

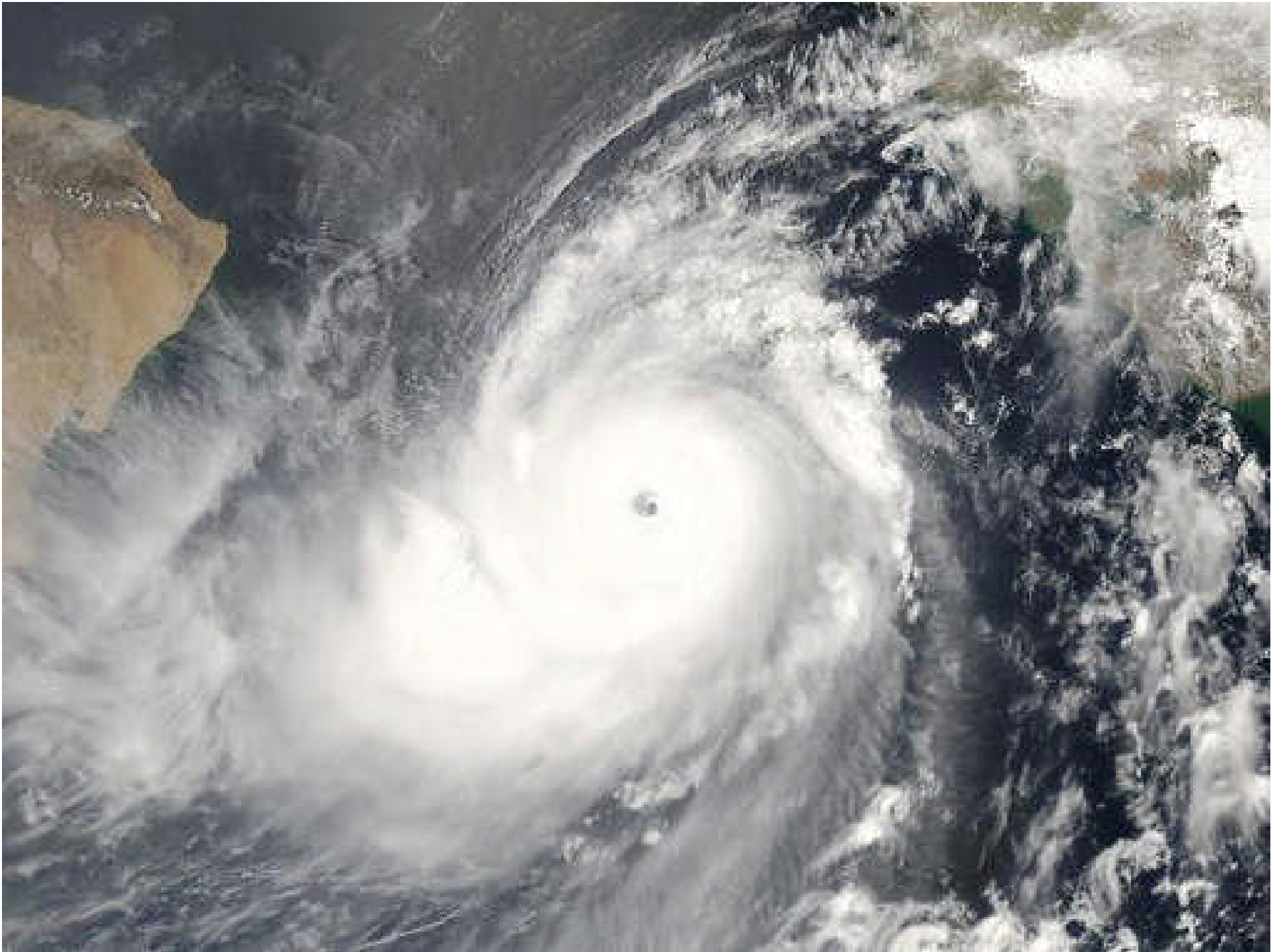
DISASTER MANAGAMENT

A stitch in time, saves nine!











Disaster: "Any occurrence that causes damage, ecological disruption, loss of human life or deterioration of health and health services on a scale sufficient to warrant an extraordinary response from outside the affected community or area".

