ROLE OF GIS & INFORMATION TECHNOLOGY COMPONENTS IN PREPAREDNESS & RISK ASSESSMENT

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Components or tools of Geospatial Technology

- GIS
- Remote Sensing
- GPS
GIS is a tool that allows users to create interactive queries (user created searches), analyze the spatial information, edit data, maps, and present the results of all these operations.

GIS provides environment for effective and efficient storage and manipulation of remotely sensed or other spatial and non-spatial data types for both scientific management and policy oriented information.

The specific application in Risk Assessment are, Hazard mapping to show earthquake, floods, landslide or fire.

These maps are used for warning system.
Application of GIS

- GIS application can be useful in the following activities
- To create Hazard inventory maps
- Locate Critical Facilities
- Create and manage associate related database
- Vulnerability Assessment
GIS and the Disaster Management Cycle

- **Planning**
  
  GIS is useful in helping with forward planning. It provides the framework for planners and disaster managers to view spatial data by way of computer based maps.

- **Mitigation**
  
  - Representation of High risk areas
  
  - Facilitates the implementation of necessary mechanism to lessen the impact.

- **Preparedness**
  
  - Identification of emergency areas
  
  - Positions of related departments, Agencies, and Human Resources
  
  - Make it easier for security and shelters provides to plan the strategies
  
  - Answer that who is to be based where and at what phase of emergency
GIS and the Disaster Management Cycle

- **Response**
  - Provide accurate information on exact location of an emergency situation
  - Time saving during the determination of trouble areas (Quick Response)
  - Used as floor guide for evacuation routes

- **Recovery**
  - Mapping level of damage
  - Information related to disrupted infrastructure, number of persons died or injured and impact on Environment.
GIS can be used by shelter operators to capture specific personal details of persons being housed at the shelters.

It would make it possible to assess the number of needed shelters and the structure of that suffering population like, children, adults, disables etc..
In affected areas during and after disaster, Food Drops is always likely to take place. This process can be helped with GIS as maps can be generated which identify the specific areas with clusters of victims are located and the unique need of persons within these clusters.
GIS and Data gathering

- The data is gathered for the analysis and to assess the need of activities and actions before, during and after the disaster.
- By the use of this data, maps of most vulnerable areas can be produced and those areas can be highlighted which are most prone to disasters.