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Silver Jubilee Foundation Day Lecture 2025
on

From Gujarat to Myanmar: Evolution of India's Disaster Management Policy and Practice during the last 25 years

Speaker:

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Dr. P.K. Mishra, at present Principal Secretary to the Prime Minister of India, has a career profile comprising research, publications, policy formulation and programme / project management. He has varied work experience in management of programmes relating to agriculture, disaster management, power sector, infrastructure financing and regulatory issues.

His international experience includes research and academic work for over four years at the Institute of Development Studies (UK), negotiation and execution of ADB and World Bank projects, as member of the Governing Board of the International Crop Research Institute for Semi-Arid Tropics (ICRISAT) and participation as expert/resource person in several international conferences.

He has a PhD in Economics/Development Studies from the University of Sussex, UK. He completed his MA in Development Economics from the University of Sussex in 1990, when his academic performance was rated outstanding by the university. He also earned an MA in Economics with a first class from the Delhi School of Economics.

In 2019, he was conferred with the United Nations SASAKAWA Award, the most prestigious international award in disaster management.

Dr. P.K. Mishra

Professor Gopal Naik, Chairperson of the Centre for Public Policy; Professor Rishikesha T. Krishnan, Director, Indian Institute of Management Bangalore; Professor Anil B. Suraj; faculty and staff of IIM Bangalore; distinguished guests, my dear students, ladies and gentlemen,

I am delighted to be amongst all of you today at IIM Bangalore. I thank Prof. Rishikesha T. Krishnan, Director, IIM Bangalore and Prof. Gopal Naik, Chairman of the Centre for Public Policy for inviting me to deliver the CPP Silver Jubilee Foundation Day Lecture.

Over the last few days, I have been thinking about the theme of my lecture. Initially, my intention was to focus on India's development story, particularly during the last decade, and our Prime Minister's vision for a Viksit Bharat. Another idea was to talk about the current economic issues in the context of the recent geopolitical situation. Finally, I decided to reflect on how India's disaster management policies and practices have evolved over the last two or three decades. This is because of a recent experience in Geneva.

I attended the 8th Session of the Global Platform for Disaster Risk Reduction (GPDRR) organized by the United Nations in the first week of June 2025 in Geneva. In the Opening Session of the GPDRR, the United Nations Deputy Secretary-General, in her inaugural address, made a special reference to India's exemplary model for financing disaster risk reduction, particularly the dedicated mitigation fund. She highlighted the need for countries to have such a national financial framework for disaster risk reduction.

On the sidelines of the conference, I had several bilateral meetings. One of those was with a minister from Norway. The discussion covered diverse aspects: India's strong economic fundamentals, opportunities for Norwegian investors in India, collaboration on technology, skilled manpower and hazard mapping. During the meeting, one of her senior Advisors made an interesting observation. He said, he had visited the Kutch district in the aftermath of the earthquake of 2001. It was an extremely difficult situation for India. He visited Myanmar after the recent earthquake. He saw search and rescue teams, field hospital, etc., from India. He was amazed at how India has transformed its disaster management capabilities during the last few years.

These observations struck me very deeply. The special mention of India's financing system for disaster management was insightful. The perception about disaster management in India, even in Norway, was an eye-opener.

During the last 25 years, I have had the opportunity, from time to time, to be associated with disaster management-related activities in Gujarat and at the national level, sometimes directly and some other times indirectly, both at policy and implementation levels. In fact, I started my career at a place during a time of a very severe drought. In subsequent years, whether it was the Kandla cyclone of 1998, the Kutch earthquake of 2001, or the Covid-19 pandemic, I was closely associated with response and recovery work.

When one is closely associated with a system, one may miss the underlying trend; one may look only at positive aspects, or develop cynicism by focusing on deficiencies. When someone else who has seen it from a distance gives some insights, one becomes conscious of the larger picture. This was the feeling I had when I heard the UN Deputy Secretary General and the senior Advisor to the Minister from Norway.

This is the backdrop which influenced my thinking while identifying the topic for today's lecture. Another reason is its relevance to **sustainable economic growth** for achieving our goal of a **Viksit Bharat.**

Disaster Management: Some Aspects

Disaster management is not something new; it has a long history. During the pre-independence period, famines and droughts which used to occur frequently, prompted the British regime to devise responses through the Famine Codes of the late 19th century. There were Relief Manuals after Independence. The focus was on relief work, often at subsistence wages – and some financial assistance. In the later years, the government introduced large-scale food-for-work programmes to support the rural households. In the context of floods, rescue and relief work was taken up at the local levels. Flood control rooms are well-known during the rainy season. The approach was short-term. It did not equip households with the means to address their vulnerability.

The expression **'disaster management'** has evolved over the years, both conceptually and in practice. Disaster management as it is understood now has different phases: mitigation, preparedness, response, relief, recovery, reconstruction and rehabilitation. For conceptual clarity, one can say that the expression 'disaster management' has a wide connotation. In recent times, the expression used is **'disaster risk reduction'**. When we talk about disaster risk, it comprises two aspects: **hazard** and **vulnerability**. 'Risk' is a 'function' of hazard and vulnerability.

The practice of disaster risk management in India had multiple transitions. Discussions and debates stirred by large disaster events such as the 1991 Odisha Super Cyclone, the 2001 Gujarat earthquake, and the 2004 Indian Ocean tsunami resulted in several lessons. There were also other events, such as the Latur earthquake of 1993 and the Kashmir earthquake of 2005. In addition, global policy processes such as the International Decade for Natural Disaster Reduction (IDNDR) 1990-1999, the Hyogo Framework for Action (HFA) 2000-2015 and the Sendai Framework 2015-2030 had great influence on our thinking and practice.

