

Subject: Geography CBCS HONOURS

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CC14T: DISASTER MANAGEMENT, HAZARD PARADIGMS

UNIT: 1- POINT: 2.

Module 6. Paradigm Shift in Disaster Management– From Relief centric to Response Centric

Rationale

The module develops a conceptual understanding of paradigm shift in disaster management and the theoretical background driving the shift in the approach. It further reflects the historical background leading to paradigm shift in global context and the frameworks supporting the transition. The process of paradigm shift in India is also elaborated along with the objectives and approach.

Unit 1 - Paradigm shift in Disaster Management

Definition –The shift in thinking and focus from a relief-centric approach to a more proactive, holistic and integrated approach for management of disasters through improved disaster

- Preparedness,
- Prevention,
- Mitigation, and
- Emergency response

is broadly considered as the paradigm shift.

Description – Paradigm shift is the change in the way of thinking. The transformation in thinking is fuelled by agents of change and occurs through a process of evolution. Historically disaster management has been a reactive process. As disaster research evolved, it was observed that it is often not possible to stop hazardous occurrences, but preventive measures can be taken to minimize the adverse impacts of the hazards. The term ‘Disaster Risk Reduction’ is used to mention such measures. The paradigm shift in fact focuses on implementing these risk reduction measures. It is a shift in approach from

- reactive approach where actions are taken after the disasters occur, e.g. providing humanitarian assistance, relief etc. **to**
- proactive approach where holistic integrated planning and management of disaster is envisioned, e.g. building seismically protected structures, creating legislations, frameworks and guidelines for disaster management, setting up of emergency operating centers and response forces, generating a culture of prevention capacity

building etc.

In other words, it aims at addressing the root causes of prospective disasters rather than addressing the stress and shocks arising after disasters.

e.g. Indonesia is seismically active and prone to earthquakes. Between 2010 and 2016, Indonesia has experienced 11 earthquakes varying in magnitudes from 6.1 to 8.6. To minimize the risk of life losses and injuries, the earthquake preparedness program in schools in Bengkulu, Indonesia was carried out. Based on technical guidance cost effective retrofitting of schools was undertaken to make them earthquake resistant. Also in post- earthquake reconstruction programmes retrofitting was incorporated. Trainings of Engineers, contractors, craftsmen and local government officials on earthquake resistance in school building were conducted. Safety drills and information on earthquake preparedness was imparted. Similar initiatives were undertaken in Bandung, Indonesia where awareness and training programmes on earthquake safety were conducted. (Case study taken from MFF regional training course, 2008)

This is a significant departure from the traditional approach (where humanitarian assistance and relief is provided only after a disaster takes place to address the stress and shock) and aims to minimize disaster risk (addressing the root cause) before the disaster strikes.

Why paradigm shift is required?

Disasters cause massive casualty, affect human beings, impact delivery of services, cause environmental harm and leave immense economic impacts. Additionally years of developmental progress get reversed post disaster occurrences. UNDP report of 2005 states that the Indian Ocean tsunami (2004) set back socio economic development by 20 years in Maldives. The tsunami occurred only 6 days after Maldives was removed from UN's list of least developed countries. After the tsunami, the tourism sector which accounts for 70% of the nation's income, got severely affected. The earnings of this sector have helped improve the living standard of the nation and contributed to higher employment rates and enrolment rates in schools. The tsunami reversed this whole process of development of the past 20 years. Similar scenario is observed in the Syrian conflict where Human Development Index (HDI) of Syria has rolled back 35 years. (UNRWA, 2013) Thus attempts to minimize disaster risks and impacts to alleviate human suffering is not only our moral responsibility but also it is extremely necessary to maintain the hard earned developmental progress.

In many cases it is observed that it is far more cost-effective to prevent disasters from occurring before hand than to recover from them afterwards". (Disaster Management Training Programme, 1994) It is estimated that every dollar spent on risk reduction saves between \$5 and \$10 in economic losses resulting from disasters. (Schwartz, 2006) Natural hazard events will continue to occur, but steps can be taken to reduce factors that increase risk due to exposure, increase the ability to withstand disasters, and increase the effectiveness of response and recovery. This necessitated the shift from a reactive to a proactive approach.

