

Background Paper

**Proposed Updated Terminology on Disaster Risk Reduction:
A Technical Review**

Facilitated by
The United Nations Office for Disaster Risk Reduction

August 2015

1. Purpose

The purpose of this paper is to inform the open-ended intergovernmental expert working group on indicators and terminology on past and recent work on disaster risk reduction terminology as a contribution to the implementation of the Sendai Framework for Disaster Risk Reduction 2015-2030.

The paper outlines the history of disaster risk reduction related terminology since 2001 and recent work facilitated by the United Nations Office for Disaster Risk Reduction (UNISDR) based on consultations with experts, the UNISDR Scientific and Technical Advisory Group, practitioners and partners to reach consensus on definitions.

The result is proposed updated terminology on disaster risk reduction (August 2015) including emerging terms used in the Sendai Framework - in particular those terms used in the scope and global targets.

2. Background and History of Disaster Risk Reduction Terminology

In keeping with the holistic approach used in disaster risk reduction, practices for reducing disaster risk require knowledge to relate them to socio-economic challenges, sustainable development, environmental management, climate change adaptation or humanitarian assistance, among others. Such knowledge evolves and adapts to meet emerging criteria and challenges. Concepts – and the terminology that describes them – are part of such knowledge.

Effort to promote a common understanding of disaster risk reduction concepts and terminology is not new. The United Nations Office for Disaster Risk Reduction (UNISDR) has been proposing terminology on disaster risk reduction for some years, through the analysis of international sources, publications and practices and by conducting expert consultations.

The first set of terminology produced by UNISDR, 'Terminology: Basic Terms of Disaster Risk Reduction', was published in July 2002 as an annex to the UNISDR publication *Living With Risk: A Global Review of Disaster Reduction Initiatives*. Following feedback from experts and practitioners, a second set was issued as part of the revised edition of *Living With Risk*, published in 2004. This list of terminology is known as the '2004 UNISDR Terminology on Disaster Risk Reduction'.

The following year, in 2005, the Hyogo Framework for Action 2005-2015 was adopted, which listed among its key recommended activities: *"Update and widely disseminate international terminology related to disaster risk reduction, at least in all official United Nations languages, for the use in programme and institutional development, operations, research, training curricula and public information programme"* (HFA, Priority of action 3, paragraph 18 (g)). Responding to that request, UNISDR reviewed the 2004 terminology based on additional consultations with experts and practitioners at various international venues, regional discussions and national settings.

The revised terminology was published in 2009 and includes evolving practices and concepts related to disaster risk reduction emerging at the time. This publication is known as the '2009 UNISDR Terminology on Disaster Risk Reduction' and is the most current of its kind (available for downloading at <http://www.unisdr.org/we/inform/terminology>).

In the preparations for the Third United Nations World Conference on Disaster Risk Reduction (March 2015) during which intergovernmental negotiations were held on the post-2015 framework for disaster risk reduction, the importance of a common and updated terminology on disaster risk reduction was again highlighted. The Sendai Framework for Disaster Risk Reduction 2015-2030 agreed in March 2015 in Sendai, Japan requests UNISDR *"to support the implementation, follow-up and review of the*

present Framework by ...leading, in close coordination with States, an update of the publication entitled 'UNISDR 2009 Terminology on Disaster Risk Reduction' in line with the agreed terminology by States" (paragraph 48 c) and "recommends that the working group [comprising experts nominated by Member States] consider the recommendations of the United Nations Office for Disaster Risk Reduction Scientific and Technical Advisory Group on the update of the publication entitled "2009 UNISDR Terminology on Disaster Risk Reduction" (Sendai Framework, paragraph 50).

3. Recent Work on Disaster Risk Reduction Terminology

Considering this request to continue updating the terminology on disaster risk reduction, the United Nations Office for Disaster Risk Reduction Scientific with the support of the Technical Advisory Group (STAG), in particular its member the European Commission Joint Research Centre and their partners, began a process in 2014 to review the '2009 UNISDR Terminology'.

Methodology and consultation process

The methodology was similar as to previous work on terminology. The intention was to find consensus among experts and practitioners on concise, clear and useful definitions. Additional explanation or examples are given under comments to illustrate the meaning.

The first step to update terminology was to identify existing terms, definitions and their usage. Five months of specialists in computational linguistics and expertise of the EC-JRC, STAG and the UNISDR were needed to create a corpus of about 35,000 documents, publications, websites and other sources in the English language to identify and analyse the usage of the 53 disaster risk reduction terms proposed in the UNISDR terminology 2009.

A second step was to identify and collect existing definitions from about 220 disaster risk reduction-related glossaries to determine a more complete impression of the enormous conceptual variance of each term, as well as to evaluate the most commonly definitions.

With this background information, consultations with experts and practitioners took place as a third step to systematically update existing terms and/or conceptualise other terms used in the Sendai Framework in the following phases:

Phase 1: To evaluate the identification of the most common used terms on disaster risk reduction in relation to the existing 53 terms of the 'UNISDR 2009 terminology', and to propose updated definitions of key terms. This work was done until February 2015.

Phase 2: To identify the most important terms used in the Sendai Framework, in particular in its scope and targets, and update or provide definitions to support the work on indicators and to inform the open-ended intergovernmental expert working group on indicators and terminology. This work was done till August 2015.

Results of phase 1:

A statistical and temporal analysis was carried out considering the corpus of about 35,000 documents and existing definitions to identify the usage of the 53 terms on disaster risk reduction proposed by the UNISDR. The results allowed to classify the 53 terms by frequency of use and ranking for the period 2000-2004, 2005-2009 and 2010-2014.

The analysis also showed that the most commonly used terms were: Risk, Disaster, Response, Capacity, Hazard, Vulnerability, Mitigation, Preparedness and Prevention. Complementary analysis indicated that Climate Change, Adaptation and Resilience have growing usage.

Regarding the sources of definitions on disaster risk reduction, the most commonly used are those proposed by the UNISDR, GAR, IPCC-SREX and in certain cases ISO.

The results of phase one were presented to an expert informal consultation held in Ispra, Italy (February 2015) where the European Commission, Joint Research Centre (EC/JRC) has their offices. The consultation was attended by STAG members dealing with terminology and other international experts.

