

Disaster Management in India

By

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Country and Climate

- Area : 3.2 million Sq.kms-7th largest country in the world
- Common border with Afghanistan, Pakistan,
- China, Bhutan, Nepal, Myanmar and Bangladesh.

Country and Climate

- Climate : Four seasons-
 - Winter, Summer, Rainy and Autumn season

Country and Climate

- Population: over 1100 million
- Average population density: about 300 persons per Sq.km
- Literacy rate: 53.00 percent

Country and Climate

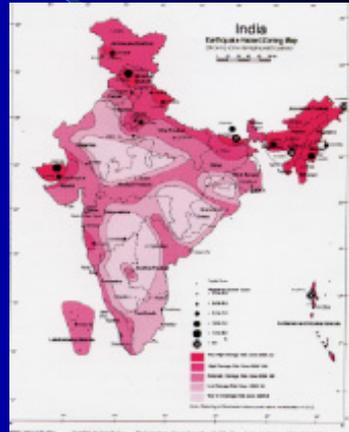
- Urbanization : about 26 percent
- Administrative Set Up:
- 28 States and 7 Union Territories
- District Collectors
- Tehsils/Blocks
- Villages

VULNERABILITY TO NATURAL DISASTERS

- India vulnerable to major disasters of floods, cyclones, drought and earthquakes
- 40 million hectares prone to floods
- 68% area vulnerable to drought
- About 60% of the landmass is prone to earthquakes of various intensities
- About 8% of the total area is prone to cyclones
- Hailstorm, landslides, avalanches fire too occur frequently

EARTHQUAKE ZONING MAP

- 27 earthquakes of 5.0 magnitude or more between 1819 to 2001(10 of between 7 and above)
- Largest magnitude of 8.7 in 1897(Assam) and 8.6 in (Assam) 1950
- Rivers changed their courses, ground elevations got changed and stones were thrown upward



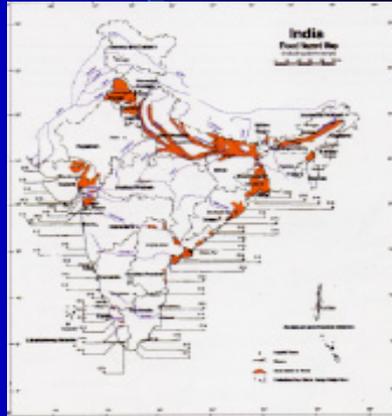
CYCLONE HAZARD MAP

- 1891-1990: 262 cyclones (92 severe) in 50 KM wide strip on the East Coast
- Less severe cyclonic activities on West Coast(33 cyclones)



FLOOD HAZARD MAP

- About 80% of annual rainfall received within four months (June-September)
- On an average 8.0 million hectares affected
- 40 million hectares area prone to floods, over 14 million hectares protected



EXETNT OF DAMGE AND DESTRUCTION (average annual during 1990-2000)

- Human loss-4344
- Cropped area affected- 1.42 million hectares.
- Number of houses damaged : 2.36 million

Disaster Management Division

Responsibilities:-

- Disaster Management and Mitigation
- Crisis Management
- NBC Preparedness
- Civil Defence

RESPONSE MECHANISM

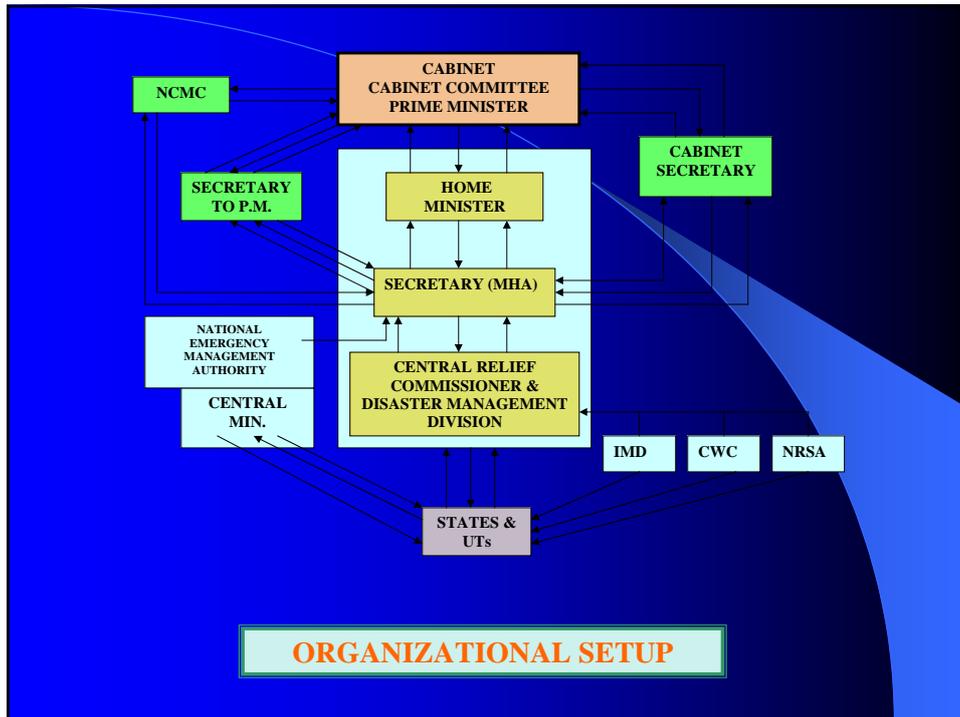
- Basic responsibility of State Governments
- Union Government supplements the efforts by extending logistics and financial support as well as coordinate efforts at national and international levels

MANAGEMENT MECHANISM

- Integrated Administrative machinery
- National Contingency Action Plan-identifies role of different players
- Ministry of Home Affairs – nodal ministry
- Central Relief Commissioner – Chief Nodal Officer
- State/District Contingency Plans and Relief Manuals/codes which identify that the role of each officer in the state for managing the natural disasters.

