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# UNIT 14 DISASTER MANAGEMENT STRATEGIES\*

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## 14.0 OBJECTIVES

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After reading this Unit, you should be able to:

- Discuss the problems involved in management of a disaster situation;
- Understand the scholarly perspectives of the disaster management strategies; and
- Explain the disaster management strategies adopted at the international and National levels.

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## 14.1 INTRODUCTION

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As discussed in the previous Units, disasters have been of wider repercussions on the society leading to huge losses and damages and this scenario is a global phenomenon. Across the borders, the disaster impact has been increasing day-by-day. Extreme weather conditions, population growth, unplanned urbanisation, demographic changes and increasing pressure on natural resources are the major factors for the disaster losses. As reported by the Centre for Research on the Epidemiology of Disasters (CRED) and the United Nations International Strategy for Disaster Reduction (UNISDR), the disaster losses in India has been enormous in the last 20 years, which is around 20 billion US dollars (CRED & UNISDR, 2018). In such a scenario, where the disasters are making huge setback on development, it is important to reflect on whether disasters can be avoided or

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not? With the adoption of the International Decade for Natural Disaster Reduction (IDNDR) convention since the 1990s, the way disaster has been looked at has changed worldwide. The relief-oriented approach changed into risk-reduction approach. With the change in approach, the focus was more towards adopting strategies that can help in disaster reduction. Thus, disaster management strategies focused on various components like improving the capacities of community, adopting prevention, preparedness and mitigation measures, etc.

While the previous Units acquainted you with the basic concepts and components of disaster management, this Unit introduces you to some of the international strategies and frameworks related to disaster management. Some of the key disaster management strategies discussed in this Unit include Yokohoma strategy, IDNDR framework and Sendai Framework for Disaster Risk Reduction 2015-2030. It also discusses the scholarly views on disaster management strategies besides elaborating the strategies for disaster management adopted in India.

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## **14.2 EVOLVING DISASTER MANAGEMENT STRATEGIES: IDENTIFYING THE PROBLEMS**

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Before the disaster management strategies could be evolved, it is important to reflect on the problems that the strategies are trying to address. Thus, clarity is needed on the kind of challenges or problems that has to be addressed, as the disaster management measures cannot remain too confused, because it involves large number of lives and huge amount of property. Some of the challenges that are to be focused upon include the following:

- *Gaps in Policies and Practice:* Though disaster management strategies and measures are formulated by emergency managers or government, there exists a huge gap between the policy formulated and policy implemented. Hence, it is important to address policy failures. Guidelines should be formulated in a more realistic and responsible manner. Further, gaps that exist in implementation due to administrative failure should also be rectified, which would otherwise lead to negative effects in the mitigation of disasters. In addition, McConnell and Drennan (2006) identify the following tensions between the ideals and practices of disaster management:
  - High potential impact of crisis vs. the low priority of emergency management;
  - Need for planning and order vs. the chaotic uncertainty and the inherent disorder of crisis events;
  - Need for an integrated approach vs. the reality of institutional fragmentation; and
  - Need for active planning and genuine readiness vs. symbolic readiness.
- *Corrupt Practices:* One of the major problems faced in disaster management is the high level of corruption involved in the phase of relief and recovery, which needs to be addressed, while planning the strategies. As highlighted by Grist (2007), there is certain element in the community which always attempts to profit from the misfortune of others or the outpouring of assistance from relief organisations. Hence, the strategies for disaster management should also ensure that such corrupt practices are prevented.

- *Lack of Situational Awareness and Analysis:* Another major problem faced is the lack of situational awareness and analysis. Without having proper understanding of the implications of a particular disaster situation, different approaches are followed which lead to delay in the process of disaster resilience. Hence, the disaster strategies should be based on a thorough knowledge of disaster situation and suggest relevant measures for different disasters.
- *Centralised Approach:* One of the crucial problems is that the emergency management measures have become more response-oriented and less collaborative, besides being more centralised. Centralised decision processes cause delays in approving and dispatching disaster assistance and greatly complicate communication between and among various stakeholders in disaster management. This creates serious communication problems between and among local, state, and federal officials, apart from creating communication gap among the emergency responders (Waugh 2006). The disaster strategy, thus, has to adopt flexible measures in terms of having decentralised measures, wherever possible, apart from ensuring coordination among various levels.
- *Lack of Coordination:* Even if collaborative arrangements are established, there remains lack of coordination among the players and various governmental, non-governmental and local agencies. All these players become much rigid in their own perspective. Thus, the strategies adopted by them become piecemeal measures, rather than following an integrated approach. Grist (2007) suggests that the elected representatives of the community should be encouraged to assume the role of integrators and preservers of the vision of the common good.

