

1. Concepts and Terms

Elements at risk: These include people, their well-being, buildings, infrastructure, economic activity, and all other things valued by the community.

Hazard (physical): A hazard is a potentially damaging process or condition, for example, an earthquake above certain intensity or a landslide of sufficient size, depth, or displacement to cause damage or disruption or, as an example of a condition, the presence of weak foundation material.

Hazard (temporal condition): The probability of a potentially damaging event (a landslide) occurring in a unit of time.

Risk: Expected consequences emanating from a hazard, expressed as the probability and severity of loss to the elements at risk for a unit area, object, or activity, over a specified period of time. Risk is a function of the magnitude and frequency of hazard, the elements exposed to the hazard and their vulnerability.

Susceptibility: The propensity of a designated area to experience a particular physical hazard.

Vulnerability: The degree of damage expected from given magnitude of hazard, usually expressed as a ratio of the existing value.

2. Disaster Risk Reduction

Disaster risk reduction (also referred to as just disaster reduction) is defined as the concept and practice of reducing disaster risks through systematic efforts to analyze and manage the causal factors of disasters, including through reduced exposure to hazards, lessened vulnerability of people and property, wise management of land and the environment, and improved

preparedness for adverse effects. Disaster reduction strategies include, primarily, vulnerability and risk assessment, as well as a number of institutional capacities and operational abilities. The assessment of the vulnerability of critical facilities, social and economic infrastructure, the use of effective early warning systems, and the application of many different types of scientific, technical, and other skilled abilities are essential features of disaster risk reduction.

Risk is a function of hazard and damage potential, hence for risk reduction we have two approaches; estimating hazard potential which is a direct measure and estimating damage potential which is an indirect measure. *Direct measures lower the hazard potential. Indirect measures lower the vulnerability.* Socio-economics have a large impact on indirect measures. Indirect measures often require constant revisions and constant contact to the population (communication)

3. Disaster Risk Reduction Strategies

Disaster risk and the adverse impacts of natural hazards can be reduced by monitoring, systematically analysing and managing the causes of disasters, including by avoiding hazards, reducing social and economic vulnerability, and improving preparedness for response to adverse hazard events. The two main elements that give rise to risk are the hazards—the potential damaging events or phenomenon and the vulnerability of populations to these hazards. Natural hazards by themselves do not cause disasters; it is the combination of an exposed, vulnerable and ill-prepared population or community with a hazard event that results in a disaster. Human activity, such as land use changes, environmental exploitation and unplanned settlement, often exacerbates the level of disaster risk.