NATURAL DISASTER RESPONSE– UNION GOVERNMENT LEVEL

- National Crises Management Committee under Cabinet Secretary
- Crises Management Committee under CRC
- Group of Ministers, Task Forces, Group of Secretaries and High Level Committees – Need based



NATURAL DISASTER RESPONSE- STATE LEVEL

- State Cabinet
- States Crises Management Group- headed by Chief Secretary
- Relief Commissioner-State Nodal Officer
- District Collector- the key role player

FINANCIAL ARRANGEMENTS

- Based on recommendations of Finance Commission- Constituted after every five years
- Calamity Relief Fund (CRF) for each State- Allocation for 2000-05 Rs.110,075 million against Rs.63042 million for 1995-2000
- Additional assistance from National Calamity Contingency Fund-need based- for severe calamity

RECENT MAJOR DISASTERS

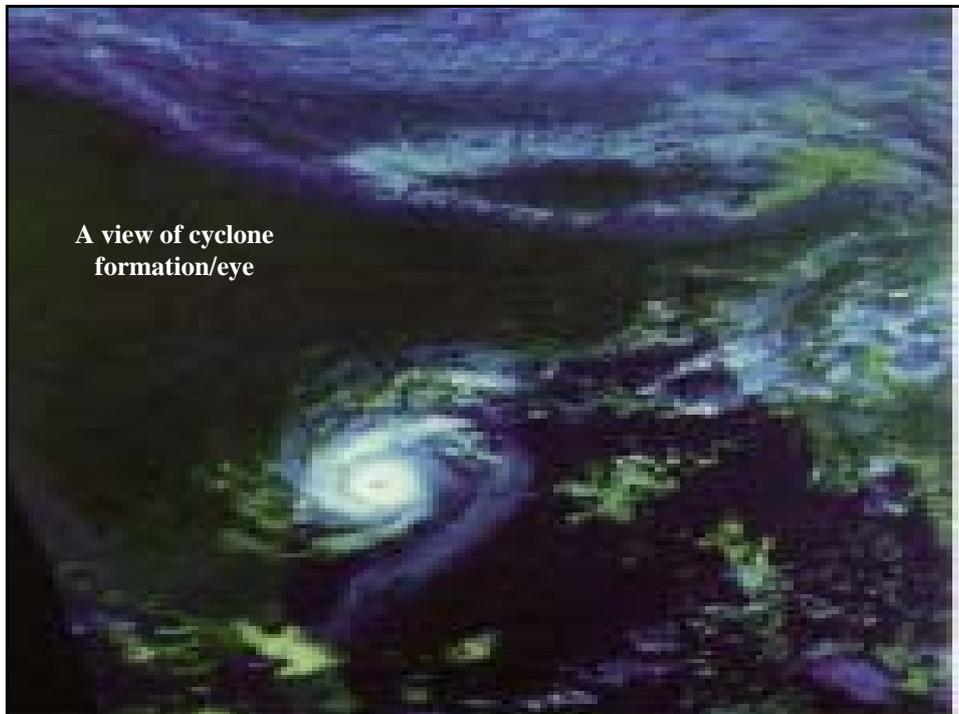
- Super Cyclone – October, 1999-Orissa
- Human live lost: 8913
- Population affected: 18.97 million
- Houses damaged: 02.03 million
- Livestock perished: 00.44 million
- Trees felled: 90.00 million
- Cropped area affected: 01.84 million
- School buildings damaged :13443