All such problems referred to above are only the tip of the ice berg. Such understanding of the problems involved in disaster management helps in evolving effective strategies and arriving at a comprehensive mechanism for dealing with it.

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### 14.3 SCHOLARLY PERSPECTIVES ON DISASTER MANAGEMENT STRATEGIES

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In dealing with a disaster situation, different strategies are suggested by different scholars and at different forums at the international level. A comprehensive definition of disaster management has been given by the United Nations International Strategy for Disaster Reduction (UNISDR, 2009), by referring to *disaster risk management* as a “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 impacts of natural hazards and related environmental and technological disasters”. However, a comprehensive strategy at the global level may not be an umbrella framework suitable for all regions. The local knowledge and indigenous thoughts should be pooled in, to design a region specific disaster management strategy.

Canton’s strategy in dealing with emergencies is the response methodology and presence of principal agent. Canton’s formulation of crisis hierarchy model suggests usage of Multi-Agency Coordination System as a response methodology and State and local governments as Principal Agents (Canton, 2007).

According to Kapucu and Van Mart (2006), ‘innovative problem solving, horizontal adaptation, collaboration, relationships based on trust, better public sector leadership, decentralised decision making and intensive human interaction are critical for the

success of disaster responses’. To this effect, it is of greater help to refer to the general strategies identified by Multidisciplinary Center for Earthquake Engineering Research (MCEER). It comprises four such general strategies that can be applied in handling any kind of disaster. These are (Kapucu, 2005):

- i) Robustness – ability to withstand the forces generated by a hazard agent without loss or significant deterioration of function;
- ii) Resourcefulness – capacity to apply material, information, and human resources to remedy disruptions when they occur;
- iii) Redundancy – the extent to which elements, systems, or other units of analysis exist that are capable of satisfying the performance requirements of a social unit in the event of loss or disruption that threaten functionality; and
- iv) Rapidity – the ability to contain losses and restore system or other units in a timely manner.

The Federal Emergency Management Agency (FEMA, 2003) of the United States has also identified few strategies in managing emergencies that include, concentrating on the core set of functions to be performed at the time of disasters; besides, other aspects in general to be taken care of. The set of core functions that is to be provided by emergency management personnel at the time of disasters includes the following:

- Direction and control;
- Communications;
- Warning;
- Emergency public information;
- Evacuation or in-place sheltering;
- Mass care;
- Health and medical; and
- Resource management.

Apart from this, FEMA has also provided a set of aspects that are required to be followed by emergency managers. These are: Hazard identification and risk assessment; Hazard mitigation; Resource management; Planning; Direction and control; Communication and warning; Operations and procedures; Logistics and facilities; Training; Exercises, evaluations, and corrective actions; Public education and information; and Finance and administration.

Kris Teutsch (2010) highlights the need for looking into the following capabilities and benefits, in planning disaster strategies:

- *Optimised Situational Awareness*: Real time communication, data management and data transmission helps in presenting a full picture of the disaster situation;
- *Interoperable, Collaborative Environment*: Information flow across all levels and all types of boundaries can help the responders to save more lives and deal with disasters in a better manner;
- *Support for Mobile and Web-based Access*: In a digital world, which is

driven by technology, all components and people are connected in fixed and field location through different digital devices. Hence, mobile and web-based access in handling disaster situation can help in handling disaster situation. For instance, during the Kerala floods of 2018, through the mobile and web-based access and portals, support was offered both in terms of mobilising fund for relief and also in identifying the victims who are in need of relief measures.

Thus, though the strategies to deal with disasters can have a comprehensive outlook, it should also have flexibility to make necessary changes based on the local context and challenges faced.

### **Check Your Progress 1**

**Note:** i) Use the space given below for your answers.

ii) Check your answers with those given at the end of the Unit.

1) Highlight the problems involved in disaster management.

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2) Discuss the scholarly perspectives on disaster management strategies.

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## **14.4 INTERNATIONAL AND NATIONAL STRATEGIES FOR DISASTER MANAGEMENT**

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### **14.4.1 Disaster Management Strategies: International Measures**

At the international level, various strategies and guidelines were given to deal with disaster situations. Some of the key strategies right from the IDNDR of the 1990s to the recently initiated Sendai framework have been discussed here.

