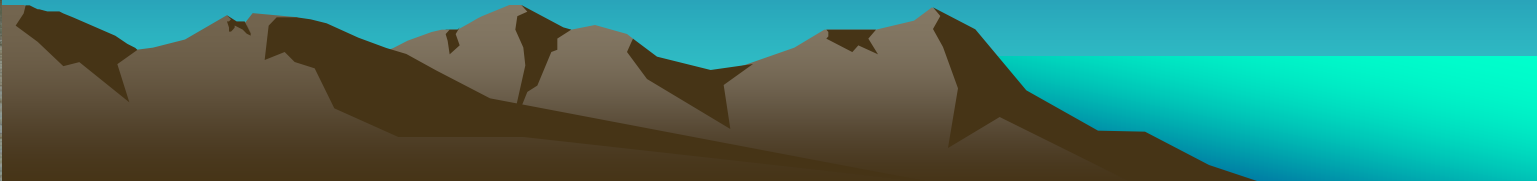




National Disaster Management Authority

Maj Gen V K Datta
AVSM, SM, VSM**, PPMG (retd)**
Senior Specialist (CB&ME)





OBJECTIVES

- To understand the Disaster Management protocol at the National Level.
- To review and draw lessons from Major Disasters in the recent past.
- To understand the Standard Operating Procedure for response in a disaster situation.
- To highlight the Roles and Responsibilities of various stakeholders involved in managing disasters as per IRS.
- To find Gaps, if any in the procedures, protocol, Communications and Systems.

TOPICS

- INTRODUCTION
- CRISIS & DISASTER
- DISASTER SPECTRUM
- MAJOR DISASTERS
- CRISIS & DISASTER MGMT APPARATUS
- INCIDENT RESPONSE SYSTEM (IRS)
- DM ACT
- ROAD MAP





- **INDIA FACES GRAVE CHALLENGES FROM MULTIPLE QUARTERS.**
- **MANAGING SUCH SITUATIONS NEEDS A DYNAMIC APPROACH AND A DEEP UNDERSTANDING BY US.**
- **ONLY THEN WE WILL BE ABLE TO RESPOND IN AN APPROPRIATE MANNER.**

ARE WE READY

- CAN WE PREVENT.
- ARE WE PREPARED.
- CAN WE MITIGATE.
- IS OUR RESPONSE MECHANISM ADEQUATE ?



EMERGENCY

**CRISIS
&
DISASTER**



WHAT IS AN EMERGENCY



EMERGENCY

AN EXTRA ORDINARY SITUATION NEEDING
IMMEDIATE AND APPROPRIATE ACTION
AND RESPONSE.

EMERGENCY BRAKE



WHAT IS A CRISIS?



CRISIS

Crisis is an emerging situation which can be controlled moderated and neutralised before it goes out of control and becomes a serious embarrassment to the Govt or the Nation.



WHAT IS A DISASTER ?



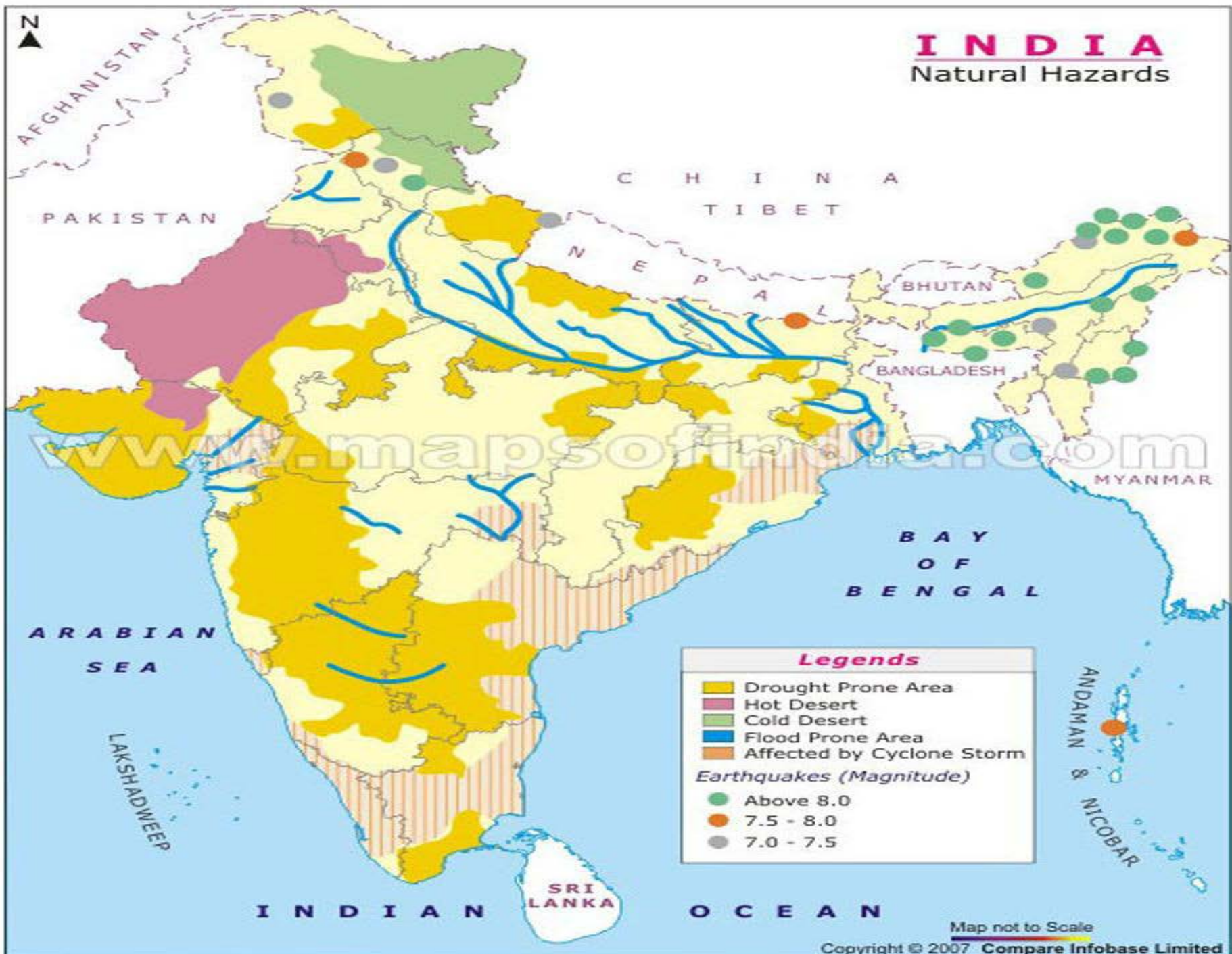
DISASTER

- Disaster, means a catastrophe, mishap, calamity or grave occurrence in any area arising from natural or manmade causes, or **by accident or negligence which results in substantial loss of life or human suffering or damage to, and destruction of property, or damage to, or degradation of, environment** and is of such nature or magnitude as to be beyond the coping capacity of the community of the affected area.



DISASTER RISKS IN INDIA

- 58.6% landmass is prone to Earth quake.
- 12% of land (over 40 million hectare) is prone to floods and river erosion.
- 5700 Km of coastline is prone to cyclones and tsunami.
- 68% of cultivable area is vulnerable to drought, landslide or avalanche.
- High vulnerability to manmade disasters and CBRN emergencies due to unfriendly Neighborhood.





58.6%



68%



12%



15%



8%


5700 KM OF COAST LINE

IMPACT OF DISASTERS

- Disasters disrupt progress and destroy years of painstaking development efforts, thereby pushing nations back by several decades. The impacts of disasters are particularly strong in case of developing nations in terms of recovery.
- Therefore, both pre-disaster efforts in terms of preparedness, capacity building, awareness along with an efficient response mechanism, recovery and reconstruction would lessen the loss of lives and property.



GOVT INITIATIVE

- Keeping the Challenges posed by the Natural and Manmade disasters , the Govt of India had enacted the DM Act of 2005.
 - A paradigm shift from response and relief centric approach to a proactive:-
 - Prevention, Mitigation and Preparedness-driven approach.
 - For preserving development gains and for minimizing loss to life, livelihood and property.
- 

DM ACT 2005

The Act provides for effective management of disasters and for matters connected therewith or incidental thereto.



NATIONAL VISION

To build a safer and disaster resilient India by developing a holistic, proactive, multi-disaster oriented and technology driven strategy through a culture of prevention, mitigation, preparedness and response.



Disasters both manmade and natural



WATER & CLIMATE RELATED DISASTERS

1. Hail Storm.
2. Cloud Burst.
3. Snow Avalanches.
4. Major Floods.
5. Dam Burst.
6. Dam Failure.
7. Cold Wave.
8. Heat Wave.
9. Unprecedented Drought.



