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**National Seminar**

on

## Disaster Management

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Department of Public Administration & Geography

Chief Editor

**Dr. Ippar R.K.**

Principal, Vaidyanath College & Senate Member,

Dr. BAMU, Aurangabad

Editor

**Dr. J.B. Kangane**

Head Dept. of Public Administration

**Dr. V.L. Phad**

Head Dept. of Geography

Home Affairs, which functions round the clock, to assist the Central Relief Commissioner in the discharge of his duties. The activities of the Control Room include collection and transmission of information concerning natural calamity and relief, keeping close contact with governments of the affected States, interaction with other Central Ministries/Departments/Organizations in connection with relief, maintaining records containing all relevant information relating to action points and contact points in Central Ministries etc., keeping up-to-date details of all concerned officers at the Central and State levels.

#### Contingency Action Plan:

A National Contingency Action Plan (CAP) for dealing with contingencies arising in the wake of natural disasters has been formulated by the Government of India and it had been periodically updated. It facilitates the launching of relief operations without delay. The CAP identifies the initiatives required to be taken by various Central Ministries/Departments in the wake of natural calamities, sets down the procedure and determines the focal points in the administrative machinery.

#### State Relief Manuals:

Each State Government has relief manuals or codes which identify that role of each officer in the State for managing the natural disasters. These are reviewed and updated periodically based on the experience of managing the disasters and the need of the State.

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4. Evolution of NDMA, National Disaster Management Authority (India)

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## DISASTER MANAGEMENT: INFORMATION, COMMUNICATION, TECHNOLOGY & GEOGRAPHIC INFORMATION SYSTEMS.

Dr. Vishvraj S. Chimangunde

Assistant Professor, Dept. of Geography,  
S.J.E.S'S, ACS College,  
Gangakhed Dist. Parbhani

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#### ABSTRACT:

The present paper discusses disaster events. What is disaster? Natural disaster & Man-made disasters. It also considers what management is? Why disaster management? Disaster management and the MDG'S. Further it gives Disaster Management Cycle, Information, Communication & Technology for the Disaster Management. Geographic Information Systems. Anatomy of Disaster Mitigation and lastly generating statistical data through survey. Lastly it gives conclusion.

**KEYWORDS:** Disaster, Disaster Management, Information, Communication, Technology, Information Systems, Natural disasters and Man-made Disasters, Management, Millennium Development Goals, Disaster Management Cycle, ICT for Disaster Management, Anatomy of Disaster Management, Geographic information system Generating Statistical Data, Survey etc.

#### 1.INTRODUCTION:

Looking at disaster events of the last few years it is evident that, by no means natural or man-made disasters can be fully prevented. Only the loss caused by these events can be prevented.

The old age disasters have been mostly natural ones. As the human being started progressing and new technologies and different living standards emerged, the world started experiencing disasters that were caused due to "Human Interventions" because "I am the creator and I am the destroyer"

## 2. WHAT IS DISASTER?

The United Nations (UN) defines Disaster as, "An event (occurrence) that causes sudden great loss".

The word 'sudden' indicates that, such an event is unexpected, unpredictable and the human is not prepared for it and 'great' only means that, the loss to life and property is beyond repairs or compensation and that the losses have a great bearing on the survivors; in fact, changing the courses of their lives.

Disaster has been with us as long as recorded history and presumably even longer. Generations of people have been host with stand disaster. We can categorize disasters in two forms: 1. Natural Disasters and 2. Man-made Disasters.

## 3. NATURAL DISASTERS:

Natural Disasters are of the following types and these have been dealt with separately as well.

### A) Volcanic eruptions (Volcano):

Are perhaps the most awesome of all natural events. When a big volcano erupts, huge underground explosions fling molten rock, red-hot ash, and fiery gases up onto the surface and high into the air, spreading devastation far around. When a volcano erupts violently, flaming streams of lava usually pour from the summit. Huge clouds of hot ash and steam may billow high into the sky, and burning cinders and rocks may be flung out in all directions, falling over a wide area in a scorching, choking rain. e.g. Lonar Sarovar and Vajreshwari (SO<sub>2</sub>)

### B) Earthquakes:

Many things can cause the ground to shake, or tremble, including erupting volcanoes,

exploding bombs, and avalanches. But the most dramatic tremors are usually caused by earthquakes, which can shake the ground so violently that buildings collapse and people's lives are endangered. e.g. Killari Earthquake on 30<sup>th</sup> September, 1993 in Maharashtra.

