ICT For Disaster Management

Namrata Nikam (07305082)

Under Guidance of
Prof. Krithi and Prof.Desai

Department of Computer Science and Engineering,
Indian Institute of Technology, Bombay

Disasters

- The most frequent natural hazards include geological risks (earthquakes, tsunami, landslides and volcanoes)

- floods, cyclones and droughts and other hazards such as epidemics and insect infestations.

- It can cause massive destruction to the lives and livelihoods of large population and hence, to the national economies. eg. The death-toll of the tsunami that occurred in the Indian Ocean in December 2004 has risen to more than 300,000 people.

- It is experienced that the least developed and developing countries are impacted more severely by large scale natural disasters.
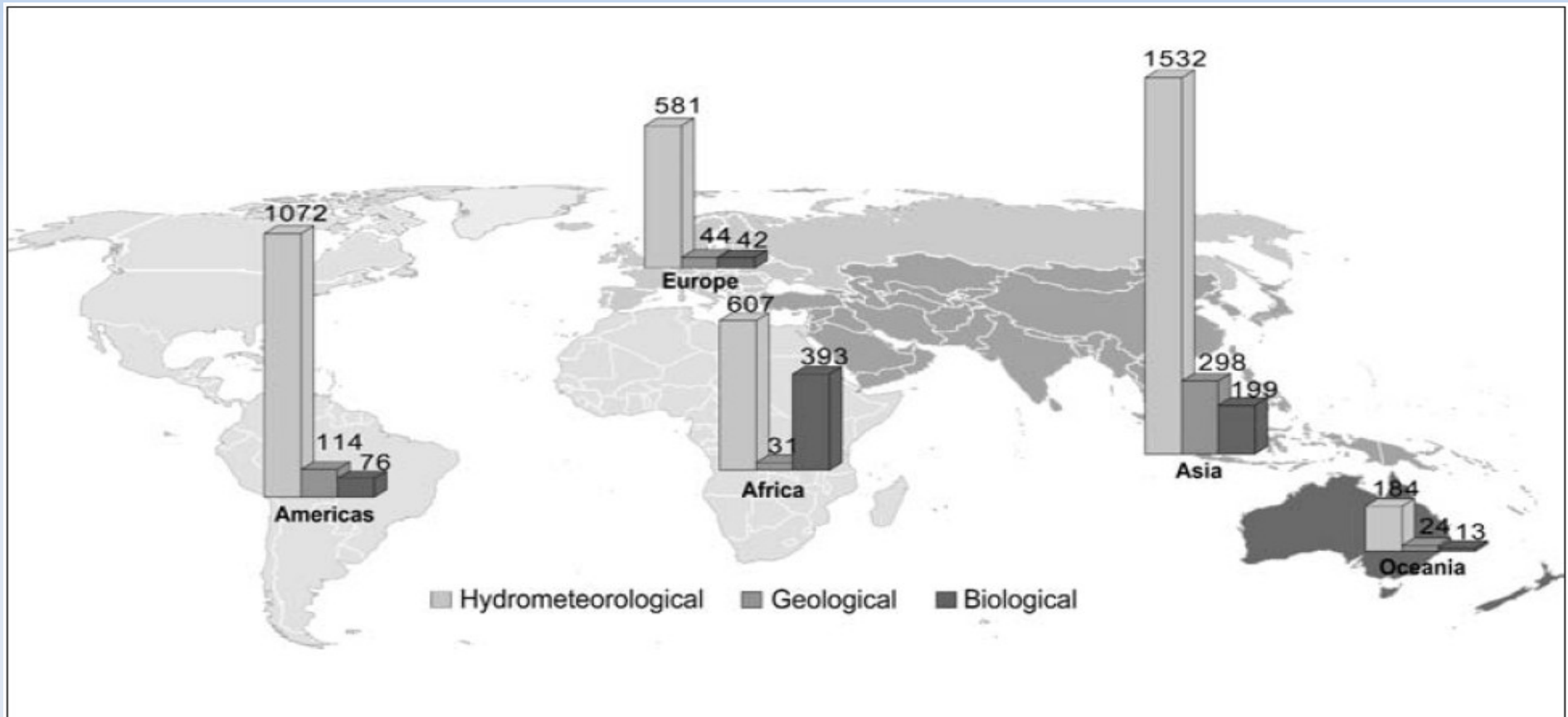
Natural Disasters