Theoretical Background

Disaster in a community or society is the outcome of societal implications rather than natural events. Thus any effort of disaster risk reduction should involve the planning and action by various social units. This conceptual idea that, anthropogenic elements play a major role in manifestation of disasters, led to the development of the theoretical background , based on which the paradigm shift in disaster management has evolved.

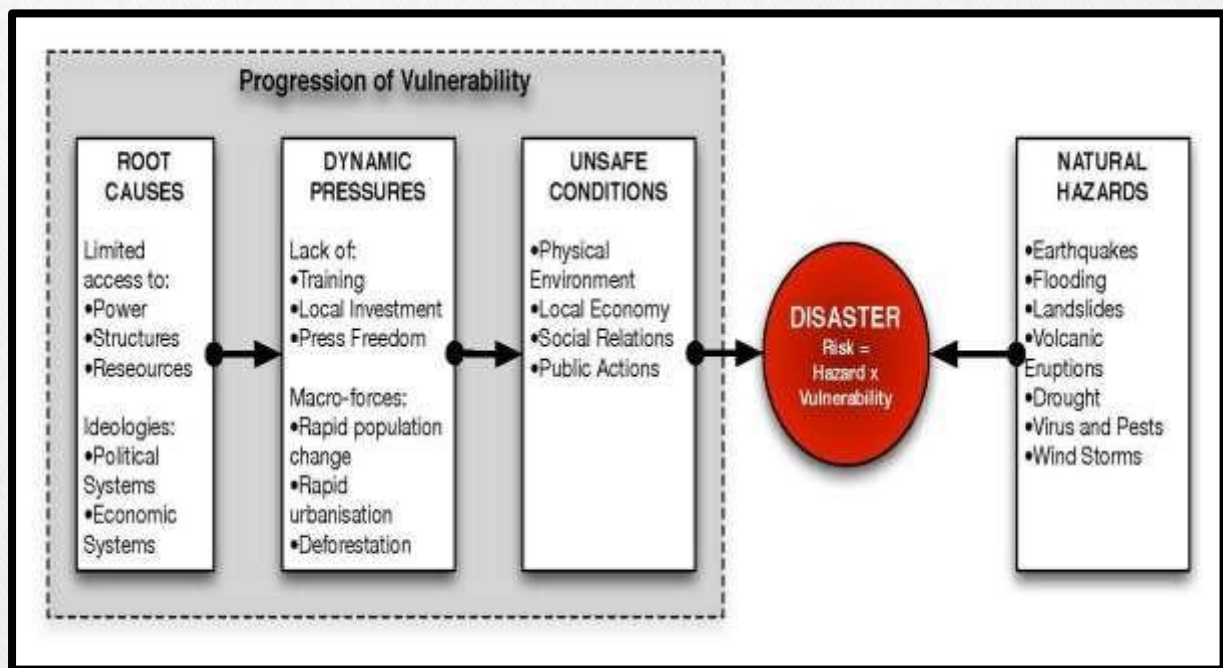
In 2003, Wisner, Blaikie, Cannon and Davis proposed the PAR and the ACCESS model in the book 'At Risk' (2003) which provided a framework to validate the emerging idea of disasters as a social phenomena. These two models portray disasters as shaped by social processes

which involve the interaction of physical events and socio economic characteristics of the society. The PAR model looks at the societal vulnerability utilising a broader spatial and temporal dimension and elaborates the progression of vulnerability. The Access model focuses on the processes before and after the environmental/anthropogenic shock and illustrate how these processes shape the future risks. The models are presented below:

Pressure and Release model - Based on the conceptual idea that 'a disaster is the impact of a natural hazard upon vulnerable people' (Cannon, 1994), the PAR (Pressure and Release) model was proposed. The PAR model considers disaster as the intersection of two opposing forces

- a) the processes which create vulnerability; and
- b) the hazard or natural process

The opposing forces build 'pressure' and with increasing pressure building from each side, hazard events turn into disasters. The 'release' idea is incorporated to conceptualise the reduction of disaster, i.e. to relieve the pressure, vulnerability has to be reduced. The image resembles a nutcracker.



Source – Wisner, Blaikie, Cannon and Davis, 2003

The progression of vulnerability has three distinct stages:

1. The root causes are general processes within the society which are **temporally and spatially distant**. They are profoundly bound within the cultural, ideological and social relationships between individuals and communities. The Economic, Demographic and Political factors are most important root causes that give rise to vulnerability. They directly impact the access to resources of individuals or communities. e.g. People who are economically marginal live in risk prone locations and tend to be less important to people who hold political or economic power. These individuals are by default vulnerable due to lack of political or economic resources and face higher exposure to hazards.