The group considered the studies, results and adjusted the definitions of the top ten most common used terms.

The results of phase one are available at the UNISDR PreventionWeb Sendai Framework for Disaster Risk Reduction 2015-2030 section on terminology.

Results of phase 2:

Further informal consultations took place via email or phone calls on June and July 2015 as well as a second workshop in Ispra, Italy at the EC/JRC on 29 and 30 June 2015 with the participation of more than 40 experts and practitioners from different continents, including STAG members, UN and non-UN. The experts reviewed definitions of phase one and proposed definitions for the terms used in the scope and targets of the Sendai Framework. Final revision was carried out by UNISDR on August 2015. As result, more than 80 terms commonly used in the field of disaster risk reduction and the Sendai Framework have been adjusted, redefined or alternatives provided.

4. Proposed updated terminology on disaster risk reduction (August 2015)

The result of the work outlined above is the 'Proposed updated terminology on disaster risk reduction (August 2015): A technical review'. The proposed terminology is a product of several meetings and consultations among experts on disaster risk reduction, as well as larger group of UNISDR partners and is presented as background information for the open-ended intergovernmental expert working group on indicators and terminology.

Proposed Updated Terminology on Disaster Risk Reduction (August 2015)

Table of Contents

A	7
Acceptable risk (based on UNISDR 2009).....	7
Adaptation (IPCC, 2014)	7
Affected people (new July 2015).....	7
B	8
Basic services (new July 2015)	8
Biological hazard (new July 2015)	8
Build back better (new July 2015).....	8
Building code (based on UNISDR 2009)	8
C	9
Capacity (based on UNISDR 2009)	9
Capacity development (based on UNISDR 2009)	9
Climate change (drawn from IPCC, 2014)	9
Compensatory disaster risk management (based on GAR 2015)	9
Contingency planning (based on UNISDR 2009).....	10
Coping capacity (based on UNISDR 2009).....	10
Corrective disaster risk management (based on UNISDR 2009)	10
Critical infrastructure (new July 2015)	10
D	11
Direct economic loss (new July 2015)	11
Directly affected (new July 2015).....	11
Disaster (small-scale, large-scale, frequent and infrequent, slow-onset, sudden-onset) (new July 2015).....	11
Disaster damage (new July 2015)	12
Disaster impact (new July 2015)	12
Disaster management (new July 2015).....	13
Disaster risk (new July 2015).....	13
Disaster risk governance (new July 2015).....	13
Disaster risk management (new July 2015).....	13
Disaster risk reduction (new July 2015)	14
Disaster risk reduction plan (based on UNISDR 2009)	14
Displaced (new July 2015).....	14
E	14
Early warning system (adapted, August 2015).....	14
Economic loss (new July 2015).....	15

Ecosystem services (adapted August 2015)	15
El Niño-southern oscillation phenomenon (based on UNISDR 2009).....	15
Emergency management (based on UNISDR 2009)	16
Emergency services (based on UNISDR 2009).....	16
Environmental degradation (adapted August 2015).....	16
Environmental hazard (adapted August 2015)	17
Environmental impact assessment (adapted August 2015).....	17
Evacuated (new July 2015).....	17
Exposure (based on UNISDR 2009)	18
Extensive risk (based on GAR 2015)	18
F.....	18
Financial protection (based on World Bank, 2012)	18
Forecast (based on UNISDR 2009)	18
G	19
Geological hazard (based on UNISDR 2009).....	19
Greenhouse gases (based on UNISDR 2009).....	19
H	19
Hazard (based on UNISDR 2004, quoted in the Sendai Framework)	19
Hazardous Event (new July 2015)	20
Hydro-meteorological hazard (based on UNISDR 2009)	20
I.....	20
Indirect economic loss (adapted August 2015).....	20
Indirectly affected (new July 2015)	21
Injured or ill (new July 2015).....	21
Intensive risk (based on GAR 2015).....	21
K.....	21
Killed (new July 2015).....	21
L.....	21
Land-use planning (based on UNISDR 2009)	21
M	22
Man-made hazard (new July 2015).....	22
Mitigation (based on UNISDR 2009)	22
Multi-hazard early warning system (new July 2015).....	22
N	23
National platform for disaster risk reduction (based on UNISDR 2009 and the Sendai Framework)	23
Natural hazard (based on UNISDR 2009)	23

P	24
Peer review (new July 2015)	24
Preparedness (based on UNISDR 2009)	24
Prevention (new July 2015).....	24
Prospective disaster risk management (based on UNISDR 2009)	25
Public awareness (based on UNISDR 2009)	25
R	25
Reconstruction (new July 2015).....	25
Recovery (new July 2015)	25
Rehabilitation (new July 2015)	26
Relocated (new July 2015)	26
Replacement cost (new July 2015).....	26
Residual risk (based on UNISDR 2009)	26
Resilience (UNISDR 2009, quoted in the Sendai framework).....	26
Response (new July 2015).....	27
Retrofitting (based on UNISDR 2009).....	27
Risk (based on UNISDR 2004).....	27
Risk assessment (based on UNISDR 2009)	28
Risk information (new July 2015)	28
Risk transfer (based on UNISDR 2009)	28
S	30
Socio-natural hazard (adapted August 2015).....	30
Structural and non-structural measures (based on UNISDR 2009).....	30
Sustainable development (based on UNISDR 2009)	31
T	31
Technological hazard (based on UNISDR 2009)	31
U	31
Underlying disaster risk drivers (new July 2015).....	31
V	32
Vulnerability (based on UNISDR 2004, quoted in the Sendai Framework)	32

Note:

Underlining is used to signify terms that have been newly updated elsewhere in the document.

A

Acceptable risk (based on UNISDR 2009)

The level of potential losses that a society or community considers acceptable given existing social, economic, political, cultural, technical and environmental conditions.

Comment:

In engineering terms, acceptable risk is also used to assess and define the structural and non-structural measures that are needed in order to reduce possible harm to people, property, services and systems to a chosen tolerated level, according to codes or “accepted practice” which are based on known probabilities of hazards and other factors.

Adaptation (IPCC, 2014)

The process of adjustment to actual or expected climate and its effects. In human systems, adaptation seeks to moderate or exploit beneficial opportunities. In some natural systems, human intervention may facilitate adjustment to expected climate.

