

# DISASTER MANAGEMENT: PLANNING AND CONTROL

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# INTRODUCTION

- **Disaster** is a sudden, calamitous event bringing great damage, loss, destruction and devastation to life and property.
- **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.

- **Disaster Preparedness** provides a platform to design effective, realistic and coordinated planning, reduces duplication of efforts and increase the overall effectiveness of National Societies, household and community members disaster preparedness and response efforts.
- Disaster preparedness activities embedded with risk reduction measures can prevent disaster situations and also result in saving maximum lives and livelihoods during any disaster situation, enabling the affected population to get back to normalcy within a short time period.

# SCOPE

- **Natural disasters** affect nations all over the world.
- Because of the large geographical size as well as the large demography of the country, **India** is often subjected to natural disasters or calamities like **floods**, **cyclones** and **drought** occurring fairly frequently and faces loss of lot of lives and property.
- India is also prone to **earthquake**, one of the most fatal natural disasters.

- **The damage caused by disasters is immeasurable and varies with the geographical location, climate and the type of the earth surface/degree of vulnerability.**
- **This influences the mental, socio-economic, political and cultural state of the affected areas.**
- **There has been an increase in the number of natural disasters over the past years, and subsequently increasing losses on account of urbanization and population growth, as a result of which the impact of natural disasters is now felt to a great extent**

- **Natural disasters** are not bound by political or geographical boundaries and have no social or economic considerations.
- They affect both developing and developed countries.
- They do not have respect for race, religion, cast or creed.
- They are also merciless, and as such the vulnerable tend to suffer more at the impact of natural disasters.
- A large number of grave and vulnerable regions are in India. As a matter of fact, **Natural Disaster Management** has emerged as a high priority for the country.

★ Going beyond the historical focus on relief and rehabilitation after the event, we now have to look ahead and plan for disaster preparedness and mitigation, in order that the periodic shocks to our development efforts are optimized.

★ Thus, a disaster may have the following main features:

➔ Unpredictability

➔ Unfamiliarity

➔ Speed

➔ Urgency

➔ Uncertainty

➔ Threat

# SUSTAINABLE DEVELOPMENT AND DISASTER MANAGEMENT

- Physical vulnerability relates to the physical location of people, their proximity to the hazard zone and standards of safety maintained to counter the effects.
- For instance, some people are vulnerable to flood only because they live in a flood prone area. Floods and high winds account for 60 per cent of all recurring natural disasters in India.
- While substantial progress has been made in other sectors of human development, there is need to do more towards mitigating the effect of disasters.



- **The country has integrated administrative machinery for management of disasters at the National, State, District and Sub-District levels.**
- **The basic responsibility of undertaking rescue, relief and rehabilitation measures in the event of natural disasters, as at present, is that of the State Governments concerned.**
- **The Central Government supplements the efforts of the States by providing financial and logistic support.**
- **Development Activities that do not consider the Disaster Loss Perspective fail to be sustainable.**

- **The reference of sustainable development is felt across the Globe.**
- **The emphasis of sustainable development is to meet the demand of present generation without compromising the needs of future generation.**
- **Sustainability is the key word in the development process.**
- **The Central Government supplements the efforts of the States by providing financial and logistic support.**