#### **14.4.1.1 International Decade for Natural Disaster Reduction (IDNDR)**

To prevent the adverse effects and impacts of natural disasters, 1990s was declared as the 'International Decade for Natural Disaster Reduction', by the United Nations General Assembly on December 11, 1987. The United Nations adopted a resolution on 22nd day of December 1989 that stated "to reduce through concerted international

action, the loss of life and disruption caused by natural disasters”. Thus, the United Nations set up a decade’s goal with focus on improving the capacity of the developing countries to mitigate the effects of natural disasters. The resolution also sought the developing nations to design guidelines and strategies for applying existing scientific and technical knowledge (United Nations, 1989).

Some of the key strategies that were suggested by the IDNDR for the participating nations and member countries included the following:

- Planning and implementation of disaster management measures at the national level;
- Integration of disaster prevention policies with the development programmes;
- Laying emphasis on community preparedness by way of education and training on the significance of preparedness, prevention, relief and recovery;
- Emphasising the developing nations to pay substantial attention to the social and economic infrastructure and concentrate on providing human shelters and proper health care facilities to mitigate the vulnerabilities at the time of disasters (Ibid.).

#### **14.4.1.2 Yokohama Strategy for Disaster Reduction**

In order to undertake a mid-term review of the resolution of International Decade for Natural Disaster Reduction (IDNDR), a World Conference on Natural Disaster Reduction was held in May 1994, at Yokohama, Japan. In this conference, the Yokohama Strategy and Plan of Action for a Safer World was adopted. In general, this Strategy played a significant role in motivating the developing countries in changing its relief oriented approach to the one based on mitigation and prevention.

Each member country in the Conference agreed to work towards protecting its people, infrastructure, and other national assets from the impact of natural disasters. The member countries thus agreed to adhere to the principles or strategies enumerated by the conference, which included the following (UNISDR, 1994):

- come to an agreement that, Risk assessment is the major step for adoption of successful disaster reduction policies and measures and disaster prevention and preparedness are of primary importance in reducing the need for disaster relief;
- consider disaster preparedness and prevention as an integral aspect in planning the development policies at the international, national, regional, bilateral and multilateral levels;
- consider development and strengthening of capacity to prevent, reduce and mitigate disasters as a top priority;
- consider early warning of impending disasters and the dissemination of information using telecommunication and other broadcasting services as a key factor for successful disaster prevention and preparedness;
- promote participation at all levels, from the local, regional, national and international for the preventive measures and reduce vulnerability by the application of proper designs and planning by focusing on target groups by way of education and training;
- provide free access to necessary technology to prevent and mitigate disasters

and promote the acceptance of international community to use it in a timely manner as an integral part of technical cooperation;

- consider environmental protection in consistent with poverty alleviation as an important component in preventing and mitigating natural disasters.

Thus, through risk reduction strategies, the varying impact of disasters can be considerably reduced, if not eliminated. Though these were emphasised upon by the Yokohama Strategy, yet these could not be taken up as sufficient to cope up with the multiplying challenges of disasters. An analysis of the Yokohama Strategy reveals gaps and challenges in the domains of governance, risk identification, assessment and monitoring, knowledge management, reduction of risk factors and preparedness for effective response and recovery (UNISDR, 2005).

#### **14.4.1.3 Hyogo Framework for Disaster Reduction**

The gaps identified in the Yokohama Strategy were addressed in the World Conference on Disaster Reduction held in Kobe, Hyogo, Japan in 2005 (it is popularly referred to as Hyogo Framework for Disaster Reduction). It was held on the hypothesis that a more comprehensive approach is needed for proper management of disasters. The Hyogo Framework of Action and Hyogo Declaration set out a result-oriented plan of action or strategy for the next decade from 2005-2015, which included the following:

- Effective integration of disaster risk considerations into sustainable development policies, planning and programming at all levels with emphasis on disaster prevention, mitigation, preparedness and vulnerability reduction;
- Strengthening of institutions, and capacities at all levels, especially at the community level;
- In the context of increasing global interdependence, concerted international cooperation and an enabling international environment are required to stimulate and contribute to developing the knowledge, capacities and motivation needed for disaster risk reduction at all levels;
- A gender perspective should be integrated into all disaster risk management policies, plans and decision-making processes, including those related to risk assessment, early warning, information management, and education and training;
- Disaster-prone developing countries, especially least developed countries and small island developing States, should be given particular attention in view of their higher vulnerability and risk levels, which often greatly exceed their capacity to respond to and recover from disasters;
- There is also a need for proactive measures, bearing in mind that the phases of relief, rehabilitation and reconstruction following a disaster are windows of opportunity for the rebuilding of livelihoods and for the planning and reconstruction of physical and socio-economic structures, in a way that will build community resilience and reduce vulnerability to future disaster risks;
- An integrated, multi-hazard approach to disaster risk reduction should be factored into policies, planning and programming related to sustainable development, relief, rehabilitation, and recovery activities in post-disaster and post-conflict situations in disaster-prone countries (UNISDR, 2005).