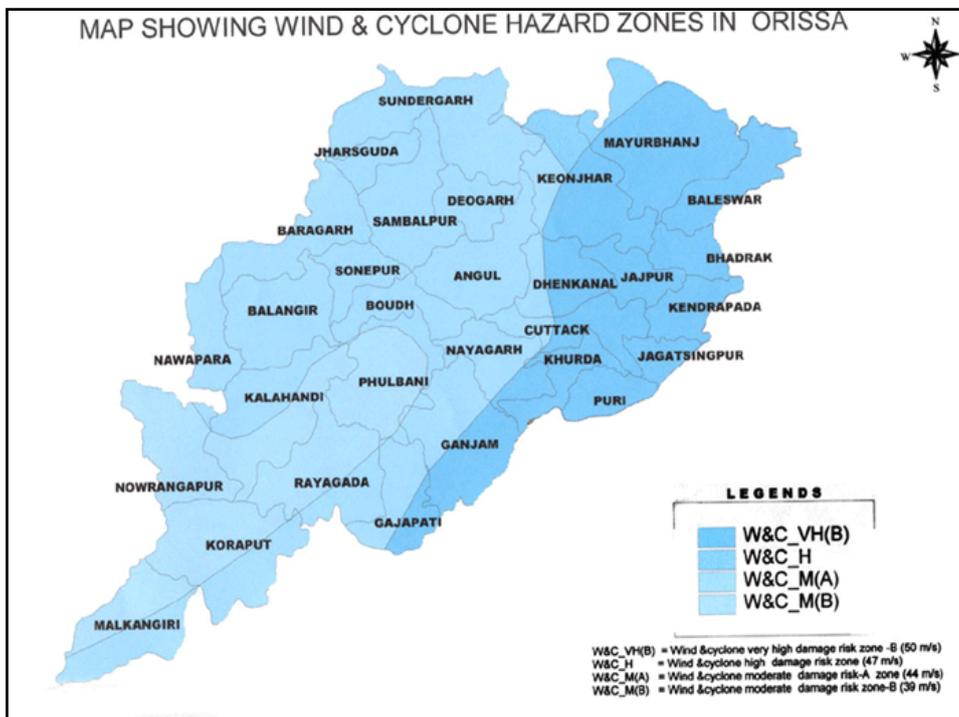
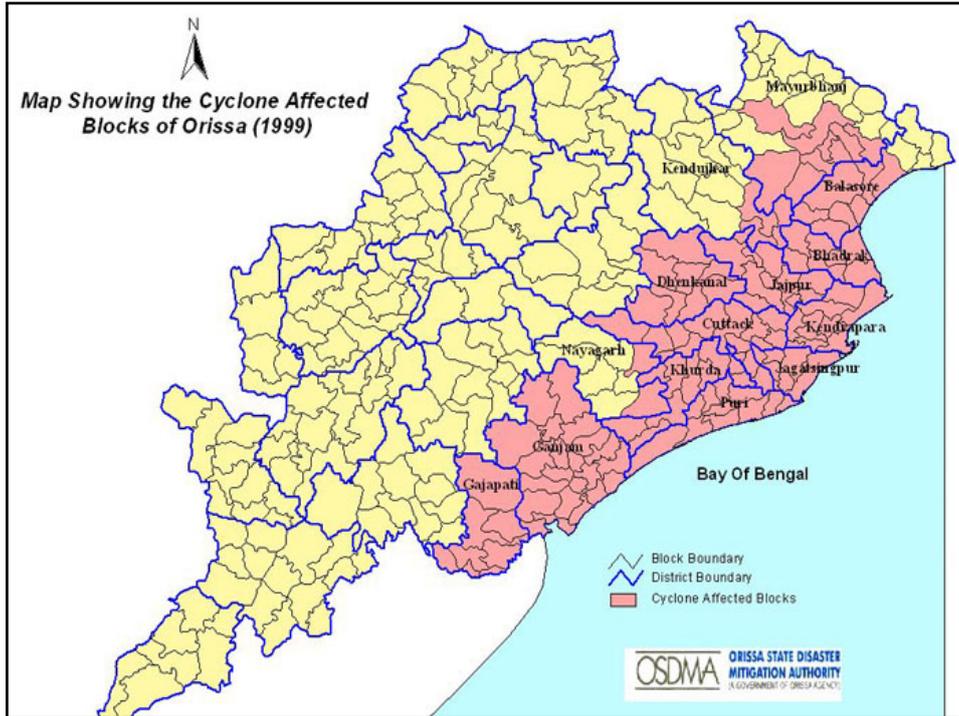
RECENT MAJOR DISASTERS- CONTD.

Relief and Rehabilitation work is over
Reconstruction work is going on(School-cum-
cyclone Shelters, Health
Institutions,Houses,Buildings)

DFID and World Bank assisting (School buildings,
supply of essential drugs,livelihood
restoration,lift irrigation point rehabilitation
project,Road work,water supply)

Today Orissa is observing the fifth anniversary of
the horrific super cyclone that struck its coast
on 29.10.1999.







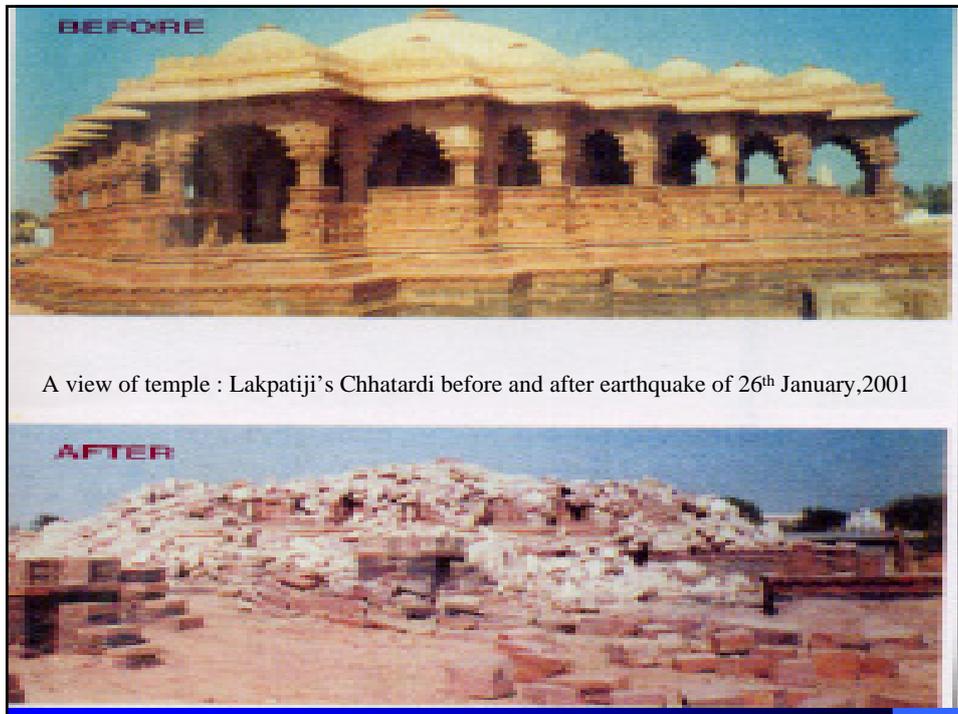


RECENT MAJOR DISASTERS- CONTD

- Gujarat earthquake – 26th January, 2001
- Human Lives lost : 13805
- Persons injured :20,747
- Villages affected: 7633
- Houses affected: 1.2 million
- Loss to public and
Private properties : Rs. 150,000 million