ACCIDENT RELATED DISASTERS

1. Air Accidents.
2. Rail Accidents.
3. Major Road Accidents.
5. Major Building Collapse.
6. Oil tanker Accidents
7. Nuclear Accidents



MEDICAL & BIOLOGICAL DISASTERS

1. Biological Disasters.
2. Epidemic (Post Disaster Outbreak).
3. Epidemic & Bird Flu.



FIRE RELATED DISASTERS

1. Oil Field Fires.
2. Forest Fires.
3. Industrial disasters.
4. Village Fires.



TERRORIST RELATED DISASTERS

1. Biological Agents.
2. Chemical Agents.
3. Radiological Agents
4. Serial Bomb Attacks.



MAJOR DISASTERS

- ORRISA SUPER CYCLONE 1999
- BHUJ EARTHQUAKE 2001
- TSUNAMI 2004
- J& K EARTHQUAKE 2005
- FIRE IN IOC DEPOT 2009



ORRISA SUPER Explosion & Fire



Satellite picture (20 Dec., 00:40 IST)
of ORRISA (Orissa Super) Explosion

THE CARNAGE



THE 1999 ORISSA CYCLONE

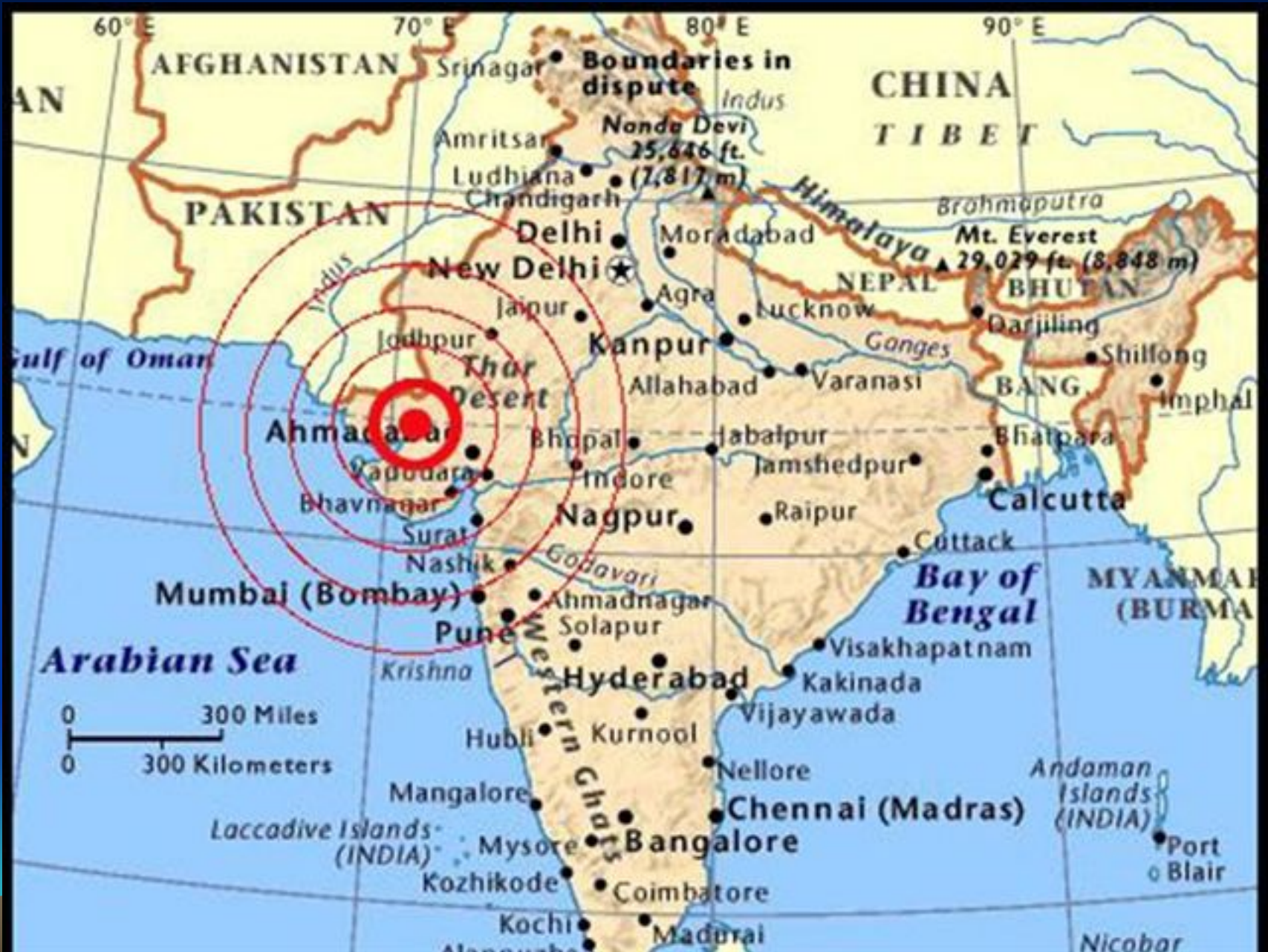
- A total of 9,803 people officially died from the storm, though it is believed that over 10,000 people really died.
- Approximately 275,000 homes were destroyed, leaving 1.67 million people homeless. Another 19.5 million people were affected by the super Explosion & Fire to some degree.



BHUJ EARTHQUAKE

26 January 2001







BHUJ

- More than 20,000 people died and over 167,000 injuries were reported.
- Both rail and highway traffic into and out of the entire Kachh region was completely cut off for two days.
- Numerous bridges, dams, and ports were destroyed or severely damaged.
- Approximately 1,000,000 homes were destroyed or seriously damaged, as were many commercial, industrial, and public utility facilities.
- Communications in Bhuj were disrupted for two days due to damaged fiber optic cables.
- Water supplies were affected as liquifaction caused some wells to become turbid.

J&K EARTHQUAKE 2005







2005 KASHMIR EARTHQUAKE

CASUALTIES

o Location	Dead	Injured
o <u>POK</u>	73,338	<u>100,000</u>
o J&K	1,360	6,266
o <u>Afghanistan</u>	4	14
Total	74,702	106,280



IOC FIRE Deoghar





- 
- A large-scale oil spill in the ocean, with a massive fire plume rising from the center. The image is heavily pixelated and blurry, showing a dark, turbulent sea under a hazy sky. A large, bright, white plume of smoke or steam rises from the center of the spill, partially obscuring the sky. The foreground shows dark, choppy water with some lighter patches of oil. The overall scene is one of a major industrial disaster.
- Petroleum products worth approximately Rs 300 crore were lost.
 - 12 persons died more than 100 injured

Major Disasters in India : 1990 - 2015				
Year	Places	& Disaster	Loss of Lives (Approx)	Loss of Property (Rs Crore) (Approx)
1991	Uttarkashi	Earthquake	2000	2000
1993	Latur	Earthquake	9500	6000
1997	Jabalpur	Earthquake	200	5000
1999	Chamoli	Earthquake	2000	2000
1999	Orissa	Cyclone	9887	10000
2001	BHUJ	Earthquake	14000	24400
2004	SE India	Tsunami	15000	10000
2004	Assam & Bihar	Floods	700	5000
2005	J & K	Avalanche	350	100
2005	Mah, Guj, HP, Karnataka, T'Nadu	Floods	1569	10300
2005	J & K	Earthquakes	2460	1000
2013	Uttarkhand	Cloud Burst	5670	1200
2014	J & K	Flood	270	
2015 Total Losses of Major Disasters only			62482	64800

DISASTER MANAGEMENT

- Disaster Management . Means a continuous and integrated process of:-
- Planning
- Organizing.
- Coordinating
- Implementing Measures for expedient:-
Preventing, mitigating, capacity building
Preparedness Response, Evacuation,
Rescue, Relief and Rehabilitation

Weaknesses in incident management

- **Lack of accountability, including unclear chains of command and supervision.**
- **Lack of an orderly, systematic planning process.**
- **Poor communication due to both inefficient uses of available communications systems, conflicting codes and terminology.**
- **Lack of knowledge with common terminology during an incident**
- **No predefined methods to integrate inter-agency requirements into the management structure and planning process effectively.**



APEX CRISIS & DISASTER MGMT APPARATUS

- CRISIS MGMT DISASTER MGMT
- NCMC Cabinet Sect NCMC
- CMG MHA NEC & NODAL MIN / NDMA
- SCMC State SDMA
- DCMC District DDMA



EXTANT MECHANISM

CRISIS MANAGEMENT



TASKS TO BE DEALT WITH BY EXTANT MECHANISM

1. Terrorism (Counter-Insurgency);
2. Law and Order Situation;
3. Serial Bomb Blasts;
4. Hijacking;
5. Air accidents;
6. Chemical, Biological, Radiological and Nuclear (CBRN) Weapon Systems;
7. Mine Disasters;
8. Ports and Harbour Emergencies;
9. Forest Fires;
10. Oil Field Fires; and
11. Oil Spills.

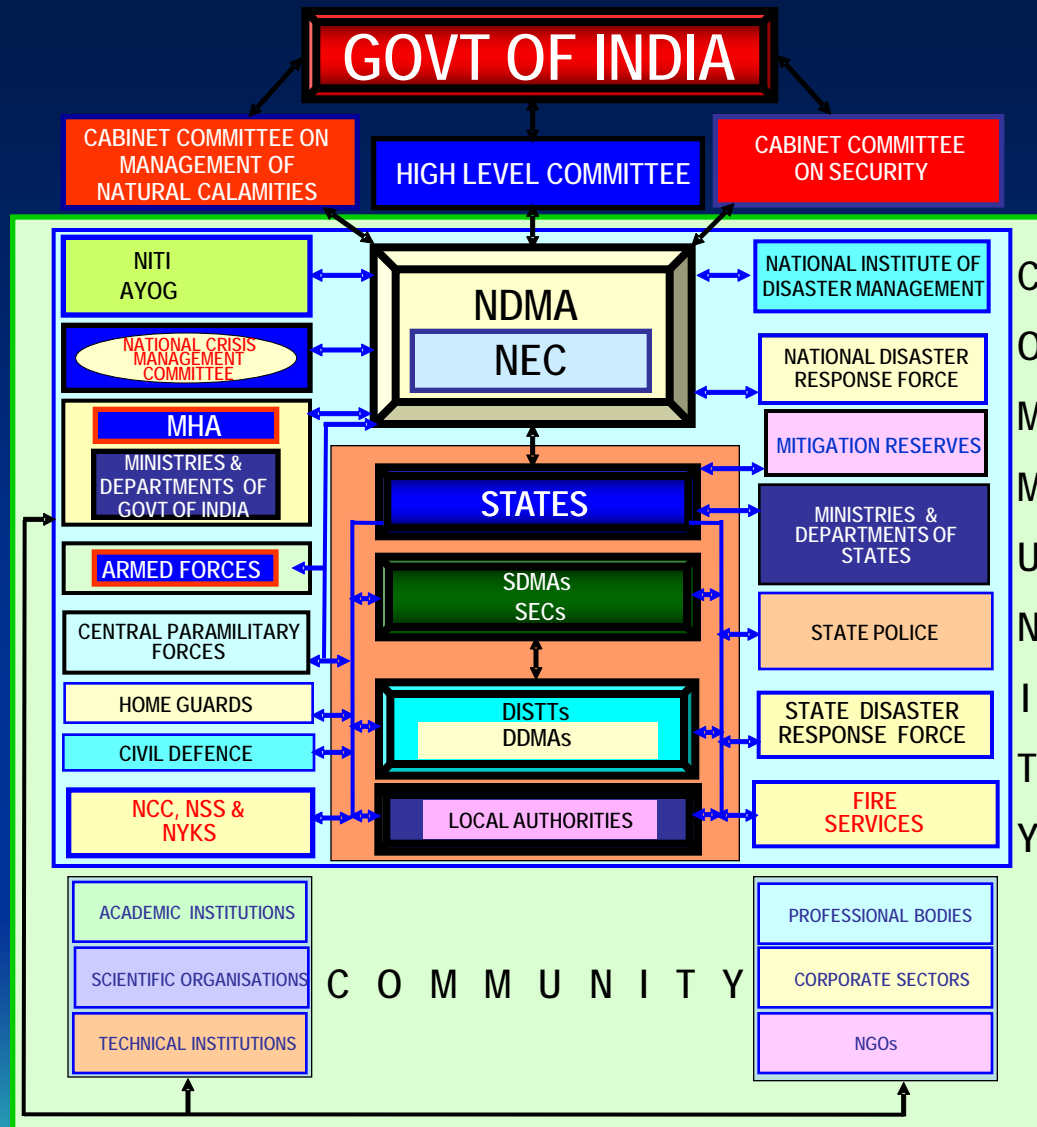
All Cross Cutting Themes will be handled by the NDMA.