### C) Cyclones:

Air pressure varies constantly from place to place, and from time to time as solar radiation makes the air warmer in some places than others. The only cause of a cyclone is the climatic disturbance created due to temperature and pressure variations. Cyclones are also called depressions or lows. Cyclones also have different names like 'Hurricane' 'Cyclones' and 'Blizzards' e.g. 'Katrina' and 'Rita' in New Orleans, Texas & Florida in 2005 in U.S.A.

### D) Tsuamis:

Tsunami is a giant wave (or event a series of waves) that originates in the sea or oceans and traverses in concentric waveform away from the epicenter. A huge sea wave set off by an undersea earthquake. Tsuamis can devastate coastal areas. e.g. Indonesia (Asia) on 26<sup>th</sup> December 2004.

### E) Floods:

When growth in the rate of accumulation is sudden, also experience 'Flash floods' or water accumulation rates go up. e.g. Mithi River flood at Mumbai in 2004.

### F) Wildfires / Forest Fires:

Forest fires are caused by natural phenomenon. Forest fires show a natural phenomenon of excessive heating of the ground igniting some material is combustible and available in plenty in that area-like dry grass. Forest fires once ignited get noticed fairly late and are difficult to control. E.g. Forest fires in Australia and Indonesia.

### D) Droughts:

There are two types of droughts i.e.

1) Dry Droughts and 2) Wet Droughts

A prolonged period without rain, or of below- average rainfall causes dry droughts.

Cyber crimes are possible because of multi media, internet, CD'S, DVD'S & other electronic media which can have disasters to human beings.

These disasters continue to cause grievous human casualties, economic, legal, cultural, political, administrative ( Social loss) & damage to the society.

### 5.WHAT IS MANAGEMENT?

Optimum utilization of resources available is management. Henry Fayol defines management is, " To manage is to forecast and to plan, to organize, to co-ordinate and to control"

"Management is a thinking function & administration is doing function"

There are eight M's of Management viz.

1. Man
2. Money
3. Materials
4. Machines
5. Methods
6. Market
7. Milien (Environment) and
8. Minutes

Management = Manage + Men + T (Tactfully) Gullick and Urwick in their paper published in 1937 gave seven basic functions of manager. These are;

1. Planning
2. Organizing
3. Staffing
4. Directing
5. Coordinating
6. Reporting
7. Budgeting

They coined the acronym POSDCORB (with the initial letters of these seven functions) which are being studied world over since then.

The success of an organization depends upon the efficient execution of its various functions given above.

### 6.WHY DISASTER MANAGEMENT?

Disaster management (also called

disaster risk management) is the discipline that involves:

1. Preparing.
2. Warning.
3. Supporting and
4. Rebuilding societies when natural or manmade disasters occur.

It is a continuous process by which all individuals, groups land communities manage hazards in an effort to avoid or minimize the impact of disasters resulting from hazards. Effective disaster management relies on thorough integration of emergency plans at all levels of government and non-government involvement. Activities at each level (individual, group, community) affect the other levels.

Therefore, disaster preparedness is no longer a choice; it is mandatory irrespective of where one lives. No country is safe from disaster.

### 7. DISASTER MANAGEMENT AND THE ;MDG'S:

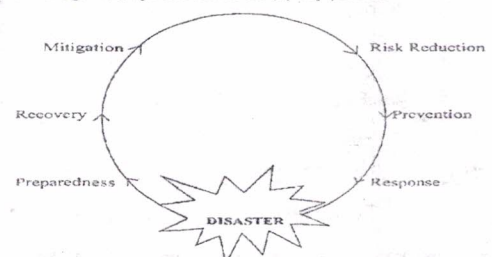
Millennium Development Goal ( MDG) directly addresses the issues related to disaster management. Perhaps it is because it is so obvious that building a safer world is a prerequisite for the achievement of all the eight MDG'S

1. Poverty eradication,
2. Freedom from hunger,
3. Primary education,
4. Freedom from disasters and
5. Building a sustainable world etc.

These are all key aspects of the disaster management process. Every nation should have effective disaster reduction and recovery processes in achieve the MDGS by the expected deadline of year 2015.

### 8. DISASTER MANAGEMENT CYCLE:

The disaster management cycle involves six (6) key phases.