Hazard: any phenomenon that has the potential to cause disruption or damage to people and their environment.

- Large no. of people - displaced, injured, killed, subjected to greater risk of epidemics...
- Considerable economic harm...
- Great threat to the existing infrastructure and to the future of sustainable development...
- Population grows, resources become limited - communities increasingly become vulnerable to hazards that cause disasters...

Types of disasters

- Earthquakes\$
- Cyclones*
- Floods*
- Tidal waves
- Land-slides
- Volcanic eruptions
- Tornadoes
- Fires
- Hurricanes
- Snow storms
- Severe air pollution (smog)
- Heat waves
- Famines
- Epidemics
- Building collapse
- Toxicologic accidents (release of hazardous substance)
- Nuclear accidents
- Warfare#

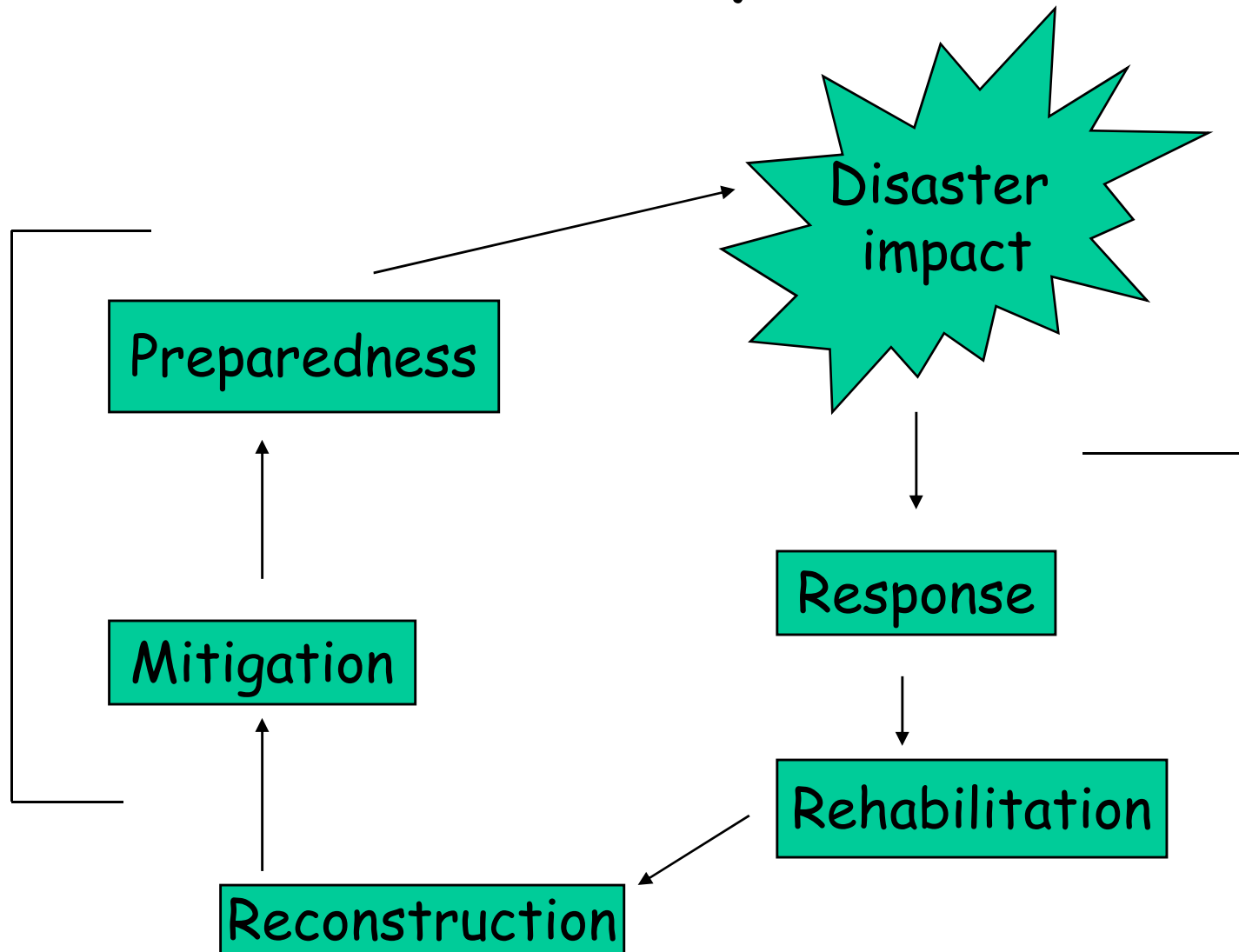
- **Injuries exceed deaths in:**
Explosions, earthquakes, hurricanes, fires, tornadoes, etc.
- **Deaths exceed injuries in:**
Landslides, avalanches, volcanic eruptions, tidal waves, floods, etc.
- **Factors determining the relative no. of injuries and deaths:**
 - Type of disaster
 - Density and distribution of the population
 - Condition of the environment
 - Degree of preparedness
 - Opportunity of the warning