CROSS CUTTING THEMES

1. Formulation of **Guidelines**, **training** and **preparedness** activities will be carried out by the **NDMA** in respect of Chemical, Biological, Radiological and Nuclear (CBRN) emergencies.
2. The Cross Cutting Themes like **Medical Preparedness**, **Psycho-Social Care** and **Trauma Management**, **Community Based Disaster Preparedness**, **Information & Communication Technology**, **Training**, **Preparedness**, **Awareness Generation**, etc. for natural and manmade disasters will be attended to by the **NDMA in partnership** with the stakeholders concerned.
3. Resources available with Authorities at all levels, which are capable of discharging emergency support functions, will be made available to the nodal ministries/ agencies dealing with the emergencies.



NATIONAL DISASTER MANAGEMENT STRUCTURE

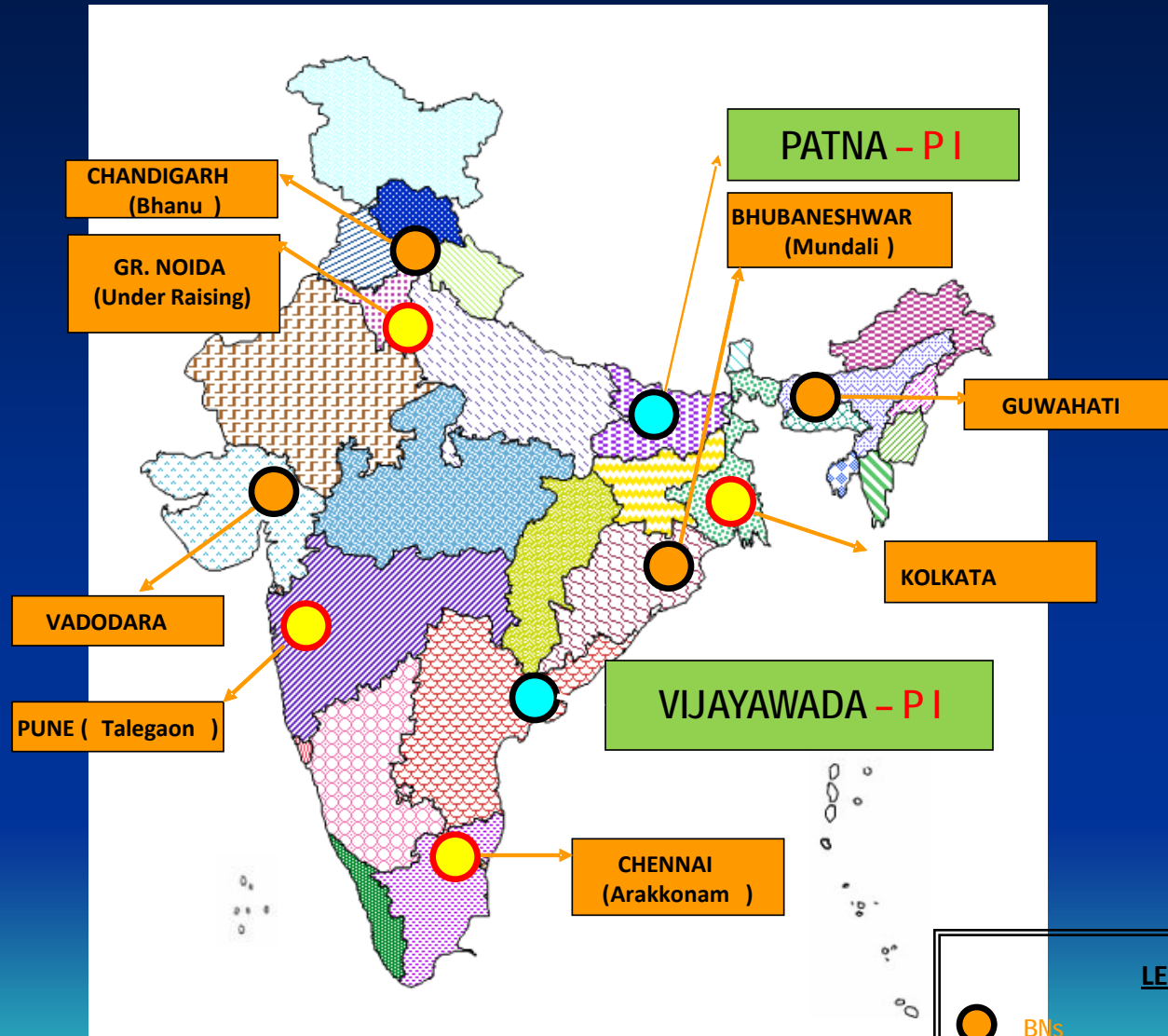


Notes: 1. This diagram reflects interactive linkages for synergised management of disasters and not a hierarchical structure.

2. Backward and forward linkages, especially at the functional level, are with a view to optimise efficiency.

3. Participation of the Community is a crucial factor.

NDRF BNS – LOCATIONS



•TEN OPERATIONAL TWO UNDER RAISING

SHORTCOMINGS
AND
LESSONS LEARNT



SHORTCOMINGS IN INDIAN DISASTER RESPONSE

- 1. Delay in Assessment of situation and Information Dissemination.**
- 2. Breakdown of communications both electronic and surface.**
- 3. Delay in mobilization of men, material, relief stores and machines to provide and restore basic life line services.**
- 4. Need is for enhancement of awareness and capacity building of first responders.**



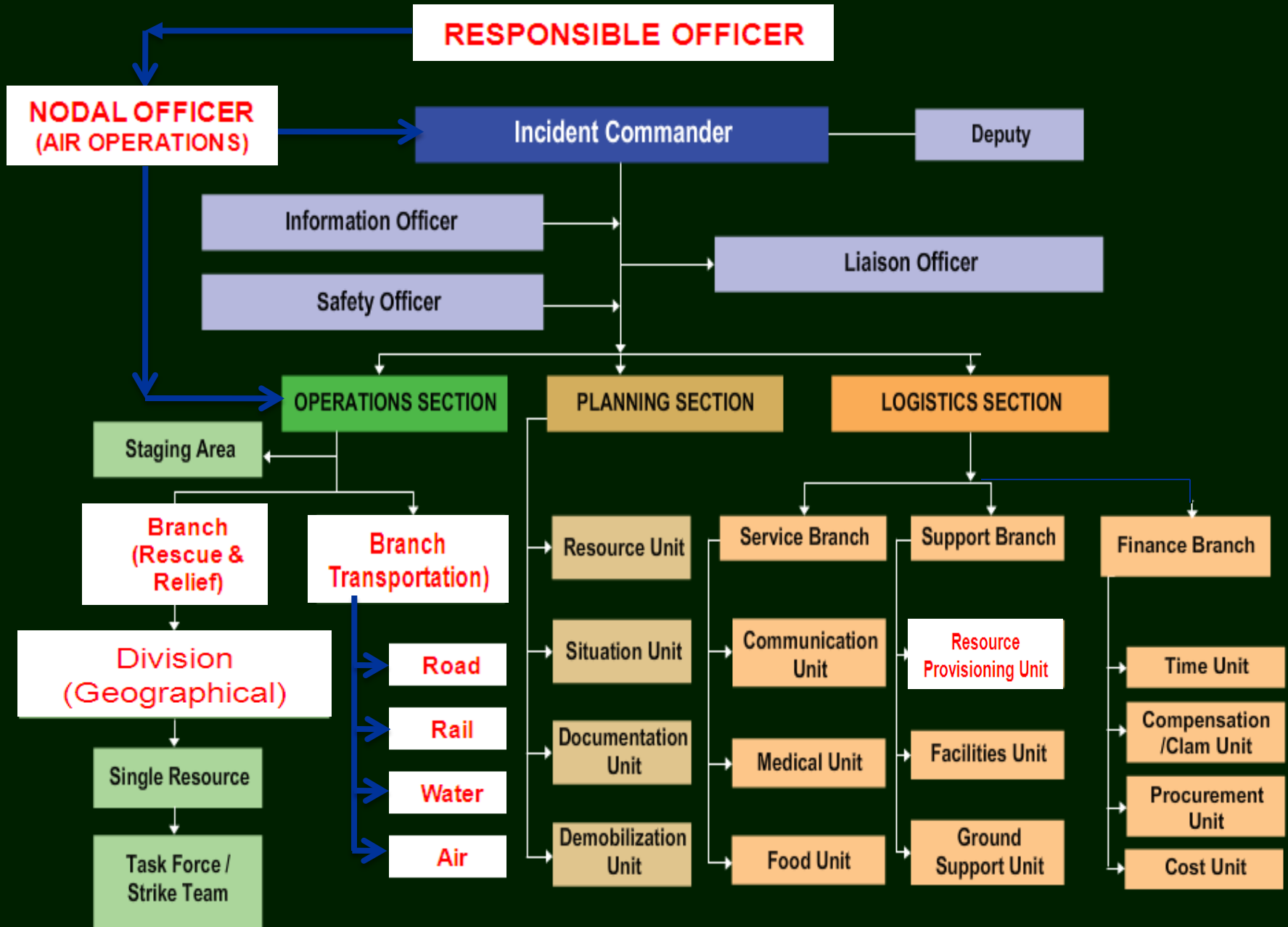
WHAT IS IRS ?