I remember during the days of the Kutch earthquake we had a feeling that **lessons of disaster**, particularly those which come after a long-time gap, but are more devastating, such as an earthquake, are not sustained over time. It appeared that the lessons of the Latur earthquake of 1993 did not effectively spread even to the neighbouring state of Gujarat. There are several other examples.

Another realization was that it is easier to convince and motivate, immediately after a disaster, the various stakeholders regarding the need for risk reduction measures.

The policies and practices of disaster management have evolved over the last three or four decades. However, **I would like to argue** that the process was much more significant and far-reaching during the last 25 years, particularly after the Kutch earthquake of 2001. To use an expression from statistics, it was a structural break.

The Kutch Earthquake of 2001

Gujarat was struck by a massive earthquake on 26 January 2001 at 8.46 hours in the morning. The magnitude was 7.7 Mw. The epicentre was at the village of Chaubari, in the district of Kutch, at a distance of about 250 kilometres west of Ahmedabad.

I was working as Agriculture Secretary to the Government of Gujarat in Gandhinagar at that time. **I vividly recollect** how the earth was shaking, windows rattling and the car parked outside moving back and forth.

Though about 7,633 villages in 21 out of 25 districts of Gujarat were affected to varying degrees, the most affected districts were Kutch, Jamnagar, Surendranagar, Rajkot and parts of Ahmedabad and Banaskantha. About 14,000 people lost their lives and about 167,000 people were injured. Over a million homes were damaged or destroyed. About 10,000 small and medium industrial units went out of production, affecting income and employment of the people. Thousands of artisans lost their livelihood.

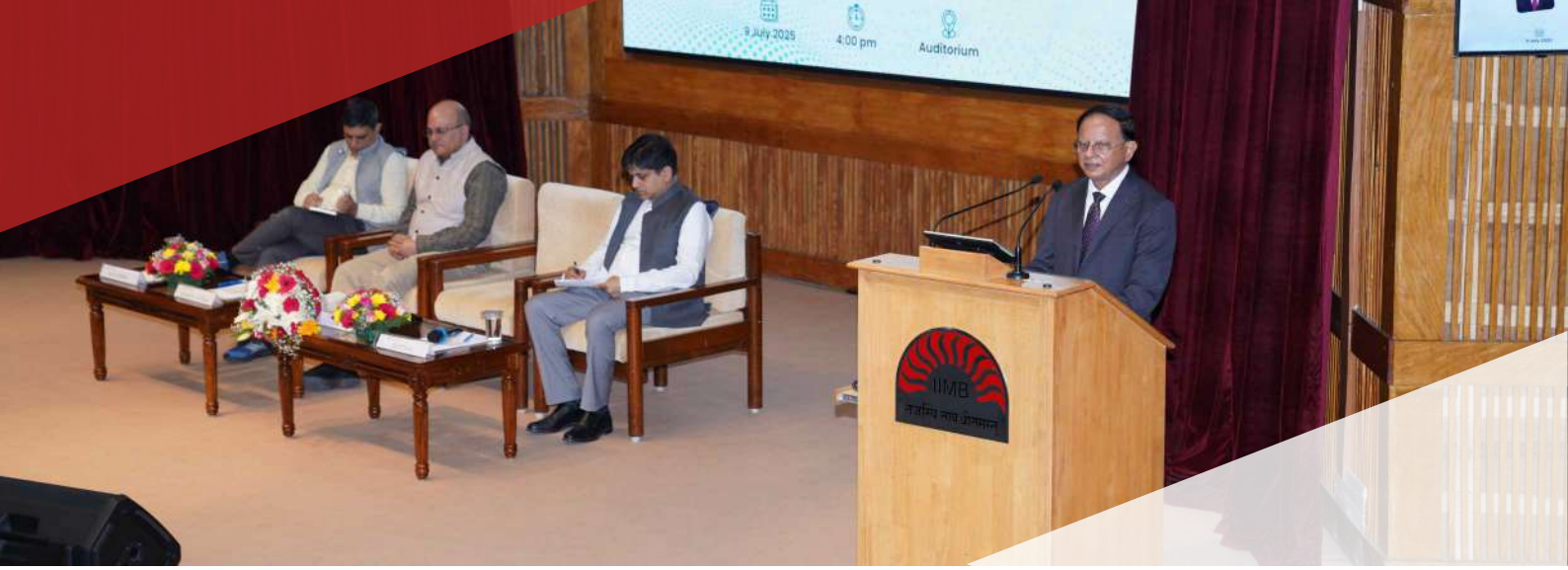
There was widespread damage to **social** and **economic infrastructure**. Power systems, water supplies and telecommunications were disrupted. Thousands of school rooms and health/medical-related structures were damaged or destroyed. The civil hospital at Bhuj, the biggest government hospital in Kutch district, collapsed, resulting in the death of patients and medical personnel. Four towns of the Kutch district were in ruins. A number of high-rise and low-rise buildings in Ahmedabad and other towns collapsed. About 450 villages, mostly in Kutch and a few other districts, were flattened. The district administration of Kutch was traumatized because many government employees lost their lives, homes and near and dear ones. Personnel of the armed forces, especially those in the Air Force, in the areas faced a similar situation.

Comprehensive Response and Reconstruction, and Long-term Perspective

Even when the massive relief operation was going on, measures were initiated to formulate a comprehensive reconstruction and rehabilitation programme. The state government **readily accepted** not only assistance but also ideas and suggestions from all available sources. The Government of India, state governments, NGOs, the corporate sector, international agencies and various countries participated in the relief efforts. A **comprehensive reconstruction programme** incorporating many sectors and a wide range of activities relating to economic and social infrastructure and livelihood regeneration were put in place.

