



## **DISASTERS AND DISASTER MANAGEMENT: SOME REFLECTIONS**

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### **Introduction**

Disaster is a calamitous event which brings about great damage, loss, destruction and devastation to life and property. Unfortunately “Disasters” have become a reality of our times. Both incidents of natural and man-made disasters have increased in recent decades along with their severity and long term impact on societies. This article is an attempt to discuss issues related to disaster and disaster management with a focus on the centrality of the role of the State in mitigation and management of Disaster, particularly the natural ones that play havoc with the lives of the people.

### **Understanding the term: Disaster**

The term Disaster is derived from the Greek pejorative prefix *dus* –plus- *aster*, which refers to a bad star. Thus, the root of the word ‘disaster’, comes from the astrological theme in which the ancients used to refer to destruction and deconstruction of a star as a disaster. In simple words, ‘disaster’ has come to be known as a tragedy of natural or anthropogenic hazard which negatively affects society and environment. Not all the adverse events (ie hazards) are disaster rather only those adverse events which overpower the response capacity of a particular society, community or a nation are called disasters.<sup>1</sup> Disasters as we know today are life changing events affecting people, property and environment. The word *disaster* is derived from the Medieval French word *desastre* meaning misfortune, calamity and misadventure and also it has an Old Italian connection

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<sup>1</sup>For more discussion on the concept of disaster see Jha, Madan Kumar (2010) Natural and Anthropogenic Disasters. An Overview in Jha, Madan Kumar (ed.) Natural and Anthropogenic Disasters: Vulnerability, Preparedness and Mitigation, Springer, p.4

with the word *disastro*, which refers to mischance and ill luck.<sup>2</sup> In the ancient Greece and Rome disaster was used more in either astronomical or astrological contexts referring to the destruction or deconstruction of a star as a disaster.

**A few Definitions:**

Disaster as a concept is used, studied and researched by people from a multitude of disciplines starting from environmental science to psychology and from geological science to public policy. That's why the development of a precise definition of disaster has not been an easy task. Disaster is also described as a "catastrophic situation in which the normal pattern of life or eco-system has been disrupted and extraordinary emergency instructions are required to save and preserve lives and or the environment".

The Indian 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 and 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." It may also be termed as, "a serious disruption of the functioning of society, causing widespread, human, material or environmental losses which exceed the ability of the affected society to cope with the challenges using its own resources".

The World Health Organization has expanded the meaning of disaster by defining it as "any occurrence that causes damages, economic destruction, loss of human life and deterioration in health and health services on a scale sufficient to warrant, extra-ordinary response from outside the affected community area."

The UNDP defines disaster "as an event or series of events, which gives rise to casualties and damage or loss of properties, infrastructures, environment, essential services or means of livelihood on such a scale which is beyond the normal capacity of the affected community to cope with."<sup>3</sup>

The damage caused by disasters is immeasurable and varies with the geographical locations, climate and the type of the earth surface and degree of vulnerability. This

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<sup>2</sup> Disaster at Merriam and Webster Dictionary Online, Accessed on 21 November 2013  
<http://www.merriam-webster.com/dictionary/disaster>

<sup>3</sup> UNDP (2011) Disaster Management in India, p. 1

influences the mental socio-economic, political and cultural state of the affected area. Generally, disaster has the following effects in the concerned areas.

- It completely disrupts the normal day-to-day life.
- It negatively influences the emergency systems.
- Normal needs and processes like food, shelter, health etc. are affected and deteriorate depending on the intensity and severity of the disaster.

### **Types of Disaster :**

Disasters have been broadly classified into two categories , natural and man-made.

#### **Natural**

These are primarily natural events while it is possible that certain human actions in short or long term could have played a contributory part for the occurrence of these events, but, by and large, these are mostly natural events. Earthquakes, Volcanoes, Floods, Tornadoes, Typhoons, Cyclones and Tsunamis belong to this category.

#### **Man Made**

These are primarily caused due to certain human factors or failures. The disasters themselves could be unintentional or intentional activity. Most of these (barring some terrorist activities) are due to certain accidents – which could have been prevented – if sufficient precautionary measures were put in place. Bhopal gas tragedy in India is a case in point of this category which though not intentional was nonetheless due to human negligence. Nuclear Leaks, Chemical Leaks/Spill over, Terrorist Activities, and Structural Collapses fall under this category.

#### **Great Disasters in Recent Times**

The world has witnessed several disasters over the centuries and although many are man-made due to wars and terrorism, Mother Nature certainly has its fair share of these damages. While there are many criteria as to what would be considered the “worst” natural disaster ranging from lives lost to cost incurred, the earthquakes, typhoons, and tsunamis which people in different times and climes have experienced are all horrific in their own right. Here are some of the worst natural disasters in recent memory.

