become the first country to partner with Facebook on disaster response.

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