A **new organization**, the Gujarat State Disaster Management Authority (GSDMA) was set up immediately after the earthquake. I was appointed as the CEO of the GSDMA. No doubt, the GSDMA had the benefit of drawing upon the Maharashtra reconstruction programme and that of the UN system and multilateral agencies. What was important was that the GSDMA had the **commitment, willingness** and **ability** to quickly internalize ideas derived from others, adapt them to the Gujarat situation and commence a variety of activities with an innovative approach.

There were effective and decisive steps for **institutionalizing disaster management** through a **legal framework, regulatory reforms, training and a knowledge network**. A Disaster Management **Policy** and a Disaster Management **Act** were finalized at an early stage. Studies on aspects such as microzonation, hazard and vulnerability analysis, damage and loss assessment methodology, early warning and emergency communication were initiated. Efforts were made to address issues relating to **building regulations** and **hazard resistant construction**. Engineers and masons were **trained** in large numbers. Revision of **syllabi** and **training of teachers** of technical institutions were undertaken to ensure availability of skill and quality on a sustainable basis.



People's participation, community preparedness and partnership with **NGOs** are important aspects of this unique reconstruction programme. People were associated right from the beginning and at all stages – damage assessment, decision to relocate villages, construction of houses, and the like.

Significance of the Gujarat Initiative

In short, the GSDMA undertook **multifarious activities**, going far beyond response and relief, in the following broad areas:

- Earthquake reconstruction work
- Formulation of policies and legislation
- Preparation of disaster management plans
- Preparedness initiatives
- Capacity building
- Mitigation measures
- Awareness and community preparedness

The Gujarat earthquake reconstruction experience has three distinguished features. First, it led to one of the most **comprehensive reconstruction** and recovery programmes and its successful implementation. Second, it focused on **medium and long-term aspects** of disaster risk reduction. Third, it brought about – triggered also by the Odisha super cyclone and the Asian tsunami – far reaching changes in the **institutional structure** of disaster management at the national level and in the states.

The Government of India recommended that states constitute State Disaster Management Authorities (SDMAs), which were formed in several states. Gujarat is the **first state in the country** to enact a comprehensive legislation on disaster management. The Gujarat Act served as a model for similar legislations in some other states. Indeed, the Gujarat Act was the starting point for the formulation of the Central Act.

It introduced a new paradigm: that recovery and reconstruction, if designed well, can be developmental tools – a catalyst for long-term transformation rather than a mechanism for restoring what was lost.[1]

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[1]More details on the response and recovery aspects relating to the Kutch (Gujarat) Earthquake of 2001 are in:

Mishra, Pramod K. (2004), The Kutch Earthquake 2001: Recollections, Lessons and Insights, National Institute of Disaster Management, New Delhi;

Mishra, Pramod K. (2006), 'Towards Excellence in Disaster Management: Governance and Sustainability of Post-Disaster Initiatives', The Indian Journal of Public Administration, vol. LII No.3, pp-370-381saster Risk Financing, I am grateful to Shri Krishna S. Vatsa, Member, National Disaster Management Authority.

While the Gujarat earthquake recovery and reconstruction programme achieved a great deal, it is also important to acknowledge the **critical role of external financial agencies**, particularly from multilateral development banks such as the World Bank and the Asian Development Bank. Their support enabled the administration to act swiftly and at scale. However, the experience also **raised a deeper structural question**: should disaster recovery in India be dependent on post-disaster external borrowing or should we move towards a nationally driven, anticipatory financing system that empowers people directly? I will address this question in the section on Finance as a Foundation.

National Level Initiatives to Reorient Disaster Management Systems

At the national level, the National Disaster Management Authority (NDMA) was set up in May 2005 through an Executive Order. A comprehensive legislative framework was put in place through the Disaster Management Act 2005, notified on 23 December 2005. The NDMA was made a statutory body under the Disaster Management Act 2005 in September 2006. Some amendments were incorporated in the Disaster Management Act in March 2025.

At the state level, State Disaster Management Authorities (SDMAs) were set up. The Disaster Management Act also envisaged specialized entities such as the National Institute of Disaster Management (NIDM) for capacity building and the National Disaster Response Force (NDRF) for response operations.

The Prime Minister is the Chairperson of the NDMA. Initially, there were a Vice Chairman and eight Members. At present, the number of Members has been reduced. I had the opportunity to function as the first Secretary to the NDMA.

Efforts were made to bring out guidelines for different aspects of disaster management relating to various types of disasters. There was a wide-ranging discussion on how to build search and rescue capacity in the country. This was in the light of the experience gained during the Kutch earthquake of 2001. At that time, it was realized that search and rescue is a specialized area that requires specialized skills and equipment. After debating various alternatives, the NDRF was conceptualized.

The Disaster Management Act envisages the role of all the ministries, departments and other agencies in disaster management. Efforts were made to ensure that all the ministries prepare their Disaster Management Plans. The NDMA prepares the national plan.

Finance as a Foundation: The Evolution of Disaster Risk Financing.[2]

The answer to the question raised earlier lies in the need for **pre-arranged** and **pre-determined** financial mechanisms–resources that are available to households, communities and administration at the moment of impact without delay or uncertainty. It allows people to rebuild, businesses to recover and the government to function effectively. A **national financing framework** that supports people at the frontline of disaster is therefore not just a fiscal strategy – it is essentially a pre-condition for building resilience across all levels of national life.