On October 29, 1999, a super cyclone with a wind speed of 300 mph had struck the Indian state of Odisha, making it probably the greatest cyclonic disaster ever recorded in the last century. Winds of up to 260 kph raged for over 36 hours affecting coastal districts of Balasore, Bhadrak, Kendrapara, Jagatsinghpur, Puri and Ganjam .While the official

death toll then was 9,885 people, unofficial sources estimated the toll to be above 50,000.<sup>(4)</sup>

An estimated 1,500 children were orphaned. At least 13 million people, including 3.3 million children, 5 million women and nearly 3.5 million elderly people were affected in this devastating tragedy.

In the year 2004, another great disaster in the world took place in the Indian Ocean known as Tsunami. Also known as the Sumatra-Andaman earthquake, it was estimated to be a magnitude 9.15, and occurred on December 26, 2004. While the earthquake itself lasted for only 10

seconds, it caused a tsunami that killed 200,000 to 310,000 people along the shores of Indonesia, Sri Lanka, South India, and Thailand.<sup>(5)</sup>

**In August 2005, Hurricane Katrina struck the Gulf Coast of the United States. With a sustained winds of 100–140 miles per hour—and stretching some 400 miles across, Hurricane Katrina killed nearly 2,000 people and affected some 90,000 square miles of the United States. Hundreds of thousands of evacuees scattered far and wide.**<sup>(6)</sup>

The 2005 Pakistan earthquake, that registered 7.6 in the Richter scale, had its epicentre in the Pakistan occupied Kashmir near the city of Muzaffarabad. It occurred on the morning of October 8, 2005 and the official death toll was 75,000 people with 106,000 people injured.<sup>(7)</sup>

(4) <http://www.hindustantimes.com/india/revisiting-the-super-cyclone-that-hit-odisha-in-1999/story-S0IDY1STwdrVdMravThCZK.html>

(5) ( <http://list25.com/25-worst-natural-disasters-recorded/>)

(6) <http://www.history.com/topics/hurricane-katrina>

(7) <http://list25.com/25-worst-natural-disasters-recorded/>

Also see for details

: [http://www.newworldencyclopedia.org/entry/2005\\_Kashmir\\_earthquake](http://www.newworldencyclopedia.org/entry/2005_Kashmir_earthquake)

Another cyclone in 2008 to hit the northern Indian Ocean, **Cyclone Nargis** made landfall in Myanmar and devastated the Ayeyarwady Delta region along with its 37 townships for two days. Official figures showed that 84,500 people were killed with 53,800 missing. With numerous storm surges and flooding, a total of 37 townships were significantly affected by the cyclone. The UN estimated that as many as 2.4 million people were affected.<sup>(8)</sup>

A magnitude 7.0 earthquake that has a depth of 8.1 miles rocked **Haiti on January 12, 2010**. With its 59 aftershocks, the strongest earthquake to hit the country since 1770, it

had led to over 200,000 deaths, 2 million homeless, and 3 million people in need of emergency aid.<sup>(9)</sup>

The flash floods and landslips triggered by very heavy rainfall and cloudburst in India's Uttarakhand on 16-17 June 2013 was another worst disaster affecting 12 out of the 13 districts in Uttarakhand and causing thousands of deaths with so many reported missing. In Kedarnath alone about 75,000 pilgrims had been stranded due to landslides and flash floods.<sup>(10)</sup>

### **Theoretical and Empirical Insights into Disaster**

There have been four general theories about disasters. Kenneth J. Costine of American Military University wrote a paper "The Four Fundamental Theories of Disasters" where he discussed these four theories-

- i) Theory of act of God- Divine retribution for human wrong doings
- ii) Theory of Act of Nature- It's not about God but science has advanced the argument that nature has its own way of functioning in the geo-physical world.
- iii) Theory of Joint effects of Nature and Society- Disaster happens due to the deliberate and non-deliberate human interventions into the functions of nature

(8) <http://www.ifrc.org/en/news-and-media/news-stories/asia-pacific/myanmar/myanmar-cyclone-nargis-2008-facts-and-figures/>

(9) <https://prezi.com/ad4dd6wxpc/haiti-earthquake-2010/>

(10) for details see:

<http://nidm.gov.in/PDF/pubs/India%20Disaster%20Report%202013.pdf>

- iv) The Theory of Social Construction- Disaster happens and impacts the society depending upon how the society is constructed both in the physical and social aspects.
- v) It includes society's ability to comprehend, trust, predict, face and be resilient on the face of disasters.