Affected people (new July 2015)

People who are affected by a hazardous event.

Comment:

People can be affected directly or indirectly. Affected people may experience short-term or long-term consequences to their lives, livelihoods or health and in the economic, physical, social, cultural and environmental assets.

See also the definition of Directly affected and Indirectly affected.

B

Basic services (new July 2015)

Services that are needed for all of society to function effectively.

Comment:

Examples of basic services include water supply, sanitation, health care, education, housing, and food supply. They also include services provided by critical infrastructure such as electricity, telecommunications, transport, finance or waste management that are needed for all of society to function. For the purpose of Sendai Framework, target four, please also refer to critical infrastructure.

Biological hazard (new July 2015)

Process or phenomenon of organic origin or conveyed by biological vectors, including pathogenic micro-organisms, toxins and bioactive substances.

Comment:

Examples of biological hazards include epidemic and pandemic diseases, plant or animal contagion, insect or other animal plagues and infestations.

Build back better (new July 2015)

The guiding principle to utilize the reconstruction process to improve living and environmental conditions including through integrating disaster risk reduction into development measures, making nations and communities more resilient to disasters.

Building code (based on UNISDR 2009)

A set of ordinances or regulations and associated standards intended to control aspects of the design, construction, materials, alteration and occupancy of structures which are necessary to ensure human safety and welfare, including resistance to collapse and damage.

Comment:

Building codes can include both technical and functional standards. They should incorporate the lessons of international experience and should be tailored to national and local circumstances. A systematic regime of enforcement is a critical supporting requirement for effective implementation of building codes.

C

Capacity (based on UNISDR 2009)

The combination of all the strengths, attributes and resources available within a community, society or organization to manage and reduce the risks and strengthen resilience.

Comment:

Capacity may include infrastructure and physical means, institutions, societal coping abilities, as well as human knowledge, skills and collective attributes such as social relationships, leadership and management. Capacity assessment is a term for the process by which the capacity of a group is reviewed against desired goals, and the capacity gaps are identified for further action.

Capacity development (based on UNISDR 2009)

The process by which people, organizations and society systematically stimulate and develop their capacities over time to achieve social and economic goals, including through improvement of knowledge, skills, systems, and institutions.

Comment:

Capacity development is a concept that extends the term of capacity building to encompass all aspects of creating and sustaining capacity growth over time. It involves learning and various types of training, but also continuous efforts to develop institutions, political awareness, financial resources, technology systems, and the wider social and cultural enabling environment.

Climate change (drawn from IPCC, 2014)

“Climate change refers to a change in the state of the climate that can be identified (e.g., by using statistical tests) by changes in the mean and/or the variability of its properties, and that persists for an extended period, typically decades or longer. Climate change may be due to natural internal processes or external forcings such as modulations of the solar cycles, volcanic eruptions, and persistent anthropogenic changes in the composition of the atmosphere or in land use”.

Compensatory disaster risk management (based on GAR 2015)

Risk management activities to strengthen the social and economic resilience of individuals and societies, particularly in the face of residual risk that cannot be effectively reduced.

Comment (based on GAR 2011):

Compensatory disaster risk management may include a mix of different instruments, such as national contingency funds, contingent credit, insurance and reinsurance. These mechanisms contribute to providing financial liquidity and fiscal stability after disasters, as well as more predictable recovery and reconstruction. If risk-transfer measures are linked to specific

requirements and criteria for risk reduction, they can provide a powerful incentive for other disaster risk management investments.

Contingency planning (based on UNISDR 2009)

A management process that analyses emerging disaster risks and establishes arrangements in advance to enable timely, effective and appropriate responses.

Comment:

Contingency planning results in organized and coordinated courses of action with clearly identified institutional roles and resources, information processes, and operational arrangements for specific actors at times of need. Based on scenarios of possible emergency conditions or hazardous events, it allows key actors to envision, anticipate and solve problems that can arise during crises. Contingency planning is an important part of overall preparedness. Contingency plans need to be regularly updated and exercised.

Coping capacity (based on UNISDR 2009)

The ability of people, organizations and systems, using available skills and resources, to manage adverse conditions, risk or disasters.

Comment:

The capacity to cope requires continuing awareness, resources and good management, both in normal times as well as during crises or adverse conditions. Coping capacities contribute to the reduction of disaster risks.

Corrective disaster risk management (based on UNISDR 2009)

Management activities that address and seek to correct or reduce disaster risks which are already present.

Comment:

This concept aims to distinguish between the risks that are already present, and which need to be managed and reduced now, and future risk that may develop if risk reduction policies are not put in place.

See also the definitions of Disaster risk management, Prospective disaster risk management and Corrective disaster risk management.

Critical infrastructure (new July 2015)

The physical structures, facilities, networks and other assets that support services that are socially, economically or operationally essential to the functioning of a society or community.

Comment:

Critical infrastructures are elements of the infrastructure that support essential services in a society. They include electricity/power, water, transport systems, air and sea ports, communication systems, health and educational facilities (including hospitals, health centres, schools), as well as public administration services, financial services, centres for fire and police, etc. For the purpose of Sendai Framework, target 4 please also refer to basic services.

D

Direct economic loss (new July 2015)

The monetary value of total or partial destruction of physical assets existing in the affected area.

Comment:

Examples of physical assets include homes, schools, hospitals, commercial and governmental buildings, transport, energy, telecommunications infrastructures and other infrastructure; business assets and industrial plants; production such as standing crops, agricultural infrastructure and livestock. They may also encompass environment and cultural heritage.

See also the definitions of Economic loss and Indirect Economic loss.

Directly affected (new July 2015)

People who have suffered injury, illness or other health effects; who were evacuated, displaced, relocated; or have suffered direct damage to their livelihoods, economic, physical, social, cultural and environmental assets.

Comment:

In addition, people who are missing or dead may be considered as directly affected.

Disaster (small-scale, large-scale, frequent and infrequent, slow-onset, sudden-onset) (new July 2015)

A serious disruption of the functioning of a community or a society due to hazardous events interacting with conditions of vulnerability and exposure, leading to widespread human, material, economic and environmental losses and impacts.