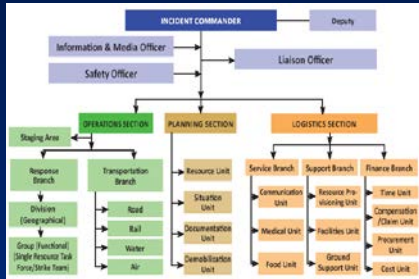
WHAT IS IRS

- IRS is a mechanism which reduces adhocism in response through a well conceived team.
- It incorporates all the tasks that may need to be performed during the response.
- It identifies and pre-designates officers to perform various duties and get them trained in their roles.
- It is a flexible system and only those Sections / Branches may be activated in the team which is required to meet the disaster situation.

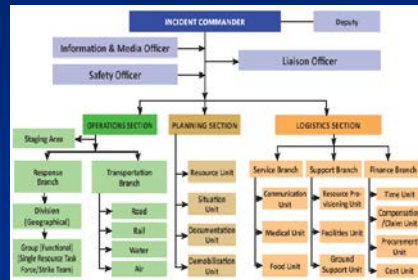
INCIDENT RESPONSE SYSTEM



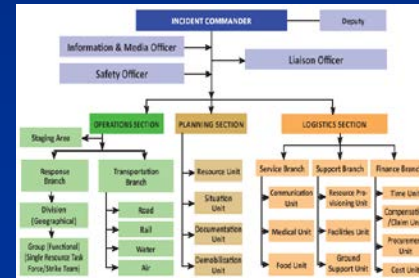
LEVELS OF INCIDENT RESPONSE TEAMS



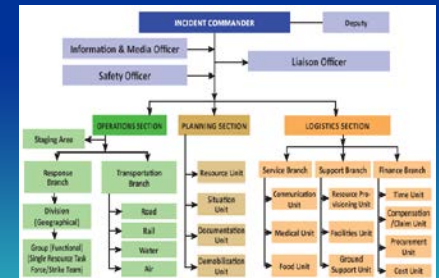
State level



District level

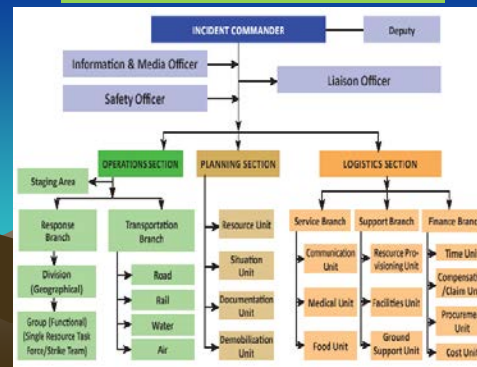
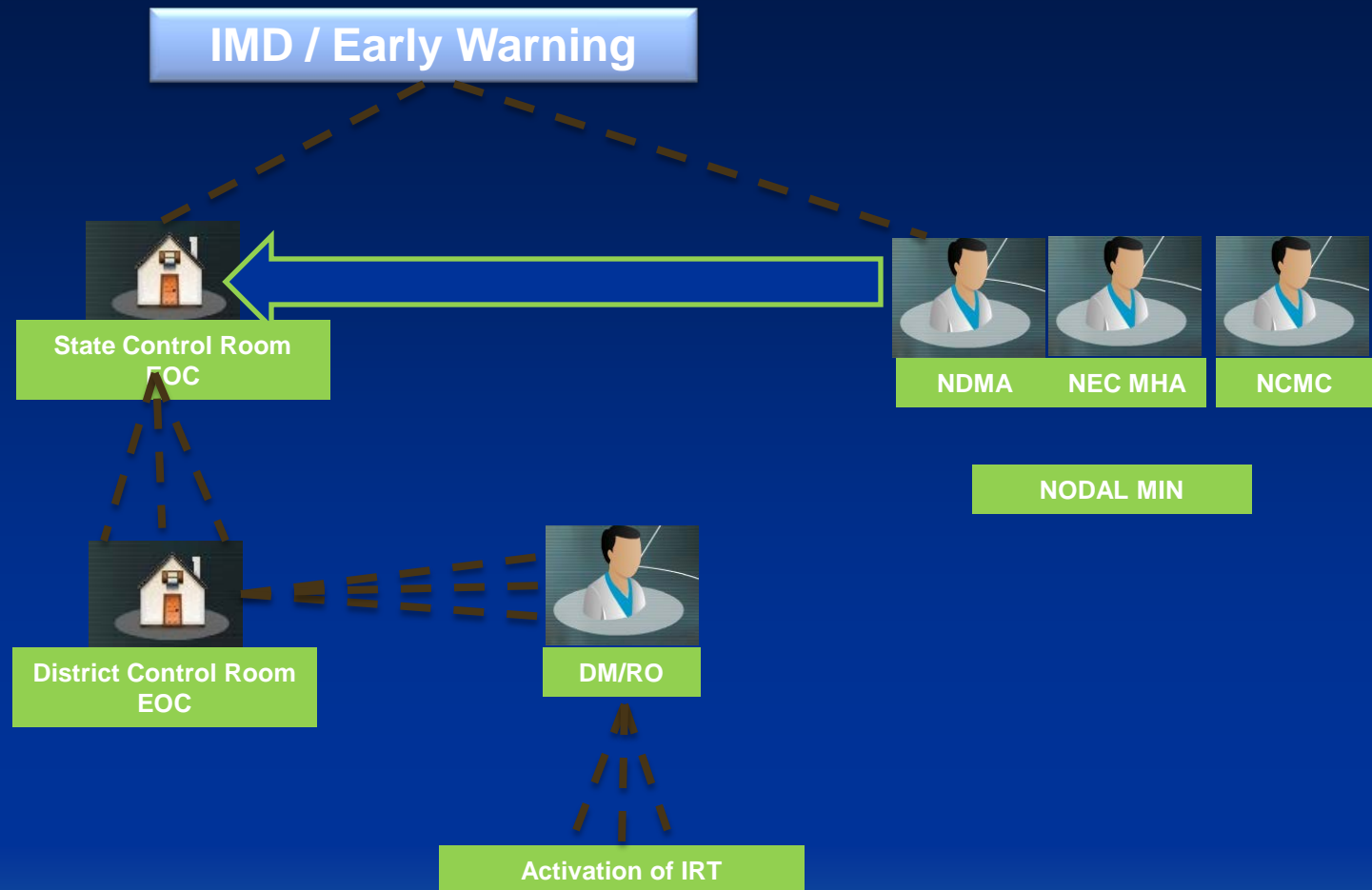


Sub-Division level

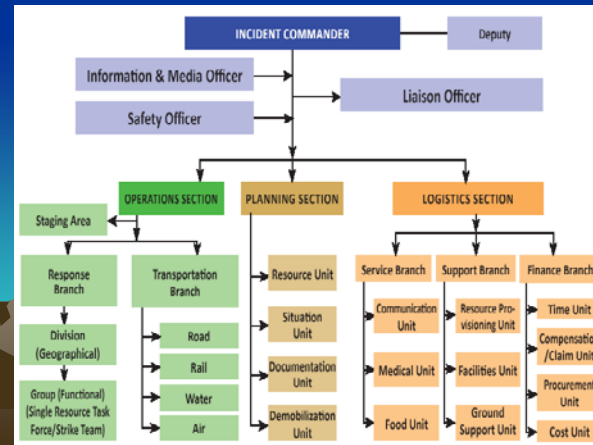
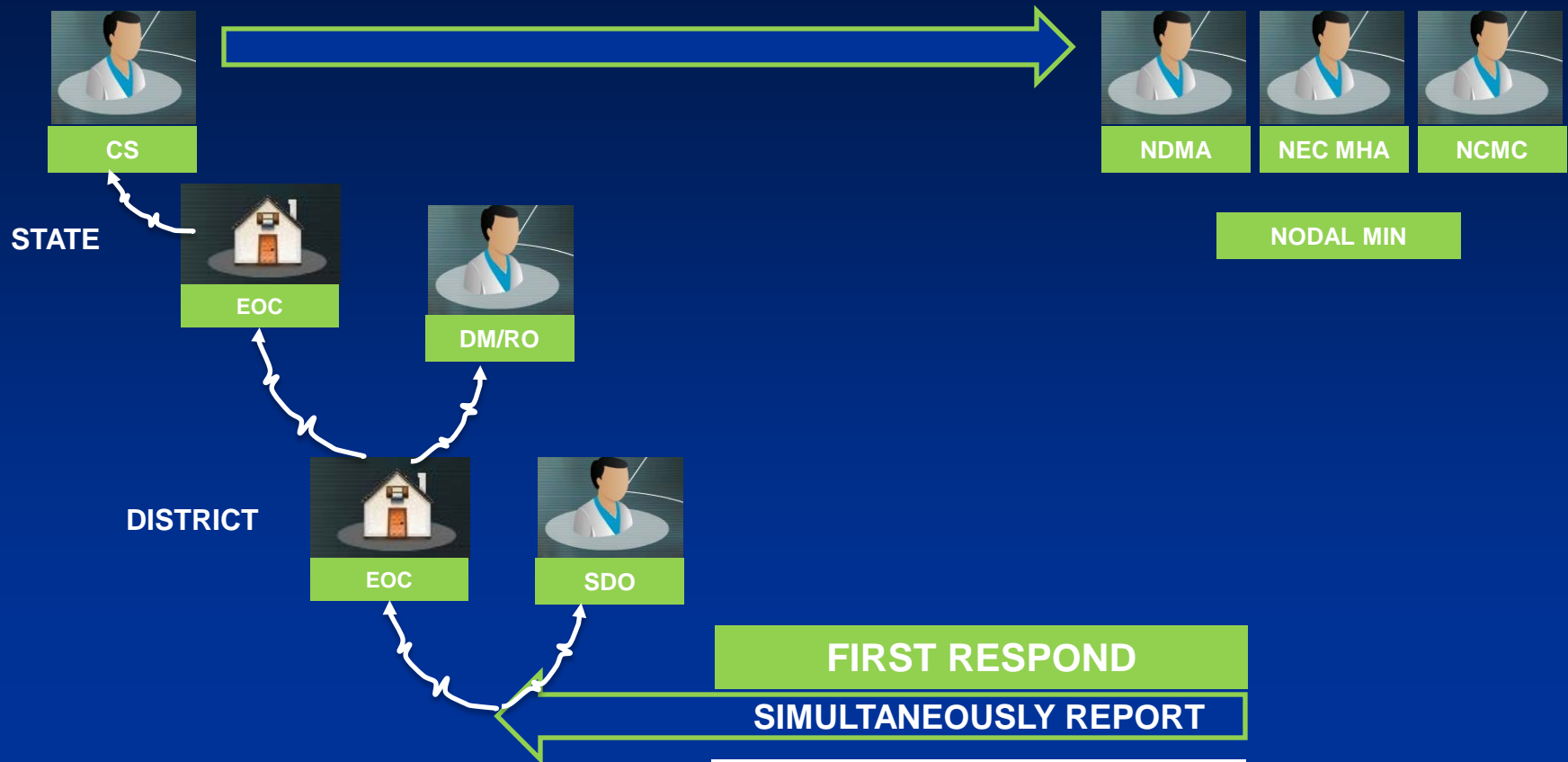


