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Disaster Management in India: A Study of Key Aspects

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Abstract: All of us know that the history of mankind has been marked by a large number of natural calamities that have caused widespread damage and loss of life. India, in particular, has always been highly vulnerable to natural disasters due to its specific geographic and climatic conditions. However, disasters have become even more frequent and severe in recent years, increasing fivefold over the last twenty years. To address this growing problem, the government of India recently has allocated 2.5 percent of the GDP for disaster management efforts. Likewise, at the global level, there has been a growing awareness of the importance of disaster management, and India has followed suit by implementing a policy framework for disaster management. This has resulted in the creation of new job opportunities in the field, and there is now a high demand for trained professionals in disaster management. The present research paper highlights the key aspects of disaster management in the perspective of India.

Keywords: Natural Calamities, Disaster Management, Disaster Management Act, 2005.

I. INTRODUCTION

Actually, disaster management is the process of preparing for, responding to, and recovering from a disaster. It involves both pre-disaster planning and preparation as well as post-disaster response and recovery efforts. Effective disaster management helps to minimize the impact of disasters and reduce the damage they cause. According to the United Nations, a disaster is a significant disruption to a community or society's normal functioning, resulting in widespread human, material, economic, or environmental consequences that exceed the ability of the community or organization to cope using its own resources. Disasters can be caused by a variety of factors, including natural disasters such as hurricanes, earthquakes, and floods, as well as man-made disasters such as wars, cyber-attacks, and industrial accidents.

If we talk about the natural calamities in the perspective of India, there are more than 30 vulnerable disasters, which can have long-lasting impacts on the economy, society, and the environment. The effects of disasters can be so severe that they can be difficult to manage, leading to widespread loss at multiple levels. This is why effective disaster management is so crucial, as it helps to mitigate the effects of disasters and prevent them from causing widespread harm. That is why; an effective disaster management is crucial to reducing the impact of disasters and ensuring that the effects are minimized. By preparing for disasters, responding effectively when they occur, and recovering from them in a timely manner, we can help to ensure that communities and societies are better able to cope with the effects of disasters and rebuild in their aftermath.

II. THE CONCEPT OF DISASTER MANAGEMENT

Disaster management is the process of preparing for, responding to, and learning from the consequences of major failures. This includes coping with the human, material, economic, or environmental impacts that disasters can have. Disasters can be caused by both human and natural factors, and they occur when risks intersect with hazards, vulnerabilities, and the inability to

mitigate their potential negative effects. In India, disaster management is focused on protecting people and property during natural or man-made disasters. The country has in place multi-layered plans for managing different types of disasters, including floods, storms, fires, widespread power outages, and the rapid spread of diseases. India's unique geo-climatic conditions, which include frequent floods, droughts, cyclones, earthquakes, and landslides, make it particularly vulnerable to natural calamities.

The national policy on disaster management in India has several goals, including promoting a culture of prevention, preparedness, and resilience at all levels through knowledge, innovation, and education. Other goals include incorporating disaster management into new development plans, establishing effective systems for detecting, evaluating, and monitoring disaster hazards, developing modern forecasting and early warning systems, and ensuring effective relief efforts that take into account the needs of the most vulnerable groups. The national policy also encourages the use of reconstruction as an opportunity to create disaster-resistant habitats and buildings, promoting proactive and effective media partnerships, and fostering innovation and environmental sustainability in disaster mitigation strategies. Today India needs to work towards reducing the impact of disasters and ensuring a safer future for its citizens.

III. TYPES OF DISASTER

- 1. Natural Disasters:-** The International Federation of Red Cross & Red Crescent Societies defines natural disasters as naturally occurring physical phenomena that can have either a rapid or sluggish onset and have an immediate impact on human health as well as secondary effects that result in more suffering and death.
- 2. Man-made Disasters:-** Man-made disasters are incidents caused by human actions and occur in or near populated areas. According to the International Federation of Red Cross & Red Crescent Societies, these disasters are frequently the result of environmental or technological emergencies. Examples of man-made disasters include oil spills, nuclear accidents, and industrial explosions.
- 3. Complex Emergencies:-** Complex emergencies are disasters that result from a mixture of natural and man-made factors. These emergencies can be caused by a variety of risks, including warfare and civil unrest, a breakdown in authority, looting, and attacks on critical infrastructure. Complex emergencies are often more difficult to respond to than single-factor disasters as they involve multiple, interrelated factors that must be addressed in a coordinated manner.
- 4. Pandemic Emergencies:-** A pandemic emergency is a large-scale outbreak of an infectious disease that spreads across a significant geographic area. Pandemics can harm both human and animal populations, disrupt services, and have a negative impact on public health. They may also occur as a result of an unusual or unexpected increase in the number of cases of an existing infectious disease in a region or population. Pandemics can be triggered by natural disasters or man-made calamities, making it important to be prepared for these types of emergencies.