2. The dynamic pressures are processes and activities that translate the effects of root causes both temporally and spatially into unsafe conditions. Dynamic pressures modify root causes in particular forms which have to be analysed in relation to the hazards facing the people. It is more specific temporally and spatially than the root causes. e.g. Rapid unplanned urbanization that results in fewer hospitals or doctors and fewer transportation options to hospitals from highly populous risk prone areas, exacerbate the vulnerability of people.
3. Unsafe conditions are the specific forms in which the vulnerability of a population is expressed in time and space in conjunction with a hazard e.g. The recurrence of flood in the region where certain individuals live in houses without flood proofing measures make them vulnerable. Thus unsafe conditions are specific temporally and spatially, and micro-mapping of unsafe conditions affecting households (ethnically backward, economically repressed etc.) differentially and subsequently groups across households (women, children, elderly, disabled etc.) can be done at this level.

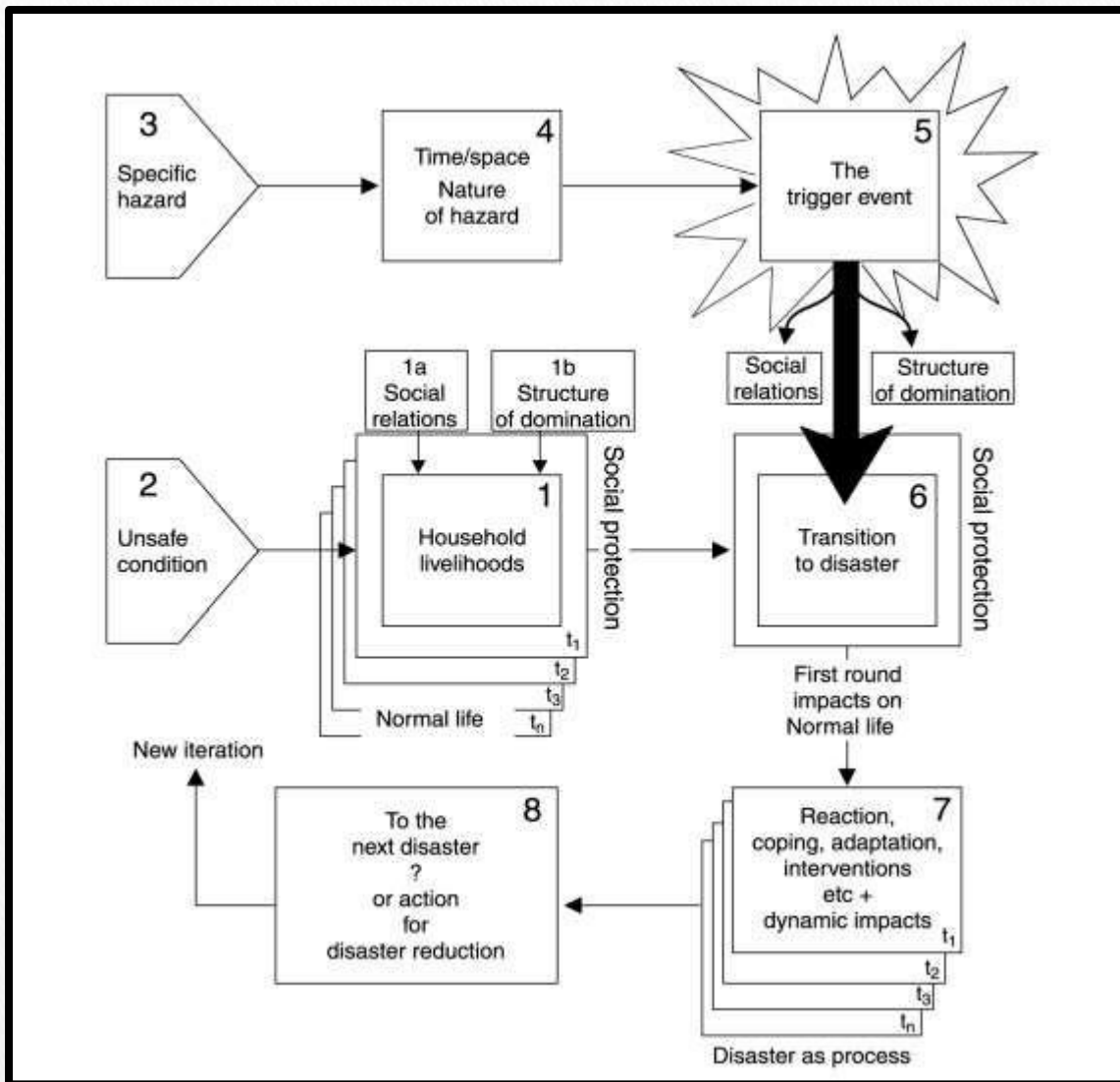
Based on this model we can conceptualize the interaction of hazards and vulnerabilities in creating disasters. This focuses more on the elaboration of the progression of vulnerability. The PAR Model could be used for a cross sectional study at any given point in time but the dynamic nature of the immeasurable vulnerability requires a robust model to attempt any measurement. The Access Model builds on the robustness and dynamicity of the PAR model and probes the trajectory of vulnerability and vulnerable people once it interacts with hazards and the transition to a disaster.