Comments:

Disasters are a type of hazardous event in which there is significant disruption of the function of all or part of society. The impact of the disaster is often widespread and could last for a long period of time. The impact may test or exceed the capacity of a community or society to cope using its own resources, and therefore may require assistance from external sources, which could include neighbouring jurisdictions, or national or international levels.

Disaster results from the combination of: the exposure to a hazard; the conditions of vulnerability that are present; and insufficient capacity or measures to reduce or cope with the potential negative consequences. Consequences may include injuries, disease and other negative effects on human physical, mental and social well-being, together with damage to property, loss of services and environmental degradation.

For the purpose of the scope of the Sendai framework (paragraph 15) the following terms are also considered:

- **Small-scale disaster:** A type of disaster only affecting local communities which require assistance beyond the affected community.
- **Large-scale disaster:** A type of disaster affecting a society, which requires national or international assistance.
- **Frequent and infrequent disasters:** depend on the probability of occurrence and the return period of a given hazard and its impacts. The impact of frequent disasters could be cumulative, or become chronic for a community or a society.
- **A slow-onset disaster** is defined as one that emerges gradually over time. Slow-onset disasters could be associated with e.g. drought, desertification, sea level rise, epidemic disease.
- **A sudden-onset disaster** is one triggered by a hazardous event that emerges quickly or unexpectedly. Sudden-onset disasters could be associated with e.g. earthquake, volcanic eruption, flash flood, chemical explosion, critical infrastructure failure, transport accident.

Disaster damage (new July 2015)

Total or partial destruction of physical assets existing in the affected area.

Comment:

Damage occurs during and immediately after the disaster and is measured in physical units (i.e. square meters of housing, kilometres of roads, etc.).

Disaster impact (new July 2015)

Represents the overall effects of a disaster, including negative and possibly positive ones.

Comments:

Disaster impact is a wider term including negative (e.g. economic losses) effects and positive (e.g. economic gains) effects of a hazardous event or a disaster. The term includes economic, human and environmental impacts.

Disaster impacts may include injuries, disease and other negative effects on human physical, mental and social well-being, together with damage to property, loss of services and environmental degradation. See also definition of Disaster.

Disaster management (new July 2015)

The organization, planning and application of measures preparing for, responding to and, initial recovery from disasters.

Comment:

Disaster management may not completely avert or eliminate the threats, it focuses on creating and implementing preparedness and others plans to decrease the impact of disasters and build back better. Failure to create/apply a plan could lead to damage to life, assets and lost revenue. See also Emergency management.

Disaster risk (new July 2015)

Disaster risk is considered to be a function of hazard, exposure and vulnerability. It is normally expressed as a probability of loss of life, injury or destroyed or damaged assets which could occur to a system, society or a community in a specific period of time.

Comment (based on UNISDR 2009):

The definition of disaster risk reflects the concept of disasters as the outcome of continuously present conditions of risk. Disaster risk comprises different types of potential losses which are often difficult to quantify. Nevertheless, with knowledge of the prevailing hazards and the patterns of population and socio-economic development, disaster risks can be assessed and mapped, in broad terms at least.

Disaster risk governance (new July 2015)

The system of institutions, mechanisms, policy and legal frameworks and other arrangements to guide, coordinate and oversee disaster risk reduction and related areas of policy.

Comment:

Good governance needs to be transparent, inclusive, collective, and efficient to reduce existing risks and avoid creating new ones.

Disaster risk management (new July 2015)

Disaster risk management is the application of disaster risk reduction policies, processes and actions to prevent new risk, reduce existing disaster risk and manage residual risk contributing to the strengthening of resilience.

Comment:

Disaster risk management includes actions designed to avoid the creation of new risks, such as better land-use planning and disaster resistant water supply systems (prospective disaster risk management), actions designed to address pre-existing risks, such as reduction of health

and social vulnerability, retrofitting of critical infrastructure (corrective disaster risk management) and actions taken to address residual risk and reducing impacts on communities and societies, such as preparedness, insurance and social safety nets (compensatory disaster risk management).

Disaster risk reduction (new July 2015)

Disaster risk reduction is the policy objective aimed at preventing new and reducing existing disaster risk and managing residual risk, all of which contributes to strengthening resilience.

Comment:

A global, agreed policy of disaster risk reduction set out in the United Nations' endorsed "Sendai Framework for Disaster Risk Reduction 2015-2030", adopted in March 2015, whose expected outcome over the next 15 years is: "The substantial reduction of disaster risk and losses in lives, livelihoods and health and in the economic, physical, social, cultural and environmental assets of persons, businesses, communities and countries".

Disaster risk reduction plan (based on UNISDR 2009)

A document prepared by an authority, sector, organization or enterprise that sets out goals and specific objectives for reducing disaster risks together with related actions to accomplish these objectives.

Comment:

Disaster risk reduction plans should be guided by the Sendai Framework and considered and coordinated within relevant development plans, resource allocations and programme activities. National level plans needs to be specific to each level of administrative responsibility and adapted to the different social and geographical circumstances that are present. The time frame and responsibilities for implementation and the sources of funding should be specified in the plan. Linkages to climate change adaptation plans should be made where possible.

Displaced (new July 2015)

Persons who, for different reasons and circumstances because of risk or disaster, have to leave their place of residence.

E

Early warning system (adapted, August 2015)

An interrelated set of hazard warning, risk assessment, communication and preparedness activities that enable individuals, communities, businesses and others to take timely action to reduce their risks.

Comments:

Effective “end-to-end” and “people-centred” early warning system comprises four interrelated key elements: 1) risk knowledge and risk assessment; 2) detection, monitoring, analysis and forecasting of the hazards and possible scenarios; 3) dissemination and communication of timely, accurate and actionable warnings and associated likelihood and impact information; and 4) preparedness and local capabilities to respond to the warnings received.

The expressions “end-to-end” and “people-centred” early warning systems are also used to emphasize that early warning systems need to span all steps from hazard detection to user-/sector- specific warning reaching a threatened community to take action. These four interrelated components need to be coordinated within and across sectors and multiple levels for the system to work effectively.

See also the definition of Multi-hazard early warning system.

Economic loss (new July 2015)

Total economic impact that consists of direct economic loss and indirect economic loss.

Comments:

Direct and indirect economic loss are two complementary parts of the total economic loss.

See also the definitions of Direct economic loss and Indirect economic loss.