IV. THE DISASTER MANAGEMENT ACT, 2005

It is a well-known fact that the Disaster Management Act, 2005 was enacted on November 28, 2005 by the Rajya Sabha, the upper house of the Indian Parliament. The lower house, the Lok Sabha, passed the act on December 12 and it was given the President's approval on December 23. The act contains 79 parts and 11 chapters and applies to all of India. Its primary goal is to aid those affected by disasters by providing efficient disaster management and addressing topics related to unexpected disasters. The Disaster Management Act outlines that disaster management is an integrated process of organizing, coordinating, and implementing measures to prevent disasters, reduce their likelihood and impact, respond promptly in case of a disaster, evaluate the impact, provide rescue and assistance, and facilitate reconstruction and rehabilitation.

The supreme disaster management body in India is the National Disaster Management Authority (NDMA) with the Indian Prime Minister as its head. The NDMA manages and leads the National Disaster Response Force (NDRF). The national

executive committee (NEC), chaired by the Union Home Secretary, develops the National Plan for Disaster Management and is comprised of high-level ministerial members from the Indian government.

Each state in India has a State Disaster Management Authority (SDMA) led by the Chief Minister with support from the State Executive Committee. The District Disaster Management Authority (DDMA) is responsible for ensuring that all district-level departments and entities follow the rules established by the NDMA and SDMA, and is led by the District Collector, Deputy Commissioner, or District Magistrate.

The National Disaster Reaction Force (NDRF) was established according to the Act for specialist response in case of a disaster. The Central Government chooses the Director General of the NDRF. The NDRF played a crucial role in saving locals and visitors during the Kashmir floods in 2014. On January 23, 2018, the 8th battalion of the NDRF received the "Subhash Chandra Bose Aapda Prabandhan Puraskar."

Local authorities, including Panchayati Raj Institutions (PRIs), Municipalities, District and Cantonment Boards, and Town Planning Authorities, are responsible for overseeing and managing civic services. The Disaster Management Act requires the creation of the National Institute of Disaster Management and mandates funds for disaster mitigation at various levels. The act also outlines civil and criminal penalties for individuals who violate its provisions.

Despite the Disaster Management Act of 2005, its implementation has been slow and lackadaisical. In 2013, the governments of Uttarakhand, Tamil Nadu, Odisha, Andhra Pradesh, Gujarat, Rajasthan, Maharashtra, and the Central government were notified for failing to implement the act, which put citizens' lives in danger according to a Public Interest Litigation. The petitioner requested "appropriate ex-gratia aid" for the victims of flash floods in Uttarakhand as per the provisions of the Disaster Management Act.

V. IMPACT OF DISASTER ON NATIONAL DEVELOPMENT

- **Impact on Contemporary Development:-** Disasters can have a severe impact on a nation's current state of development, particularly in infrastructure and industries that generate revenue. For example, the growth of crops like coconut and oil palms as a source of copra and palm oil can be severely damaged or lost. The loss or destruction of crops, production sources, processing facilities, and equipment, employee housing, etc. can lead to a loss of development funds. Key national resources such as the meat or wool trades may be impacted by the loss of cattle due to disease outbreaks or rural wildfires. Land inundated by natural disasters like tsunamis or cyclonic storms may affect both domestic and international food supplies. Disasters may cause catastrophic losses in infrastructure, affecting ongoing national initiatives. Severe constraints on wheat growth may harm or lose a vital export market.
- **Loss of Transport Facilities:-** Maritime transportation capacity can be significantly reduced by the damage to wharves and harbors, limiting import and export operations. Loss of airport and aircraft facilities may result in similar restrictions as those relevant to maritime transport. Loss of roads and bridges may impede ongoing construction projects and other initiatives. Business and commerce, both domestically and abroad, can be severely hampered by the loss of buildings and facilities.
- **Long-Term Development Effects:-** The short-term impacts of disasters can be fatal to ongoing programs. However, some long-term effects may be just as severe or even worse. For example, it may take 7-8 years for injured coconut palms to recover, and a crucial export capability may have already been lost to rival nations by that time. The loss of essential resources can have a significant impact on long-term growth and may delay or prevent the start of future development programs. The financial and material loss from a disaster is the initial impact on long-term programs and may delay the start and continuation of such programs. The planning of future development may also be impacted by a disaster. Limitations on international assistance programs may also have an impact on national development. For