Flood

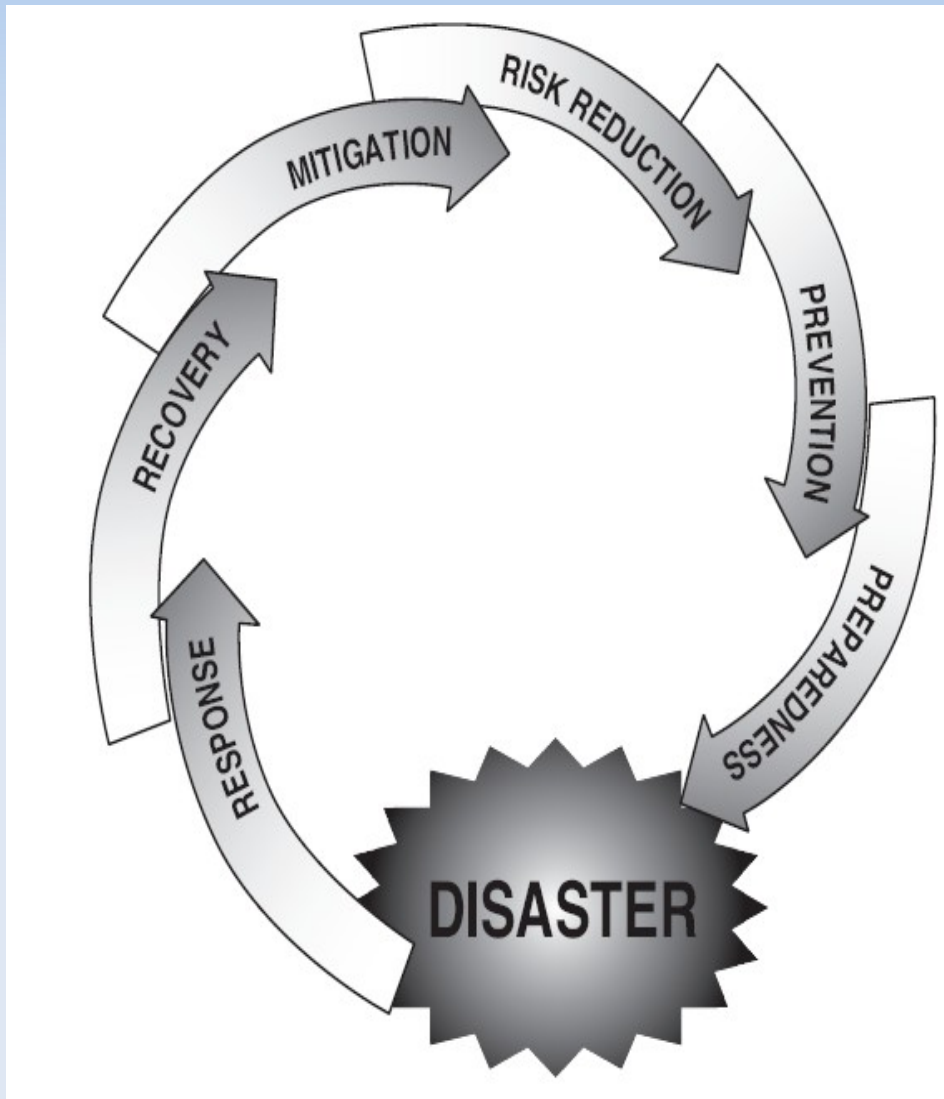**Fire**

Earthquake

Volcano

Need of ICT

- The Asia-Pacific is among the most disaster prone regions in the world

Number of Disasters by Origin: Regional Distribution, 1995–2004

The Disaster Management Cycle

RISK REDUCTION

MITIGATION

PREVENTION

RECOVERY

PREPAREDNESS

RESPONSE

DISASTER

Taking measures to reduce the losses brought by natural disasters has been a major challenge for the world in achieving its development goals.

"ICT can be as crucial as Food & Shelter in any disaster… It can save lives thro' timely & accurate Information"

Diasater Management

- **Prevention:** avoiding a disaster even at the eleventh hour.

- **Mitigation:** activity that reduces the chance of a hazard turning into disaster

- **Risk reduction:** actions that seek to avoid future risks as a result of a disaster

- **Preparedness:** plans made to save lives or property, and help the response and rescue service operations

- **Response:** actions taken to save lives

- **Recovery:** includes actions that assist a community to return to a sense of normality after a disaster

