

Disaster And Its Impact On Environment & Mankind

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Abstract

Nature is the source of life and our quality of life depends on all the living things that share this planet with us. But, we do not practice and believe in judicious use of natural resources and face disasters. Natural hazards turning into disasters have increased in terms of frequency, complexity, scope and destructive capacity.

Natural disaster increasing globally affect the developing and under developed countries the most. Thus coordination between government and Public Private Partnerships may be thought to minimize the negative impacts of disasters in developing countries by implementing comprehensive disaster management programs.

This paper discusses the concept, challenges and strategies to overcome disasters in Indian context as well as the role of government and need of public private partnerships to prevent and mitigate them

Introduction

“Disaster” the word in itself sounds horrific and means even more dreadful. Any catastrophic event that is caused by nature or natural process of earth is termed as natural disaster. A natural hazard occurs whenever there is a natural process threatening to life & property; but if this threat becomes real and affects significantly by damaging life and property, then it is called a natural disaster. (Hyndman and Hyndman, 2006). Disasters are not new to humankind; they have accompanied us since time immortal. Natural disasters are governed by natural forces which are beyond the control of humans.

The UNISDR (2009) defines disaster as;

“ 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.” (NDMP, 2016)

Developing Countries Are More Vulnerable To Disasters

The two most exposed regions globally are emerging Asia and the Caribbean. (Elena H. Duggar et al. 2016). The Indian sub continent is highly vulnerable to natural calamities. Among the 36 states/union territories in the country 25 are disaster prone. About

50 million people are affected by disaster besides loss of property worth millions, on an average.(World Disasters Report 2006-Disaster data) The developing nations are not prepared to handle the impact and aftermath of the disaster due to lack of resources. Thus, making them difficult to rebuild their homes and meet their basic needs enabling them to recover in the long run.

Types Of Disasters

The increased frequency of natural disasters led the Government India to constitute a High Powered Committee on Disaster Management in August 1999 to prepare a comprehensive plan for National, State and District levels. The committee identified 31 disasters in the country and categorized these into five sub groups based on generic considerations and various ministries/departments dealing them.

S. No.	Sub-Group	Category	Disasters
1	Sub-Group I	Water and Climate Related Disasters	Flood, Cyclones, Drainage Management, Tornados and Hurricanes, Hailstorm, Cloud-burst, Heat and Cold Wave, Snow Avalanches, Drought, Sea Erosion, Thunder and Lightning
2	Sub-Group II	Geologically Related Disasters	Landslides, Mudflows, Earthquakes, Dam Failure/Burst and Mine

			Fires
3	Sub-Group III	Chemical, Industrial and Nuclear Related Disasters	Chemical and Industrial Disaster, Nuclear Disaster
4	Sub-Group IV	Accident Related Disasters	Forest Fires, Urban Fires, Mines Flooding, Oil Spill, Major Building Collapse, Bomb blast, Electrical Disasters and Fires, Air, Road and Rail Accidents, Boat Capsizing.
5	Sub-Group V	Biologically Related Disasters	Pest Attacks, Cattle Epidemics and Flood Poisoning

Causes Of Natural Disaster

The growing conflict in India is over the use of natural resources as biomass between the country’s two economic sectors that is;

- i. The Cash Economy (Modern Sector)
- ii. Non-monetised Biomass based Subsistence Economy (The Traditional Sector)

There are two major pressures on India’s natural resources;

- i. **Population Growth:** this increases household demand for biomass resources.
- ii. **Modernisation/Industrialisation:** this affects natural resources in two ways;
 - a. Its hunt for cheap biomass based raw materials and waste disposal.
 - b. It is reducing the diversity in nature and transforming it into high yielding monocultures. Thus, promoting the highest yielding gene for maximum profit and production.

This creation of a new nature is being done on a massive scale in India. The effect of this environmental change is disastrous especially when we are aware that our country has an extremely high level of poverty on one hand and high population density on the other .