Though the Hyogo Framework provided new measures to deal with disaster management, it lacked innovation in it. It seemed to be an old wine in a new bottle. Repeatedly the issues of prevention, preparedness, mitigation and recovery, occupy the central theme in all the three frameworks, viz., IDNDR, Yokohama Strategy and the Hyogo Framework. Nevertheless, the three frameworks are landmark initiatives at the international level, reinforcing the developing countries for favourable response, towards a disaster free world.

#### **14.4.1.4 Sendai Framework for Disaster Risk Reduction**

During the Third United Nations World Conference on Disaster Risk Reduction held in Sendai, Japan, in June 2015, the “Sendai Framework for Disaster Risk Reduction” was adopted. It was the first major agreement of the post-2015 development agenda, with four priorities of action and seven targets.

The four priorities for action under the Sendai Framework include:

**Priority 1: Understanding disaster risk** – Disaster risk management should be based on an understanding of disaster risk in all its dimensions of vulnerability, capacity, exposure of persons and assets, hazard characteristics and the environment. Such knowledge can be used for risk assessment, prevention, mitigation, preparedness and response.

**Priority 2: Strengthening disaster risk governance to manage disaster risk** – Disaster risk governance at the national, regional and global levels is very important for prevention, mitigation, preparedness, response, recovery, and rehabilitation. It fosters collaboration and partnership.

**Priority 3: Investing in Disaster Risk Reduction for resilience** – Public and private investment in disaster risk prevention and reduction through structural and non-structural measures are essential to enhance the economic, social, health and cultural resilience of persons, communities, countries and their assets, as well as the environment.

**Priority 4. Enhancing disaster preparedness for effective response and to “Build Back Better” in recovery, rehabilitation and reconstruction** – The growth of disaster risk means there is a need to strengthen disaster preparedness for response, take action in anticipation of events, and ensure capacities are in place for effective response and recovery at all levels. The recovery, rehabilitation and reconstruction phase is a critical opportunity to build back better, including through integrating disaster risk reduction into development measures (UNISDR, 2015).

The strategy adopted by the Sendai Framework is to focus on the seven “global targets”, which include:

- 1) Substantially reduce global disaster mortality by 2030, aiming to lower the average per 100,000 global mortality rate in the decade 2020–2030 compared to the period 2005– 2015;
- 2) Substantially reduce the number of affected people globally by 2030, aiming to lower the average global figure per 100,000 in the decade 2020–2030 compared to the period 2005–2015;
- 3) Reduce direct disaster economic loss in relation to global gross domestic product (GDP) by 2030;



- 4) Substantially reduce disaster damage to critical infrastructure and disruption of basic services, among them health and educational facilities, including through developing their resilience by 2030;
- 5) Substantially increase the number of countries with national and local disaster risk reduction strategies by 2020;
- 6) Substantially enhance international cooperation to developing countries through adequate and sustainable support to complement their national actions for implementation of the present Framework by 2030;
- 7) Substantially increase the availability of and access to multi-hazard early warning system and disaster risk information and assessments to people by 2030 (ibid).

However, in spite of all such strategies, frameworks and their guidance, managing a disaster does not appear to be an easy task, because of multiple issues and complexities involved in it. Most of the time, the mismanagement of disaster is mainly due to the poor handling of disaster events by the disaster managers or the government or sometimes the victims themselves, who pay least attention to the warnings issued.

#### **14.4.2 Disaster Management Strategies: Indian Context**

Evolving disaster management strategies in the Indian context has been in practice since age old times, as disasters have been a regular phenomenon (For more details on Disaster Management in India, refer Unit-5). In earlier times, adoption of systematic strategy to deal with disasters, has been found in Arthashastra written by Kautilya in the period of 321 to 296 BC. This treatise on Statecraft is a book of rules, which could be enforced by law by the king and along with other rules, rules for dealing with disaster situation have been specified.

In contemporary times, the strategy adopted by India to deal with disaster was mostly reactive rather than being proactive. In recent times, with repeated emphasis by International forums, the strategy of India has changed. Thus, there has been a widespread awareness about the impact of disasters and India has started taking proactive measures to mitigate disasters. The Declaration of International Decade for Natural Disaster Reduction in 1989, made the country to realise the importance of disaster management. However, the efforts of India towards disaster management were proceeding at a slow pace. With the Yokohama Strategy of 1994, the disaster management efforts picked up momentum and after the Hyogo framework of 2005, India has engaged in full-fledged measures to mitigate disaster.