As per the theoretical premises responses of people can also be understood. Kenneth J. Costine encapsulates the popular response as the following

- Acts of God: Do nothing.
- Acts of Nature: Use technology to control nature with, engineering, and money or do nothing.

- Disaster as Joint effects of nature and society: Develop society to adjust through careful zoning, awareness of flood plains, seismic areas, wildfire zones, and other land use management, etc.
- Social Constructions: Look at the basic reasons and causes of injustice and human vulnerability to hazards in society.

### **DISASTER MANAGEMENT:**

Disaster management is the empirical aspect of understanding and facing disaster. It has two aspects. One is preparedness and the second is relief. Some have also talked about the 5Rs: Readiness, Rescue, Relief, Recovery and Review being the stages in disaster management. These steps are self-explanatory.

Disaster Management refers to the range of activities designed to mitigate the effects of disasters and emergency situations and to provide a frame-work for helping people at risk to avoid or recover from the impact of the disaster. Disaster management includes steps to be taken prior to, during, and after the disaster. These involve four elements. (a) Preparedness, Response, Recovery, Prevention, and Mitigation. Preparedness includes the set of activities and precautions that a community collectively takes before a disaster occurs in order to reduce the impact of a disaster and to cope with it efficiently.

As per India's Disaster Management Act, 2005, "disaster management" means a continuous and integrated process of planning, organising, coordinating and implementing measures which are necessary or expedient for: (i) Prevention of danger or threat of any disaster; (ii) Mitigation or reduction of risk of any disaster or its severity or consequences; (iii) Capacity-building; (iv) Preparedness to deal with any disaster; (v) Prompt response to any threatening disaster situation or disaster; (vi) Assessing the severity or magnitude of effects of any disaster; evacuation, rescue and relief; (vii) Rehabilitation and reconstruction. Thus Disaster Management can be defined as the organization and management of resources and responsibilities for dealing with all humanitarian aspects of emergencies, in particular preparedness, response and recovery in order to lessen the impact of disasters. <sup>(11)</sup>

The primary focus of disaster management is to prevent disasters whenever possible or to mitigate those which are inevitable. Hazard management and vulnerability reduction, economic diversification, political instruction and commitment and public awareness are the tools that could be used to prevent or mitigate disasters. The first two tools apply exclusively to disasters caused by natural phenomena while the latter are used to mitigate

any other hazards. The complete disaster management cycle includes the shaping of public policies and plans that either address the causes of disaster or mitigate their effects on people, property and infrastructure.

### **Disaster Preparedness and Relief**

Disaster Management comprises of two components viz, disaster preparedness and disaster relief. In the aftermath of a disaster both relief and rehabilitation attract immediate attention and receive response from all quarters. However, more importance is accorded to disaster preparedness because it has the potential to mitigate the adverse effects through effective planning. It is evident that smaller investment in disaster preparedness can save thousands of lives and vital economic assets as well as reduce the cost of overall relief assistance. Hence it becomes highly cost effective. The sole objective of emergency preparedness programmes is to achieve a satisfactory level of readiness to respond to any emergency situations through programmes that strengthen the technical and managerial capacity of government organizations and communities. These measures can be described as logistical readiness to deal with disasters and can be enhanced by improving response mechanisms and procedures rehearsals, developing long term and short term strategies, public education and building early warning systems. Preparedness can also take the form of ensuring that strategic reserves of food, equipment, water medicines and other essentials are maintained in cases of national or local catastrophes.

(11)(<https://www.ifrc.org/en/what-we-do/disaster-management/about-disaster-management> )

The major components of the 'preparedness' stage of disaster are (i) community awareness and education (ii) preparation of disaster management plans for Community, School and Individual, (iii) Mock drills, training and practice, (iv) Inventory of resources both material and human skills, (v) proper warning system (vi) Mutual aid and arrangement and (vii) Identifying the vulnerable groups.

**Disaster Relief :** There are three phases of disaster relief, i) Immediate, ii) Intermediate, iii) Long Term and the fourth one, some argue, as the disaster preparedness. Immediate requires rescue, medical attention, food and water including the media attention for wider coverage and awareness. Intermediate covers food, water, shelter, sanitation, health care and restoration of normal life like going to schools and colleges. Long Term approach includes engagement of local population in planning and reconstruction of communities.

The disaster preparedness takes from here to have training, policy, collaboration and relationship building between service providers and communities.