RECENT MAJOR DISASTERS-

- Gujarat Earthquake-2001-contd.
- Emergency relief work completed
- Process of reconstruction and rehabilitation work has almost completed



A student body in Ahmedabad School after earthquake

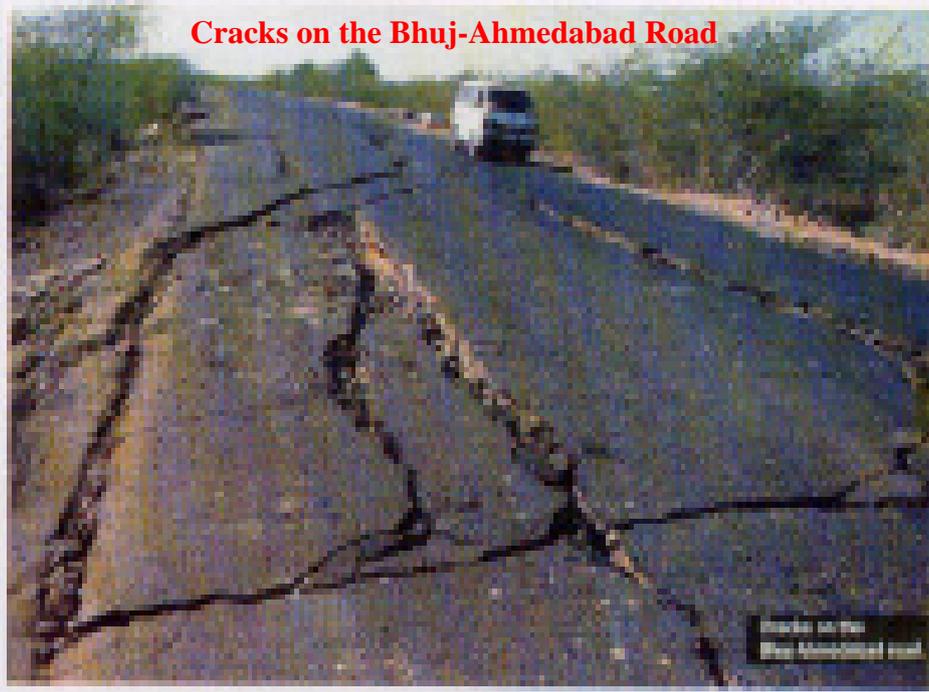


PHOTO COURTESY OF THE GOVT.

