ANNEXES

ANNEX I

GLOSSARY

Active fault

A fault along which slip has occurred in historic or recent geological time (i.e., the past 10,000 to 2,000,000 years) and along which future movement is expected.

Aftershocks

Violent main shocks of earthquake are followed by shocks of decreasing intensity which occur at increasing intervals. These aftershocks may last for months.

Albedo

The ratio of light reflected from an unpolished surface to the total light falling on it. Albedo is important in calculating potential **evaportranspiration** (see below) using the heat budget method of determining evaporation. Different types of vegetation and different soils absorb different amounts of solar radiation.

Arid zone

An area having a low ratio of precipitation to potential evapotranspiration. As a result, arid zones are regions of low biotic productivity. Arid zones are areas of dry land with both annual and perennial species.

Carrying capacity

(a) the number of individuals of a given species that can be sustained by a given ecosystem; (b) the density of people at a given standard of living that can be supported by a system; and, (c) the maximum number of a wildlife species which a certain territory will support through th most critical period of the year in terms of forage.

Coping mechanisms

The means by which individuals and communities, without assistance from external sources, meet relief and recovery needs, and adjust to future disaster risk.

Cyclone

A weather system consisting of an area of low pressure, often known as a "low" or a depression, in which winds circulate at speeds exceeding 61 km/hour. If the speed exceeds 115 km/hour, the depression is said to be of **hurricane** force.

Desert

The term "desert" has never been precisely defined. In popular thinking, it generally means a region where vegetation is scarce or absent because of deficient precipitation or edaphic aridity but may also mean "wasteland" and areas of low production of vegetation regardless of the reason.

Desertification indicator

A physical phenomenon, an organism, a biotic community, a social criterion, or a combination of these, that is generally associated with one or more conditions that demonstrate the existence of the desertication process.

Disaster

The impact of a natural event upon a vulnerable community resulting in disruption, damage and casualties which cannot be relieved by the unaided capacity of locally-mobilized resources.

Disaster "continuum"

A conceptual framework for depicting disasters and showing how one phase leads into the next.

Disaster management

The efficient use of resources to co-ordinate the processes of relief, recovery and reconstruction.

Disaster response

Activities occurring in the aftermath of a disaster which assist disaster victims and which rehabilitate or reconstruct damaged infrastructure.

Drought

An extended period of dryness; usually any period of moisture deficiency that is below normal for a specific area. Sharing this commonality, there are several definitions which tend to be conceptual or operational and vary by discipline (meteorological drought, agricultural drought, hydrological drought, socio-economic drought) or by climatic zone.

Earthquake

A convulsion of the Earth's surface caused by volcanic activity or active faults in the Earth's crust.

Elements at risk

All human enterprise at risk in a given area. This includes the population, buildings, civil engineering works, economic activities, public services and infrastructure, etc.

Epicentre

The point on the Earth's surface directly above the focus of an earthquake.

Evapotranspiration (ET)

Total water lost from the land and water bodies by evaporation and plant transpiration. Evaporation from soils, plant surfaces, and water bodies, and transpiration through plant stomata collectively constitute evapotranspiration. The evaporation process is simply the net loss of water from a surface by means of a change in state of water from liquid to vapor. The requirements for evaporation or transpiration are: (a) flow of energy to the evaporating or transpiring surface; (b) a flow of vapor away from these surfaces; and (c) a flow of liquid water to these surfaces.

Fault

A fracture or zone of fractures along which there has been displacement of the sides relative to one another, parallel to the fracture.

Flash floods

Floods caused by localized intense rainfall commonly associated with small catchment areas.

Floods

Riverine floods are caused mostly by heavy rainfall, strong and protracted snow-melt, or combination of the two.

Coastal floods are usually caused by rainfall aggravated by wind-induced surcharge caused by cyclones or hurricanes.

Hazard

A threatening event in nature. See Natural hazard.

Natural hazard mapping

The process of establishing geographically where certain phenomena are likely to pose a threat to human settlements.

Humid zone

An area having a precipitation to potential evapotranspiration ratio of greater than 0.75 (P/PET > 0.75). That is, it is an area having excess water where drought conditions rarely occur. Forests occur and crops may be grown without irrigation in this zone, although at the lower end of the precipitation range, production may be reduced.

Hyper-arid zone

An area of extreme aridity having a precipitation to potential evapotranspiration ratio of less than 0.03 (P/PET < 0.03) and where periods (even years) may go by with no precipitation. Except for phreatophytes, no permanent vegetation is present, although ephemeral plants occur with precipitation. Except in rare periods of precipitation when ephemerals may be grazed, no agriculture, forestry, or grazing is possible without some kind of irrigation.

Intensity

A subjective measure of the force of an earthquake at a particular place as determined by its effects on persons, structures, and earth materials. *Intensity* is a measure of effect, in contrast with *magnitude*, which is a measure of energy.