Block level

TRIGGERING MECHANISM WITH EARLY WARNING



TRIGGERING MECHANISM WITHOUT EARLY WARNING



IRS ENTITIES

- EOC
- STAGING AREA
- HELIBASE/HELIPADS
- INCIDENT COMMAND POST
- RALLAYING POINTS
- MEDICAL AID POSTS
- DECONTAMINATION POINTS
- RELIEF CAMPS/SHELTERS



Planning and Preparedness

is bound to yield

more effective returns

than distributing relief after a disaster.



DISASTER & CRISIS PREPAREDNESS

- Disaster/Crisis preparedness/Emergency Response Plans, are written policies and procedures that prevent or minimize damage /loss from disasters/Crisis (either manmade or natural).
- These should be tailored to cover all relevant threats or risks to an area at the National, State, District & Industry.
- The plan should also outline the responsibilities of various stake holders, organisations and resources .



ON OCCOURANCE OF AN
INCIDENT
ISSUE OF CODE WORD
FOR
EOC MEETING





ALL ASSETS AND PERSONNEL REPORT TO NOMINATED STAGING AREA









DAMAGE ASSESSMENT CARRIED OUT









TASKS ASSIGNED

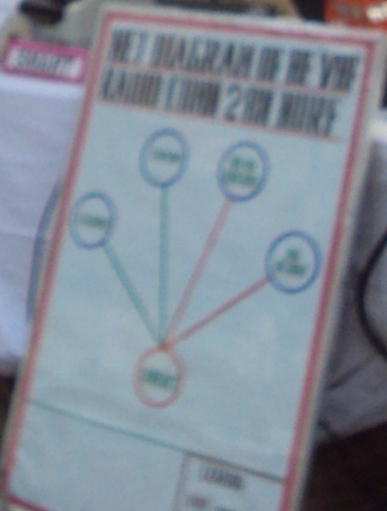
- OP CDRS BRIEFED
- RESOURCES ALLOCATED
- IAP MADE
- IRTS NOMINATED AREA WISE
- TRANSPORTED TO THE SITE OF OPERATIONS BY AIR /RAIL/ROAD
- OPERATIONS COMMENCE AT THE FECTED SITES



INCIDENT COMMAND POST EST



COMMAND POST



NATIONAL DISASTER RESPONSE FORCE
2ND BN KOLKATA

HF COMM

VHF COMM

**INCIDENT
COMMAND**



**Planning
Section**



IRTS LAUNCHED SEARCH AND RESCUE OPS COMMENCE





MED AID POST

- **CASUALTIES MOVED TO MEDICAL AID POST**
- **TRIAGE CARRIED OUT**
- **CASUALTIES EVACUATED TO HOSPITALS**













EVACUATION PLANNED
IF NEEDED





DECONTAMINATION POINTS ESTABLISHED





RELIEF CAMPS /SHELTERS OPENED








Stake holders in a District

1. DC/ District Magistrate.
2. SP /Commissioner Police .
3. District Medical Officer/Civil Surgeon.
4. District Fire Officer.
5. State Electricity Board.
6. Water Supply Department.
7. District Supply Officer.



Stake Holders – Cont

8. CEO/Operational Head of Identified Industrial Units.
 9. Public Works Department.
 10. Local NGOs
 11. Civil Defence
 12. Home Guards
 13. National Disaster Response Force
 14. District Public Relations Officer.
 15. Army/PMF unit located in the District if required.
 16. Any Other identified stakeholder.
- 

EMERGENCY SUPPORT FUNCTIONS

No	Emergency Support Function	Nodal Officer	Support Agencies
1.	Search & Rescue, Fire Fighting	District Fire Services	Police Deptt, CD & HG Teams & teams ex Identified Units.
2.	Evacuation	DC /Industrial unit/s	Police Deptt, Fire Deptt, CD & HG
3.	Law & Order	CP	CD & HQ
4.	Medical Response & Trauma Counseling.	CMO/Civil Surgeon	Hospitals in District, Red Cross, NGOS'
5.	Communication	Distt Telecom Officer	BSNL, Private Telecom Service Providers, Mobile Phone Operators.

6.	Relief. A. Food B. Shelter	Revenue Deptt.	NGOs, Corporate Sector, Community
7.	Equipment Support, Debris and Road Clearance & Sanitation.	PWD/Army/ BRO	-
8.	Water supply	Water Works Deptt	NGOs.
9.	Electricity	State Electricity Board	Service Providers.
10.	Transport.	RTO	Municipal Corporation
11.	Help Lines.	Revenue Deptt/ Public Relation Offr/industrial units	Deptt. of Information & Publicity, AIR, Doordarshan, Private TV Channels, UNI, Press, PTI, PIB.



No leader can handle any situation without a dedicated, well trained and a motivated team.

WAY AHEAD

- Promoting a culture of prevention and preparedness, so that DM receives the highest priority at all levels.
- Ensuring that community is the most important stakeholder in the DM process.
- Encouraging mitigation measures based on state-of-the-art technology and environmental sustainability.
- Mainstreaming DM concerns into the developmental planning process.
- Putting in place a streamlined and institutional techno-legal framework for the creation of an enabling regulatory environment and a compliance regime.
- Developing contemporary forecasting and early warning systems backed by responsive and fail-safe communications and Information Technology (IT) support.

MOCK EXERCISE DETAILS FORM 06 OCT,2006 TILL DATE

S.NO.	Type of Disasters	Nos
1.	Chemical (Industrial)	72
2.	Earthquake	165
3.	Cyclone	18
4.	Flood	23
5.	Urban Fire	22
6.	Nuclear Emergency	06
7.	Tsunami	02
8.	Terrorist Related, bomb blast, dirty bomb	47
9.	Mass Casualty Management.	08
10.	Manmade, Dam failure, fire in oil depot, Chemical leak.	12
11.	CBRN	1
12.	Snow Avalanche	1
13.	Disaster during Public gathering Kumb mela,Rath yatra, Amarnath Yatra, stampede	7
14.	Landslide	1
15.	School Safety	98
	TOTAL	494

OBERVATIONS DURING MOCK EXERCISES & CDP,S

- **Most of the DM Plans at State/Districts in Draft form.**
- **Resource inventories incomplete.**
- **IRS Guidelines not incorporated, IRT,S not formed.**
- **EOC Non Functional or not established.**
- **No stand alone communication/ redundancy for Disaster Management.**
- **SDRF not operational/not raised.**
- **Police personnel not trained in DM nor equipped.**
- **Civil Defense/Home guards not fully trained/equipped.**
- **Fire and emergency services inadequate.**
- **Medical resources and medical teams and plans inadequate.**
- **Community Participation poor .Gen awareness lacking.**



ROAD MAP

- **Prevention.**
- **Preparedness.**
- **Capacity Development.**
- **Mitigation.**
- **Response**
- **Awareness Generation.**
- **Relief & Rehabilitation**



?