Our **Finance Commissions**, particularly starting from the 2nd Finance Commission, have evolved an approach for financing disaster response. It has evolved from allocating funds primarily for relief and response to now providing for disaster mitigation, preparedness and risk reduction. The 15th Finance Commission, in particular, institutionalized dedicated mitigation funds at both national and state levels, thereby strengthening India's disaster risk financing framework and reducing reliance on post-disaster aid.

At the state level, early arrangement such as the **'margin money'** concept was changed to the establishment of the Calamity Relief Fund (CRF), which was later formalized into the State Disaster Response Fund **(SDRF)** under the Disaster Management Act 2005. The 15th Finance Commission further strengthened this by introducing the State Disaster Risk Management Fund **(SDRMF)** with a component allocation of 1.62 lakh crore for response and mitigation.

At the national level, the shift from the National Fund for Calamity Relief (NFCR) to the National Calamity Contingency Fund (NCCF) and ultimately to the National Disaster Risk Management Fund (NDRMF) reflects a similar transition from the discretionary aid to structured financing for various needs.

With over Rs. 2.32 lakh crore now committed under the 15th Finance Commission, India's disaster funding model offers multi-layered allocations enabling states to plan for **risk reduction, build local capacity** and move decisively from a reactive to a resilient approach.

The strength of this system lies in its non-partisan and **rule-based character**. Once the allocations are decided, states receive those as pre-determined transfers for a period of five years, independently of annual budget negotiations. This enhances planning certainty, encourages states to invest in **preparedness** and reinforces the principle of shared but clearly defined responsibility between the Centre and states in managing disaster risks.

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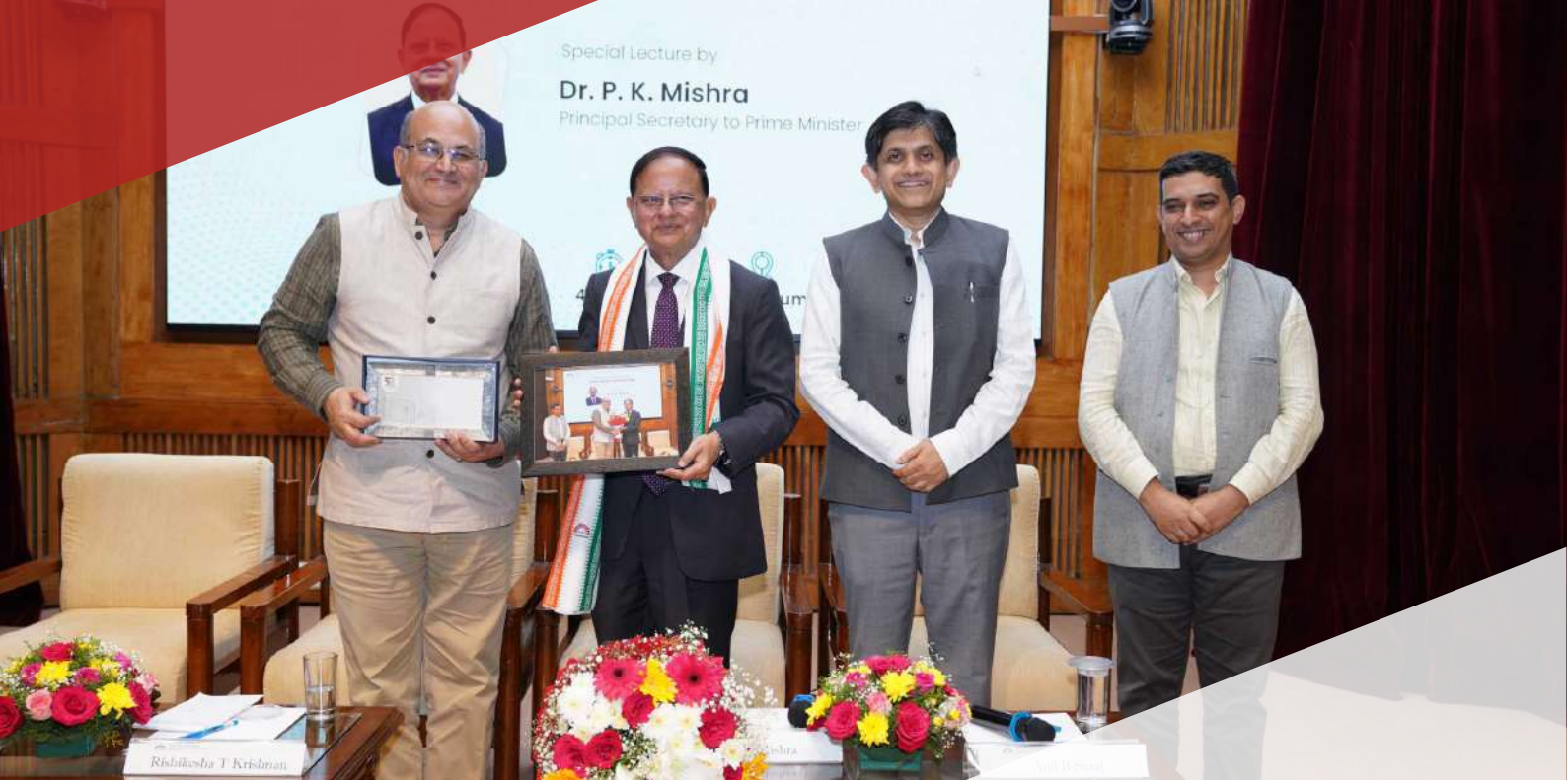
[2]For the details relating to the Evolution of Disaster Risk Financing, I am grateful to Shri Krishna S. Vatsa, Member, National Disaster Management Authority.