Ecosystem services (adapted August 2015)

The benefits provided by ecosystems that contribute to making human life both possible and worth living.

Comment:

An ecosystem is a dynamic complex of plant, animal, and micro-organism communities and the non-living environment, interacting as a functional unit. Humans are an integral part of ecosystems. Ecosystem services are the benefits people obtain from ecosystems. The Millennium Ecosystem Assessment categorized these as provisioning services such as food and water; regulating services such as flood and disease control; cultural services such as spiritual, recreational, and cultural benefits; and supporting services, such as nutrient cycling, that maintain the conditions for life on Earth. Integrated management of land, water and living resources that promotes conservation and sustainable use, the recognition of their benefits and the promotion of their equitable use provide the basis for maintaining and sustaining ecosystem services, in particular those that contribute to reducing disaster risks.

El Niño-southern oscillation phenomenon (based on UNISDR 2009)

A complex interaction of the tropical Pacific Ocean and the global atmosphere that results in irregularly occurring episodes of changed ocean and weather patterns in many parts of the world, often with significant impacts over many months, such as altered marine habitats, rainfall changes, floods, droughts, and changes in storm patterns.

Comment:

The El Niño part of the El Niño-Southern Oscillation (ENSO) phenomenon refers to the well-above-average ocean temperatures that occur along the coasts of Ecuador, Peru and northern Chile and across the eastern equatorial Pacific Ocean, while La Niña part refers to the opposite circumstances when well-below-average ocean temperatures occur. The Southern Oscillation refers to the accompanying changes in the global air pressure patterns that are associated with the changed weather patterns experienced in different parts of the world.

Emergency management (based on UNISDR 2009)

The organization and management of resources and responsibilities for addressing all aspects of emergencies and effectively respond to a hazardous event or a disaster.

Comment:

A crisis or emergency is a threatening condition that requires urgent action. Effective emergency action can avoid the escalation of a hazardous event into a disaster. Emergency management involves plans and institutional arrangements to engage and guide the efforts of government, non-government, voluntary and private agencies in comprehensive and coordinated ways to respond to the entire spectrum of emergency needs.

See also definition of Disaster management.

Emergency services (based on UNISDR 2009)

The set of specialized agencies that have specific responsibilities and objectives in serving and protecting people and property in emergency situations.

Comment:

Emergency services include agencies such as civil protection authorities, police, fire, ambulance, paramedic and emergency medicine services, Red Cross and Red Crescent societies, and specialized emergency units of electricity, transportation, communications and other related services organizations.

Environmental degradation (adapted August 2015)

The deterioration of the environment through depletion of resources such as air, water and soil; the destruction of ecosystems and the extinction of wildlife.

Comment:

Environmental degradation may include water pollution and water scarcity, air pollution, soil

degradation, deforestation, desertification, loss of biodiversity, and atmospheric changes. Environmental degradation can lead to increased occurrence and intensity of hazards, such as drought, soil erosion, mass movement of land, or floods, and to increased vulnerability of people and societies to hazards through increased incidence of disease, reduced access to drinking water, and loss in productivity of farms.

Environmental hazard (adapted August 2015)

A process in the environment either occurring naturally, like earthquakes, typhoons, or man-made, like endocrine disruptors, and pollution, that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage.

Comment:

Environmental Hazards can include chemical, natural and biological hazards and may include: skin irritants, carcinogens or respiratory sensitizers; drought, floods, earthquakes; medical waste or samples of a microorganism, virus or toxin. Environmental hazards can be created by environmental degradation, physical or chemical pollution in the air, water and soil.

Environmental impact assessment (adapted August 2015)

Environmental Impact Assessment (EIA) is the formal process by which the environmental consequences of a proposed project or programme are evaluated, undertaken as an integral part of planning and decision-making processes, taking into account inter-related socio-economic, cultural and human-health impacts, both beneficial and adverse.

Comment:

Environmental impact assessment is a policy tool that provides evidence and analysis of environmental impacts of activities from conception to decision-making. It is utilized extensively in national programming and project approval processes and for international development assistance projects. Environmental impact assessments should include detailed risk assessments and provide alternatives, solutions or options to deal with identified problems.

Evacuated (new July 2015)

People who, for different reasons or circumstances because of risk conditions or disaster, move temporarily to safer places before, during or after the occurrence of a hazardous event.

Comment:

Evacuation can occur from places of residence, workplace, schools, hospitals to other places. Evacuation is usually a planned and organized mobilization of persons, animals and goods, for eventual return.

Exposure (based on UNISDR 2009)

People, property, other assets or systems exposed to hazards.

Comment:

Measures of exposure can include the number of people or types of assets in an area. These can be combined with the specific vulnerability of the exposed elements to any particular hazard to estimate the quantitative risks associated with that hazard in the area of interest.

Extensive risk (based on GAR 2015)

The risk of low-severity, high-frequency disasters, mainly but not exclusively associated with highly localized hazards.

Comment (based on UNISDR, 2009)

Extensive risk is mainly a characteristic of rural areas and urban margins where communities are exposed to, and vulnerable to, recurring localised floods, landslides storms or drought. Extensive risk is often associated with poverty, urbanization and environmental degradation.

See also the definition of Intensive risk.

F

Financial protection (based on World Bank, 2012)

Strategies to protect governments, businesses and households from the economic burden of disasters.

Comment:

Financial protection strategies can include programs to increase the financial capacity of a state to respond to a disaster impact or an emergency, whilst protecting the fiscal balance. They can also promote the deepening of insurance markets at a sovereign and household level, and social protection strategies for the poorest.

Forecast (based on UNISDR 2009)

Definite statement or statistical estimate of the likely occurrence of a future hazardous event or conditions for a specific area.

Comment:

In meteorology a forecast refers to a future condition, whereas a warning refers to a potential occurrence of a hazardous event.

G

Geological hazard (based on UNISDR 2009)

Geological process or phenomenon that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage.

Comment:

Geological hazards include internal earth processes, such as earthquakes, volcanic activity and emissions, and related geophysical processes such as mass movements, landslides, rockslides, surface collapses, and debris or mud flows. Hydro-meteorological factors are important contributors to some of these processes. Tsunamis are difficult to categorize; although they are triggered by undersea earthquakes and other geological events, they essentially become oceanic process that is manifested as a coastal water-related hazard.

