

## **COURSE : DISASTER MANAGEMENT (MA/MSc PART I)**

### **Paper : I**

**Prepared by : Prof. B. K. Mishra, Course coordinator**

**Topic : Vulnerability & its types**

## **INTRODUCTION**

Vulnerability is the inability to resist a hazard or to respond when a **disaster** has occurred. For instance, people who live on plains are more **vulnerable** to floods than people who live higher up.

**Vulnerability** describes the characteristics and circumstances of a community, system or asset that make it susceptible to the damaging effects of a hazard. There are many aspects of vulnerability, arising from various physical, social, economic, and environmental factors.

## **TYPES OF VULNERABILITY**

There are four main types of vulnerability:

**Physical Vulnerability** may be determined by aspects such as population density levels, remoteness of a settlement, the site, design and materials used for critical infrastructure and for housing.

*Example:* Wooden homes are less likely to collapse in an earthquake, but are more vulnerable to fire.

**Social Vulnerability** refers to the inability of people, organizations and societies to withstand adverse impacts to hazards due to characteristics inherent in social interactions, institutions and systems of cultural values. It is linked to the level of well being of individuals, communities and society. It includes aspects related to levels of literacy and education, the existence of peace and security, access to basic human rights, systems of good governance, social equity, positive traditional values, customs and ideological beliefs and overall collective organizational systems.

*Example:* When flooding occurs some citizens, such as children, elderly and differently-able, may be unable to protect themselves or evacuate if necessary.

**Economic Vulnerability.** The level of vulnerability is highly dependent upon the economic status of individuals, communities and nations. The poor are usually more vulnerable to disasters because they lack the resources to build sturdy structures and put other engineering measures in place to protect themselves from being negatively impacted by disasters.

*Example:* Poorer families may live in squatter settlements because they cannot afford to live in safer (more expensive) areas.

**Environmental Vulnerability.** Natural resource depletion and resource degradation are key aspects of environmental vulnerability.

*Example:* Wetlands, such as the Caroni Swamp, are sensitive to increasing salinity from sea water, and pollution from stormwater runoff containing agricultural chemicals, eroded soils, etc.