**Concluding Observations: Even in a developed country as the USA there was state-failure in the management of disaster in the wake of hurricane Katrina in spite of the early warnings about it. It is said that** in the aftermath of Hurricane Katrina many people acted heroically. The Coast Guard, for instance, rescued some 34,000 people in New Orleans alone, and many ordinary citizens commandeered boats, offered food and shelter, and did whatever else they could to help their neighbours. Yet the government—particularly the federal government—seemed unprepared for the disaster. The Federal Emergency Management Agency (FEMA) took days to establish operations in New Orleans, and even then did not seem to have a sound plan of action. Katrina had left in her wake what one reporter called a “total disaster zone” where people were “getting absolutely desperate.”<sup>(12)</sup>

(12) <http://www.history.com/topics/hurricane-katrina>

A very severe cyclonic storm, Phailin, hit the Odisha coast near Gopalpur in Ganjam district in October 2013. More than 1.26 crore people were hit by the cyclone that damaged lakhs of thatched and kutcha houses in the coastal districts. Ganjam district was the worst hit. For three to four days before cyclone Phailin hit Odisha and Andhra Pradesh, memories of the 1999 super cyclone made authorities and people fearful of what the cyclone would bring. The super cyclone devastated vast stretches of the state and so do did Phailin. But there is a big difference between what happened then and now—over 10,000 people were killed in Odisha in October 1999, while Phailin's toll was less than 30. Improvements in weather forecasting and disaster preparedness, after lessons learnt from 1999, proved crucial in reducing the extent of the disaster. As UNEP acknowledged in one of its news letters, early warning and timely actions saved lives.<sup>(13)</sup>

In 1999, preparedness of the Odisha government was poor. Andhra Pradesh was better prepared and pro-actively assisted Odisha overcome the disaster situation. "Odisha did not even have instruments to cut trees that fell on the roads. Subsequently it has acquired emergency equipments and built many cyclone shelters. The communication network and means have improved and being strengthened..During the Phailin crisis, NDMA managed the channel of communication from the Central government level to the district level, Both Odisha and Andhra have their own personnel to deal with disaster—Odisha Disaster Rapid Action Force and Andhra Pradesh State Disaster Response. NDMA conducts mock drills to check and prepare local authorities and people for disaster and help reduce damage to the



minimum. "Odisha state has been conducting a mock drill every June 19 since 2006 in areas like Jagatsingpur district and Paradip, which are cyclone prone. This also helps in managing disaster and reduce casualty. Importance is attached to community participation in the Disaster management process. Community participation is vital not only in rescue and relief operation of a disaster, but in all stages of disaster management. The experience of the 1999 super cyclone shows that the community and the affected people were very much effective in rescue and relief work during and after the cyclone.<sup>(14)</sup>

(13) [http://www.unep.org/pdf/UNEP GEAS NOV 2013.pdf](http://www.unep.org/pdf/UNEP_GEAS_NOV_2013.pdf) )

(14) for details see : **Kishor C Samal**, Facing Sudden Impact, Experience of Orissa Super Cyclone of 1999 , **Man & Development** ,March 2006

**OSDMA and the UN** have made a community contingency plan for flood and Cyclone in Odisha after the experience of 1999 Super Cyclone. A community contingency plan (CCP) is a list of activities a village agrees to follow to prevent loss of life, livelihood and property in case of cyclone or flood. Action to be taken by individuals in the community in the event of a crisis is identified in advance . Since villages differ in so many respects, contingency plan is bound to differ from village to village. <sup>(15)</sup>( **ibid** ) Of late awareness is growing to effectively integrate a gender-sensitive approach in disaster management from its very early planning. Overlooking gender perspective in disaster and emergency situations is often done under the ‘tyranny of the urgent’ pretext. Owing to existing political, socio-economic, and cultural imbalances in many Asian societies, women are more susceptible to the devastating impacts of natural disasters. Gender role restriction, for example, does not allow women in some cultures to learn to swim, therefore decreasing their chances of survival in flood events. While women are more vulnerable group, however, is not the only reason for the need for gender-sensitive approach to disaster management. On the flip side of the coin, with knowledge of their surroundings and of natural resources, women can play significant roles in reducing disaster risk and managing climate change adaptation. It is argued that mainstreaming gender is key to effective disaster risk reduction, response, and recovery in the affected region.<sup>(16)</sup> In the above paragraphs we have discussed the meaning and types of disaster with example from recent past and attempted to present a discussion on the several aspects of disaster management, preparedness and relief. It will not be wrong to say that disaster is increasingly happening due to the interaction and intervention of human beings in the functioning of nature and societies that are vulnerable to several types of disasters but do

not have the capacity to face disaster on their own. There is a need to globalize disaster management and learn from the best practices developed around the world.

(15) Ibid

(16) See, Margareth Sembiring, Climate Change, Disaster Risk Reduction and Gender: The Southeast Asia Experience ; RSIS Commentary 111/2016)

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