Greenhouse gases (based on UNISDR 2009)

Gaseous constituents of the atmosphere, both natural and anthropogenic, that absorb and emit radiation of thermal infrared radiation emitted by the Earth's surface, the atmosphere itself, and by clouds.

Comment:

This is the definition of the Intergovernmental Panel on Climate Change (IPCC). The main greenhouse gases (GHG) are water vapour, carbon dioxide, nitrous oxide, methane and ozone.

H

Hazard (based on UNISDR 2004, quoted in the Sendai Framework)

A potentially damaging physical event, phenomenon or human activity that may cause the loss of life or injury, property damage, social and economic disruption or environmental degradation.

Comment:

Hazards can include latent conditions that may represent future threats and can have different origins: natural (geological, hydro-meteorological and biological) or induced by human processes (environmental degradation and technological hazards). Hazards can be single, sequential or combined in their origin and effects. Each hazards is characterised by its location, intensity, frequency and probability.

See other hazard-related terms in the Terminology: Biological hazard; Environmental hazard; Geological hazard; Hydro-meteorological hazard; Man-made hazard; Natural hazard; Socio-natural hazard; Technological hazard.

Hazardous Event (new July 2015)

The occurrence of a natural or human-induced phenomenon in a particular place during a particular period of time due to the existence of a hazard.

Comment:

Severe hazardous event(s) could lead to a disaster as a result of the combination of hazard occurrence and risk factors.

Hydro-meteorological hazard (based on UNISDR 2009)

Process or phenomenon of atmospheric, hydrological or oceanographic nature that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage.

Comment:

Hydro-meteorological hazards include tropical cyclones (also known as typhoons and hurricanes), thunderstorms, hailstorms, tornados, blizzards, heavy snowfall, avalanches, coastal storm surges, floods including flash floods, drought, heatwaves and cold spells. Hydro-meteorological conditions also can be a factor in other hazards such as landslides, wildland fires, locust plagues, epidemics, and in the transport and dispersal of toxic substances and volcanic eruption material.

I

Indirect economic loss (adapted August 2015)

Declines in value added as a consequence of direct economic loss and/or human and environmental impacts. Indirect economic loss is part of disaster impact.

Comments:

Indirect economic loss includes micro-economic impacts (e.g. revenue declines owing to business interruption), meso-economic impacts (e.g. revenue declines owing to impacts on a supply chain or temporary unemployment) and macro-economic impacts (e.g. price increases, increases in government debt, negative impact on stock market prices, and decline in GDP). Indirect losses can occur inside or outside of the hazard area and often with a time lag.

See also the definitions of Economic loss and Direct economic loss.

Indirectly affected (new July 2015)

People who have suffered consequences, other than or in addition to direct effects, over time due to disruption or changes in economy, critical infrastructures, basic services, commerce, work or social, health and psychological consequences.

Injured or ill (new July 2015)

People suffering from a new or exacerbated physical or psychological harm, trauma or an illness as a result of a hazardous event.

Intensive risk (based on GAR 2015)

Intensive risk is used to describe the risk of high-severity, mid to low-frequency disasters, mainly associated with major hazards.

Comment:

Intensive risk is mainly a characteristic of large cities or densely populated areas that are not only exposed to intense hazards such as strong earthquakes, active volcanoes, heavy floods, tsunamis, or major storms but also have high levels of vulnerability to these hazards.

See also the definition of Extensive risk.

K

Killed (new July 2015)

People who lost their lives as a consequence of a hazardous event.

L

Land-use planning (based on UNISDR 2009)

The process undertaken by public authorities to identify, evaluate and decide on different options for the use of land, including consideration of long term economic, social and environmental objectives and the implications for different communities and interest groups, and the subsequent formulation and promulgation of plans that describe the permitted or acceptable uses.

Comment:

Land-use planning is an important contributor to sustainable development. It involves studies and mapping; analysis of economic, environmental and hazard data; formulation of alternative

land-use decisions; and design of long-range plans for different geographical and administrative scales. Land-use planning can help to mitigate disasters and reduce risks by discouraging settlements and construction of key installations in hazard-prone areas, including consideration of service routes for transport, power, water, sewage and other critical facilities.

M

Man-made hazard (new July 2015)

Hazards induced entirely or predominantly by humans, including technological and socio-natural hazards.

Comment:

Man-made hazards (also known as human-induced hazards or anthropogenic hazards) are a collective term that covers the range of hazards that result from human activities. They are distinguished from natural hazards. The range of man-made hazards includes technological and socio-natural hazards, and those that may arise from the relationships within and between communities.

Mitigation (based on UNISDR 2009)

The lessening or limitation of the adverse impacts of a hazardous event.

Comment:

The adverse impacts of hazards often cannot be prevented fully, but their scale or severity can be substantially lessened by various strategies and actions. Mitigation measures encompass engineering techniques and hazard-resistant construction as well as improved environmental policies and public awareness. It should be noted that in climate change policy, "mitigation" is defined differently, being the term used for the reduction of greenhouse gas emissions that are the source of climate change.

Multi-hazard early warning system (new July 2015)

An early warning system is designed to be used in multi-hazard contexts where hazardous events may occur simultaneously or cumulatively over time, and taking into account the potential interrelated effects.

Comment:

A multi-hazard early warning system increases the efficiency and consistency of warnings by using updated and accurate hazards identification, mapping and monitor systems' data.

N

National platform for disaster risk reduction (based on UNISDR 2009 and the Sendai Framework)

A generic term for national mechanisms for coordination and policy guidance on disaster risk reduction that are multi-sectoral and inter-disciplinary in nature, with public, private and civil society participation involving all concerned entities within a country.

Comments:

This definition is derived from paragraph 27g of the Sendai Framework that calls to “ establish and strengthen government coordination forums composed of relevant stakeholders at national and local levels, such as national and local platforms for disaster risk reduction, and a designated national focal point for implementing the post-2015 framework. It is necessary for such mechanisms to have a strong foundation in national institutional frameworks with clearly assigned responsibilities and authority to, inter alia, identify sectoral and multisectoral disaster risk, build awareness and knowledge of disaster risk through sharing and dissemination of non-sensitive disaster risk information and data, contribute to and coordinate reports on local and national disaster risk, coordinate public awareness campaigns on disaster risk, facilitate and support local multi-sectoral cooperation (e.g. among local governments), contribute to the determination of and reporting on national and local disaster risk management plans and all policies relevant for disaster risk management. These responsibilities should be established through laws, regulations, standards and procedures”

Natural hazard (based on UNISDR 2009)

Natural process or phenomenon that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage.