Another aspect is that what had begun as an **administrative arrangement** has now become a **statutory funding mechanism** backed by law and embedded within the governance architecture for disaster management in India. Of course, there was a notable **lack of operationalizing** key provisions, particularly those related to disaster mitigation. The prevailing assumption was that mitigation efforts could be a part of ongoing development schemes. In reality, however, such integration never materialized meaningfully, and mitigation remained peripheral to mainstream planning.

The **gap was decisively addressed** by the 15th Finance Commission. For the first time, it recommended the operationalization of the National and State Disaster Mitigation Funds, allocating 20 percent of total disaster-related resources specifically for mitigation. This was more than a budgetary allocation; it marked a paradigm shift in how the Indian state viewed disaster risk, not just as an emergency to be responded to, but as a risk to be **pre-emptively reduced**.

Thanks to this dedicated Mitigation Fund, India is now implementing a **range of hazard-specific programmes** – from Glacial Lake Outburst Flood (GLOF) risk reduction in Arunachal Pradesh, to landslide mitigation in Mizoram and Manipur, to coastal erosion management in Andhra Pradesh. The fund has enabled decentralized, targeted investments in risk reduction that were previously unthinkable under the relief-focused approach.

This experience also illustrates the broader truth in public policy: within government, policy, legislation and financing **do not always evolve in lockstep**. There is often an act of catching up, where one element outpaces the others, until a moment of equilibrium is reached. The Mitigation Fund is a clear example of such a long-overdue policy correction finally being realized.

The 15th Finance Commission, for the first time, restructured the Response Fund to **explicitly allocate 30 percent for recovery and reconstruction**, alongside relief and preparedness. This reform did more than expand the scope of funding; it established recovery and reconstruction as integral functions, not afterthoughts, and recognized them as part of a continuum with relief and response.

One of the most significant conceptual contributions of the new financing architecture is the recognition that **disaster management comprises differentiated yet interdependent functions** – response and relief, recovery and reconstruction, preparedness, and mitigation. Each of these require dedicated financial windows, technical processes and appropriate delivery systems. This balanced function-based approach has not only made India's disaster financing model more robust – it is now **widely recognized as an emerging global good practice**.

Another critical evolution in disaster financing, introduced by the 15th Finance Commission, was the shift toward **risk-based allocation of resources**. Traditionally, allocations to states were primarily determined by past expenditure on disaster relief. While this criterion continues to be used to some extent, it has now been supplemented by forward-looking indicators that reflect a state's **exposure, vulnerability** and **risk**.

Specifically, the allocation formula now includes parameters such as area and population, which serve as proxies for exposure, and most importantly, a composite **risk score** developed for each state. This risk score is derived from hazard profiles, historical disaster impact, and socio-economic vulnerability, offering a baseline for calibrated resource distribution.

As disaster risk financing evolves with specified funding windows, functional alignment and risk-based allocation, an important next step is the **diversification of financial instruments**. Public finance must increasingly be complemented by market-based solutions – **alternative risk transfer mechanisms**. These include **insurance, catastrophe bonds** (Cat Bonds), and **risk pools**, each designed to spread and transfer risk beyond traditional government systems. Among these, insurance is the most widely recognized. Its effectiveness, of course, depends on the law of large numbers and broad participation, which can be challenging to achieve in economies with fragmented markets and a large informal sector.

From **parametric insurance** for drought and flood-prone farmers to **urban catastrophe insurance** for critical infrastructure, the space for innovation is vast. The challenge now is not only about affordability or uptake, it is also about designing instruments suited to India's risk profile and social landscape. As India's economy grows in scale and with more diversity, and as data systems improve, the potential to **create viable insurance** markets for disaster risk becomes increasingly feasible.

Going forward, the government's role will be catalytic – not just as a provider of funds, but as an enabler and regulator, facilitating partnerships with private insurers, reinsurers, financial institutions, and technology providers. The goal should be to build a **layered risk financing architecture:** public funds for routine and widespread risks, and market instruments for extreme and infrequent events.

This evolution towards a **blended model of public and private risk finance** is essential if we are to build a resilient financial ecosystem capable of supporting households, businesses, and governments in the face of increasingly complex disaster risks.

An Outcome

All these investments – in **financing mechanisms, institutional development** and **capacity-building** – are not abstract exercises. They are intended to deliver **measurable outcomes**. And one of the most significant achievements of India's evolving disaster risk management system is the reduction in **disaster-related mortality.**

Thanks to the combined effect of improved **early warning systems,** strengthened **institutions, better planning** and more responsive financing, the age of mass fatality in Indian disasters has largely receded.

Today, we no longer expect the devastating loss of thousands of lives in most disasters, unless we are confronted with a mega-earthquake or a catastrophic event of unprecedented scale. **Mortality rates have shown a consistent decline** across both rapid-onset and slow-onset hazards. This is a core commitment under the Sendai Framework for Disaster Risk Reduction, to which India is a signatory – and we are making meaningful progress.

India's Significant Achievements in Disaster Management in Recent Times

Over the past two decades, India has made remarkable progress in disaster risk management, becoming a global example in reducing disaster mortality, improving response capabilities, leveraging technology for relief and strengthening recovery systems. The following key achievements underscore this progress:

1. Dramatic Reduction in Cyclone-Related Mortality

India's most significant success story in disaster risk reduction is the sharp decline in cyclone-related fatalities. The 1999 Odisha Super Cyclone claimed over 10,000 lives. In stark contrast, recent cyclones, such as Cyclone Biparjoy (2023) and Cyclone Yaas (2021), have seen zero to single-digit mortality despite similar intensity levels. This transformation is attributed to:

- Massive early warning dissemination, using mobile alerts, community sirens and village volunteers.
- Large-scale, pre-emptive evacuations, sometimes exceeding 1 million people per event.
- Well-coordinated shelter management, especially the effective use of the multipurpose cyclone shelters under the National Cyclone Risk Mitigation Project (NCRMP).

