



Towards a Disaster Free India

National Institute of Disaster Management

N E W S L E T T E R

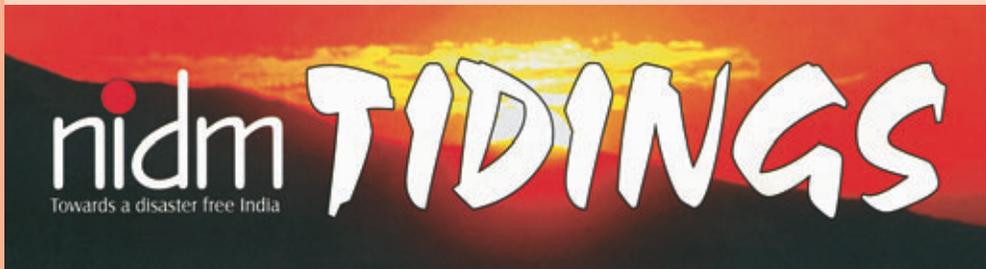
(For restricted circulation only)

Editorial Board

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Contents...

FROM THE EDITOR'S DESK	1
UPCOMING EVENTS	1
INSTITUTE NEWS	2
AN OVERVIEW OF THE TSUNAMI DISASTER IN INDIA	3



Quarterly Newsletter of National Institute of Disaster Management

From the Editor's Desk ...

As the year 2004 was drawing to a close, South East Asia was numbed by a tsunami, which caused the loss of over 10,000 lives and affected the livelihoods of over 2.7 million people in this country alone. Even two months after the calamity, few of us have been able to come to terms with the extent of the devastation caused by the disaster.

The Tsunami took the entire nation by surprise. Largely a Pacific Ocean phenomenon, we were not prepared for such ferocity. However, this has been a learning process for us to prepare for and therefore reduce the risk from such disasters. Now that we are aware that the Indian Ocean rim countries are vulnerable to tsunamis of such intensity, it is time for us to develop an effective warning system, plan for preparedness, mitigation and effective response for future occurrences. The colossal work envisaged requires active participation from each one of us, to make our lives safe from such calamities.

Like all other disasters, this event has also given rise to analyses, recommendations, allegations of misdemeanours and also incidences of great courage and resilience. NIDM salutes the indomitable spirit of those who have coped with the onslaught of the disaster and have started rebuilding their lives. The teams sent from NIDM to Tamil Nadu and Andaman & Nicobar Islands have tried to document the impact of the tsunami and bring out the lessons learnt from this event; and what needs to be done to prevent such devastation from taking place in the future.

We at NIDM hope that we can work together in our journey to build a disaster free India!

Editorial Board

Depend not on Fortune, but on Conduct

— Pibilius Syras

Changes ...

Shri Ashim Khurana, IAS, Joint Secretary (DM), MHA has taken additional charge as Executive Director, NIDM.

Shri S.P. Gaur, former Executive Director, NIDM has taken charge as Secretary, UPSC.

Upcoming Events

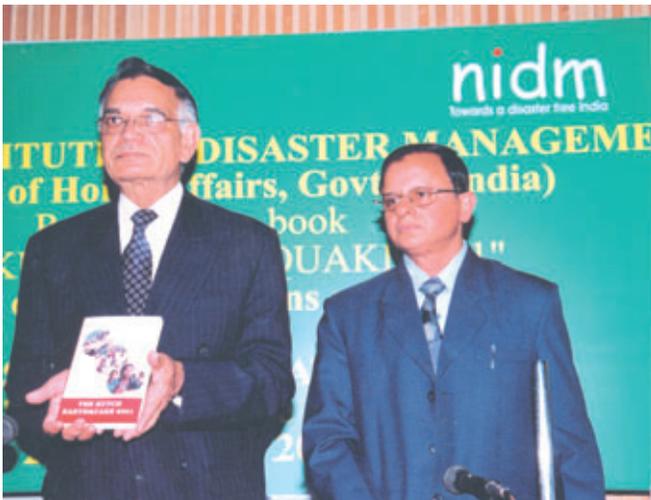
- o Media Workshop in collaboration with the Ministry of Home Affairs, NIDM 22-23, March, 2005.
- o Training of Trainers on Disaster Management at ATI, Shimla, March 28-April 1, 2005.
- o Workshop on Risk Financing in Disaster Management at NIDM, 26-27 April, 2005.

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Institute News

Book Release

NIDM has published a book—*The Kutch Earthquake 2001: Recollections, Lessons and Insights*, by Dr P.K. Mishra. Dr Mishra, in his capacity as Principal Secretary to the Government of Gujarat and subsequently as Chief Executive Officer, Gujarat State Disaster Management Authority (GSDMA), has played a crucial role in managing the response, relief and reconstruction in the aftermath of the calamity.