example, funding nations may only agree to implement a three-year medical and health support program due to limits on scope, size, time, and cost.

VI. CYCLE OF DISASTER MANAGEMENT

We now that the integration of developmental factors is a crucial aspect of all phases of the disaster management cycle. The objective of promoting sustainable livelihoods and ensuring their preservation and recovery during disasters is a key element of disaster management and its strong connection with development. When this objective is achieved, communities are better equipped to handle disasters and their recovery is faster and more sustainable.

A development-focused approach to disaster management seeks to reduce risk, prevent disasters, and prepare for emergencies. Thus, the mitigation and readiness phases of the disaster management cycle place a significant emphasis on developmental factors. On the other hand, improper development practices can lead to a lack of preparedness for emergencies and increased vulnerability to disasters.

Figure 1- Disaster Life Cycle



(Source: www.google.com)

The management of unavoidable disasters involves various stages to reduce the impact and consequences on people, property, and infrastructure. One of these stages is the mitigation phase, which aims to either eliminate or reduce the likelihood of a disaster occurring. To achieve this goal, various mitigation strategies are implemented, including building codes, updated vulnerability studies, zoning and land use management, building use restrictions, safety requirements, preventative healthcare, and public awareness campaigns. The adoption of relevant measures in national and regional development planning is crucial for the success of mitigation efforts.

The accessibility of information regarding risks, emergencies, and essential countermeasures also plays a vital role in the effectiveness of mitigation measures. The creation of governmental policies and strategies that either alter the causes of disasters or lessen their consequences is a critical component of the disaster management cycle.

The next stage is the preparedness phase, where governments, organizations, and private citizens create strategies to save lives, reduce disaster damage, and improve disaster response operations. This includes plans for emergencies, emergency drills and training, warning systems, emergency communications, evacuation plans, resource inventories, emergency personnel, and contact lists, mutual aid agreements, and public awareness and education campaigns.

The response phase aims to deliver quick aid to keep people alive, enhance their health, and boost their spirits. This support could be in the form of establishing a temporary settlement or providing specialized but restricted relief. The goal of the response phase is to fulfil the people's immediate needs while searching for longer-term, more sustainable solutions. Humanitarian organizations are frequently quite active during this stage of the disaster management cycle.

The final stage is the recovery phase, where the affected population works towards restoring their lives and the infrastructure supporting them. The transition from urgent assistance to recovery and ultimately to long-term sustainable development is not well defined. However, there are numerous opportunities to improve preparedness and prevention, lowering vulnerability during the recovery phase.

Recovery efforts continue until all systems are better or back to normal, and can include restoring essential life-support systems, finding temporary housing, educating the public about health and safety, rebuilding, offering counseling services, and conducting economic impact assessments. The ideal scenario is a seamless transition from recovery to ongoing development.

VII. PREVENTION OF NATURAL DISASTER

Today, risk assessment and mitigation strategies play a crucial role in reducing the impact of natural disasters such as earthquakes, floods, and cyclones in vulnerable regions. The following areas must be given special attention to achieve this goal:

- **Risk Assessment and Vulnerability Mapping:-** A Geographic Information System (GIS) based database such as the National Database for Emergency Management (NDEM) and National Spatial Data Infrastructure (NSDI) should be utilized to carry out vulnerability mapping and analysis in a multi-risk structure.
- **Strengthening Critical Infrastructure:-** It is important to regularly inspect critical infrastructure such as roads, dams, bridges, irrigation canals, power plants, railway lines, delta water distribution networks, ports and rivers, and coastal barriers and ensure they are in compliance with international safety standards.
- **Environmentally Sustainable Development:-** Both environmental concerns and development initiatives should be managed in a way that promotes sustainability.
- **Adaptation to Climate Change:-** Adaptation policies and disaster risk reduction strategies should be developed to address the rising frequency and intensity of natural disasters, including floods, droughts, and cyclones, caused by climate change.