Comment:

Natural hazards are a sub-set of all hazards. The term is used to describe actual hazards as well as the latent hazard conditions that may give rise to future events. Natural hazards can be characterized by their magnitude or intensity, speed of onset, duration, and area of extent. For example, earthquakes have short durations and usually affect a relatively small region, whereas droughts are slow to develop and fade away and often affect large regions. In some cases hazards may be coupled, as in the flood caused by a hurricane or the tsunami that is created by an earthquake.

P

Peer review (new July 2015)

Systematic and independent examination of performance or studies in a particular area through a collaborative approach involving experts from different disciplines and sectors, allowing mutual learning, identification of effective practices and recommendations for improvements.

Comment:

The key features of an effective review lies in its credibility, objectivity, impact and relevance as well as on mutual trust among the partners involved and shared confidence in the process.

Preparedness (based on UNISDR 2009)

The knowledge and capacities developed by governments, professional response and recovery organizations, communities and individuals to effectively anticipate, respond to, and recover from, the impacts of likely, imminent or current disasters.

Comment:

Preparedness action is carried out within the context of disaster risk management and aims to build the capacities needed to efficiently manage all types of emergencies and achieve orderly transitions from response through to sustained recovery. Preparedness is based on a sound analysis of disaster risks and good linkages with early warning systems, and includes such activities as contingency planning, stockpiling of equipment and supplies, the development of arrangements for coordination, evacuation and public information, and associated training and field exercises. These must be supported by formal institutional, legal and budgetary capacities. The related term “readiness” describes the ability to quickly and appropriately respond when required.*

Prevention (new July 2015)

Activities and measures to avoid existing and new disaster risks.

Comment:

Prevention (i.e. disaster prevention) expresses the concept and intention to completely avoid potential adverse impacts of hazards, vulnerability conditions and exposure through action normally taken in advance of an event. Examples include dams or embankments that eliminate flood risks, land-use regulations that do not permit any settlement in high risk zones, and seismic engineering designs that ensure the survival and function of a critical building in any likely earthquake.*

Prevention measures can also be taken in or after an event or disaster to prevent secondary hazards or their consequences such as measures to prevent contamination of water supplies or measures to eliminate natural dams resulting of earthquake induced landslides and/or rock falls. Very often the complete avoidance of losses is not feasible and the task transforms to that of mitigation. Partly for this reason, the terms prevention and mitigation are sometimes used interchangeably in casual use.

Prospective disaster risk management (based on UNISDR 2009)

Management activities that address and seek to avoid the development of new or increased disaster risks.

Comment:

This concept focuses on addressing risks that may develop in future if risk reduction policies are not put in place, rather than on the risks that are already present and which can be managed and reduced now.

See also the definition of Corrective disaster risk management, Corrective disaster risk management and Compensatory disaster risk management.

Public awareness (based on UNISDR 2009)

The extent of common knowledge about disaster risks, the factors that lead to disasters and the actions that can be taken individually and collectively to reduce exposure and vulnerability to hazards.

Comment:

Public awareness is a key factor in effective disaster risk reduction. Its development is pursued, for example, through the development and dissemination of information through media and educational channels, the establishment of information centres, networks, and community or participation actions, and advocacy by senior public officials and community leaders.

R

Reconstruction (new July 2015)

The medium and longer-term repair and sustainable restoration of critical infrastructures, services, housing, facilities and livelihoods required for full functioning of a community or a society affected by a disaster.

Recovery (new July 2015)

Decisions and actions aimed at restoring or improving livelihoods, health, as well as economic, physical, social, cultural and environmental assets, systems and activities, of a disaster-affected community or society, aligning with the principles of sustainable development, including build back better to avoid or reduce future disaster risk.

Rehabilitation (new July 2015)

The rapid and basic restoration of services and facilities for the functioning of a community or a society affected by a disaster.

Relocated (new July 2015)

People who, for different reasons or circumstances because of risk or disaster, have moved permanently from their places of residence to new sites.

Replacement cost (new July 2015)

The cost of replacing damaged assets with materials of like kind and quality.

Comments:

This includes both private and public assets. Replacement is not necessarily an exact duplicate of the subject but serves the same purpose or function as the original (not taking into account building back better).

Residual risk (based on UNISDR 2009)

The risk that remains in unmanaged form, even when effective disaster risk reduction measures are in place, and for which emergency response and recovery capacities must be maintained.

Comment:

The presence of residual risk implies a continuing need to develop and support effective capacities for emergency services, preparedness, response and recovery together with socio-economic policies such as safety nets and risk transfer mechanisms, as part of a holistic approach.

Resilience (UNISDR 2009, quoted in the Sendai framework)

The ability of a system, community or society exposed to hazards to resist, absorb, accommodate to and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions.

Comment:

Resilience means the ability to “resile from” or “spring back from” a shock. The resilience

of a community in respect to any hazard or event is determined by the degree to which the community has the necessary resources and is capable of organizing itself both prior to and during times of need.

Response (new July 2015)

Actions taken during or immediately after a disaster in order to save lives, reduce health impacts, ensure public safety and meet the basic subsistence needs of the people affected.

Alternative definition (based on UNISDR 2009):

The provision of emergency services and public assistance during or immediate after a disaster in order to save lives, reduce impacts, ensure public safety and meet the basic subsistence needs of the people affected

Comment:

Disaster response is predominantly focused on immediate and short-term needs and is sometimes called disaster relief. Effective, efficient and timely response relies on risk-informed preparedness measures, including the development of the response capacities of individuals, communities, organizations, countries and the international community.

The institutional elements of response often include provision of emergency services and public assistance by public and private sectors and community sectors, as well as community and volunteer participation. The division between this response stage and the subsequent recovery stage is not clear-cut. Some response actions, such as the supply of temporary housing and water supplies, may extend well into the recovery stage.

Retrofitting (based on UNISDR 2009)

Reinforcement or upgrading of existing structures to become more resistant and resilient to the damaging effects of hazards.