THANK YOU

MAJOR DISASTER IN INDIA AND NEPAL HIGHLIGHTS



FLOODS IN J&K

September , 2014

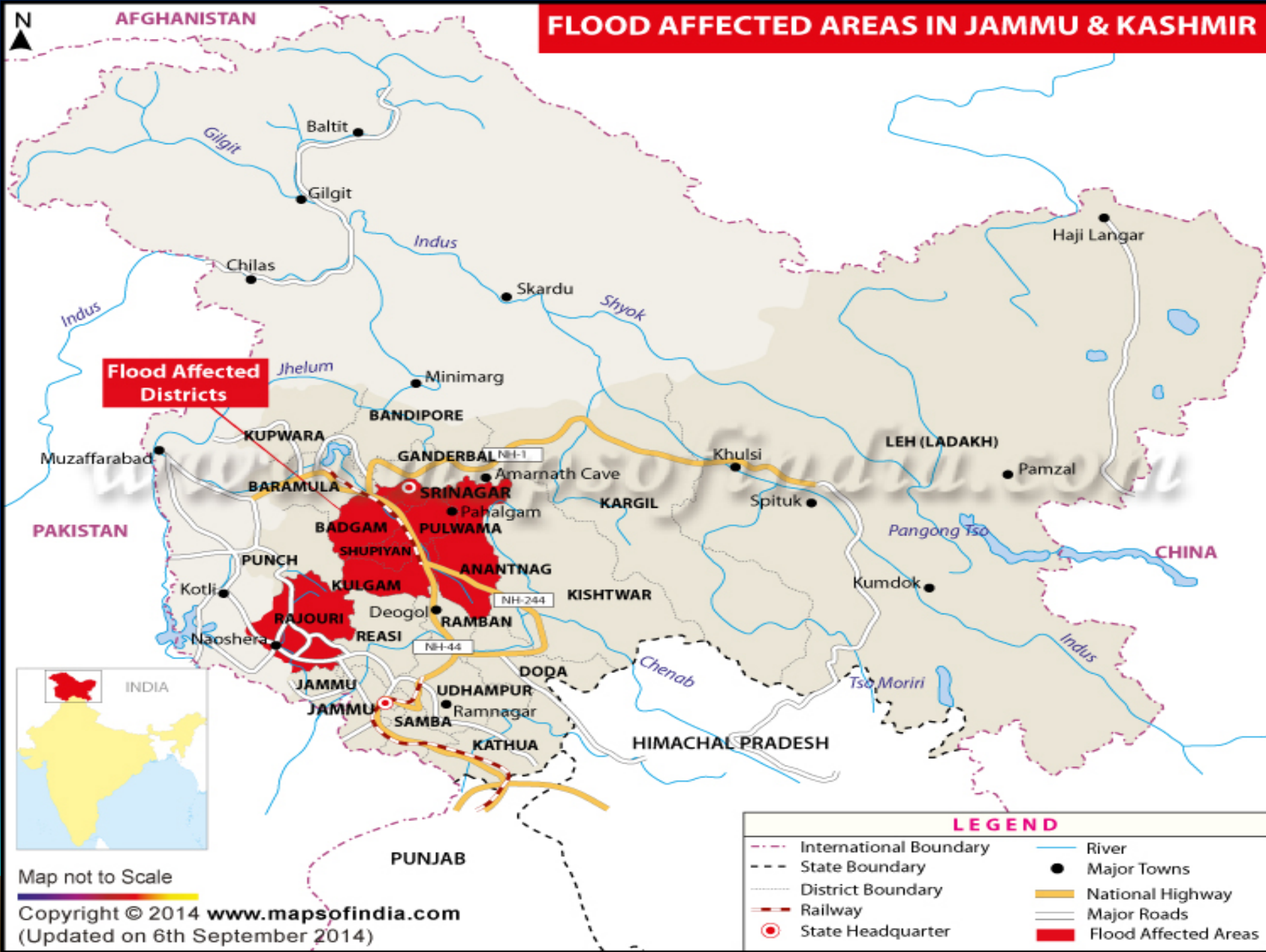


FLOODS IN J&K

**Jammu
and
Kashmir**



FLOOD AFFECTED AREAS IN JAMMU & KASHMIR













ASSISTANCE BY ARMEDE FORCES

- The Indian Army, Air Force, and the Navy, committed large resources to the assistance mission including over 30,000 troops (21,000 in Srinagar, and 9000 in Jammu), 15 engineer task forces, 84 Indian Air Force and Army Aviation Corps assets fixed wing transport aircraft and helicopters, naval commandos and rescue specialists, one Base Hospital, four field hospitals, and over 106 medical detachments.

STATEMENT BY THE CM

- “I had no government” in the first few days following the floods, as “My secretariat, the police headquarters, the control room, fire services, hospitals, all the infrastructure was underwater.” Adding “I had no cell phone and no connectivity.




J & K Flood Response by NDMA

- Mobilized resources including equipment for de-watering, relief materials, Medical First Response (MFR), etc.
- Post Disaster - DBT Rs. 140 Cr to 20,016 beneficiaries for fully damaged houses, Rs. 85.24 Cr. to 38,305 beneficiaries for partially and severely damaged houses.
- Hospital Equipment (Rs. 137.97 Cr.): Order placed for 222 items by HLL (Rs. 116.64 Cr); 141 items delivered, 56 installed and 41 commissioned. Another 238 items to be procured by J& K at a cost of Rs. 20.14 cr. 56 items already procured.
- 7.05 lakh textbooks to 77,244 Govt. Schools and 41,256 Private Schools; 7,200 NCERT textbooks to 5 Kendriya Vidyalayas and 3 Jawahar Navodaya Vidyalayas (Rs. 4.08 Cr).



NDRF DEPLOYMENT

- 22 Rescue teams were deployed at various places of Distt- Pulwama
 - (viz. Kulgam, Kakapura, Pullu, Lallar, Rishipura, Begambag),
 - Awantipur and Srinagar in Kashmir.
 - Satwari and Sandwa in Jammu.
-
- NDRF teams engaged in rescue and relief work have thousands of stranded persons.
- 

GREY AREAS

- The people, the state and the armed forces in the area, were caught unaware by the 2014 [floods](#). None of the Federal or the State Government agencies responsible for monitoring natural disasters and providing early warning, such as [a] [Floods -Central Water Commission](#) [b] Landslide hazard – [Geological Survey of India \(GSI\)](#) [c] [Avalanche](#) – [Defence Research & Development Organization](#) (DRDO) [d] Disaster Management Support (DMS) – [Indian Space Research Organization](#) (ISRO), and [e] [Weather-Indian Meteorological Department](#) (IMD), forecast the floods. Knowledgeable observers have singled out the Central Water Commission, which was tardy even during the [Uttarkund floods](#)



RESCUE OPS

- By the 11 September, there were 224 army boats and 148 NDRF's inflatable boats in the affected area conducting rescue and search operations.
- For those who were stranded on roof tops as flood water menacingly swirled around them, Air Force helicopters with IAF Garud Commandos helped winch the stranded people to safety



LESSONS LEARNT

- state and district authorities overwhelmed.
- Most govt offices inundated.
- No EOC were functional or made for multi hazard survival.
- Break down of communication.
- Delay in mobilisation of men material and resources by J&K Govt.
- Prompt response by Army, Airforce, and central Govt and deployment of NDRF.

CYCLONE HUDHUD

12 OCT 2014



CYCLONE HUDHUD

- **Very Severe Cyclonic Storm Hudhud**
- landfall near [Visakhapatnam](#), [Andhra Pradesh](#), on October 12, [17.7°N 83.3°E](#). The maximum wind gust recorded by the High Wind Speed Recorder (HWSR) instrument of the Cyclone Warning Center in Visakhapatnam was 260 km/h (160 mph). Measured by the [Doppler weather radar](#) the storm's eye was 66 km (41 mi) in diameter.
- The strength of the winds disrupted telecommunication lines and damaged the Doppler radar, inhibiting further observations.
- Hudhud caused extensive damage to the city of Visakhapatnam and the neighbouring districts of [Vizianagaram](#) and [Srikakulam](#)
- Damages were estimated to be 21908 [crore](#)



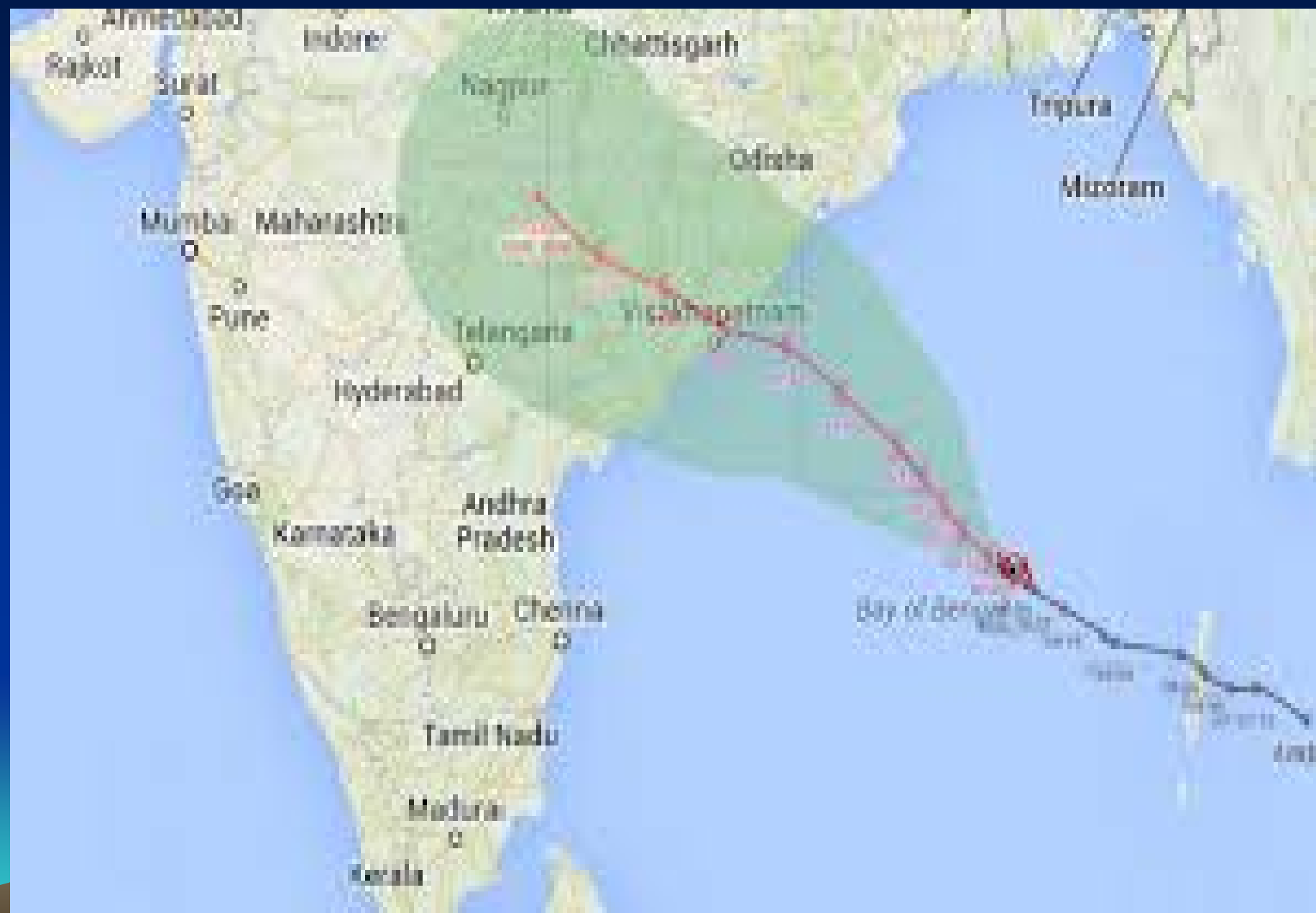
NATIONAL CYCLONE RISK MITIGATION PROJECT (NCRMP)

