ELCS 0045- DISASTER MANAGEMENT

LECTURE 8

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Information Technology and Vulnerability analysis

The Use of Internet and Communication Networks in Disasters

- **The Role of the Internet and Communication Networks**

Lifeline for Disaster Management Communication networks are the backbone of all four phases of disaster management (Mitigation, Preparedness, Response, Recovery).

- **Functions**
  - **Data Collection:** Gathering real-time data from sensors, satellites, and ground reports.
  - **Coordination:** Connecting various stakeholders (government, NGOs, first responders).
  - **Information Dissemination:** Alerting the public and providing safety instructions.
  - **Resource Management:** Tracking and allocating supplies and personnel

- **Warning Systems**

An integrated system of sensors, communication networks, and institutional protocols designed to detect impending hazards and issue timely alerts.

- **Components of an Effective Warning System:**

Risk Knowledge: Understanding the hazards and vulnerabilities of the area.

Monitoring & Warning Service: Technical capacity to monitor and forecast hazards

Communication: Ability for reaching at-risk population.

Response Capability: The community's capacity to act upon the warning.

- **Communication Channels for Warnings**
  - **Traditional:** such as radio, television, megaphones.
  - **Modern:** Mobile networks (SMS/Cell Broadcast), social media (Twitter, Facebook), smartphone apps, satellite phones.
- **Post-Disaster Review**

Purpose: To analyze what happened, what worked, what failed, and why, to improve future responses.

The Process:

- **After-Action Review (AAR):** A structured debriefing of all responding agencies.
- **Data Analysis:** Examining response times, resource utilization, and casualty figures.
- **Stakeholder Feedback:** Gathering input from survivors, first responders, and volunteers.

Vulnerability Analysis of Infrastructure and Settlements

Types of Vulnerability

- **Physical/Infrastructure Vulnerability:** Susceptibility of buildings, roads, bridges, power grids, and water systems to damage.

Factors: Building materials (e.g., unreinforced masonry), age, construction codes, location (e.g., floodplains, fault lines)

- **Social Vulnerability:** The inability of people, organizations, and societies to withstand adverse impacts.
  - *Factors:* Age (elderly, children), poverty, lack of awareness, gender, health status, social isolation.
- **Economic Vulnerability:** Susceptibility of economic systems to disaster impacts.
  - *Factors:* Dependency on a single industry, lack of insurance, poverty levels.

Self studies

- 'Fluvial Flooding' and 'Pluvial Flooding
- 'Landslide Hazard Zonation' and state its primary purpose



"Your talents and abilities will improve over time, but for that, you have to start."

- MARTIN LUTHER KING

WISHING YOU ALL THE BEST

END