Disasters in India

- Wide range of topographic and climatic conditions make India highly disaster-prone
- Average 8 major natural calamities annually (floods, cyclones, draughts, earthquakes, epidemics, accidents in railways, mines, factories, etc.)
- Northern mountain region: snow-storms, land slides, earthquakes
- East coast: floods, cyclones
- West: draughts

- Orissa: Super cyclone, Oct. 29, 1999
- Gujarat: Earthquake, Jan. 26, 2001
- Bhopal: Union carbide (Methyl isocyanate leakage), 1984

Disaster Cycle



- Disaster impact and response:

1. *Search, rescue and first aid:*

Need is so great that organized relief services are able to meet only small fraction of the demand, immediate help comes from the uninjured survivors

2. *Field care:*

- maximization of bed availability and surgical services
- Provision of food and shelter
- Inquiry response centre
- Victim identification
- Provision of mortuary space

3. Triage:

- Maximum benefit to the greatest number
- **Rapid classification** of the injured on the basis of the severity of their injuries and the likelihood of their survival with prompt medical intervention
- **Highest priority** to the victims whose immediate or long-term prognosis can be dramatically affected by simple intensive care
- **Lowest priority** to moribund patients
- Most commonly used classification - **four colour code system**

red **yellow** **green** **black**

4. Tagging:

- Name, age, place of origin, triage category, diagnosis, initial treatment

5. Identification of dead:

- Removal from the disaster scene
- Shift to mortuary
- Identification
- Reception of relatives
- Minimum health hazard if death results from trauma
- If human bodies contaminate streams, wells or other sources of water as in floods, they may transmit AGE or food poisoning to the survivors

- Relief phase:

begins when assistance from outside starts to reach the disaster area

- Most critical health supplies are those needed for treating casualties and preventing spread of communicable diseases
- Then - food, clothing, blankets, shelter, sanitary engineering equipment and construction material
- Rapid damage assessment - needs and resources

Epidemiological Surveillance and Disease Control:

- Overcrowding, poor sanitation in temporary resettlements
 - Population displacement
 - Disruption and contamination of water supply, damage to sewerage system
 - VBDs take several weeks to reach epidemic levels
 - zoonoses
- AGE
ARI

Principles of prevention and control of communicable diseases after a disaster:

- Implementation of public health measures as soon as possible
- Organization of a reliable system of disease reporting to identify outbreaks and to promptly initiate control measures
- Investigation of all reports of outbreaks rapidly

- Vaccination: ? typhoid, cholera, tetanus
- Nutrition
- Personal Protection in diff. emergencies
- Rehabilitation:
 - Water supply
 - Food supply
 - Basic sanitation and personal hygiene
 - Vector control
 - Reintegration of the disaster survivors especially orphaned children into the society through institutional programmes coordinated by MoHFW, MoSW, MoE, NGOs

Disaster mitigation in health sector

- Main aim is to reduce vulnerability of the system by applying measures to prevent hazards from causing emergency or to lessen the likely effects of emergencies
 - Flood mitigation works
 - Appropriate land-use planning
 - Improved building codes
 - Reduction or protection of vulnerable population and structures

