

DISASTER MANAGEMENT CYCLE

The concept of Disaster Management Cycle integrates isolated attempts on the part of different actors, government and nongovernment, towards vulnerability reduction or disaster mitigation, within the enveloping domain of disaster management, as phases occurring in different time periods in disaster management continuum. This has facilitated a planned approach to disaster management in that post- disaster recovery and pre -disaster mitigation planning are perceived as integrated/related activities.

Stages in Disaster Management

Disaster Management efforts are geared towards disaster risk management. Disaster Risk Management “implies the systematic process of using administrative decisions, organisation, operational skills, and capacities to implement policies, strategies and coping capacities of the society and communities to lessen the impact of natural hazards and related environmental and technological disasters. These comprise all forms all activities including structural and non- structural measures to avoid (prevention) or to limit (mitigation and preparedness) adverse effects to hazards”.

There are three key stages of activities in disaster management:

1. *Before a disaster:* to reduce the potential for human, material, or environmental losses caused by hazards and to ensure that these losses are minimised when disaster strikes
2. *During a disaster:* to ensure that the needs and provisions of victims are met to alleviate and minimise suffering
3. *After a disaster:* to achieve rapid and durable recovery.

Common perception of disaster management is limited to emergency relief and post- disaster rehabilitation. This is so because these 2 elements are far and not separate.

Thus, prevention, mitigation and preparedness form pre-disaster activities in the Disaster management Cycle and response, comprising relief, recovery and rehabilitation are post-disaster activities. Whilst emergency relief and rehabilitation are vital activities, successful disaster management planning must encompass the complete realm of activities and situations that occur before, during and after disasters.

These phases can best be represented as a cycle, which if followed through public policy can obstruct future development of disasters by impeding the vicious cycle of cause and effect. One of the key issues in disaster management planning is the allocation of resources at all stages of the disaster cycle, which optimises the total effectiveness of risk reduction activity and maximises the overall impact of disaster management.

This approach has imparted a more holistic perception to disaster management and has served to integrate disaster management with development planning in that most predisaster activities, involve activities for vulnerability reduction like poverty reduction, employment provision etc. which are also mainstream development concerns.

Thus, disaster management cycle implies development is essentially/conceptually related to disaster management.

Disaster and Development

Another significant consequence/effect of this concept relates to understanding the inherent correlation between disasters and development. Development had proceeded with relative unconcern for environmental issues. The result has been newer vulnerabilities/risks arising as a result of indirect/direct consequences of development strategies.

For example, air pollution has been caused due to uncontrolled emission of green house gases, water pollution due to unregulated working of industrial enterprises as also agriculture, leading to adverse impacts on the environment.

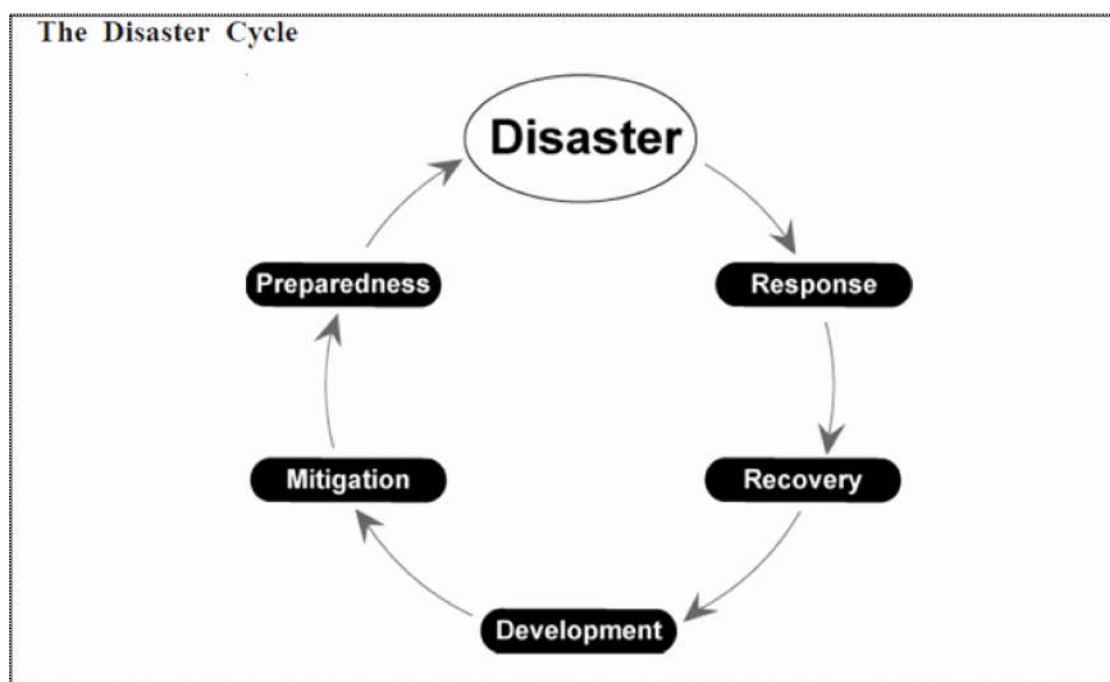
The concept of disaster management cycle is expected to impart the much needed long-term perspective / viability to developmental policy since vulnerability reduction would be factored in mainstream planning to reduce costs on response efforts when disasters strike. Also, the process preceding policy formulation, that is deliberation with involved stakeholders and citizen groups, is likely to get more participatory and inclusive of disaster related concerns.

