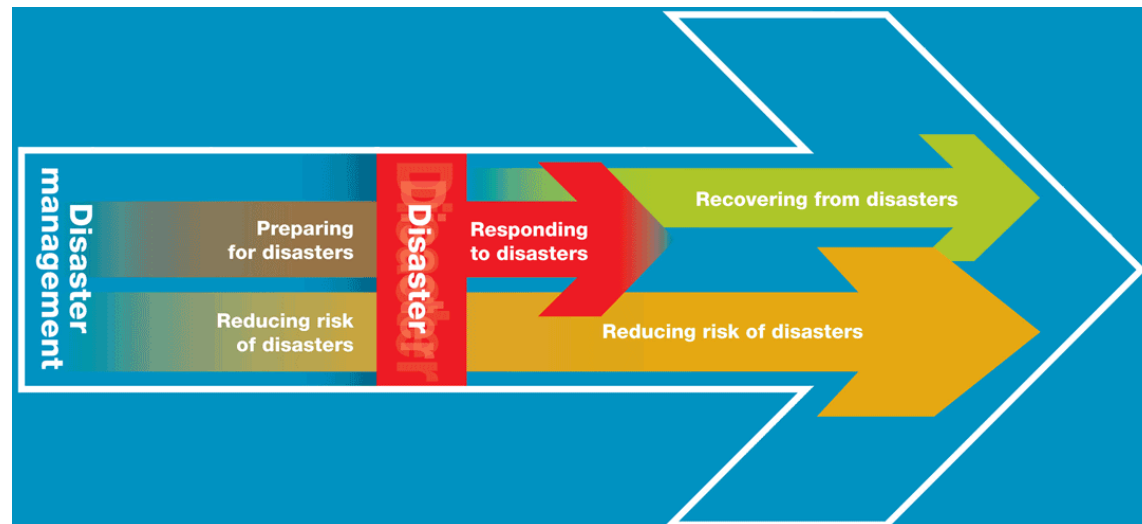


Disaster Management,
Vulnerability, Risk, Capacity

- The [United Nations defines a disaster](#) as a serious disruption of the functioning of a community or a society. Disasters involve widespread human, material, economic or environmental impacts, which exceed the ability of the affected community or society to cope using its own resources.
- The [Red Cross and Red Crescent societies define disaster management](#) as the organisation and management of resources and responsibilities for dealing with all humanitarian aspects of emergencies, in particular preparedness, response and recovery in order to lessen the impact of disasters.



- Any disaster can interrupt essential services, such as health care, electricity, water, sewage/garbage removal, transportation and communications. The interruption can seriously affect the health, social and economic networks of local communities and countries.
- Disasters have a major and long-lasting impact on people long after the immediate effect has been mitigated. Poorly planned relief activities can have a significant negative impact not only on the disaster victims but also on donors and relief agencies. So it is important that physical therapists join established programmes rather than attempting individual efforts.
- Local, regional, national and international organisations are all involved in mounting a humanitarian response to disasters. Each will have a prepared disaster management plan. These plans cover *prevention, preparedness, relief* and *recovery*.

- **Disaster Prevention**

These are activities designed to provide permanent protection from disasters. Not all disasters, particularly natural disasters, can be prevented, but the risk of loss of life and injury can be mitigated with good evacuation plans, environmental planning and design standards. In January 2005, 168 Governments adopted a 10-year global plan for natural disaster risk reduction called [the Hyogo Framework](#). It offers guiding principles, priorities for action, and practical means for achieving disaster resilience for vulnerable communities.

- **Disaster preparedness**

These activities are designed to minimise loss of life and damage – for example by removing people and property from a threatened location and by facilitating timely and effective rescue, relief and rehabilitation. Preparedness is the main way of reducing the impact of disasters. Community-based preparedness and management should be a high priority disaster management.

- **Disaster relief**

This is a coordinated multi-agency response to reduce the impact of a disaster and its long-term results. Relief activities include rescue, relocation, providing food and water, preventing disease and disability, repairing vital services such as telecommunications and transport, providing temporary shelter and emergency health care.