The book was released on 22 February 2005, by Shri Shivraj Patil, Hon'ble Union Home Minister, along with two other publications of NIDM at a function organised by the Institute at the India International Centre Annexe.

Speaking on the occasion, Shri Patil stressed on the objective evaluation of response to a particular event as the basis for better reaction in the next. He lauded the author and NIDM for bringing out this 'unique and extremely relevant documentation of our response to one of the most severe natural disasters in recent memory.' He added that despite the focus being on the Kutch earthquake of 2001, the book had national and international relevance, particularly in the context of the recent tsunami disaster. He hoped that NIDM would continue to fulfill the great expectations that the nation had, in terms of building the capacity of the entire nation to be resilient to the impact of all future disasters.

Template for District Disaster Management Plan

Pre-disaster planning is crucial for ensuring an efficient response at the time of a disaster. A well-planned and well-rehearsed response system can deal with the exigencies of calamities and also put up a resilient coping mechanism.

Keeping in view the nodal role of the district administration in disaster management, NIDM organized a workshop on 29 November 2004, to formulate a template for the preparation of a District Disaster Management Plan (DDMP), attended by officials from the district and state administration, the Ministry of Home Affairs, NIDM and United Nations Development Program (UNDP). The available DDMPs were critically examined and a final template for them was developed.

The DDMP template has been published by NIDM and was released on 22 February 2005, by Shri Shivraj Patil, Hon'ble Union Home Minister. It is currently being sent to the state relief commissioners; it will later be disseminated to all districts.

Study Report on Kumbakonam School Fire Tragedy

The field study report of the Kumbakonam school fire tragedy, prepared by researchers from this Institute, was released by Hon'ble Home Minister.

The report was a situation analysis focusing on a comprehensive coverage of the incident profile including the factors that led to the incident, the response of stakeholders, relief and rehabilitation of the affected families, and examination of the various regulatory mechanisms in place.

It also includes a need assessment of the affected children and their families. The report will be disseminated by NIDM to all the state governments.

Training Programmes Conducted

- Training of Trainers Programme on Disaster Management, focusing on earthquakes and landslides, conducted at the Administrative Training Institute, Kohima, from 29 November - 3 December 2004.

NIDM faculty: Brig. B.K. Khanna, Consultant; and Shri Amir Ali Khan, Senior Research Officer.

- Training of Trainers Programme on Disaster Management, with a focus on disaster resistant techniques for houses; conducted at the Assam Administrative Staff College, Guwahati, from 6–10 December 2004.

NIDM faculty: Brig. B.K. Khanna, Consultant; and Shri Amir Ali Khan, Senior Research Officer.

- Training of trainers Programme on Disaster Management, focusing on earthquakes, tsunamis, cyclones and floods conducted at the Administrative Training Institute, Kolkata, from 31 January - 4 February 2005.

NIDM faculty: Santosh Kumar, Professor, Chandrani Bandyopadhyay, Senior Research Officer.

- Training Programme on Disaster Management for the corporate sector in collaboration with the Federation of Indian Chambers of Commerce and Industry (FICCI) conducted at Hyderabad, 17–18 February 2005.

An Overview of the Tsunami Disaster in India

The devastating earthquake that occurred on 26 December 2004, on the interface of the India and Burma plates, was caused by the release of stresses that developed as the India plate subducted beneath the overriding Burma plate. The mega earthquake was of the magnitude of 8.9 on the Richter Scale.

The epicenter of the earthquake was located near the west coast of the Aceh province on the Indonesian island of Sumatra. It generated a powerful tsunami, which caused devastation in the South and South East Asian countries. Almost all the countries situated along the Bay of Bengal were also affected.

The killer waves were felt up to the east African coast, affecting countries like Somalia, Tanzania and Kenya. Indonesia, Sri Lanka, India, Thailand, Malaysia and the Maldives, were affected the most. The total death toll due to the tsunami disaster in all the affected countries has risen to over 200,000 and has caused immense loss to property and livelihood in the affected regions.