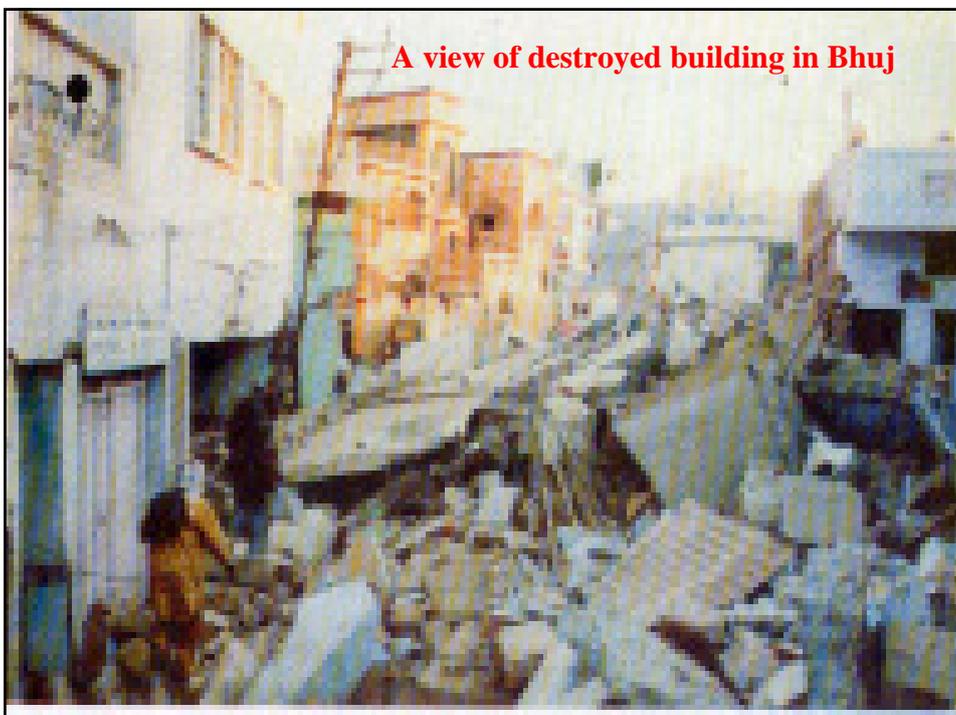


Rescue of 2 years old child

Cracks on the Bhuj-Ahmedabad Road



A view of destroyed building in Bhuj





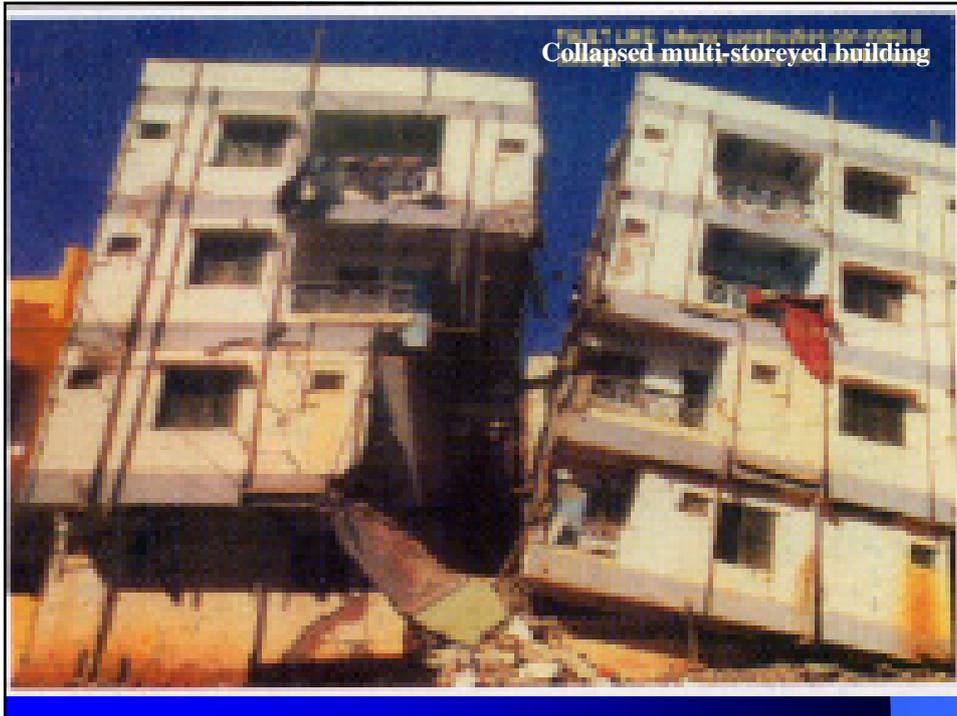


Fig. 8.7.1.1.1. **Collapsed multi-storeyed building**



**Swiss team-
rescuing elderly
woman**

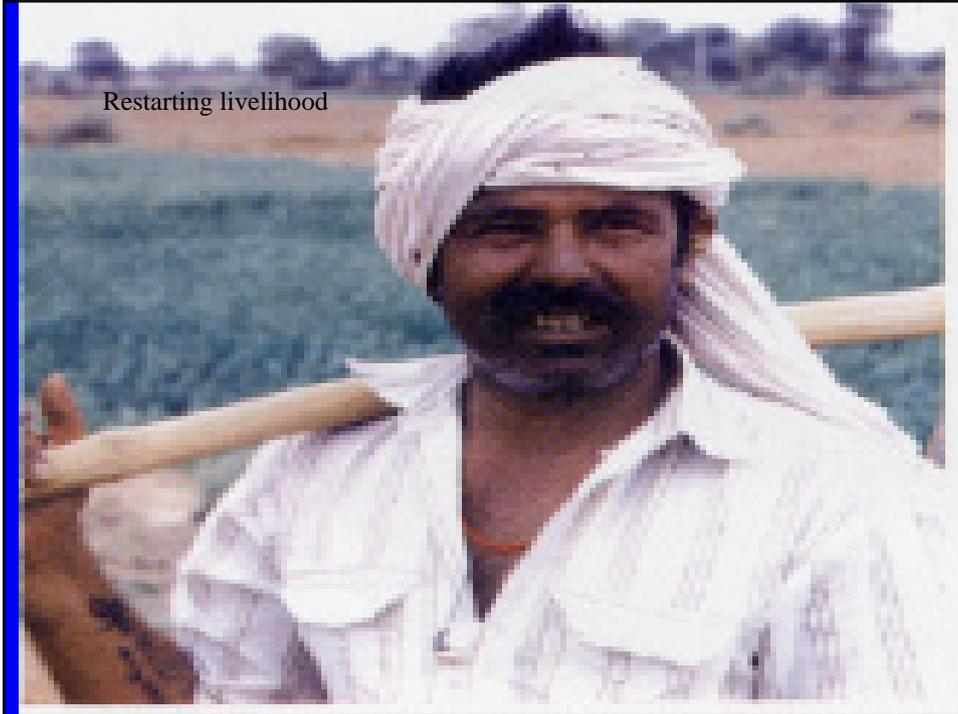


Russian team
rescuing elderly
woman



Restarting
livelihood

Restarting livelihood



Natural Disaster Management

- Subject (except Drought and Epidemics) transferred to MHA from Ministry of Agriculture (Earlier nodal Ministry) in June, 2002

*After transferred of work -
Initiatives taken by the
Ministry of Home Affairs
in the field of Disaster
Management*

**National Roadmap for Disaster
Management**

- ❑ A National Roadmap for Disaster Management drawn up - Action being taken in accordance with the Roadmap. The roadmap covers institutional mechanisms, mitigation/prevention measures, legal/policy framework, preparedness and response, early warning systems, human resource development, capacity building.
- ❑ Copy of the Roadmap has been sent to all the States with the advice to draw up similar roadmaps

Institutional mechanisms

- A National Emergency Management Authority [NEMA] being set up at the national level-Committee of Secretaries have recommended the proposal—being submitted to Home Minister for approval before submission to Cabinet, after obtaining comments of relevant Ministries/Departments.
- Departments of Relief and Rehabilitation in States to be converted into Departments of Disaster Management with wider Terms of Reference to include mitigation and vulnerability reduction.
 - 11 States/UTs – have carried out this change.