Thus, if the process of urbanisation in India continues at the same rate, it will only accelerate the destruction of the natural resources creating

unsustainable environment and as a result making it impossible to manage.

Effects Of Disasters

Disaster is a state of uncertainty or war and their consequences are great and cannot be ignored. We are all exposed to different kinds of disasters now a days. Disaster in any shape proves to be fearful with worst experience one can have. Any type of disaster has numerous disruptive effects that can broadly be categorized into four types;

1. Impact On Mankind

This can further be divided into four subtypes as;

- a. **Displaced Populations:** people abandon their homes and seek shelter at different places/regions leading to population displacement which is one of the most immediate effects of disasters
- b. **Food Scarcity:** natural disasters results in thousands of hungry people due to scarcity of food causing a condition of increased risk of severe malnutrition, lifelong damage to children or even death.
- c. **Health Risks:** the actual health risks do not occur immediately after disaster instead massive social disruption, birth of epidemics and famines are the aftermath of natural calamities.
- d. **Emotional Aftershocks:** natural disaster proves to be very distressing for children who can develop a serious psychological condition Post-traumatic stress disorder due to loss of their loved ones and extreme trauma.

2. Economic, Social And Political Effects:

Disasters create a condition of emergency rather destroy economies as people become jobless, and owners loose their investments as well as their savings. These boom in the economies requires a major physical reconstruction after the disaster. (F.C.Cuny,1983)

3. Administrative And Managerial Effects:

There are four factors which worsen administrative problems during disasters, they are;

- a. **Effects on community leadership:** the death or injury of community leader can weaken disaster response.
- b. **Disruption of formal organisations:** disasters led to disruption of large formal organizations rather than small community

based organization which can generally function, even after losing the leaders.

c. Damage to critical facilities and lifelines: disasters damage the facilities for maintaining a safe environment and public order as communication installations, electric generating and transmission facilities, water facilities, hospitals and other private buildings.

d. Disruption of transportation: almost all surface means of transportation are disturbed as bridges and roads can be cut by landslides, rubble can block streets and highways. (F.C.Cuny,1983)

4. Environmental Effects:

The environmental effects vary considerably from disaster to disaster and can have any number or combination of four effects as damage of buildings/homes, destruction of crops and food stocks, decreased quality and quantity of water supply and the presence of unburied human bodies or animal carcasses. (Don Schramm and Robert Dries, 1986)

Preparedness, Mitigation And Prevention

“Prevention is better than cure”

Preparedness is the key to breaking the disaster cycle which can be better achieved by;

- Providing proper training to the community for disaster management
- Development of advanced forecasting systems of disaster
- Effective Communication &
- Well networked institutional structure

The most practical disaster management means is enhanced awareness, being more responsible towards vulnerable community and increased efforts for Pre- disaster mitigation.

One of the initiatives is the work done by ‘National Centre for Disaster Management.’

The term ‘Disaster Management’ as defined in DM Act 2005 is;

“A continuous and integrated process of planning, organising, coordinating and implementing measures which are necessary or expedient” for:

1. Prevention of danger or threat of any disaster
2. Mitigation or reduction of risk of any disaster or its severity or consequences
3. Capacity-building

4. Preparedness to deal with any disaster
5. Prompt response to any threatening disaster situation or disaster
6. Assessing the severity or magnitude of effects of any disaster
7. Evacuation, rescue and relief, &
8. Rehabilitation and reconstruction.”