Prevention Phase

- Channels Used for Disaster Warning

  ➔ Radio and Television

  ➔ Telephone

  ➔ SMS

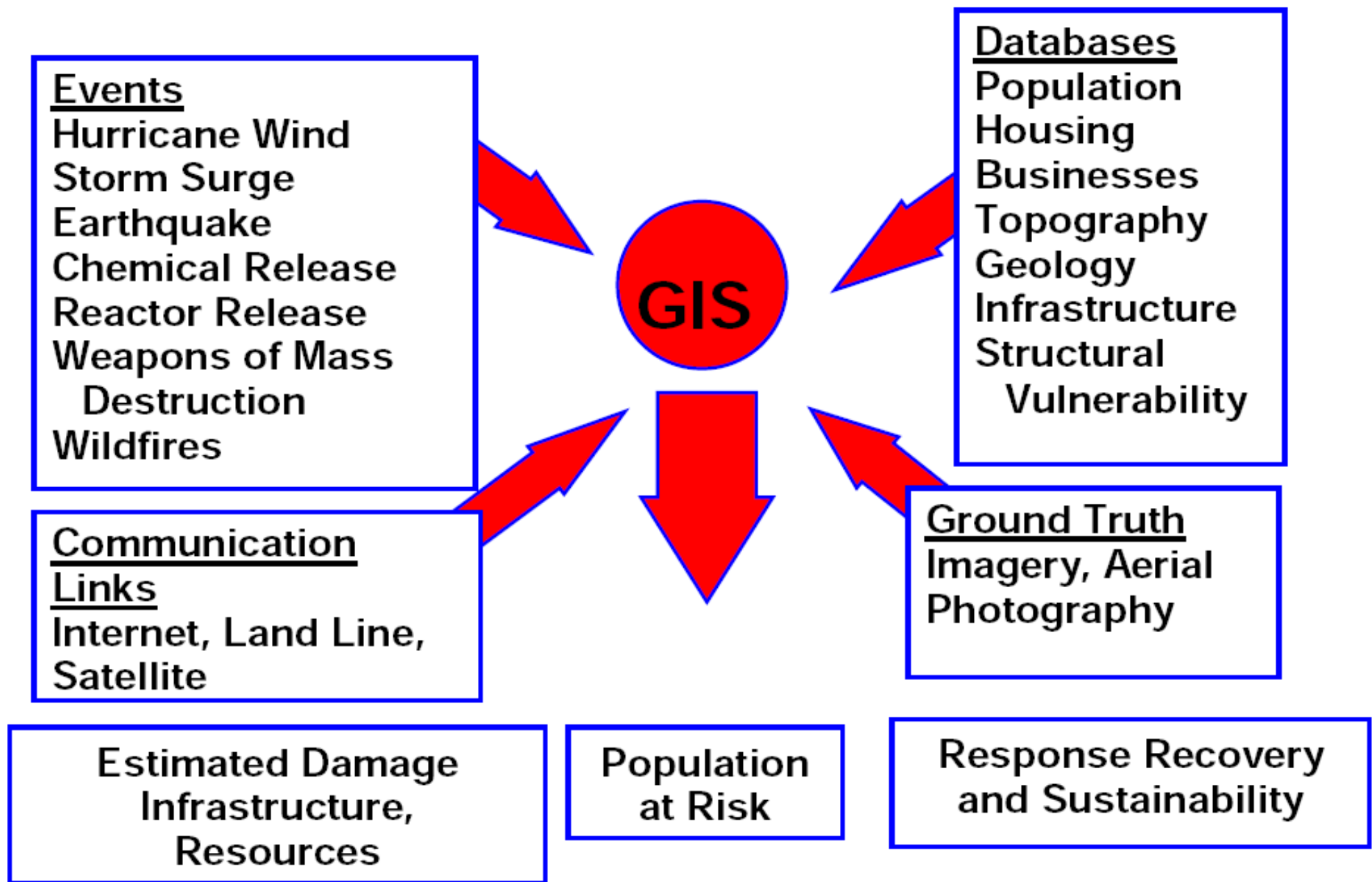 ➔ Cell Broadcasting

  ➔ Satellite Radio

  ➔ Internet

GIS for DM Planning

- Using a GIS, it is possible to pinpoint hazard trends and start to evaluate the consequences of potential emergencies or disasters.

- When hazards are viewed with other map data, such as buildings, residential areas, rivers and waterways, streets, pipelines, power lines, storage facilities, forests, etc.,

- disaster management officials can formulate mitigation, preparedness, response and possible recovery needs.

Web Portal for DM Response

- Missing Person Registry: Helping Families Find Each Other

- Organization Registry & Volunteer coordination : Coordinating All Aid Groups and Helping Them to Operate Effectively As One

- Camps Registry: Capturing the Location of All Temporary Camps and Shelters

- Request Management System: Effectively Utilization

- Inventory Management: Keeps track of inventories at a high enough granularity to account for the chaotic transfer of goods and aid.

GIS for DM

Thank You