Institutional mechanisms

(Contd.)

- States also asked to set up Disaster Management Authorities with the Chief Minister as the Head and Ministers of relevant Ministries/Departments as Members.
 - 11 states/UTs- have constituted Disaster Management Authorities. Other States are in the process of setting up these Authorities.

Policy

- A National Policy on Disaster Mitigation and Prevention drafted- modifications suggested by Home Minister-revised draft drawn up-in process for inter-ministerial consultations.
- States also being pursued to have DM policies in place. Madhya Pradesh, Gujarat already have policies. Other States in the process.

Legal Framework

- States advised to adopt **Disaster Management Acts**-Gujarat has enacted the Act. Other States are in the process.
- Relief Codes being changed into Disaster Management Codes by including aspects of prevention, reduction and preparedness. States have set up committees for the purpose.

Financing

- Terms of Reference of the Twelfth Finance Commission changed to mandate that the Finance Commission looks at the entire cycle of disaster management and not only relief and rehabilitation.
- Memorandum drafted in consultation with States, sent to the Finance Commission includes creation of Disaster Mitigation Fund of Rs.100,000 Millions).

Regional Response Centers (RRCs)

- Regional Response Centers (RRCs) being set up – **14** Regional Response Centers have been identified with approval of Steering Committee. These Centers will have caches of equipment, boats etc. and assistance to neighboring States will be provided from these Regional Response Centers.

Response Systems (Contd.)

- **Creation of capabilities in States:**
 - States asked to designate a Training Center and procure Training equipment
 - Central Government will provide Training of Trainers
 - 15 States initiated action

Provision made in the CRF that 10% of the annual allocation can be used for purchase of:

- Search and Rescue equipment
- Communication equipment

Project for strengthening of emergency and fire services

- Project drawn up to convert Fire Services into all hazard response units at a cost of Rs. 24570 Million over five years.
- Equipping and training of fire services for carrying out search and rescue in all types of disasters.

Incident Command System (ICS)

- In order to professionalize the management of response, Incident Command System being introduced. This system provides for specialist incident command teams with an incident Commander and officers trained in different aspects of incident management
- LBSNAA, Mussoorie identified as the Core Training Institution.
- Curriculum and training of trainers being undertaken in collaboration with United States.

National Emergency Operations Centre

- Present control room strengthened
 - 5 on-site emergency coordination kits with SATPHONES, GPS, Laptops, Computers, VHF sets, emergency lights etc.
 - Regular drills with State Emergency Operations Centre (EOCs) being organized
- State-of-the-art National EOC with superior structural features and communication facilities to be set up (underground)
 - To be commissioned by June 2006

Emergency Operations Centers (Contd.)

- States being assisted to set up Control Rooms at the State level as well as at district level –standard design and layouts for State and District EOCs shared with all States/UTs
- States also being assisted under the GOI-UNDP project to set up Control rooms to be completed by March 2006

Emergency Support Function Plans

- The relevant departments/agencies have been asked to draw up ESF Plans and constitute response teams and designate resources in advance so that response is not delayed. ESF Plans have been received from eight Ministries/Departments. States have also been asked to take similar steps.

Pre-Contracts

- In an emergency/crisis, the procurement procedures cause delays. States asked to identify critical requirements and enter into pre-contracts. Response received from six States indicating the action being taken

Disaster Management Programme

- Under the Disaster Risk management Programme, Multi hazard prone
- States being assisted to draw up
- Disaster Management Plans at State,
- District and Block levels.

Disaster Risk Management Programme [UNDP assisted]

- Awareness generation, community preparedness planning and capacity building initiated in **169** districts in 17 multi-hazard-prone States

National Core Group for Earthquake Mitigation constituted

- This Group has eminent national experts and resource institutions as Members.
- Training of Rural Masons includes:
 - Drawing up a strategy and plan of action for mitigating the impact of earthquakes
 - Development of handbook/pamphlets/type designs for earthquake resistant construction
 - Evolve systems for training of Municipal Engineers as also practicing Architects and Engineers in the salient features of the BIS Codes and the amended bye laws

Earthquake Risk Mitigation Project

- To cover **229** districts in **21** States in seismic zones IV and V (project cost Rs 10390 Million)
 - Putting techno-legal regime in place.
 - Capacity building/training of engineers/masons etc.
 - Awareness through technology demonstration.
 - Retrofitting of life line buildings and public utilities.
 - Formulation of preparedness and response plans.
- The modalities for mobilisation of resources are being finalized in consultation with Department of Economic Affairs.

Techno-legal regime and Capacity building for its compliance

Working with States in seismic zones III, IV and V for incorporating the BIS Codes in the Building Byelaws.

- Model Building Bye-laws and Development Control Regulations have been finalized by a Committee of Experts
- In the process of being shared with the State Governments.

Techno-legal regime and Capacity building for compliance [contd.]