VIII. IMPORTANCE OF DISASTER MANAGEMENT

Today, India is facing many problems related to the natural disasters. Therefore, the govt. of India has framed a disaster management Act in 2005. In this Act, a focus on disaster management professionals has been laid down. Actually, the primary role of is to save lives and provide support to those affected by disasters. The government, both at the central and state level, provides necessary funds for this work, and various agencies and institutions, including NGOs and private organizations, are prioritizing disaster management efforts. The Ministry of Home Affairs plays a crucial role in managing disasters, while other ministries such as the Ministry of Agriculture and Cooperation, the Ministry of Civil Aviation, the Ministry of Railways, the Ministry of Forest and Environment, the Ministry of Health, and the Ministry of Atomic Energy, are responsible for managing different types of disasters. In order to prepare for these emergencies, individuals who are trained in disaster management are crucial. During their training, students learn how to manage emergency situations effectively and respond promptly to save lives and minimize damage. The presence of these trained professionals can make all the difference during a disaster.

Most of the scholars agree with the fact that the disaster management is a crucial component in ensuring the safety and well-being of communities. It encompasses a wide range of activities aimed at preventing, preparing for, responding to, and

recovering from emergencies. This includes coordinating resources such as pollution control systems, following best practices and policies, and removing people and property from a threatened location to minimize damage, protect people, and reduce trauma. Therefore, to better understand the importance of disaster management, here are some key reasons as under:

- **Improving Response Management:** Disaster management is responsible for overseeing the response to a disaster. It coordinates all aspects of disaster response to effectively mobilize the necessary equipment, resources, personnel, and assistance to assist those affected. The control and oversight of disaster response is crucial for effective disaster management.
- **Establishes Coordination of Actors:** Disaster management is critical for coordination of various actors within a response. Disaster zones are complex and often chaotic environments, and good coordination among disaster responders is essential to provide effective assistance to communities affected by disasters. Skilled disaster managers ensure that responders work together and coordinate their efforts.
- **Ensures Effective Communication:** In the aftermath of a disaster, the local and national government is responsible for the affected area. Disaster management establishes how responders should communicate with these authorities. Effective communication is crucial in disaster response, and a failure to establish effective communication can significantly reduce the ability of responders to assist.
- **Improves Management of Resources:** Effective resource management is critical to the success of a disaster response. Disaster management governs how resources should be used in a disaster area to maximize their effectiveness and minimize wastage. Trained disaster managers ensure that resources are allocated as needed in a well-managed disaster response.
- **Coordinating Disaster Preparedness:** While it is not always possible to prevent disasters, preparedness measures can protect communities from their effects. Disaster management is responsible for coordinating disaster preparedness, including pre-establishing resources so they can be rapidly deployed once a disaster hits.
- **Ensures Human Life:** The ultimate goal of disaster management is to save lives and limit the impact of hazards on people. Stronger disaster management improves emergency response, allowing responders to better assist those affected. This is the most important reason why disaster management is so vital.

IX. CONCLUSION

Now, it can be pointed out that in the recent years, the Government of India has taken several steps towards promoting disaster management as an important field of study and work. To this end, the Ministry of Human Resource Development has incorporated disaster management into the curriculum of schools and professional education during the Tenth Five Year Plan. Moreover, in the year of 2003, the Central Board of Secondary Education made history by including disaster management in the syllabus of the social science subject for class VIII students. As a result of this initiative, the study of disaster management has become an integral part of the education system, with opportunities for higher learning available in government and non-government institutions alike. The field offers a wide range of job opportunities in various sectors, including government, emergency services, law enforcement, local authorities, relief agencies, non-governmental organizations, international agencies such as the United Nations, and the private sector.

In the present economic scenario, some of the industries such as chemical, mining, and petroleum, which pose a risk to the public and the environment, often have a disaster management cell in place and hire trained professionals. For those with experience, there is even the possibility of starting one's own company or agency in the field of disaster management. Moreover, some organizations like the Red Cross and the UN Foundations are known to hire trained professionals in the field. That is why; the process of disaster management plays a vital role to mitigate and control any type of natural disaster.

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