This success reflects India's ability to act swiftly and decisively to protect lives, especially among vulnerable coastal populations.

2. Enhanced Response Capacity at National and State Levels

India has developed a robust institutional framework for disaster response:

- The National Disaster Response Force (NDRF), with over 16,000 personnel across 16 battalions, has emerged as a world-class force for search and rescue, including in cyclones, floods, landslides, industrial accidents and earthquakes.
- State Disaster Response Forces (SDRFs) are being established in many states, thereby enhancing decentralized response capabilities.
- Auxiliary forces, such as Civil Defence, Home Guards, and trained community volunteers (e.g., Aapda Mitras), have significantly contributed to the response strength.
- The cumulative impact of these trained responders has improved multi-hazard search, rescue and evacuation operations, leading to more efficient and life-saving interventions across the country.

3. Swift and Transparent Relief Delivery through Technology

India has revolutionized its disaster relief mechanisms through Direct Benefit Transfer (DBT) systems:

- Relief assistance like cash for shelter, livestock loss, crop damage, etc., is transferred directly to beneficiaries' Aadhaar-linked bank accounts, reducing leakages and delays.
- Real-time data on affected populations and damages, often collected through mobile apps and GIS-based platforms, has expedited needs-based targeting.

- During events such as the 2023 Himachal Pradesh floods and 2022 Assam floods, assistance reached tens of thousands of people within days of the disaster, demonstrating speed, scale and transparency.

Further, relief camps are increasingly better organized, offering not only shelter and food but also medical care, psychosocial support, sanitation and child-friendly spaces, reflecting a more holistic approach to humanitarian needs.

4. Social Protection and Food Security Post-Disaster

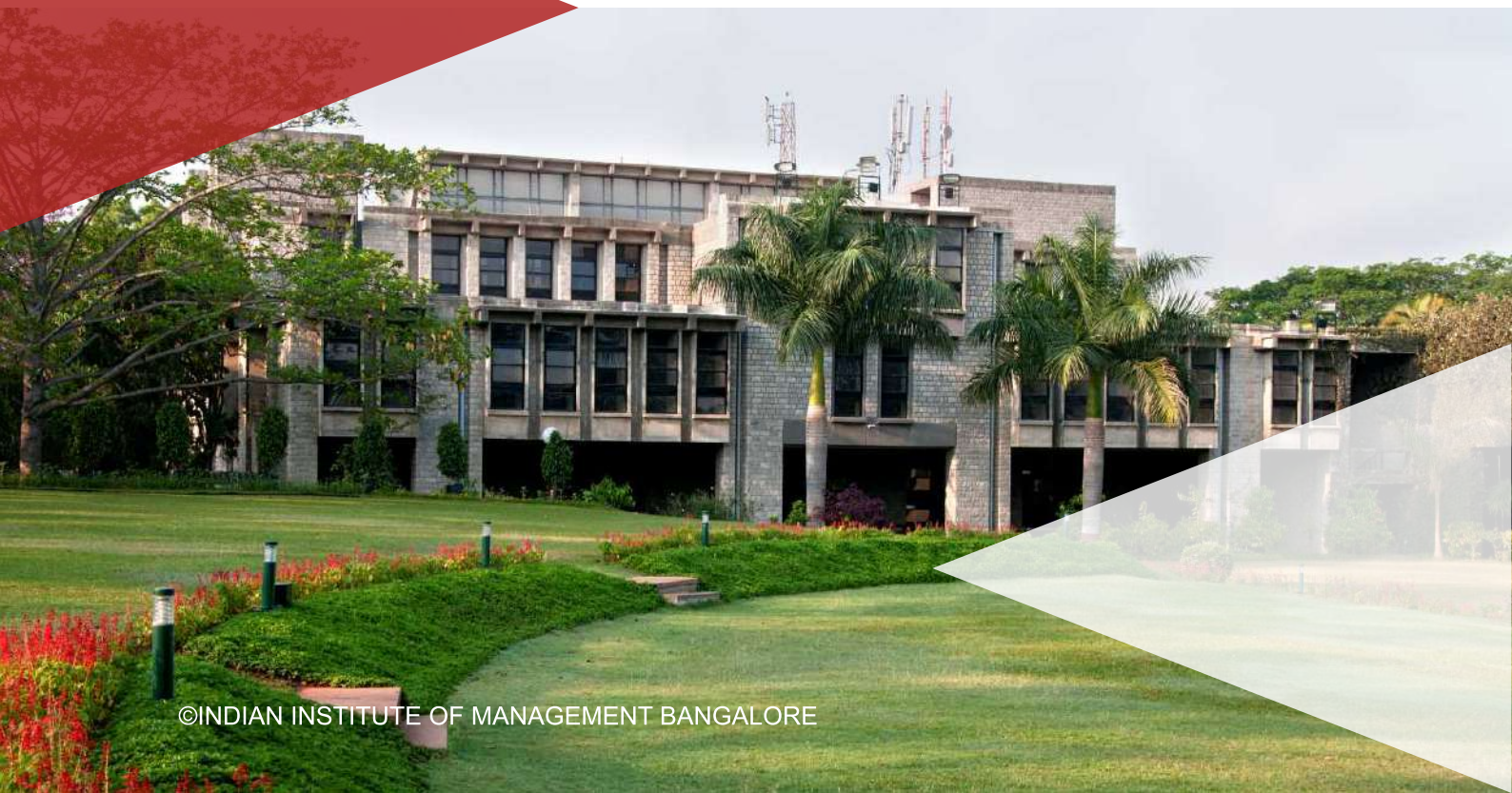
India has effectively used its social protection schemes to buffer disaster impacts:

- The Pradhan Mantri Garib Kalyan Anna Yojana (PMGKAY) has ensured free food grain distribution to disaster-affected households, even during multiple crises like the COVID-19 pandemic and concurrent floods.
- State governments, with support from central funds, are now able to provide improved temporary shelters to those rendered homeless.
- These measures have mitigated the risk of hunger and destitution in the aftermath of disasters and supported dignified living conditions for displaced populations.