The key objectives to be achieved under this NCRMP Project are as follows:

- Reduction in cyclone vulnerability of coastal districts through creation of appropriate infrastructure which can help mitigate the adverse impacts of cyclones
- Strengthening of cyclone-warning systems, enabling quick dissemination of warnings and advisories from source/ district/ sub-district level to the community and vice versa for their timely reception and adequate response









TROPICAL CYCLONE HUDHUD

ALL TIMES LOCAL

India

TUE

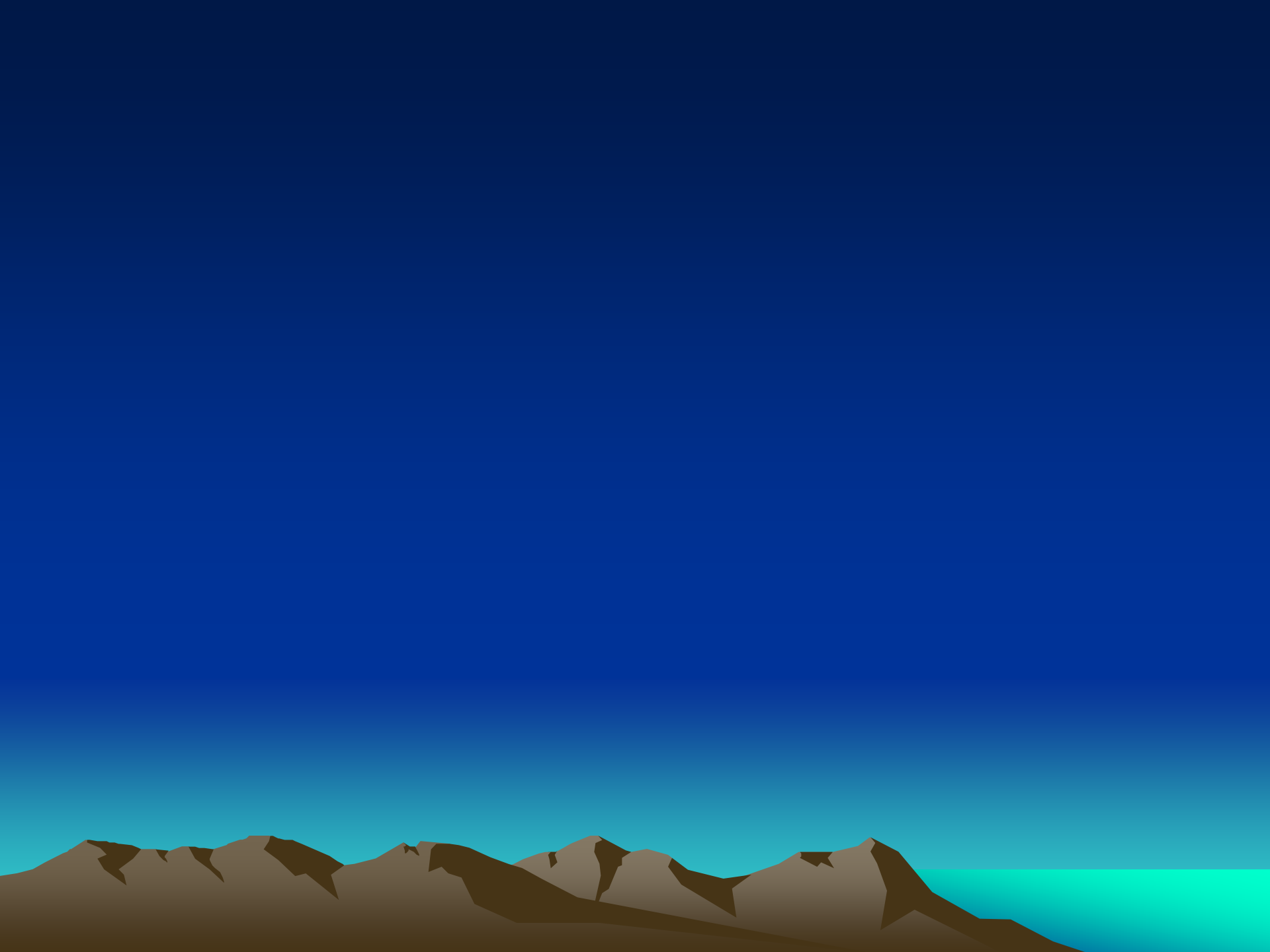
MON

SUN

SAT PM

Bay of Bengal





EW - ACTION

- An alert was sounded in nine out of thirteen districts of Andhra Pradesh where standing crops including paddy, groundnut, sugarcane, and pulses were yet to be harvested.
- 500,000 people in Andhra Pradesh, were evacuated and put up in relief camps. The local government made arrangements to shift half a million people in all.
- Hudhud caused 61 deaths within Andhra Pradesh and an estimated damage of 21908 crore .
- Visakhapatnam, bore the brunt of Hudhud, which hit the coast with a speed of 185 km/h (115 mph). Hundreds of vehicles parked on roads were damaged while heavy rains inundated a few colonies. The runway at Visakapatnam Airport was flooded and the radar and navigational aids were destroyed. The roof of the terminal was torn apart due to the speed of the cyclone.

EARTHQUAKE IN NEPAL



Earthquake in Nepal

killed more than 8,786 people.

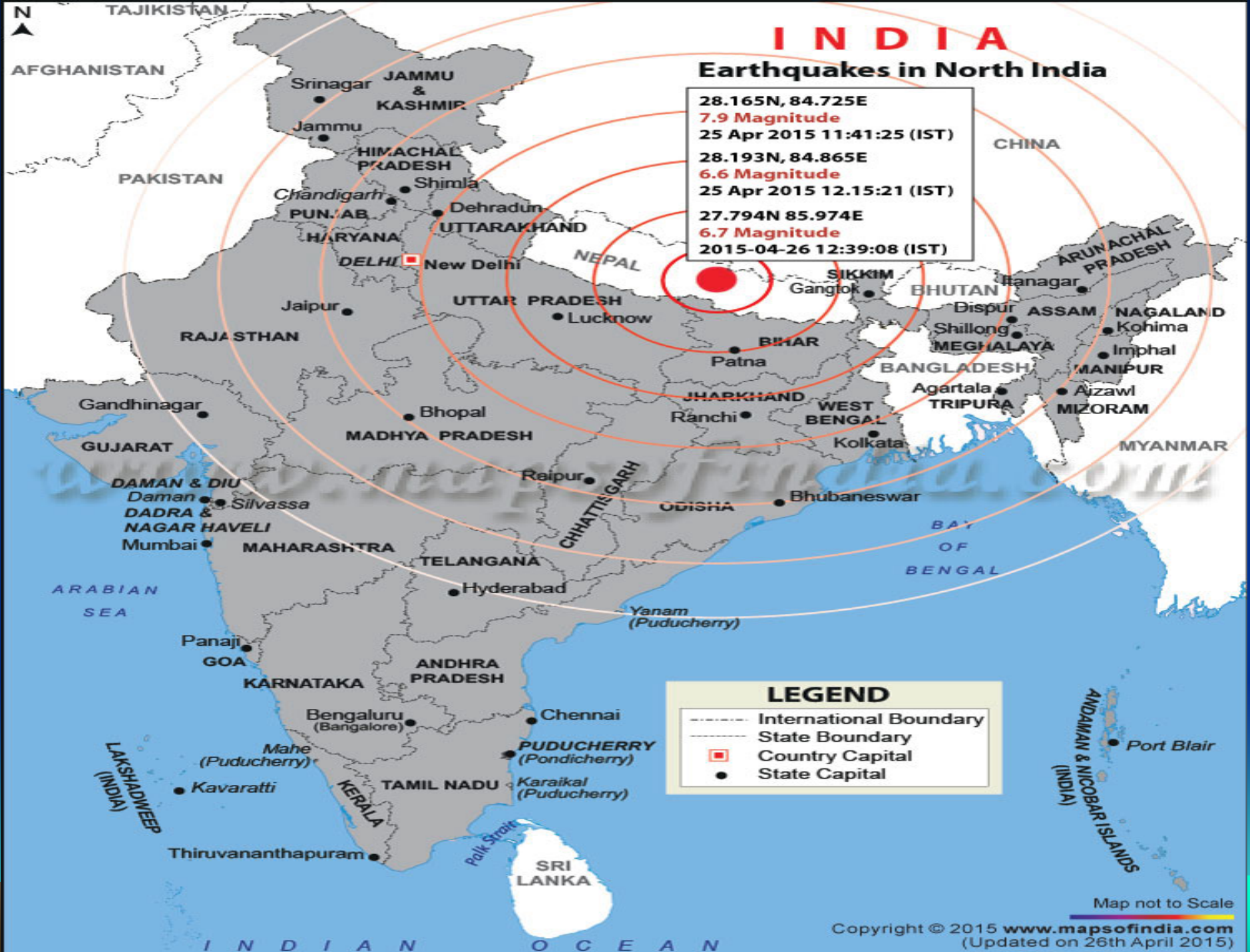
Injured more than 22,303.

It occurred at 11:56 NST on 25 April.