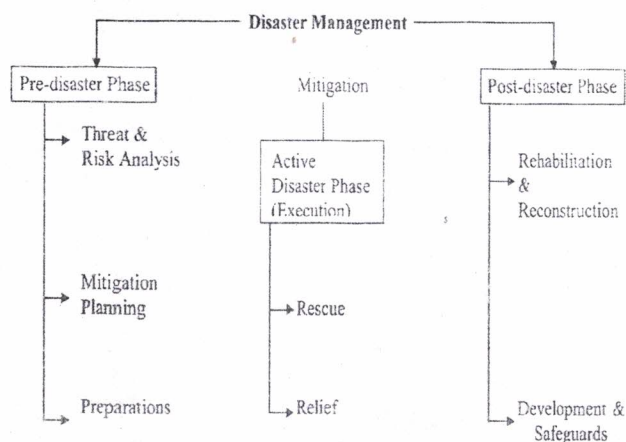


- 1. Response:** includes actions taken to save lives and prevent property damage, and to preserve the environment during emergencies or disasters. The response phase is the implementation of action plans.
- 2. Recovery:** includes actions that assist a community to return to a sense of normalcy after a disaster.
- 3. Mitigation:** includes any activities that prevent a disaster, reduce the chance of a disaster happening, or reduce the damaging effects of unavoidable disasters.
- 4. Risk reduction:** induces the risk which can be reduced before and after disaster.
- 5. Prevention:** includes the activities prior to the disaster.
- 6. Preparedness:** includes plans or preparations made to save lives or property, and help the response and rescue service operations. These phases usually overlap. ICT is being used in all the phases, but the usage is more apparent in some phases than in the others.

### 9. ANATOMY OF DISASTER MITIGATION:

"Nature! Give me the sense to prevent the unwanted and the strength to fight when it occurs".

Disasters do occur, but, preventing them is every one's responsibility & fighting through them is everyone's duty. Any disaster is an unwanted event.



### 10. ICT FOR DISASTER MANAGEMENT:

The importance of timely disaster warning can never be underestimated. An early

warning system involves several players and has many links.

#### ICT:

I- Information sharing is the greatest virtues of the modern world.

C- Communication is necessary for better command & control over the situation.

T-Technology & based on science which is boon to the human beings.

This is where ICT plays the most crucial role. The Knowledge pyramid has the following link as below:

Data — Information — Knowledge — Wisdom — Creation .

However, in this case it is not a question of one medium against another. The requirement is to pass the warning as quick as accurate as possible.

Any one or a combination of the following I C T and media tools can be used for that purpose.

#### a. Radio and Television:

Considered the most traditional electronic media used for disaster warning ,radio and television still have a valid use. The effectiveness of these two media is high because even in developing countries and rural environments where the tele-density is relatively low, they can be used to spread a warning quickly to a broad population. The only possible drawback of these two media is that their effectiveness is significantly reduced at night when they are normally switched off.

#### b. Telephone (Fixed & Mobile):

Telephones can play an important role in warning communities about the impending danger of disaster. There were many examples of how simple phone warnings saved many lives in south Asian countries during the 2004 Tsunami.

#### c. Short Message Service (SMS):

When the traditional landline phones are engaged or failed SMS are more easily when the network was functional. This is because SMS

To create awareness among the society some of the information channels may be made available as bellows.

1. Telephone directories
2. Shopping bags
3. Existing Govt. Programmes
4. Radio/TV media
5. Cinema programmes
6. Special Information display
7. POLICE information channels
8. Print media
9. Voluntary organizations.

## 12. GENERATING STATISTICAL DATA THROUGH SURVEY:

Factual data of a region, a place, a town or a village or an area is required to be built up. Citizens can participate in the gathering of data.

1. Geological/ Geographic data
2. Weather data
3. Housing society & Residential Complexes
4. Industries
5. Corporate Offices
6. Educational Institutions
7. Organizations
8. Hospitals
9. Place of Entertainment
10. Religious places & celebrations/ festivals
11. Transportation Systems
12. Dams, Irrigation Projects, Power Plants & Mines

All the factual data mentioned above can be transferred into records and reports.

## CONCLUSION:

It is essential that we look at disaster management from the development angle. Disaster management is no longer either one of or standalone activity. Another big challenge is the reluctance of some States governments to implement ICT friendly policies. It also requires separate information system at national level linkage with international information centers like Geographical Information System.

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