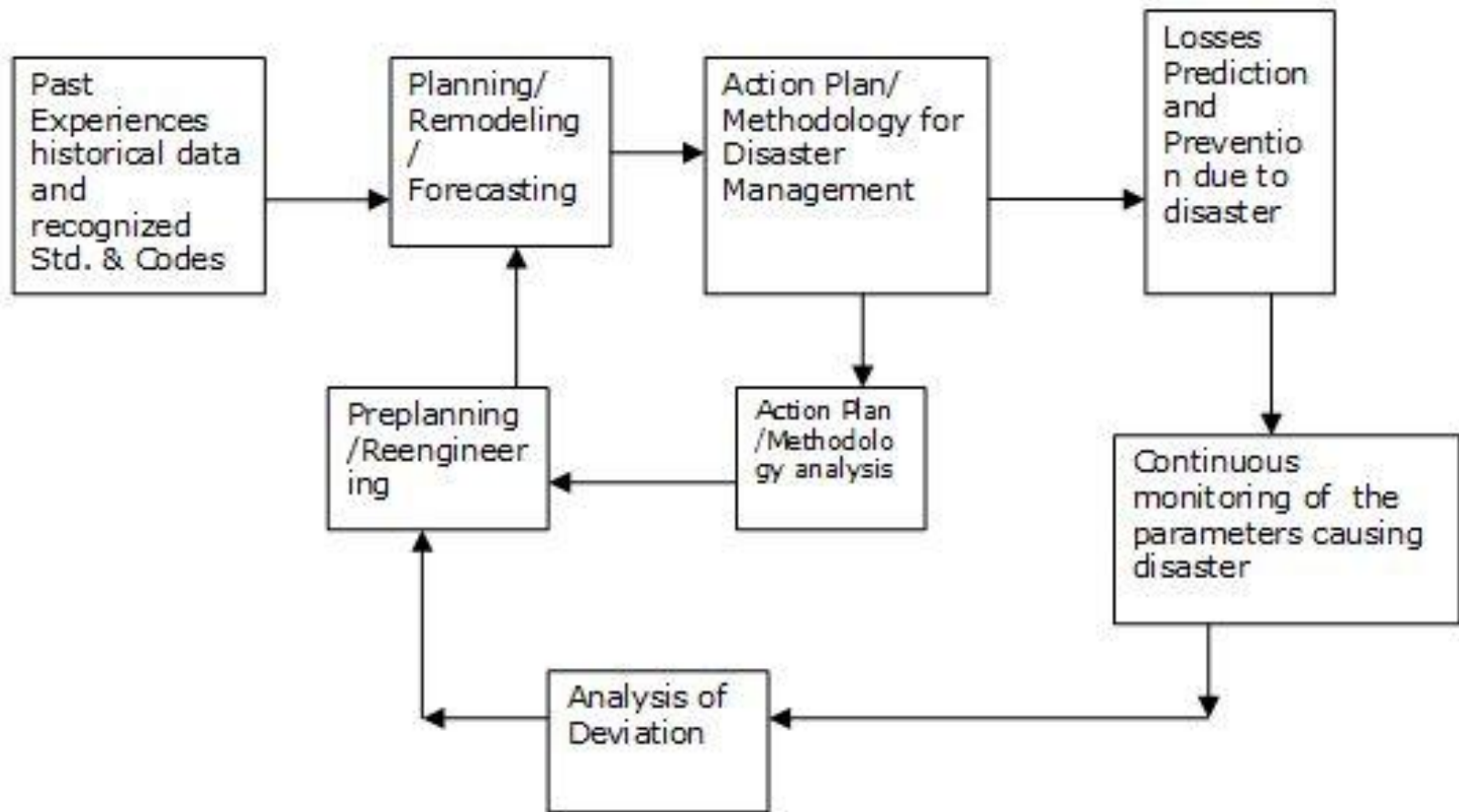
❖ **The compounded costs of disasters relating to loss of life, loss of assets, economic activities, and cost of reconstruction of not only assets but of lives can scarcely be borne by any community or nation.**

❖ **Therefore, all development schemes in vulnerable areas should include a disaster mitigation analysis, whereby the feasibility of a project is assessed with respect to vulnerability of the area and the mitigation measures required for sustainability.**

- ❑ **Environmental protection, afforestation programme, pollution control, construction of earthquake resistant structures, etc. should, therefore, have high priority within the plans.**
- ❑ **The growing awareness towards environmental issues and stringent pollution and environmental regulations compel to practise prevention norms. The emphasis is on waste utilization, resource conservation, recovery and recycles.**

# **APPLICATION OF REENGINEERING IN DISASTER MANAGEMENT SYSTEM**

- Re-engineering is a fundamental rethinking and radical redesign of business process to achieve dynamic improvements in critical measures of performance, such as cost, quality, and service and speed, as shown in Fig. 1.
- (Source: Hammer and Champ, 1993).



**Fig. 1:** Reengineering of the Disaster Management System

- Business Process Reengineering methodology comprises of developing the business vision and process objectives, identifying the processes to be redesigned, understanding and measuring the existing processes, identifying IT levers and designing and building a prototype of new process.
- These changes aim at the reduction of human involvement, knowledge management, quick decision making, storage and analysis of abundant useful information and quick processing of those bundles of information to reach to an option.
- This approach would yield a better understanding for the planners and government agencies.
- The new work environments would give ease in understanding as given in the following Table-1.