(Taken from *At Risk* by Wisner, Blaikie, Cannon and Davis, 2003)

Example - Landless farm labourers or marginal landholding farmers of different regions relocate to urban areas in lean seasons in search of jobs. They are economically deprived, politically weak and often belong to socially backward communities. They mostly live in slums and dingy buildings which are constructed in unsafe localities or are inhabitable, e.g. near railway tracks, on flood plains these buildings are old and might collapse. In case of an earthquake or flood, these people are affected first due to their high levels of exposure to hazards. These people lack fall back options in case they are affected by a hazard. Thus they are impacted worst when hazard materializes. The case study of 'Landless squatters in Dhaka' can be referred (Wisner, Blaikie, Cannon and Davis, 2003)

Access Model: The model explores how relative resilience of individuals and groups to disasters is determined by differences in access to the economic or political resources. The model provides a broad view of root cause of vulnerability, the cycle of hazards and provides a framework for looking at livelihoods and vulnerability.

It is developed to understand the complex dynamic sets of environmental and social processes that develop from a disaster. The Access model fits at the location of the magnifying glass in the PAR model in the wider explanatory framework of the models. The Access model "explains at a micro-level the establishment and trajectory of vulnerability and its variation between individuals and households. It deals with the impact of a disaster as it unfolds, the role and agency of people involved, what the impacts are on them, how they cope, develop recovery strategies and interact with other actors" like humanitarian agencies, community based bodies etc.



Source – Wisner, Blaikie, Cannon and Davis, 2003

The model consists of 8 boxes of closely related ideas linked by arrows to indicate cause effect relationships. Hazards (3) have specific time and space characteristics (4) and result in trigger event. Social relations and structures of domination (1a and 1b) shape household conditions (1) which are subject to unsafe conditions (2). The trigger event impacts on social relations, structures of domination and overall social protection (Box 6). It interacts with households, and while impacting on different households it follows a process termed ‘transition to disaster’ (Box 6). After the first round of impacts on normal lives, the reaction, coping, interventions etc. (Box 7) occur. This phase determines the answer to the question of Box 8 ‘To the next disaster?’, and indicates altered conditions of vulnerability. The iteration continues. (At Risk by Wisner, Blaikie, Cannon and Davis, 2003)

Based on the above models, we can identify two broad anthropogenic components which can be focussed on to minimize the impacts of adverse hazardous events:

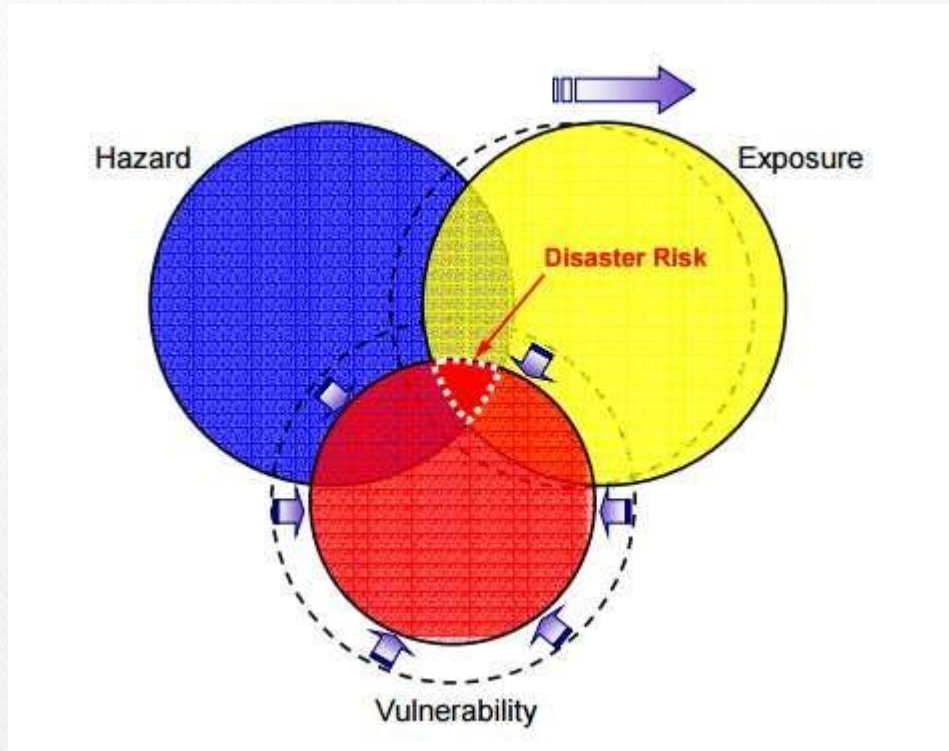
- a) Pre-existing vulnerability of the society, and
- b) The quality of reaction to a disaster, coping, adaptation, interventions and other dynamic inputs after a disaster strikes

The proactive approach tries to address these areas to minimize disaster impacts and disaster risks.

The Approach

The following figure represents the proactive approach in disaster management that also explains the paradigm shift in approach. It focuses on two key aspects:

- a) Reduce the level of susceptibility to hazardous events and build coping capacity (fall back mechanisms)
- b) Minimize exposure to hazards



Source – ADRC, 2005

To attain the above mentioned objectives the international, regional and national agencies have developed multiple guidelines and frameworks which are discussed in the next section.

Unit 2 – Global initiatives on Paradigm Shift

National policies and frameworks for disaster management in different nation have shaped up based on the nation's experience with disasters. Different countries have developed diverse sets of institutional agenda and are following different practices. In countries like USA, comprehensive disaster management processes started from as early as 1800s when the division of the federal government was set up to help victims of natural disasters. While for nations like India the comprehensive framework was set up only in 2005. To bring different initiatives under one umbrella, guide processes and also enable collaboration and cross learning, a number of international policies and frameworks have emerged from 1990s.

- The Yokohama Strategy and Plan of Action (1990- 1999) can be considered as the first global strategy to address the subject of disaster and disaster risk management.
- The International Decade for Natural Disaster Reduction (IDNDR) programme forum organized in 1999 reflected on the progress in the past decade and it was observed that “despite dedicated efforts, the number and cost of natural disasters continue to rise”. (IDNDR, 1999)
- Following this, the International Strategy for Disaster Reduction was introduced which proposed institutional mechanism at global, regional and national level for Disaster risk reduction.
- The Hyogo Framework of Action: Building the Resilience of Nations and Communities which was operational from 2005 to 2015 provided a practically applicable framework for disaster risk reduction. It promoted disaster risk reduction as a policy priority and can be regarded as a stepping stone in disaster risk governance. It also provided critical guidance to disaster risk reduction efforts and has contributed towards achieving the ‘Millennium Development Goals’.
- Following this, many national and regional frameworks were developed e.g the African Regional Disaster Risk Reduction Framework.
- The implementation of Hyogo Framework for Action “highlighted a number of gaps in addressing the underlying disaster risk factors, in the formulation of goals and priorities for action, in the need to foster disaster resilience at all levels and in ensuring adequate means of implementation”. (SFDRR, 2015)
- The Sendai Framework for Disaster Risk Reduction replaced the Hyogo Framework of Action and is currently functional (from 2015 - 2030). It builds on the Hyogo Framework to ensure continuity to the work done and also address the gaps in the Hyogo Framework. The Sendai Framework lays a strong emphasis on disaster risk management and defines seven global targets to operationalize disaster risk management and expects the outcome of reduced disaster risks. The scope of disaster risk reduction was also broadened to focus not only on natural and man-made hazards but also on hazards related to environmental, technological and biological hazards and risks.