Magnitude of 7.8 MW

WHAT IF IT HAD AT MIDNIGHT





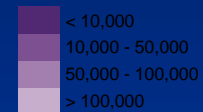
A Snapshot

NEPAL: Earthquake Humanitarian Snapshot

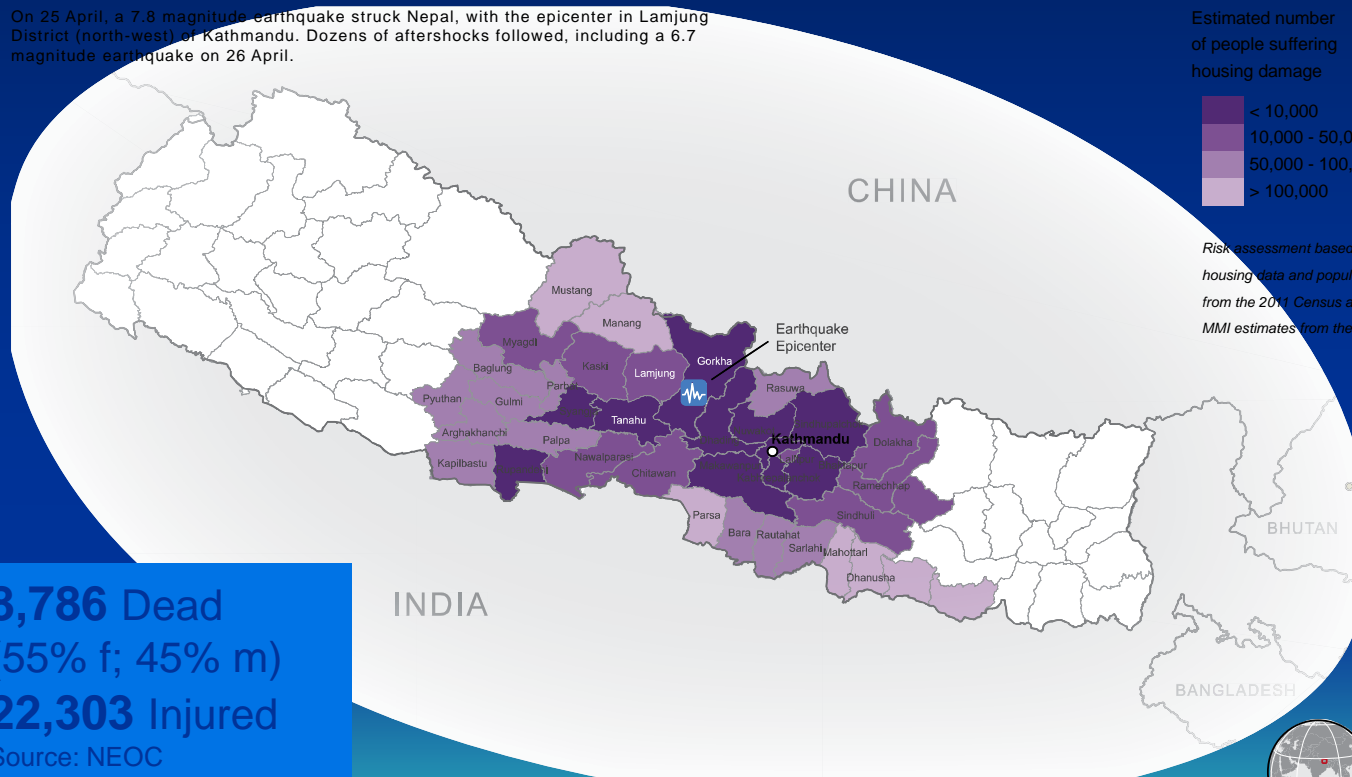


On 25 April, a 7.8 magnitude earthquake struck Nepal, with the epicenter in Lamjung District (north-west) of Kathmandu. Dozens of aftershocks followed, including a 6.7 magnitude earthquake on 26 April.

Estimated number of people suffering housing damage



Risk assessment based on housing data and population from the 2011 Census and MMI estimates from the USGS



Map Sources: UNCS Nepal Survey Department, USGS.
The boundaries and names shown and the designations used on this map do not imply endorsement or acceptance by the United Nations. Map created on 25 April 2015.













KEY IMPACTS

- **8 m people (25% of total population) affected in 35 districts, 2 m in 14 districts**
 - **510,762** private and **2,649** government buildings have been completely destroyed
 - **291,707** private and **3,617** government buildings partially damaged
 - Outside the main towns **90%** of school buildings and health posts were rendered unusable
 - Coping with displacement: **16 open spaces** as temporary settlements in Kathmandu Valley
 - **Food insecurity rising:** 1.4 million people in need of food assistance.
- 

INTERNATIONAL AID



AUSTRALIA



Two C17 aircraft carrying relief supplies and additional personnel

CANADA



Assessment team and Disaster Assistance Response Team (DART) deployed

CHINA



62 member USAR team including 6 dogs



A 58 personnel medical team



IL-76 planes with two teams of PLA soldiers carrying four sniffer dogs, five recovery vehicles and rescue equipment, including life detection equipment and entry tool



Tents, generators, medical supplies and water purification equipment

BELGIUM



Deployed Medium SAR team

DENMARK

8 experts and equipment to set up comms/coordination centers

FRANCE



Three planes with humanitarian and civilian protection personnel



50 tonnes of in-kind aid (mainly medical aid, WASH and nutritional aid)

GERMANY



Water purification module

ISRAEL



Deployed a large Israel Defence Force (IDF) delegation including 240 medical and logistics officers as well as a field hospital



JAPAN



Japan Disaster Relief (JDR) Rescue Team, with 70 members, assessment team of 4

Emergency relief goods (tents, blankets, etc.)

INDIA

Launched an extensive humanitarian relief and rescue operation: OPERATION MAITRI



Several aircraft, carrying medical supplies, and a mobile hospital

10 NDRF teams (450 people including 90 NDRF personnel internationally trained in search and rescue) and six more on their way



Engineering task force, 18 medical units, and six medical teams



Trucks with medical supplies and a team of 41 medical and paramedical staff



One Unmanned Aerial Vehicle (UAV)



10 Inmarsat systems for satellite communications and 250 high frequency wireless sets



90 buses and 40 trucks full of relief material



Communication and power infrastructure experts

22 tonnes of food, two tonnes of medical supplies, 50 tonnes of water, 10 tonnes of blankets and other relief material

INDONESIA



Emergency kits, tents, food, medical supplies and sanitation kits



ITALY



Foreign medical team

LUXEMBOURG



Telecoms support

PAKISTAN



Four C-130 aircraft carrying a 30-bed field hospital and army doctors and specialists

Urban search-and-rescue teams equipped with radars and SAR dogs

POLAND

Heavy USAR

QATAR

2,000 meals, 200 tents and



Deployed a large Israel Defense Force (IDF) delegation including 240 medical and logistics officers as well as a field hospital



Trucks with medical supplies and a team of 41 medical and paramedical staff

One Unmanned Aerial Vehicle (UAV)



10 Inmarsat systems for satellite communications and 250 high frequency wireless sets



90 buses and 40 trucks full of relief material



Communication and power infrastructure experts

22 tonnes of food, two tonnes of medical supplies, 50 tonnes of water, 10 tonnes of blankets and other relief material



PAKISTAN



Four C-130 aircraft carrying a 30-bed field hospital and army doctors and specialists

Urban search-and-rescue teams equipped with radars and SAR dogs

2,000 meals, 200 tents and 600 blankets

POLAND



Heavy USAR and 81 experts including doctors and paramedics



RUSSIA

87 member USAR team

QATAR



21 professionals and volunteers to distribute emergency relief materials including food packages, hygiene kits, sheltering materials, tarpaulin sheets and medical supplies



40 bed field hospital that can provide a full range of medical services to more than 30,000 individuals for 30 to 120 days



'Kit 5' water and sanitation system



240 metric tonnes relief items, including foodstuffs, medicines, power generators and tents

REPUBLIC OF KOREA



Korean Disaster Relief Team, composed of 40 persons, mainly SAR and medical staff



SRI LANKA

Medicines, dressing items, medical equip, water bottles, NFIs

SWEDEN



70 member, SAR dogs & equipment

NETHERLANDS

62 member USAR team

SWITZERLAND

13 experts

SINGAPORE



69 member Operation Lionheart disaster relief contingent



Singapore Armed Forces (SAF) medical team



Personnel from the HADR Coordination Centre



Two Republic of Singapore Air Force C-130 aircraft



Relief items and emergency supplies

TURKEY



42 member SAR Team

AFAD cargo flight with medicine, food & hygiene kits

UAE



88 member SAR team
Five Boeing 747 airlifts

USA



128 person Disaster Assistance Response Team (DART)

UNITED KINGDOM



60 member SAR and medical experts, 4 SAR dogs

LESSONS LEARNED: IMMEDIATE RELIEF

- **Disparity in loss of lives across gender:** 55% women, 45% Men
- A disaster response **plan is meaningless unless it is practiced** regularly involving all sectors of society; Nepal had a response plan but for the most part it sat on the shelf!
- An imperfect plan **prepared by key actors** is better than a perfect plan prepared by 'experts'
- A permanent, **full-time structure for disaster risk management** in high risk areas is a necessity
- **International exposure** for disaster responders managers to work seamlessly with international humanitarian community
- More “**discipline**” on the part of internationals



Nepal Response Support by NDMA

- Coordinated Relief & Response.
- Approx 14,000 MT of Relief Materials worth Rs. 380 Cr.
- More than 2,000 trucks crossed from Raxaul and Sonouli Border.
- 16 NDRF Teams – rescued 11 live persons and retrieved 133 bodies.
- Established/manned 15 helplines 24x7–011-1078 (over 5,000 calls).
- Deployment of Teams of Experts for Technical oversight and support: Structural Engineers; DM Experts supporting the Planning Commission, Nepal in PDNA; Sectoral Experts; Engineers from NBCC; Landslides Monitoring.
- SOP for Response.

SHORTCOMINGS IN INDIAN DISASTER RESPONSE

- 1. Delay in Assessment of situation and Information Dissemination.**
- 2. Breakdown of communications both electronic and surface.**
- 3. Delay in mobilization of men, material, relief stores and machines to provide and restore basic life line services.**
- 4. Need is for enhancement of awareness and capacity building of first responders.**



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THANK YOU