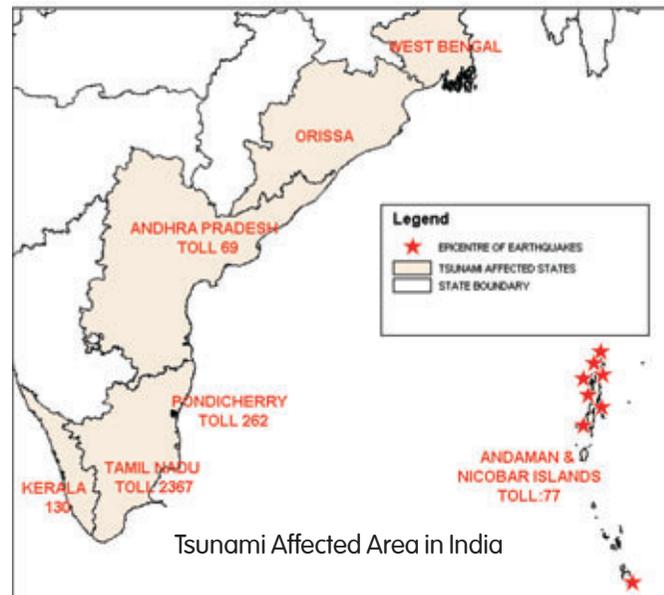


Tsunami Profile

The map is not to scale and it is indicative

Source: reliefweb.int

Region & Country	Off the west coast of Northern Sumatra, Indonesia
Moment Magnitude	9.0
Date	26 December 2004
Time	06:28:53 AM (IST), 00:58:53 (UTC)
Epicenter	3.267 N, 95.821 E near west coast of Sumatra in Indonesia
Affected Countries/Cities	Indonesia, Sri Lanka, India, Thailand, Somalia, Maldives, Malaysia, Bangladesh, Kenya, Myanmar, Singapore and Seychelles
Casualties	Over 200,000



The map is not to scale and it is indicative

Source: undp.org

Impact of the tsunami in India

The tsunami caused havoc and destruction in the coastal regions of south India and the Andaman and Nicobar Islands. It affected 2,260 km of the coastline, covering the entire habited Nicobar Islands, a majority of other inhabited islands of the Andaman & Nicobar Islands, and the states of Andhra Pradesh, Kerala, Tamil Nadu and the Union Territory of Pondicherry.

Table 1 shows the extent of damage in the tsunami-affected states and Table 2 shows human lives lost.

Table 1: Details of impact of the tsunami on the mainland states (as on 12 January 2005)

Details	Andhra Pradesh	Kerala	Tamil Nadu	Pondicherry	Total
Coastal length affected in km	985	250	1000	25	2,260
Penetration of water into main land in km	0.50–2.0	1–2	1–1.5	0.30–3.0	
Average height of the tidal wave	5 mtrs	3–5 mtrs	7–10 mtrs	10 mtrs	
No. of villages affected	301	187	376	33	897
Dwelling units	1,557	17,381	128,394	10,061	157,393
Cattle lost	195	NR	9,559	506	10,260
Cropped area (Ha)	790	NR	10,245	792	10,260
Number of boats damaged	1,362	10,065	45,920	6,678	74,025

Source: Situation Reports, Ministry of Home Affairs, Government of India.

NIDM Team Visit

A study team from the NIDM visited the tsunami-affected areas of Tamil Nadu and Pondicherry. It included members from the Structural Engineering Research Centre (SERC), Chennai, and the Anna Institute of Management, Chennai. The team visited the most severely affected areas under the districts of Nagapattinam, Cuddalore, Chennai, Kancheepuram

in Tamil Nadu and Pondicherry, and the Karaikal divisions of Pondicherry.

General Observations About the Damage:

- Various facilities including buildings, houses and compound walls constructed on the coast were washed away by the tsunami waves.
- The fishing community living along the shore suffered the maximum brunt of the tsunami in terms of loss of lives and damage to housing, boats and fishing equipment.

Table 2: Human lives lost (as on 18 January 2005)

States/UT	Population Affected	Human lives lost	Persons missing
Andaman & Nicobar Islands	295,959	1,899	5,554
Andhra Pradesh	196,320	105	11
Tamil Nadu	896,163	7,983	-
Pondicherry	43,432	591	75
Kerala	1,300,000	171	
Total	2,731,874	10,749	5,640

Source: Situation Reports, Ministry of Home Affairs, Government of India

- Nagapattinam district (Tamil Nadu) was extensively affected in terms of infrastructure loss, where a railway line on the shore, telecommunication tower and control panel room etc., were damaged. The government warehouse was also considerably damaged.
- In ports and harbours, major damage was caused to the vessels anchored there. These vessels hit others and caused damage after breaking their supports. Small boats and ships were carried away by the giant waves onto the land, and were extensively damaged.
- The backwaters provided a good cushion and saved the surrounding areas from great damage.
- Thick vegetation along the shoreline reduced the fury of the tsunami waves considerably.