# TABLE 1

<b>Sl. No.</b>	<b>Old Work Environment</b>	<b>New Work Environment</b>
<b>1.</b>	<b>Departmental hierarchy based on “Function.”</b>	<b>Process oriented teams in a Flattened” hierarchy.</b>
<b>2.</b>	<b>Specialized tasks done by one person, then “handed off” to the next employee.</b>	<b>Multidimensional work duties</b>
<b>3.</b>	<b>Work Division</b>	<b>Team work</b>
<b>4.</b>	<b>Serial workflow</b>	<b>Parallel workflow</b>
<b>5</b>	<b>Bureaucratic process with rigid rules and controls.</b>	<b>Delegation of authority and simplified processes.</b>
<b>6.</b>	<b>Supervisors</b>	<b>Coaches</b>
<b>7.</b>	<b>Age of Control</b>	<b>Age of flexibility</b>



- **Sometimes the bureaucratic process with rigid rules hinders the process of rehabilitations among the effected persons.**
- **In this case delegation of authority to different persons will give effective results.**
- **Political party workers do not start work unless they feel that their political mileage is being fulfilled.**
- **One must think about these activities also. A fundamental rethinking and radical redesign is must for disaster management planning.**
- **Actions must be objective oriented.**

# **DISASTER MITIGATION AND ITS ROLE**

- **As the first responder in any disaster situation, each State needs to build a team of skilled personnel, make provision for a lot of specialized equipment, efficient communication network and relevant, intelligent and easily accessible database.**
- **There is also a need to consider creation of a plan scheme in each state basically to meet the minimum requirements for strengthening communications and emergency control rooms, thereby improving coordination and response to disasters.**
- **The design of developmental projects and the process of development should take the aspect of disaster reduction and mitigation within its ambit; otherwise, the development ceases to be sustainable and eventually causes more hardship and loss to the nation**

# Preparedness against Floods

Within the overall master plan for the state, there has to be a contingency plan for each district, involving steps required to be taken before the onset of floods during the floods and post-flood management.

The following would be some of the essential components of flood preparedness:

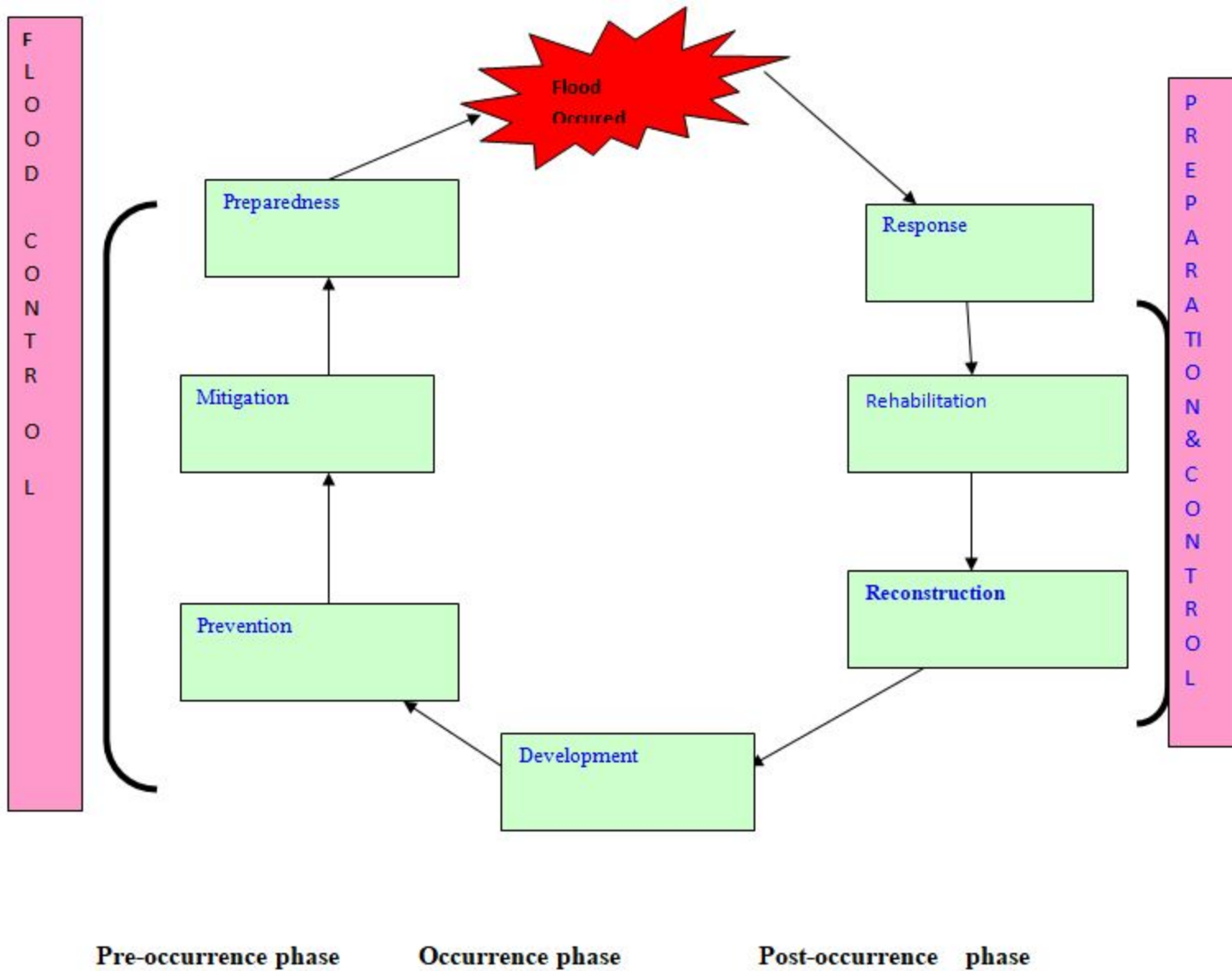
- A. "Pre Monsoon Inspection" of all railway tracks, canals and drains.
- B. Regular clearance of the drains from silt and weeds to make the drainage system fully functional.
- C. Regular maintenance of embankments of rivers, canals and tributaries etc.
- D. Clearing of storm water and sewerage drains in towns before monsoon.
- E. Constitution of committees comprising of heads of all emergency services.