The key areas focussed currently in the global initiatives for proactive management of disasters are:

Disaster Risk Reduction–

- Understand hazard and vulnerability characteristics
- Prevent creation of new risks
- Identify, assess and understand existing risks
- Reduce existing risk
- Strengthen resilience

- Develop and implement disaster risk reduction policies, laws, regulations, guidelines, directives and standards
- Ensure adequate emergency and contingency measures are in place for possible disasters
- “Build Back Better” approach in recovery and reconstruction
- Provide funding to sustain disaster risk reduction measures
- Mobilization of risk-sensitive investment to avoid the creation of new risk
- Protection of cultural and natural heritage

Risk Governance–

- Strengthening of disaster risk governance
- Establish adequate institutional and political decision making structures to govern disaster risk reduction
- Set of guiding principles and frameworks
- Accountability for disaster risk management, including primary responsibility of states to prevent and reduce disaster risk
- Recognition of stakeholders and their roles
- Multi-sectorial partnerships and collaboration –engagement of institutional, community and private agencies to work in disaster risk reduction
- Strengthening of global cooperation, co-ordination and partnerships
- Risk-informed policies and programs, including financial support from international financial institutions

Developmental processes- Integrate disaster risk reduction measures into development planning. “United Nations Development Program is promoting the goal of sustainable development, and it is argued that disaster awareness considerations should be incorporated into all development programming and planning, both to

- a) protect the development process and
- b) reduce the risk of wasting scarce development resources.” (Disaster Management Training Programme, 2006)

Along with reduction of exposure and structural mitigation, vulnerability has to be reduced by strategic processes within development; not by the ad hoc application of services that commence after disaster has occurred.” (Lewis, 1999) It is to be understood that “building to specific standards,” “disallowing development in hazardous areas”, adding gender goals in intervention programs are not likely “to have much impact until problems as poverty, land and income distribution and equity issues are resolved” (Tobin & Montz, 1997). With this objective risk sensitivity in development planning and implementation process is incorporated.

Disaster research and awareness–

- Encouragement to research, training and disaster education
- Generating public awareness and accountability
- Availability of information to enable development of informed risk perception
- Improved role of media and public institutions in generating risk awareness

Unit 3 - Paradigm shift in the Indian context

The historical trajectory and institutional framework of disaster management in India has been explained in the earlier module. Traditionally, disasters in India have been addressed after the incident has occurred, for instance the Bhopal gas tragedy (1984) or the Latur earthquake (1993). A review of the 5 year plan points the fact that understanding of disasters was to mitigate droughts and floods. (Planning Commission, 2002) In certain disasters the failure of governmental mechanism itself led to the emergence of disasters as evident in the Bengal Famine (1943).

The severe damages incurred due to the Orissa Super Cyclone (1999) served a wakeup call for the Indian government. Following that, the High Powered Committee set up in 1999 revealed major weaknesses in the system of disaster management in the country. The impacts of Bhuj Earthquake (2001) and the catastrophic devastation caused by the Indian Ocean Tsunami (2004) validated the findings of the High Powered Committee. Post Tsunami, India declared the national commitment to set up effective institutional mechanism at different administrative levels.

National Disaster Management Act 2005

The Government of India took a defining step on 23 December by enacting the Disaster Management Act, 2005. The Act envisaged the establishment of dedicated institutional structure for disaster management in India and strengthening disaster risk reduction efforts across the nation. It mandated the formation of the National Disaster Management Authority (NDMA), State Disaster Management Authorities (SDMAs) and District Disaster Management Authorities (DDMAs). It provided detailed guidelines on the structure, responsibility and functioning of these Authorities and incorporated multidisciplinary integrated and holistic approach in disaster management. It also proposes the development of the national Plan for disaster management. For disaster research and training purposes, the establishment of NIDM was envisaged. For special response to impending hazard strike or disaster event, National Disaster Response Force was formed. Specific funds like Disaster Response Fund at national (National Disaster Response Fund), state (State Disaster Response Fund) and district (District Disaster Response Fund) level and Disaster Mitigation Fund at national (National Disaster Mitigation Fund), state (State Disaster Mitigation Fund) and district (District Disaster Mitigation Fund) level were set up as part of the Act. This helped in consolidating disaster efforts