There is increasing realisation, as also explained earlier, of a cause-effect relation between disasters and development in that development has not factored environmental concerns sufficiently in mainstream policy and has been predominantly productivity centred.

The World Disasters Report, 2002 categorically states that; International development targets set for the year 2015, such as reducing world poverty and hunger by one half, will not be reached unless the heavy toll of disasters on the poor is reduced through effective measures.

In its 10th year, the report published by the International Federation of Red Cross and Red Crescent Societies, calls for disaster risk reduction targets to be added to the international development goals for 2015 and beyond. These targets include reducing by one half, the number of people killed and affected by disasters and increasing the number of governments with dedicated plans and resources for risk reduction programmes.

The Disaster Cycle



The different phases of disaster management are represented in the disaster cycle diagram.

1. The Disaster Event

This refers to the real-time event of a hazard occurring and affecting the 'elements at risk'. The duration of the event will depend on the type of threat, for example, ground shaking may only occur for a few seconds during an earthquake while flooding may take place over a longer period of time. Disasters have tremendous modifying impact on the physical landscape. Within a few minutes, an entire region is reduced to rubble in the event of an earthquake. The impact leads to loss of life and property in affected areas; losses being directly correlated to the vulnerability of the region, physical and socio-economic. Vulnerability is also socio-economic. Weaker sections of society, viz. women, children, aged and handicapped, mentally infirm, etc., suffer a lot more than their stronger counterparts. Studies have also unearthed positive correlation between poverty and vulnerability. The poor inhabit the most hazardous physical areas because they are easier to procure and offer added advantages, like proximity to sea for fishermen or fertile soil for farmers near flood prone areas etc., that makes them prone to losses, both of assets and life. The poor also lack the resilience to recover from shock in the aftermath of a disaster.

This brings to light the need for multi-faceted response to disasters, which takes account of all social political and economic ramifications. Issues to be addressed range from physical to social and economic vulnerability of weaker sections that suffer more relative to other, better placed.

2. Disaster Response

A Disaster is a cataclysmic event that has severe modifying impact. Consequences are both physical and social/ human. Disaster Response has to tackle all aforesaid challenges. Disaster response entails restoring physical facilities, rehabilitation of affected populations, restoration of lost livelihoods and reconstruction efforts to restore the infrastructure lost or damaged. There are inherent important lessons to be learnt from disaster response. Retrospectively, it brings to light flaws in efforts pertaining to policy and planning with respect to location and type of infrastructure and social schemes to improve the social positioning of the under privileged, particularly with respect to access to resources of the underprivileged. Disaster aftermath is evaluation time for the administrative set up in that disaster response exposes system weaknesses. Disaster is the ultimate test of administrative efficiency, in the sense of positive impact on the environment, preparedness, procedural simplicity, logistics, speed and expertise. **There are inherent important lessons to be learnt with regard to administrative reforms by way of policy interventions to ensure:**

- Better institutional preparedness
- Countering contrary pulls such as lack of social cohesion owing to irrational differentiations that effectively impede response, in the sense of self- help and 'communitarianism'
- Long- term mitigation policy to counter vulnerabilities, structural and non- structural by enabling legal provisions and honest implementation of the same.

3. Recovery

The recovery phase involves implementation of actions to promote sustainable redevelopment (reconstruction, rehabilitation) following a disaster. It covers long-term measures like, rebuilding of houses, assets, infrastructure, school building, hospital buildings, and other public buildings. It is a process undertaken by a disaster-affected community to fully restore itself to pre-disaster level. Recovery is the activity that returns infrastructure systems to minimum operating standards and guides long-term efforts designed to return life to normal or improved levels after a disaster. Recovery is also sometimes used to describe the activities that encompass the three overlapping phases of emergency relief, rehabilitation and reconstruction.