- Assistance to States for training of engineers / architects / masons
 - National Programme for Capacity Building in Earthquake Risk Mitigation for training of **10,000** engineers—
 - Approved and under implementation (project cost Rs. 123.60 Million)
 - 11 National Resource Institutions (NRIs) identified
 - State Resource Institutions and Faculty Members being nominated by the State Govts for their training at NRIs

Techno-legal regime and Capacity building for compliance [contd.]

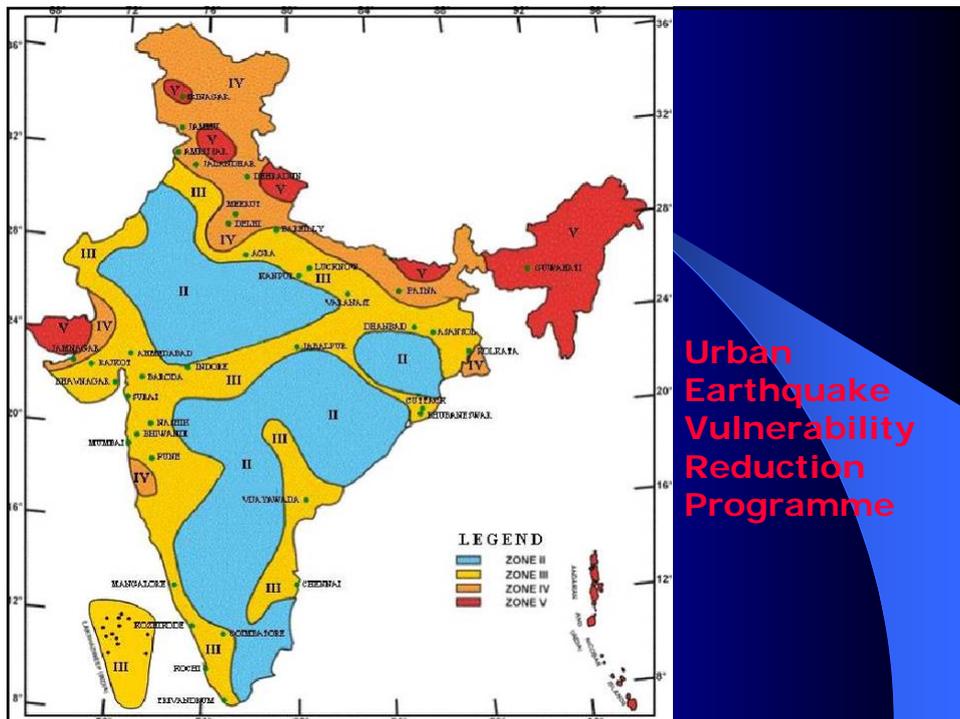
- National Programme for Capacity Building of Architects in earthquake risk management—assistance to States to train **10,000** architects – project has been approved with an outlay of Rs. 45.10 Million
 - Five National Resource Institutes identified
 - States being addressed to identify State Resource Institutes.
 - National Programme for Capacity Building of Masons in Earthquake Risk Mitigation—assistance to States to train **30,000** masons -- project being formulated

Earthquake safety of lifeline buildings and critical infrastructure

- Steps initiated for examination of the **structural safety of life-line buildings** from the seismic point of view. Home Secretary has written to Secretary, Civil Aviation [for airports and control towers] and other Ministry issued instruction to the concerned agencies.
- Air Port Authority of India has confirmed that all Airport control Towers and Terminal buildings are in conformity/compliance with Earthquake resistant designs. Architects of Indian Institute to ensure compliance of Airport Control Towers and Terminal buildings with revised BIS norms and undertake retrofitting measures wherever required.

Accelerated urban earthquake safety

- **38 cities** with a population of over half a million in seismic zones III, IV and V taken up for focussed attention as regards earthquake mitigation.
 - **38** City consultations with all stakeholders organized
 - Awareness generation programme initiated in all cities
 - Information, education and communication materials developed in local languages
 - Review of existing techno-legal regime and its compliance initiated
 - Training of architects and engineers started in association with I.I.Ts
 - **778** Engineers and **220** Architects trained.



Cyclone Monitoring and Mitigation Group

- Training of Rural include:
 - Strengthening mechanisms for tracking and monitoring the cyclonic system
 - Warning protocols for cyclones
 - Suitable mechanism for providing warning in respect of local cyclonic/weather systems
 - Coordination mechanism between different Central and State Ministries/ Departments/ Organisations, regarding Cyclone mitigation measures required for the coastal States.
- The current protocols have been reviewed.

Forecasting

Under GOI-USAID project, sub-project initiated for strengthening of climate forecasting system

- The following five sub-projects approved for study and technology transfer:
 - Tropical cyclone forecasting and warning
 - Severe storms (including flash floods)
 - Extreme temperatures
 - Flood forecasting
 - Forecast Communications
- IMD, CWC and National Centre for Medium Range Weather Forecast & NRSA will be technical agencies to work in cooperation with agencies of US Govt. – USGS, NOAA

Special Focus on NE States

- Resource person for Disaster Management provided to North Eastern Council.
- With MHA assistance, NEC have drawn up Action Plan for discussion in the next governing body meeting.
- Assistance being provided to NE States for development of State Road Maps, DM Plans, DM Codes.
- 210 Master Trainers from the region trained in Disaster Management in NE region.