These arrangements ushered “a paradigm shift, from the erstwhile relief-centric response to a proactive prevention, mitigation and preparedness-driven approach for conserving developmental gains and also to minimise losses of life, livelihoods and property.” (NPDM, 2009)

National Policy on Disaster Management, 2009 – The policy sums up the existing institutional and financial arrangements for addressing disasters in the nation. It also sums up the phase wise components of disaster management. The objectives of the policy promote a culture of prevention, encourage risk reduction and aim at mainstreaming disaster management in development processes.

National Disaster Management Plan, 2015 – The plan provides a framework and direction to the government agencies for disaster management and risk reduction.

Paradigm shift in Action

To operationalize the paradigm shift in disaster management, multiple initiatives have been undertaken by the Indian government in association with non-governmental and community based bodies. The following section mentions a few such initiatives:

Promoting a culture of prevention and preparedness—“Odisha has a 480 km long coastline stretching over 6 districts of Balsore, Bhadrak, Kendrapara, Jagatsingpur, Puri and Ganjam. On an average in every 5 years, a major cyclone and almost every year several cyclones of minor intensity strike the coast accompanied by high speed winds, tidal waves and floods.” To deal with the hazard situations, the Indian Red Cross Society (IRCS) is managing 75 multi-purpose cyclone shelters constructed in the region to house the affected community during disasters. But in inter disaster periods, the shelters are used to “train communities for preparedness and Disaster Risk Reduction (DRR) activities.” The Red Cross “has trained communities in the vicinity of cyclone shelters in first aid, search and rescue, disaster preparedness, management of cyclone shelters etc. Every cyclone shelter has a task force trained in first aid, search & rescue and a 30-40 community members committee manages these multi-purpose cyclone shelters.” Through this initiative a culture of prevention and preparedness is promoted. (India Red Cross Society, 2013)

Source - indianredcross.org

Mainstreaming Disaster Risk Reduction in Developmental Planning—The Integrated Watershed Management Programme, by the Department of Land Resources, Government of India, aims “to restore the ecological balance by harnessing, conserving and developing degraded natural resources such as soil, vegetative cover and water. The outcomes are prevention of soil run-off, regeneration of natural vegetation, rain water harvesting and recharging of the ground water table” enabling multi-cropping and the introduction of diverse agro-based activities. (Department of Land Resources) With the development planning of the watershed, the hazard of drought is also mitigated. Similarly, the MGNREGA (Mahatma Gandhi National Rural Employment Guarantee Act) has also been extensively used not only to provide livelihood security but also to create flood mitigation structures like dykes, reservoirs and rejuvenation of canals and natural water systems. Thus through MGNREGA, the economic vulnerability of the population is addressed as well as disaster prevention and mitigation measures are getting incorporated.

Summary

1. There has been a remarkable shift in the approach ,thought and focus from a relief-centric approach to a more proactive, holistic and integrated approach for management of disasters through improved disaster. e.g.
 - Preparedness,
 - Prevention,
 - Mitigation, and
 - Emergency response
2. It is a change in the way of thought process
3. It refers to a shift from reactive (relief centric) to proactive approach (response centric)
4. Paradigm shift is required to minimize loss and suffering as also maintain developmental progress
5. The PAR model considers disaster as the intersection of two opposing forces
 - a) the processes which create vulnerability; and
 - b) the hazard or natural processThe opposing forces build 'pressure' and with increasing pressure building from each side, hazard events turn into disasters. The 'release' idea is incorporated to conceptualise the reduction of disaster, i.e. to relieve the pressure, vulnerability has to be reduced.
6. The ACCESS model explores how relative resilience of individuals and groups to disasters is determined by differences in access to the economic or political resources.
7. Approach to implement paradigm shift
 - a) Reduce the level of susceptibility to hazardous events and build coping capacity (fall back mechanisms)
 - b) Minimize exposure to hazards
8. Sendai framework of disaster risk reduction provide the global framework for operationalizing the paradigm shift
9. The National Disaster Management Act 2005, National Policy on Disaster Management 2009 and National Disaster Management Plan 2015 provide the basis for paradigm shift in Indian context

10. EPATHSHALA MHRD