- Five Year Plan documents have, historically, not included consideration of issues relating to the management and mitigation of natural disasters.
- The impact of major disasters cannot be mitigated by the provision of immediate relief alone, which is the primary focus of calamity relief efforts.
- The disaster must be predicted and prevented at every level.
- In case of flood, an early warning system is must.
- For example, the developing countries are much more seriously affected in terms of the loss of lives, hardship borne by population and the percentage of their GNP lost.

- Since 1991, two-third of the victims of natural disasters was from developing countries, while just 2 per cent were from highly developed nations.
- The flood hazard is compounded by the problems of sediment deposition, drainage congestion and synchronization of river floods with sea tides in the coastal plains.
- India now will have to look ahead and plan for disaster preparedness and mitigation in order that the periodic shocks to our development efforts are minimized.

# GENERATION OF DATA BANK FOR DISASTER MITIGATION

- ✘ Data bank will provide the useful information's to decision makers at Government as well as private or NGO agencies.
- ✘ Although two disasters are never similar in nature, yet one can draw similarities to a certain extent. For example 30 to 40 per cent similarities will yield better results. Only 60 to 70 per cent strategies have to be developed.
- ✘ This is only possible through on-line data bank for different situations and the actions taken at different situation. Any draw-back in the strategy will help the future planner for disaster mitigation.
- ✘ Data Management Cycle containing Pre-occurrence phase, Occurrence phase and Post-occurrence phase is shown in Fig. 2.



**Fig. 2 – DISASTER MANAGEMENT CYCLE**



# PREDICTION, PREVENTION AND DEVELOPMENT MEASURES

- Developmental measures are always related with prediction and prevention.
- Within the overall master plan for the state, there has to be a contingency plan for each district, involving steps required to be taken before the onset of floods, during the floods and post- flood management.
- On receipt of warning of the impending disaster, part of the immediate response has to be to warn people.
- The utility of flood forecasts is dependent on both accuracy and timeliness. A "Flood Forecast" received too late to take the necessary flood fighting measures is of "No" use.

The organizations responsible for flood-protection, warning and flood-fighting works should be informed about the incoming flood as early as possible so that the required action is planned and activities set into operation with least possible time delay.

Sl. No.	Preflood	Flood	Post flood
	<b>Response and Warning System (well in advance)</b>	<b>Disaster</b>	<b>Rehabilitation</b>
1.	Preparedness: Precaution for less damage	Adoption of Methods for life saving techniques	Material Support
2.	Policies, Planning, Legal, Technological, Institutional mitigation	Evacuation	Counseling
3.	Aforestation, de-silting	Medical Aid	Economic Support
4.	Public Awareness and Education	Food Supply, clothing	
5.	Maintenance of embankments	Security	
6.	Preparedness for transportation, emergency services, public administration, police, formation of committee, mock drills, etc.		

# CONCLUSION



- The interaction between technology, economy, environment, society and policies has never been so intimate than it is today.
- The technology demands have changed enormously due to environmental concern, ecological impact, energy requirements, policy modification and changes.
- The technology must assist other demanding areas such as natural disaster and disaster management.
- The integration with society, environmental management, information technology and other government agencies including NGO are necessary for overall decision making in disaster management.

- **The growing awareness towards environmental issues and stringent pollution and environmental regulations compel to practice prevention norms.**
- **The emphases are on waste utilization, resource conservation, recovery and recycle. All these add up for fighting in disaster management.**
- **Reengineering works on the principle to eliminate the basis of failure.**
- **It is about totally redesigning the processes and hence searches a new path for the system, with the optimistic view that the path that has been searched will lead to success.**

THANK YOU

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