- ***Emergency Relief***

Emergency relief refers to the period immediately following the disaster when steps are taken to meet the needs of survivors with regard to shelter, water, food and medical care. Activities undertaken during and immediately following a disaster, include, immediate relief, rescue, damage and needs assessment and debris clearance.

Rescue and relief are critical elements of response. This would necessitate institutional/organisational improvements by way of better delegation to field agencies, improvements in decision-making and communication processes, incorporation of indigenous traditional knowledge on warning signs, a cartographic knowledge of safe and unsafe areas, survival methods, and traditional forms of insurance built around kinship and families.

The most crucial aspect in relief and rescue is communication across involved agencies. Disaster zone is often equated with a war zone, where communication is the critical factor, often, crucial, in fact, the deciding factor between success and failure.

- ***Rehabilitation***

Rehabilitation implies activities that are undertaken to support the victims' return to of temporary housing and public utilities as interim measures to assist longer-term recovery through permanent housing and infrastructure. Besides physical elements, rehabilitation programmes also include economic rehabilitation through livelihood recovery and support actions and finding alternate employment options for those who cannot get back to their original occupations due to irreparable damage. Rehabilitation also includes psycho-social rehabilitation for those who are badly traumatised and need support in terms of psychosocial counseling or even medication in some cases.

- ***Reconstruction***

Reconstruction attempts to return communities to improved pre-disaster functioning. It includes the replacement of buildings, infrastructure and lifeline facilities such as roads, bridges and communication links, so that long-term development prospects are enhanced rather than reproducing the same conditions which made an area or a population vulnerable in the first place.

4. Development

The inclusion of development as a phase in the disaster cycle is intended to ensure the natural disaster, societies factor hazard and vulnerability considerations into their development policies and plans in the interest of overall progress. The rationale behind the use of the expression 'disaster management cycle' is that disaster and its management is a continuum of inter-linked activities. It is sometimes also referred to as the 'disaster-development cycle', implying that disasters are periodic phenomena and occur regularly in such a way that there is development, followed by a disaster, then back to development till the next disaster.

Sustainable development is another term that is useful in this context, implying development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains within it 2 key concepts of 'needs' in particular, to the essential needs of the world's poor, to which overriding priority should be given and the idea of limitations imposed by the state of technology and social organisation on the environment's ability to meet the present and the future needs.

Risk Reduction: Mitigation and Preparedness

The Risk Reduction is chronologically the latest paradigm for mitigating the impact of disasters. The disaster risk management process is a process for good decision-making and for ensuring the best use of limited resources. It applies standard principles, process and techniques of risk management to disaster management.

Risk reduction can take place in 2 ways i.e. Long-term Mitigation and Short-term Preparedness.

This protective process embraces measures, which enable governments, communities and individuals to respond rapidly to disaster situations to cope with them effectively.

Thus disaster risk reduction strategy includes:

1. **Legal and institutional framework** - Creating appropriate legal and organizational framework is the first step towards Disaster Risk Reduction
2. **Vulnerability Analysis and Risk Awareness** - Appraisal of likelihood and intensity of hazards and analysis of vulnerabilities thereto of the community with making government organizations, local bodies, communities/groups and individuals at all levels aware of the risk of potential natural and man-made hazards.
3. **Planning** - Building of institutional capabilities and meticulous long and short term planning with effective implementation of plans and enforcement measures.
4. **Implementation of Plan and Community Resilience** - Community preparedness is the next step. Building resilience of the communities to face crises and ensuring their full participation through inputs like education, training and urban planning, infrastructure building and logistics. Crucial to all these efforts, however, is the existence of a **'safety culture'** in societies.
5. **Knowledge Creation and Dissemination** - Knowledge plays an important role in disaster reduction. The traditional knowledge available with the community has to be used along with knowledge acquired through research and past experiences. Research in the field of disaster management has contributed in predictions with a fair degree of accuracy (earthquakes are an exception), and this has led to establishment of efficient Early Warning Systems. The information is growing at a rapid rate, which, calls for its processing and sharing. The challenge is to ensure that the community and the decision makers are empowered with this knowledge. Therefore, disseminating it to the larger population is the final element in effective Disaster Risk Reduction efforts.

World Conference on Natural Disaster Reduction, Yokohama, 1994

Yokohama Strategy and Plan of Action for a Safer World includes:

- Risk assessment
- Disaster prevention and preparedness
- Prevention and preparedness should be considered integral aspects of development
- Early warnings and their effective dissemination
- Preventive measures
- Application of proper design and patterns of development focused on target groups
- Share the necessary technology to prevent, reduce and mitigate disaster.
- Strong political determination required to make efficient use of existing resources