Where the System Worked

- Less damage was caused to the villages that were located on higher reaches; even though they were located 100–200 meters away from the coast. In all such villages, the damage was restricted to huts located along the coastline only. Similarly; in Tranquebar, no structural damage was caused to the Danish Fort which is just 100–200 meters away from the coastline, but about 20 feet higher than the coastline.
- The effect of the tsunami on the villages/settlements

behind mangrove and coastal plantations was minimal.

- Villages/settlements adjacent to the backwaters were more protected and damaged less.

Lacunae in the System

- There was no warning given to the people on the east coast about the tsunami, though the India Meteorological Department (IMD) station in Andaman and Nicobar is reported to have recorded the earthquake around

7:00 a.m. (people have questioned the silence of the IMD on this aspect).

- All thatched huts up to 400–500 meters from the coastline were flattened, brick structures like compound walls, single-storeyed brick houses etc., were damaged extensively but the majority of RCC structures survived the tsunami.

Photographs taken by the NIDM team



Damage to the coastal area in Cuddalore district



Damaged boats at Nagapattinam



Marina Beach immediately after the tsunami

Damage at Cuddalore



NIDM has been requested by some tsunami-affected states to collaborate in the preparation of detailed disaster management plans for the districts.



Relief distribution at Cuddalore



Damaged railway line at Nagapattinam



Devastated fishermen's colony at Chennai



Devastation at Cuddalore

Revisiting Tsunami Management in India

- Search and rescue operations were initiated by the community immediately after the calamity, almost at all the places.
- The administration took 2–3 days to mobilize and come to terms with the magnitude of the disaster. After initial delays, the state government picked up the pace of emergency management and were in full control after 5–6 days; thereafter the speed of relief and rehabilitation was much faster.
- Central Search and Rescue (SAR) teams constituted from the paramilitary forces and state SAR teams were not visible in the areas visited by the study team in Tamil Nadu and Pondicherry.
- After the Army was called in, they started relief work within 4–5 hours in Chennai; however in the affected districts they arrived after 2–3 days, thereby losing the crucial 48 hours for rescue.
- Some villages like Keechankupam in Nagapattinam district could not be reached due to the fact that the only connecting bridge had been blocked by a 100 boats. Help could reach only after two days, when Army sappers removed the boats from the bridge.
- Dead bodies were being recovered even after 11 days in Nagapattinam. The Army along with NGOs like Ekta Trust from Gujarat, did a commendable job in dealing with the dead bodies.
- Indian Army units (from Madras Regimental Centre, Wellington and Madras Engineering Group, Bangalore) helped the administration to revert to normalcy which included the task of recovery of dead bodies, the removal of debris, damaged boats, the repair of boats, providing temporary bridges, and distribution of relief material.
- There was overwhelming response from the NGO sector which responded instantly. Over 150 NGOs were found participating in coordination committee meetings in the Nagapattinam district alone.
- Concerted official response from neighbouring districts and the state—state government secretaries, collectors/deputy collectors/assistant collectors, tehsildars, BDOs and other revenue officials up to the village level from eight neighbouring districts assisted the district administration. State line department heads asked for assistance from their

subordinate offices in affected districts, on their own. About 10,000–12,000 officials, including 30 IAS officers were mobilized to oversee search and rescue, relief and rehabilitation and temporary reconstruction work in the affected districts.

- The local police was involved in SAR, protection of property and for the orderly distribution of relief material. There were reports of some looting in the initial phase.

Over 280,000 are now dead or missing from the Boxing Day Tsunami, reports Swiss Re, a reinsurance company. And yet, 13 hurricanes in the United States and its neighbours, plus a record ten typhoons in Japan, were more expensive for the insurers, costing \$38 billion. Hurricane Andrew, in 1992, remains the biggest insured loss at \$ 21.5 billion. (The Economist, March 26-April 1, 2005).

In India repairing the damage is expected to cost \$1.2 billion. (BBC, January 7, 2005).

It is time we think of risk transfer mechanisms in disaster mitigation!

Team Visit to Andaman and Nicobar Islands

As a part of the collaborative research efforts between TISS and NIDM, a team from NIDM visited the islands in the Andaman district. The team made extensive visits to all relief camps in Port Blair and some in Hut Bay (Little Andaman). A structured interview schedule focusing on household damage assessment, as well as livelihood restoration parameters was conducted with the active participation of people in the camps. The team carried out in-depth interaction with government officials and people working with the affected communities. Since livelihood resources and options varied from island to island and from one social category to another, it was felt that any livelihood restoration/rehabilitation programme should keep these basic parameters in mind before implementation.

(A detailed report on the Andaman & Nicobar Islands Field Visit will be published in the next issue).

We welcome comments/responses/articles
from readers of our Newsletter