Isoseismals

Map contours drawn to define limits of estimated intensity of shaking for a given earthquake.

Landslide

Mass movement or sliding of hillsides caused by a variety of factors such as heavy rains, earthquake ground shaking or geological forces. The term is also used to denote almost all varieties of slope movement, such as rock-falls, topples, slips or debris flow.

Lifelines

Those facilities that are crucial to life support and that should receive high priority for protection or restoration following disasters.

Life zone

An altitudinal or latitudinal bioregion with distinctive faunal and floral characteristics. These are areas of natural landscape that are homogeneous in terms of climate. In Latin America and to some degree in the Caribbean, life zone maps have been developed based on the Holdridge system. These are areas having equivalently weighted divisions of heat, precipitation, and moisture. Heat is expressed as biotemperature, which is a measurement of the heat effective in plant growth (0-30 degrees Celcius); precipitation is total annual precipitation; and effective moisture is a combination of biotemperature and precipitation. All major life zones can be given a graphical representation.

Liquefaction

The transformation of a granular soil to a liquefied state usually caused by strong earthquake shaking.

Magnitude

A measure of earthquake size that describes the amount of energy released.

Mercalli scale

A rating scale for classifying the degree of ground shaking at a specific location. The scale is graded in Roman numerals from I to XII.

Mitigation

All measures taken to reduce loss of life, livelihood and property caused by natural disasters, either by reducing vulnerability or by modifying, where possible, the hazard.

Mudflow

Mobile mixture of volcanic debris and water which often accompanies pyroclastic eruptions.

Natural hazard

The probability of occurrence, within a specific period of time in a given area, of a potentially damaging natural phenomenon.

Potential evapotranspiration (PET)

Generally defined as the rate of evaporation and transpiration which would take place from a completely vegetated area in which soil water was not limiting. Maximum evaporation rates from large water bodies in arid areas approach 2500 mm per year.

Prevention

All activities that are undertaken to lessen the human and socio-economic impacts of hazards; or all risk reduction and preparedness actions taken prior to an onset of a hazardous event.

Pyroclastic flow

Materials formed by the fragmentation of magma and rock during explosive volcanic activity. The term *pyroclastic* is derived form the Greek words *pyr* = fire, and *klaein* = to break.

Range condition

The status of rangeland vegetation in relation to its potential in terms of the amount and kind of biomass production. Evaluation of range condition involves an analysis of density and composition of plant species of "quality" (those that are palatable and which are preferred by livestock and wildlife) as opposed to those that are less palatable and which increase in density and composition under excessive grazing pressure, and those that are unpalatable and perhaps noxious and which invade the range under extremely heavy use by livestock.

Recovery

The replacement of resources that may have been disrupted or destroyed by a disaster. The term is also used to cover the social relations required to use those resources.

Rehabilitation

Action undertaken in the weeks or months following a disaster to restore basic services which enable life in the region to return to normality.

Relief

Attention to immediate and basic needs of disaster survivors. These needs include food, clothing, shelter and medical or emotional care. In the case of fast-impact disaster such as floods, earthquakes or cyclones, this process is directed at saving lives and alleviating further suffering.

Remote sensing

The gathering of information or measurement of some property of an object by a recording device that is not in physical contact with the object under study.

Return period

The time period (in years) in which there is a good statistical probability that an earthquake of a certain magnitude or a hurricane will recur.

Richter magnitude scale

A measure of earthquake size that describes the amount of energy released. The measure is determined by taking the common logarithm (base 10) of the largest ground motion observed during the arrival of the P-wave or seismic surface wave and applying a standard correction for distance to the epicentre.

Risk

The expected number of lives lost, persons injured, property damaged and economic activity disrupted due to a particular natural phenomenon. *Risk* is therefore the product of specific risk and elements at risks.

Risk assessment

The quantification of risk by means of hazard mapping and vulnerability analysis. Risk assessment can be made on the basis of both empirical and theoretical data.

Risk mapping

The process of identifying high risk areas by correlating a hazard to the terrain and to the probability of occurrence. The results of these analyses are usually presented in the form of risk maps which show the type and degree of hazard represented by a natural phenomenon at a given geographic location.

Seismicity

The distribution of earthquakes in space and time. A general term for the number of earthquakes in a unit of time, or for relative earthquake activity.

Seismology

The scientific study of earthquakes and the phenomena associated with them.

Semi-arid zone

An area having a ratio of precipitation to potential evapotranspiration of from 0.20 to 0.50 (P/PET = 0.20 - 0.50) and a natural discontinuous herbaceous vegetative cover with a greater frequency of perennial species than arid zones. This zone normally can sustain dry-land agriculture and livestock raising activities with little additional input if stocking rates are held at adequate levels to sustain production.