5. Improved Damage Assessment and Resilient Recovery

India has institutionalized the Post-Disaster Needs Assessment (PDNA) methodology, aligned with international best practices:

- PDNAs now cover multi-sectoral assessments, enabling evidence-based recovery and reconstruction planning.
- States such as Kerala (2018 floods), Odisha (Cyclone Fani, 2019), Himachal Pradesh (Floods, 2023) and Sikkim (2023 earthquake), have used PDNAs to mobilize resources and build back better.
- PDNAs also help identify resilience gaps in housing, infrastructure and livelihoods, ensuring that recovery is not just reactive but transformative.



6. Global Disaster Assistance and Leadership in HADR

India has emerged as a key global responder in Humanitarian Assistance and Disaster Relief (HADR) operations, reflecting its growing commitment to regional and international solidarity in times of crisis. Through its trained and equipped NDRF and armed forces, India has extended timely disaster response support to countries such as Nepal (2015 earthquake), Türkiye (2023 earthquake) and Myanmar (2025 earthquake).

Following the Nepal earthquake, India not only deployed rapid response teams but also undertook one of the most significant bilateral recovery operations by constructing 50,000 houses in Gorkha and Nuwakot, and supporting the rebuilding of schools, health facilities, and cultural heritage structures.

India launched Operation Dost to assist Turkey after the devastating earthquake of February 2023. India sent multiple batches of aid, including the NDRF teams, search and rescue dog squads, medical teams, field hospitals, medicines, relief material and specialized equipment.

On 28 May 2025, at 12.50 pm local time, Myanmar was struck by an earthquake of 7.7 Mw with the epicentre close to Mandalay, the country's second largest city. It was the most powerful earthquake to strike Myanmar since 1912.

Following the devastating earthquake, India played a key role in providing immediate relief and aid demonstrating its "Neighbourhood First" policy. In Operation Brahma, India deployed resources for search and rescue, humanitarian assistance, disaster relief and medical aid.

The National Disaster Response Force (NDRF) was the first to reach the affected area for search and rescue operations. India also provided medical teams and naval ships carrying essential supplies. The Indian Army established a 60-bed field hospital treating hundreds of patients and deployed a 118-member medical team for advanced care.

Within hours of the Myanmar earthquake, we had a coordination meeting with Ministries of Home, External Affairs, NDMA, Armed Forces, etc., on sending search and rescue teams and relief assistance to the affected areas immediately. They were fully prepared. All that we had to explore was how to get necessary permissions and local logistics in place. I was pleased to see how things were comprehensively transformed in two decades after the Gujarat earthquake.

India had earlier provided disaster relief assistance to developed countries, including the United States (Hurricane Katrina, 2005) and Japan (Tōhoku earthquake and tsunami, 2011). It also supported disaster-struck Caribbean and Pacific Island nations, reinforcing its commitment to the Global South.

To institutionalize this capacity, India has developed HADR operational guidelines, which enable the structured and rapid deployment of relief across borders. These efforts demonstrate India's evolution into a net provider of humanitarian assistance, contributing to global disaster resilience and showcasing its operational excellence, empathy, and strategic outreach.

A promising example of **institutional innovation** led by India is the **Coalition for Disaster Resilient Infrastructure** (CDRI), a multilateral platform established to promote resilience in infrastructure systems globally. **Conceived** and **hosted** by India, CDRI represents a new generation of specialized institutions that address a **focused domain** – resilient infrastructure – while facilitating **global collaboration** and **knowledge exchange**. CDRI demonstrates how a well-defined institutional mandate, supported by technical expertise and international partnerships, can contribute meaningfully to building resilience at a **'planetary scale'.**

It sets a benchmark for how Indian institutions can excel in niche areas and lead transformative initiatives in disaster risk reduction.The CDRI has taken up projects in Small Island Developing States. It is also planning to take up programmes in African countries.

Looking to the Future

No matter how sophisticated our policies or how well-designed our financing mechanisms may be, their success ultimately rests on the **strength and capability of institutions**. To support the full disaster management cycle – from preparedness and mitigation to response, recovery and reconstruction – we need institutions that are not only structurally sound but also **functionally competent.**

While the institutional architecture established by the Disaster Management Act was forward-looking in its time, the past two decades have seen a dramatic evolution in the field of disaster risk management. The emergence of differentiated functions – ranging from relief and recovery to preparedness and mitigation – alongside the increasing complexity and interdependence of risks, demands far **greater agility and specialization from our institutions.** Moreover, the growing role of **technology** in early warning systems, **data analytics** and **risk modelling** calls for institutions to be not only administratively competent but also technologically adaptive. Today, the core challenge is that institutional capacity has not kept pace with the expanding scope and sophistication of disaster management.