Human Resource Development

- National Institute of Disaster Management [NIDM] asked to prepare a National HRD Plan for Disaster Management-this will be ready by December 2004
- 29 DM faculties being supported by MHA in 28 State Administrative Training Institutes/State Institute of Rural Developments

Disaster risk mitigation technologies in technical education

- Earthquake engineering currently not a part of UG engineering courses as a result of which ensuring seismically safe construction is difficult. **Curriculum for inclusion of earthquake engineering for UG Engineering course** drawn up in consultation with IIT, Kanpur and All India Council of Technical Education (AICTE)— has been shared with AICTE & State Governments-expected to be introduced by engineering colleges from 2005-2006
- **Model Earthquake engineering curriculum for UG Architecture courses** finalized in consultation with Council of Architect (COA), Indian Institute of Architect (IIA) and experts—has been shared with COA & States-expected to be introduced in the Architecture courses from 2005-2006
- Regional Technical workshops for integration of the modules in curricula being organized by AICTE/COA

Emergency health management in medical education

- Discussion initiated with Ministry of Health & Family Welfare and Medical Council of India
- Two Committees with representation from all resource institutions in the Country constituted for development of:
 - Curriculum for emergency health management in MBBS
 - Training module for in-service Health Managers in Emergency Health Management
- Rajiv Gandhi University of Health Sciences (RGUHS)-Karnataka, identified as lead national resource institution

Disaster Management in Public Education

- **Disaster management introduced in Central Board of Secondary Education (CBSE) school curriculum** for Std VIII[2003] and IX[2004], work in progress for Std X.
- States advised to include DM in school curriculum—many States have initiated the process—Gujarat, Assam, Orissa, Bihar, Tamilnadu, Mizoram.
- Working with Council of Board of School Education (COBSE) to facilitate inclusion of disaster management in public education in all 39 School Boards in India

Working with partner Ministries/Departments (Contd.)

- Working with MoRD for:
 - Amendment of existing guidelines to incorporate essential cyclone/ earthquake resistant features in constructions under the schemes.
 - Publicize disaster resistant design features
 - Organize training programmes for block officers, engineers and VLWs.

Working with partner Ministries/Departments

- Working with Ministry of Environment and Forest to
 - Lay down a time table for review and rehearsals of on-site and off-site response plans of hazardous industries under District Collectors– once in a year
 - Mandate wide awareness generation by industries handling hazardous material regarding possible hazards to the population in the vicinity – and the mitigation measures/antidotes/do's and don'ts
- Ministry of Environment and Forests have issued

UNION OF INDIA RESPONSE TO MAJOR DISASTERS

- Immediate Policy decisions
- Single authority for clearances
- Finances-no constraint
- Bureaucratic procedures simplified
- Red tape given a go away
- Resource pooled and channelised

UNION OF INDIA RESPONSE TO MAJOR DISASTERS

- National resources at the disposal of the State Government
- Necessary exemptions given to accelerate rescue and relief
- International assistance offered was accepted with gratitude
- Well coordinated responses/efforts

ONGOING INITIATES IN DISASTER PREPARED AND MITIGATION

- Setting up of National Committee on Disaster Management under Prime Minister with National and State level political parties as members inter-alia to suggest institutional and legislative measures needed for effective long term strategy to deal with future major disasters
- Setting up of High Powered Committee on Disaster Management Plan
- Ministry of Home Affairs focal point for natural and manmade disasters

ONGOING INITIATES IN DISASTER PREPARED AND MITIGATION

- Creation of Search and Rescue Teams-at National and State Levels
- Setting of National Disaster Management Authority
- Setting up of National Institute for Disaster Management as an autonomous body
- Strengthening Institutional net work
- Four digits common telephone for Disaster Managers

ONGOING INITIATIVES IN DISASTER PREPAREDNESS AND MITIGATION

- Implementation of a new UNDP Project from July, 2002-2007 for sustainable reduction in natural disaster risk by involving community in some of the disaster prone districts
- USAID-Programme for Enhancement of Emergency Response
- Preparation of Vulnerability Atlas of India for Flood, Cyclone and Earthquake

ONGOING INITIATIVES IN DISASTER PREPAREDNESS AND MITIGATION

- Setting up of Orissa State Disaster Mitigation Authority
- Setting up of Gujarat State Management Authority
- Working out legal framework
- Implementation of a Plan Scheme for HRD, institutional strengthening, public awareness and community participation, documentation, research and consultancy

OUR APPROACH/MISSION

- Preparedness rather than crises management
- Coordinated participatory approach rather than only State responsibility
- Technology up-gradation and deployment
- Information – a tool for disaster management

PRIORITY AREAS

- Quick damage assessment Technology
- GIS web enabled networking
- State of art control rooms
- Mobile onsite control rooms
- Human resource development
- Greater attention in North eastern region
- Regular review of Sectoral Emergency Support Functions

EXTERNAL ASSISTANCE - POLICY

- No formal appeal for external assistance made for relief
- External assistance, if offered as solidarity, accepted with gratitude
- Bi-lateral agreements suggested by some countries

INTERNATIONAL DISASTER RESPONSE COOPERATION

- Asian Region-Membership of ADRC and ADPC
- UNDP and USAID projects
- Member of UNDAC Team
- UNOCHA Regional office in Delhi (proposed)
- Organised ADRC/UNISDR/UNOCHA meeting in Delhi

Vision

- Our vision 2020 is to built a safer India through sustained collective efforts, synergy of national capacities and people's participation

Purpose of visit

I am working in Disaster management since 1993. I came in Japan with the intention to study the system of disaster management in Japan and other member countries. To share the experiences of disaster management of my country. This study and experience will be very useful to me for performing my duties in the field of disaster management.

Thank you