Soil Texture

The relative proportions of the various sizes of mineral particles (gravel, sand, silt, clay) in the soil. Fine and coarse particles have very different properties in terms of water infiltration and holding capacity, compactability, erosivity, and nutrient availability. Textural classes range from clay consisting of particles smaller than 0.002 mm in diameter (the material passes a sieve of 0.002 mm), to silt (which passes a sieve between 0.002 mm and 0.050 mm), to fine sand (which passes a sieve between 0.050 mm and 0.020 mm), to coarse sand (which passes a sieve between 0.020 mm and 0.200 mm), to fine gravel (which passes through a mesh between 0.200 mm and 2.00 mm) and coarse gravel (which passes through a mesh between 2.0 mm and 5.0 mm). In general, the terms "fine texture" and "heavy texture" refer to soils containing large quantities of clay or clay loams while "coarse texture" and "light texture" refer to soils with relatively more sand than clay.

Specific risk

The expected degree of loss due to a particular natural phenomenon as a function of both natural hazard and vulnerability.

Strain (elastic)

The geometrical deformation, or change in shape, of a body. The change in an angle, length, area, or volume divided by the original value.

Stress (elastic)

A measure of the forces acting on a body in units of force per unit area.

Structural type

A group of constructions with similar damage performance when exposed to a specified natural hazard.

Sub-humid zone

An area having a ratio of precipitation to potential evapotranspiration of 0.5 to 0.75 (P/PET = 0.5 - 0.75) covered with stands of natural vegetation that are more dense but which may include tropical savannas. Dry-land agriculture is common in this zone for crops adapted to occasional drought.

Surge

Coastal flooding which accompanies a cyclone.

Tectonics

The study of the Earth's broad structural features.

Tsunami

A seawave produced by displacements on the ocean floor as a result of earthquake, landslide or volcanic activity. The term comes from the Japanese word meaning "wave in harbour".

Typhoon

Term used in the North Western Pacific Ocean to designate hurricane-force winds. See Cyclone.

Volcanic eruption

Molten material within the Earth's crust called magma is driven upwards under pressure through volcanic vents. Eruptions may range from the quietly effusive to the violently explosive.

Vulnerability

The degree of loss to a given element at risk, or set of such elements, resulting from the occurrence of a natural phenomenon of a given magnitude and expressed on a scale from 0 (no damage) to 1 (total loss). In lay terms, it means the degree to which an individual, family, community, class or region is at risk from suffering a sudden and serious misfortune following an extreme natural event.

Vulnerability analysis

The process used to identify vulnerable conditions that will result in a disaster when they meet a natural phenomenon. The analysis must first study societies at risk by exploring such issues as social density, incomes, gender, home-ownership patterns and occupations. Secondly, it must examine the physical factors of property at risk: buildings, crops, infrastructure, economic assets, etc.

Zoning

The division of land surface into areas, and the ranking of these areas according to degrees of actual or potential hazard. (In the U.S., **Zonation.**)

PROJECT LEVEL SCREENING OF DISASTER VULNERABILITY

COUNTRY:_____

PROJECT/COMPONENT:_____ YEAR: _____

RISK CATEGORY: L= low risk, M= medium risk, H= high risk, ?= unknown risk, more information needed

PHENOMENON	IMPACTS ON PROJECT		POTENTIAL INCREASE IN DISASTER VULNERABILITY CAUSED BY THE PROJECT	RECOMMENDATIONS FOR ACTIVITIES (describe)
	Direct (L, M, H, ?)	Long-term (L, M, H, ?)	(L, M, H, ?)	
(Climatic)				
(Seismic/Geologic)				
(Hydrologic)				
(Volcanic)				
(Wildfires)				
(Pests)				
Conclusions:				

ANNEX II

INSTITUTIONAL AND SOCIO-ECONOMIC FACTORS AFFECTING VULNERABILITY	TRENDS (describe)	POTENTIAL IMPACT ON DISASTER VULNERABILITY (describe)	RECOMMENDATIONS FOR ACTIVITIES (describe)
(Socio-Economic) * vulnerability of target/affected groups * risk groups			
(Cultural)			
(Legislative)			
(National Strategies)			
(Sectoral Policies)			
(Other organizational/ institutional factors)			
Conclusions:			

SECTORAL SCREENING OF DISASTER VULNERABILITY

PHENOMENON	SECTORS: DISASTER-SENSITIVITY (Describe in words, or use L, M, H, ?)					
	Agriculture	**Forestry**	**Water Supply Sanitation**	**Infrastructure**	**Health**	**Education**
(Climatic)						
(Seismic/geologic)						
(Hydrologic)						
(Volcanic)						
(Wildfires)						
(Pests)						
Conclusions:						

INSTITUTIONAL AND SOCIO-ECONOMIC FACTORS	TRENDS (describe)	POTENTIAL IMPACTS ON DISASTER SENSITIVITY (describe)	RECOMMENDATIONS FOR ACTIVITIES (describe)
(Socio-Economic)			
(Cultural)			
(Legislative)			
(National strategies)			
(Sectoral policies)			
(Other organizational/institutional)			
Conclusions:			