Evolution Of Disaster Management Authority

The emergence of an organisation is always through an evolutionary process. The Government of India recognised the importance of Disaster Management as a national priority and set up a high-Powered Committee (HPC) IN August 1999 and enacted the Disaster Management Act on 23rd January 2005, which envisaged the creation of National Disaster Management Authority (NDMA) headed by Prime Minister and State Disaster Management Authority (SDMA’s) headed by respective Chief Minister’s to spearhead and implement a holistic approach to Disaster Management in India. Disaster risks in India are compounded by increasing vulnerabilities related to changing demographics and socio-economic conditions, unplanned urabnization, development within high risk zones, environment degradation, climate change, geological hazards, epidemics and pandemics. LI these elements contribute to a situation where disasters seriously threaten India’s economy, population and sustainable development. (ndma.gov.in)

Disaster Management Cycle

India being more vulnerable to natural and man-made disasters an integrated approach with strategies at various levels is evolving for its management. The themes of the policy are;

- Community based Disaster Management, including last mile integration of the policy, plans and execution
- Capacity development in all spheres
- Consolidation of past initiatives and best practices
- Cooperation with agencies at national and international levels
- Multi-sectoral synergy

Requirement For Effective Response

Fundamentally this depends on two factors;

1. Information &
2. Resources

Without these two crucial elements the best plans with the most efficient team and management arrangements is a failure

Key Dimensions To Disaster Reduction

Disasters impact socio-political factors. Thus any effort to reduce the risk of disaster should also think about the social issues determining the changes in political environment resulting in the increase of flexibility among communities. There are four parallel and complementary lines of actions which can be considered to reduce exposure to disasters and achieve a more sustainable approach to development. (Bendimerad, 2003):

- Community/ Stakeholder participation
- Public policy actions
- Safer construction and urban development
- Development of a culture of prevention

Inter-relatedness among various dimensions of disaster risk reduction



(Source. Info.worldbank.org)

Role Of Communities To Reduce Disasters

To manage the hazards and reduce the vulnerability of these hazards, every community must know and be familiar about the natural environment as well as environment built by the humans in which they live. This will help us to better understand the causes of their happening and also how to mitigate them. Also the community will realize that this is the impact of what we are doing to our nature and it should be stopped to avoid or reduce these disasters. This can be achieved through;

- Raising awareness
- Organising prevention campaigns
- Spotting dangerous places
- Encouraging people to protect nature
- Planting more trees

Need For Public Private Partnership

Public Private Partnerships (PPP) gained popularity since the 1990’s (Steijn et al., 2011, Jing & Besharoy, 2014). Since it is widely believed that

the coordination between government and them yields better results (Osborne, 2000, Ghobadian et al., 2004, Donahue & Zeckausar, 2011).

It is a smart strategy used by government to encourage private participation in public projects (Johannessen et al, 2013). As there are two main roles associated with government while managing any disaster and they are to draft and strengthen national policies for disaster reduction (Sylves, 2008) and for allocating funds for disaster mitigation and preparedness programs (Xie et al., 1999, Akai& Sakata 2002, Skidmore & Toya 2013). Nowadays attention is paid to local governments in disaster management as they are more familiar to local conditions, communities and culture (Herman 1982, Stewart et al. 2009, Kusumasari et al 2010)

The implementation of PPP can act as a new strategy in managing disasters and developing national disaster management programmes. Thus the government of developing countries needs to work together with private sectors and develop regulatory frameworks which enhances the implementation of PPP in our country (Chen et al. 2013). The regulatory framework established will be helpful in easing out the barriers for all actors involved in the PPP arrangement (Busch & Givens 2013).

The involvement of private sector may also assist governments to formulate better programs, as social insurance practised in the developed countries. Thus, will provide added value and also reduce government’s financial restriction to deliver better services to community.

Conclusion

Thus it can be said that although NDMA is mandated to deal with all types of disaster whether natural or man-made but coordination between all the central agencies designed to meet these situations and also community participation is needed to overcome these disasters. Natural disasters cannot be prevented as they have their own factors and consequences but can be mitigated well in time. The numerous factors that trigger the occurrence of a disaster whether natural or man-made can be avoided. So we as humans can only lessen or reduce their effects and occurrence by understanding the law of nature i.e. basic principles of ecology and can only prevent them by the strategies found in nature.

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