- **Disaster recovery**

Once emergency needs have been met and the initial crisis is over, the people affected and the communities that support them are still vulnerable. Recovery activities include rebuilding infrastructure, health care and rehabilitation. These should blend with development activities, such as building human resources for health and developing policies and practices to avoid similar situations in future.

- Disaster management is linked with sustainable development, particularly in relation to vulnerable people such as those with disabilities, elderly people, children and other marginalised groups.

Vulnerability

- **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. Examples may include:
 - poor design and construction of buildings,
 - inadequate protection of assets,
 - lack of public information and awareness,
 - limited official recognition of risks and preparedness measures, and
 - disregard for wise environmental management.
- Vulnerability varies significantly within a community and over time. This definition identifies vulnerability as a characteristic of the element of interest (community, system or asset) which is independent of its exposure. However, in common use the word is often used more broadly to include the element's exposure.

Types of Vulnerabilities

- There are four (4) main types of vulnerability:

1. 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 (UNISDR).

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

2. 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 (UNISDR).

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

3. 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.

4. 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.

Categories of Vulnerability

- 3 areas of vulnerability by Anderson and Woodrow (1990)
- Physical or material vulnerability
- Social or Organizational vulnerability
- Attitudinal or motivational vulnerability

Physical/ Material Vulnerability

- **Location** or type of housing/building materials
- Land, water, animals, capital, other **means of production**.
- **Infrastructure and services**: roads, health facilities, schools, electricity, communications, transport, housing etc.
- Human capital: population, mortality, diseases, nutritional status, literacy, numeracy, poverty levels.
- Environment factors: forestation, soil quality, and erosion

Social/Organizational Vulnerability

- Family structure (weak/strong)
 - Leadership qualities and structure
 - Legislation
 - Administrative structures and institutional arrangements
 - Decision-making structures
 - Participation levels
- Divisions and conflicts: ethnic, class caste, religion, ideology, political groups, language groups, and structures for mediating conflicts
 - Degree of justice, equality, access to political processes.
 - Community organizations: formal; informal; traditional; governmental; progressive.
 - Relationship to government
 - Isolation and connectedness

Attitudinal/Motivational Vulnerability

- Attitude toward change
- Sense of ability to affect their world, environment, get things done
- Initiative
- Faith
- Religious beliefs
- Fatalism, hopelessness, despondency, discouragement

- Dependent/Independent (self reliant)
- Consciousness, awareness
- Cohesiveness, unity, solidarity, cooperation
- Orientation toward past, present, future.

Risk

- **Risk** (or more specifically, disaster risk) is the potential disaster losses (in terms of lives, health status, livelihoods, assets and services) which could occur to a particular community or a society over some specified future time period. (Reference [UNISDR Terminology](#))
- It considers the probability of harmful consequences, or expected losses (deaths, injuries, property, livelihoods, economic activity disrupted or environmentally damaged) resulting from interactions between natural or human induced hazards and vulnerable conditions.
- Risk can be calculated using the following equation: Risk = Probability of Hazard x Degree of Vulnerability.
- There are different ways of dealing with risk, such as:
- **Risk Acceptance:** an informed decision to accept the possible consequences and likelihood of a particular risk.
- **Risk Avoidance:** an informed decision to avoid involvement in activities leading to risk realization.
- **Risk Reduction** refers to the application of appropriate techniques to reduce the likelihood of risk occurrence and its consequences.
- **Risk Transfer** involves shifting of the burden of risk to another party. One of the most common forms of risk transfer is Insurance.
- **ANALYSES**
- Before steps can be taken to reduce risk and vulnerability, they must first be understood. Vulnerability assessments and risk analyses allow for the identification of areas of critical concern and help to guide mitigation efforts. There are a variety of methods by which these assessments can be conducted and organizations such as the National Oceanic and Atmospheric Administration have even developed their own tools to aid this process:

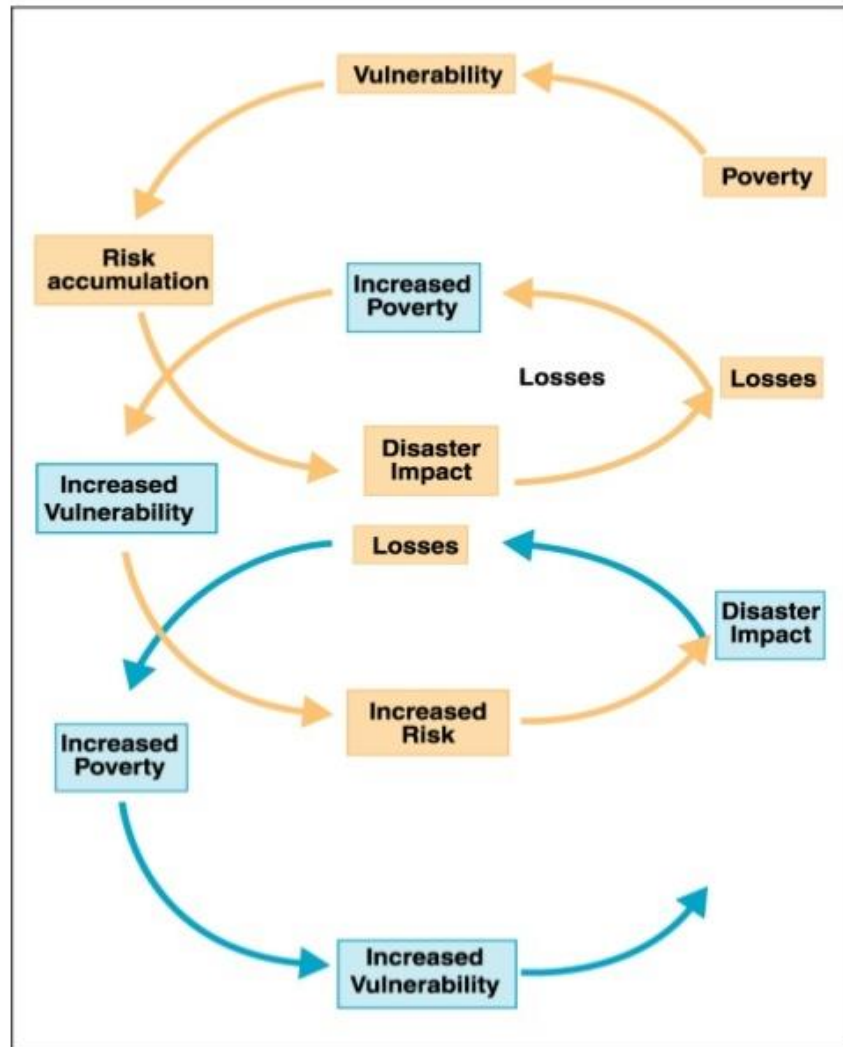
Risk

RISK



Risk

A Vicious Spiral of Poverty



Oxfam's depiction of disaster impacts aggravating the vicious spiral of poverty
Source: Adapted from DFID

Capacity

A combination of all the strengths and resources available within a community, society or organization that can reduce the level of risk, or the effects of a disaster.

Capacity may include physical, institutional, social or economic means as well as skilled personal or collective attributes such as leadership and management. Capacity may also be described as capability.

DISASTER RISK REDUCTION

The conceptual framework of elements considered with the possibilities to minimize vulnerabilities and disaster risks throughout a society, to avoid (prevention) or to limit (mitigation and preparedness) the adverse impacts of hazards, within the broad context of sustainable development.

If we are going to shake the table, which object would be affected the most by the shaking?

Why do you think it would be affected the most?



The three objects have been exposed to the same hazard but did you notice different possible effects on the mug, glass and bottle?

The mug, glass and bottle have **intrinsic vulnerabilities** such as shape, thickness, and the material they are made of aside from **extrinsic vulnerabilities** such as location or distance from the edge of the table.



The mug, glass and bottle are elements-at-risk that have different risk consequences as determined by their particular vulnerabilities.