Comment:

Retrofitting requires consideration of the design and function of the structure, the stresses that the structure may be subject to from particular hazards or hazard scenarios, and the practicality and costs of different retrofitting options. Examples of retrofitting include adding bracing to stiffen walls, reinforcing pillars, adding steel ties between walls and roofs, installing shutters on windows, and improving the protection of important facilities and equipment.

Risk (based on UNISDR 2004)

The combination of the probability of an event and its consequences which result from interaction(s) between natural or man-made hazard(s), vulnerability, exposure and capacity.

Comment:

Beyond expressing the probability of an event and its consequences, it is crucial to recognize that risks are inherent or can be created or exist within social systems. It is important to consider the social contexts in which risks occur and that people therefore do not necessarily share the same perceptions of risk and their underlying risk factors.

Risk assessment (based on UNISDR 2009)

An approach to determine the nature and extent of risk by analysing potential hazards and evaluating existing conditions of vulnerability that together could potentially harm exposed people, property, services, livelihoods and the environment on which they depend.

Comment:

Risk assessments (and associated risk mapping) include: a review of the technical characteristics of hazards such as their location, intensity, frequency and probability; the analysis of exposure and vulnerability including the physical social, health, economic and environmental dimensions; and the evaluation of the effectiveness of prevailing and alternative coping capacities in respect to likely risk scenarios. This series of activities is sometimes known as a risk analysis process.*

ISO 31000 defines risk assessment as a process made up of three processes: risk identification, risk analysis, and risk evaluation.

- *Risk identification: process that is used to find, recognize, and describe the risks that could affect the achievement of objectives.*
- *Risk analysis: process that is used to understand the nature, sources, and causes of the risks that have been identified and to estimate the level of risk. It is also used to study impacts and consequences and to examine the controls that currently exist.*
- *Risk evaluation: process that is used to compare risk analysis results with risk criteria in order to determine whether or not a specified level of risk is acceptable or tolerable.*

Risk information (new July 2015)

Comprehensive information on all dimensions of risk including hazards, exposure, vulnerability and capacity related to persons, communities, organizations and countries and their assets.

Comment:

Risk information includes all studies, information and mapping required to understand the risk drivers and underlying risk factors.

Risk transfer (based on UNISDR 2009)

The process of formally or informally shifting the financial consequences of particular risks from one party to another whereby a household, community, enterprise or state authority will obtain resources from the other party after a disaster occurs, in exchange for ongoing or compensatory social or financial benefits provided to that other party.

Comment:

Insurance is a well-known form of risk transfer, where coverage of a risk is obtained from an insurer in exchange for ongoing premiums paid to the insurer. Risk transfer can occur informally within family and community networks where there are reciprocal expectations of mutual aid by means of gifts or credit, as well as formally where governments, insurers, multi-lateral banks and other large risk-bearing entities establish mechanisms to help cope with losses in major events. Such mechanisms include insurance and re-insurance contracts, catastrophe bonds, contingent credit facilities and reserve funds, where the costs are covered by premiums, investor contributions, interest rates and past savings, respectively.

S

Socio-natural hazard (adapted August 2015)

Hazards where the causes are a combination of natural and anthropogenic factors, including environmental degradation, climate change and others.

Comment:

This term is used for the circumstances where human activity is increasing the occurrence of certain hazards beyond their natural probabilities. Evidence points to a growing disaster burden from such hazards. Socio-natural hazards can be reduced and avoided through wise management of land and environmental resources.

Structural and non-structural measures (based on UNISDR 2009)

Structural measures: Any physical construction to reduce or avoid possible impacts of hazards, or application of engineering techniques to achieve hazard resistance and resilience in structures or systems; Non-structural measures: Any measure not involving physical construction that uses knowledge, practice or agreement to reduce risks and impacts, in particular through policies and laws, public awareness raising, training and education.

Comment:

Common structural measures for disaster risk reduction include dams, flood levies, ocean wave barriers, earthquake-resistant construction, and evacuation shelters. Common non-structural measures include building codes, land use planning laws and their enforcement, research and assessment, information resources, and public awareness programmes. Note that in civil and structural engineering, the term “structural” is used in a more restricted sense to mean just the load-bearing structure, with other parts such as wall cladding and interior fittings being termed non-structural.

Sustainable development (based on UNISDR 2009)

Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

Comment:

This definition coined by the 1987 Brundtland Commission is very succinct but it leaves unanswered many questions regarding the meaning of the word development and the social, economic and environmental processes involved. Disaster risk is associated with unsustainable elements of development such as environmental degradation, while conversely disaster risk reduction can contribute to the achievement of sustainable development, through reduced losses and improved development practices.

T

Technological hazard (based on UNISDR 2009)

A hazard originating from technological or industrial conditions, including accidents, dangerous procedures, infrastructure failures or specific human activities.

Comment:

Examples of technological hazards include industrial pollution, nuclear radiation, toxic wastes, dam failures, transport accidents, factory explosions, fires, food contamination, cyber incidents, and chemical spills. Technological hazards also may arise directly as a result of the impacts of a natural hazard.*

U

Underlying disaster risk drivers (new July 2015)

Processes or conditions, including development-related, that influence the level of risk.

Alternative definition:

Processes or conditions, mostly development-related, that influence the level of risk.

Comments:

They include the consequences of increased exposure and vulnerability, poverty and inequality, climate change and variability, unplanned and rapid urbanization, poor land management and compounding factors such as demographic change, weak institutional arrangements, non-risk-informed policies, lack of regulation and incentives for private disaster risk reduction investment, complex supply chains, limited availability of technology, unsustainable uses of natural resources, declining ecosystems, pandemics and epidemics.

Examples of underlying risk factors are: lack of risk-informed land use, urban planning and development activities to reduce risk and vulnerabilities; lack of sustainable and integrated environmental and natural resources management; factors conducting to climate change consequences that increase hazard intensity and frequency, and sea level rise.

V

Vulnerability (based on UNISDR 2004, quoted in the Sendai Framework)

The conditions determined by physical, social, economic and environmental factors or processes, which increase the susceptibility of a community to the impact of hazards.

Comment:

For positive factors which increase the ability of people to cope with hazards. See also the definitions of Capacity and Coping Capacity.