The **professionalization of disaster management institutions** – through formal training, career tracks and expert cadres – is perhaps the most important challenge we will face in the coming years. Without it, even the best-designed policies and financing tools risk becoming underutilized or ineffectively implemented.

The **Covid-19** pandemic was a sobering reminder that we have a long way to go in building a resilient future because there are vulnerabilities lurking across the global system. There was a debate whether it was a 'Black Swan' event – which are rare events that have outsized impact, are hard to fully anticipate, and it is harder still to model their impact. We have seen events such as the Indian Ocean tsunami of 2004 which could be of this category. The Covid-19 was a disaster that engulfed the entire world.

Covid-19 was riddled with several **uncertainties.** The traditional disaster risk management paradigm is attuned to using **analysis of past events** – their frequency, intensity and impact – to evaluate risk and devise risk management strategies for the future. The lesson of Covid-19 was that we need to bridge the gap between traditional disaster risk management and **risk management in an uncertain environment.**

Perhaps the greatest challenge facing disaster management systems – and indeed broader governance frameworks – in the 21st century is the impact of **climate change**. The nature, frequency and distribution of hazards are changing rapidly. Atmospheric hazards, such as lightning and heat waves, which were once considered peripheral, have now emerged as the most significant threats to life and well-being in many regions. Forest fires have surged in both frequency and intensity, and rainfall events have become more erratic and extreme.

This transformation reflects a fundamental shift in our risk landscape. We are transitioning from a regime dominated by **intensive risks** – high-impact events concentrated in specific locations (e.g. major cyclones or earthquakes) – to one increasingly characterized by **extensive risks.** These are low-to-moderate intensity events, spread across vast geographies, which cause cumulative loss of life, livelihoods, and ecosystems in a diffuse and often invisible manner.

This shift demands a significant recalibration of our disaster management systems. It compels us to build greater capacity and resilience at the local level, where extensive risks are experienced most acutely.

It is no longer enough for disaster management to be the domain of **central or state agencies**. We must involve **urban local bodies and Panchayati Raj institutions** as key actors in both planning and implementation.

Local institutions must be resource-rich, technically supported, and institutionally empowered to act as the first and most immediate line of defence. The more effective our local governance systems are, the more resilient our communities will be – not just in responding to disaster, but in adapting to a rapidly changing climate.

Recognizing this, the recent amendment to the Disaster Management Act, 2005 mandates the creation of **Urban Disaster Management Authorities** in cities. This is a critical step toward formalizing local-level disaster governance, but it must be backed by meaningful capacity-building, financing, and integration with broader urban and rural development plans.

In essence, the frontlines of **climate adaptation and disaster risk reduction** now lie at the local level. The effectiveness of India's national disaster management strategy will increasingly depend on our ability to empower and equip local institutions to meet the evolving risks of our time.

Concluding Remarks

India's disaster management policy and practices have evolved over several decades. Even during the pre-Independence time there were administrative arrangements for measures to be taken during disaster events. After Independence, relief and response activities continued to evolve to address a variety of disasters such as droughts, floods, cyclones and earthquakes.

In the context of the Kutch earthquake of 2001, the Government of Gujarat introduced a very comprehensive reconstruction and recovery programme which was distinguished by its medium-term and long-term perspectives. It was possibly one of the most influential and far-reaching initiatives.

At the national level, keeping in view the experiences of Odisha and Gujarat and in the aftermath of the Asian tsunami, administrative and legislative frameworks were put in place. Parallelly, the financing mechanism for disaster management also evolved.

Today, India's disaster management evolution reflects a systemic and integrated approach – combining technology, institutional capacity, community engagement and social protection. These achievements position India not only as a regional leader but as a global best-practice model in disaster risk management.

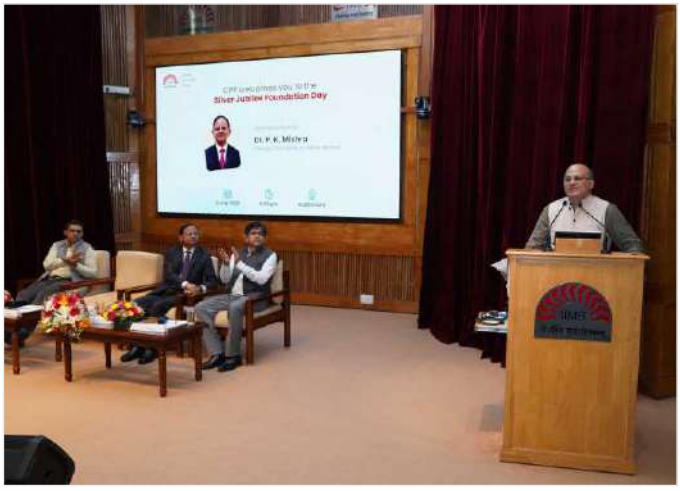
The challenge ahead lies in sustaining this momentum, deepening preparedness in new risk zones (e.g., urban floods, heat waves), and embedding climate resilience in all facets of recovery and development.

Policies, legislations, institutions and **financing** form the complex tapestry of disaster risk governance. Each is essential on its own, but they are most effective when they work in concert, encouraging and reinforcing one another in pursuit of a common goal: resilience on the ground.

The Disaster Management system needs to have its dynamism in the context of the emerging challenges arising due to climate change, geo-political developments and other factors. We need to pursue an active, iterative and practice-oriented approach where each reform strengthens another, and where all elements converge to improve people's access to resources, security and opportunity.

This transformation needs not just design and execution – it demands **visionary leadership**, which has indeed been a **distinguishing feature of India's progress** over the last decade. It also requires institutions to ensure collaboration, learning and **innovation**.


Special lecture by
Dr. P. K. Mishra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