Apart from such international efforts, the disasters that happened continuously at the national level since 1993; the Latur Earthquake (1993), Malpa Landslide (1994), the Orissa Super Cyclone (1999), Bhuj Earthquake (2001), Indian Ocean Tsunami (2004), Kosi Floods (2008), Uttarakhand Floods (2013), Cyclones and Floods in Chennai and Kerala (2018) etc., were responsible for the quick reaction of India. The High Powered Committee on Disaster Management was constituted in August 1999, under the chairmanship of Shri J.C.Pant, Secretary, Ministry of Agriculture, Government of India. This was a first attempt in India towards framing a systematic, comprehensive and holistic approach towards disasters. After that India had enacted the Disaster Management Act in 2005 and also established the National Disaster Management Authority in the same year, that is, 2005. In addition, the Disaster Management Policy was formulated in 2009. It was followed by the formulation

of the National Disaster Management Plan in 2016. The State Governments are also in the process of setting up State and District Disaster Management Authorities. The provisions of the Act relevant to the States/UTs have been brought into force with effect from 1<sup>st</sup> August 2007. Almost all States are reported to have constituted the State Disaster Management Authority (SDMA) (Kanal, 2013).

The National Disaster Management Plan 2016 has been created based on the goals and priorities set out by the Sendai framework. The vision of the document is to “*Make India disaster resilient, achieve substantial disaster risk reduction, and significantly decrease the losses of life, livelihoods, and assets – economic, physical, social, cultural, and environmental – by maximising the ability to cope with disasters at all levels of administration as well as among communities*” (Government of India, 2016).

Thus, in the Indian context, it can be stated that the strategy adopted mostly aims at setting the institutional structure and enumerating the provisions for dealing with disaster situation. However, in terms of implementation, India still needs to adopt firm strategies. However, it cannot be denied that the institutional structure of the disaster management in India has been strengthened. Further, the focus also has shifted to risk reduction and capacity enhancement.

### **Check Your Progress 2**

**Note:** i) Use the space given below for your answers.

ii) Check your answers with those given at the end of the Unit.

1) Discuss various features of Yokohama Strategy and Hyogo Framework.

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2) List out the priorities and global targets of Sendai framework.

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## **14.5 CONCLUSION**

On the whole, the attempt has been made in this Unit to sensitise you about the disaster management strategies. It summarised the challenges that are to be identified and acted upon even before framing the strategies. In addition, the Unit also brought forth the scholarly views on disaster management strategies as put forward by different scholars and also international forums. Various disaster management strategies, both at the international level and in the Indian context, have also been highlighted, whereby it can be observed that there has been shift in focus from managing disasters to dealing with disaster risks. Thus, the shift from reactive to proactive approach that was seen in various forums such as UNISDR, Yokohama strategy, Hyogo and Sendai Framework, etc., was discussed, besides referring to the strategies adopted in India.

## 14.6 GLOSSARY

- Principal-Agent** : The principal-agent problem, in political science and economics, occurs when one person or entity is able to make decisions and/or take actions on behalf of, or that impact, another person or entity: the “principal” (Wikipedia).
- FEMA** : It is called as a Federal Emergency Management Agency in USA. FEMA (Federal Emergency Management Agency) mission is to support the citizens and first responders to promote that as a nation we work together to build, sustain, and improve our capability to prepare for, protect against, respond to, recover from, and mitigate all hazards (www.fema.gov).

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## **14.8 ANSWERS TO CHECK YOUR PROGRESS EXERCISES**

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### **Check Your Progress 1**

1) Your answer should include the following points:

- Gaps in Policies and Practice
- Corrupt Practices
- Lack of Situational Awareness and Analysis
- Centralised Approach
- Lack of Coordination

2) Your answer should include the following points:

- Multi-agency coordinating system
- Four general strategies
- FEMA four core functions.

### **Check Your Progress 2**

1) Your answer should include the following points:

- Yokohama Strategy for Disaster Reduction
- Hyogo Framework for Disaster Reduction

2) Your answer should include the following points:

- Understanding disaster risk
- Strengthening disaster risk governance to manage disaster risk
- Investing in disaster risk reduction for resilience
- Enhancing disaster preparedness for effective response and to “Build Back Better” in recovery, rehabilitation and reconstruction
- Seven Global Targets