Disaster preparedness

- A programme of long-term development activities whose goals are to strengthen the overall capacity and the capacity of a country to manage efficiently all types of emergencies
- Aim is to ensure that appropriate systems, procedures and resources are in place to provide prompt effective assistance to disaster victims, thus facilitating relief and rehabilitation services

- An ongoing multisectoral activity
- Major sectors involved:
 - communication
 - health
 - social welfare
 - police and security
 - search and rescue
 - transport

- The system depends on coordination of a variety of sectors to carry out tasks like:
 - Risk evaluation (part or whole of the country)
 - Standards and regulations
 - IEC and warning* systems
 - Availability and mobilization of financial and other resources
 - Coordination of information sessions with news media
 - Disaster simulation exercises to test response mechanisms

- * Indian Meteorological Department (IMD):
 - 5 centres in Bhubaneswar, Chennai, Kolkata, Mumbai and Vishakhapatnam for detection and tracing of cyclone storms
 - In addition, 31 special observation posts set up along east coast of India
 - Sea warnings: six times a day
 - Coastal areas of TN and AP: Insat Disaster Warning System (DWS) receivers installed
 - Snow and Avalanche Study Establishment (SASE) in Manali: warning 24 to 48 hours in advance

Man made disasters

- Disasters with large elements of human causation either accidental or intended

Categories:

1. Sudden disasters

- **Bhopal Gas Tragedy, India, Dec. 3, 1984**
 - Union Carbide Pesticide Plant - Methyl isocyanate
- **Chernobyl nuclear power station, reactor 4, Soviet Union, Apr. 26, 1986**
 - Accidental release of radioactive material like - Iodine 131, cesium 134 & 137, Strontium 90, others throughout the northern hemisphere

2. Insidious disasters

- Nuclear weapons production factories
- Research laboratories
- Chemical plants
- Global warming (Green house effect)
 - Chlorofluorohydrocarbons

3. Wars and civil conflicts

- World Trade Centre, USA, Sept. 11, 2001
- Since World War II, 21.8 mill deaths (50% civilians, recently increasing)

In India, execution of relief -
responsibility of the state in wake of
natural disasters

(GoI - supportive role, Min. of
Agriculture is the nodal agency for
coordination of overall activities,
DGHS - Emergency Medical Relief
Wing coordinates activities related to
health)

Involvement of NGOs and local
communities



- The UNDP Gujarat office came into being in the immediate aftermath of the devastating earthquake of January 26th 2001. UNDP has contributed to each phase of the disaster management cycle from relief to the transition to recovery, to mitigation and now preparedness.

In the relief phase UNDP acted as a platform for coordination between the Government, NGOs and other UN agencies.

During the transition from relief to recovery it extended its technical and financial support for various livelihood, temporary shelter and information and communications technology related programs. During this phase, all initiatives were geared towards factoring vulnerability reduction and mitigation measures into reconstruction and rehabilitation for long-term growth and sustainable development.

- A new approach to disaster management crystallized in post-earthquake Gujarat. A new culture of preparedness came to life and with it the *Disaster Risk Management Program*. The Gujarat State Disaster Management Authority (GSDMA) with support from UNDP is implementing the program in fourteen of the most multi-hazard prone Districts of Gujarat. The main components of the program include:

- The development of Multi-level preparedness and response plans.
Creation of disaster management teams at each administrative level and their **Capacity building.**
- **Raising awareness** of the vulnerability of Gujarat's population to earthquakes, cyclones, floods and chemical and industrial hazards, the characteristics of these hazards and actions required to be taken by the public pre, during and post-disaster

A sub-component of the DRM Program is the Urban Earthquake Vulnerability Reduction Program, currently being implemented in six cities of Gujarat which lie in earthquake zones III, IV and V and with populations over five hundred thousand, with the goal of reducing urban earthquake vulnerability

It is envisaged that the above mentioned activities combined with specialized support to the State Government for ensuring administrative, institutional, financial and legal mechanisms for disaster risk management will help mitigate future losses should a disaster strike and protect development gains.

International agencies providing health humanitarian assistance:

- Every country is a potential source of assistance for some other affected nation
- United Nation's Office for the coordination of humanitarian Affairs
- WHO
- UNICEF
- World Food Programme
- FAO, many others...