

## Glossary

Many of the definitions found in this glossary have been drawn from *Climate Resilient Cities 2008 Primer*.<sup>1</sup> Any working definitions are not intended to substitute for established definitions adopted in various international forums, such as the United Nations Framework Convention on Climate Change (UNFCCC) and Intergovernmental Panel on Climate Change (IPCC).

**Adaptation.** Adaptation to climate change refers to adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities. Various types of adaptation can be distinguished, including anticipatory and reactive adaptation, private and public adaptation, and autonomous and planned adaptation.<sup>2</sup>

- **autonomous adaptation.** Refers to spontaneous adaptation.
- **adaptation (planned).** Adaptation that is the result of a deliberate policy decision, based on an awareness that conditions have changed or are about to change and that action is required to return to, maintain, or achieve a desired state.
- **adaptation benefits.** The avoided damage costs or the accrued benefits following the adoption and implementation of adaptation measures.
- **adaptation costs.** Costs of planning, preparing for, facilitating, and implementing adaptation measures, including transaction costs.

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<sup>1</sup> World Bank. 2008. *Climate Resilient Cities 2008 Primer*. Contributors include World Bank, Global Facility for Disaster Reduction and Recovery, UN International Strategy for Disaster Reduction; Asian Development Bank; Organe consultatif en matière de recherche sur le climat et les changements climatiques (OcCC); Centre for International Climate and Environmental Research; United Nations Framework Convention on Climate Change.

<sup>2</sup> IPCC. 2001. *Third Assessment Report*.

**Adaptation Fund.** The Adaptation Fund will finance concrete adaptation programs in developing country Parties to the Kyoto Protocol with high vulnerability to the adverse effects of climate change. It is financed from a 2% levy on clean development mechanism project activities.

**Adaptation in development.** The marriage of humanitarian aid, disaster management, and poverty alleviation as an integral component of the development process.<sup>3</sup>

**Adaptive capacity.** The ability of a system to adjust to climate change (including climate variability and extremes) to moderate potential damage, take advantage of opportunities, or cope with the consequences.<sup>4</sup>

**Annex 1 (countries).** Parties include industrialized countries that were members of the Organisation for Economic Co-operation and Development (OECD) in 1992, plus countries with economies in transition (the “EIT Parties”), including the Russian Federation, the Baltic States, and several Central and Eastern European States. See: [http://unfccc.int/parties\\_and\\_observers/items/2704.php](http://unfccc.int/parties_and_observers/items/2704.php)

**Atmosphere.** The envelope of gases surrounding the earth and bound to it by the earth’s gravitational attraction.

**Bali Action Plan.** The United Nations Climate Change Conference in Bali in 2007 culminated in the adoption of the Bali Road Map, which consists of a number of forward-looking decisions that represent the various tracks that are essential to reaching a secure climate future. The Bali Road

Map includes the Bali Action Plan, which charts the course for a new negotiating process designed to tackle climate change, with the aim of completing this by 2009.

**Carbon capture and storage.** See **carbon sequestration**.

**Carbon intensity.** The ratio of carbon emissions produced to GDP or other unit of measurement (e.g. per unit of production, amount of energy produced).

**Carbon productivity.** Carbon productivity can be thought as the inverse of carbon intensity, which is measured in terms of greenhouse gas emissions (tons of CO<sub>2</sub> equivalent) divided per GDP.

**Carbon sequestration.** Carbon sequestration is defined by the IPCC as the carbon storage in terrestrial or marine reservoirs. Biological sequestration includes direct removal of CO<sub>2</sub> from the atmosphere through land use change, afforestation, reforestation, carbon storage in landfills, and practices that enhance soil carbon in agriculture.

**Carbon sinks.** Natural or artificial systems that absorb carbon dioxide from the atmosphere and store them. Trees, plants, and the oceans all absorb carbon dioxide and therefore are all carbon sinks.

**Carbon Market Initiative.** The CMI an innovative financing scheme by which ADB provides “upfront” co-financing through its Asia Pacific Carbon Fund in return for a proportion of certified emissions reduction (CERs) to be generated until 2012 by

<sup>3</sup> P Hayes. 2004. Master’s thesis: *Vulnerable Coastal Communities And Participatory Climate Adaptation In Development: A Case Study Of Scott’s Head/Soufriere, Commonwealth Of Dominica*. pp9.

<sup>4</sup> IPCC. 2001. *Climate Change 2001: Impacts, Adaptation and Vulnerability. Third Assessment Report*.

projects eligible for CDM. For projects that generate post-2012 carbon credits, ADB has established the Future Carbon Fund (FCF). The initial target fund size of FCF is \$100 million. Approved in July 2008, the FCF commenced operations in January 2009. CMI also provides technical support for project preparation and marketing services for CERs.

**Central Asian Countries Initiative for Land Management (CACILM).** CACILM is a partnership between Central Asian countries and international donor community to combat land degradation and improve rural livelihoods in Kazakhstan, Kyrgyz Republic, Tajikistan, Turkmenistan, and Uzbekistan.

**Civil society.** According to the United Nations Research Institute for Social Development definition of civil society in the context of poverty reduction, “civil society can be understood as the realm of citizen’s informal and formal private associations to pursue non-economic interests and goals.”

**Clean Development Mechanism (CDM).** The Clean Development Mechanism (CDM) is an investment scheme under the Kyoto Protocol whereby industrialized countries with a greenhouse gas reduction commitment can implement projects that reduce emissions in developing countries as an alternative to more expensive emission reductions in their own countries.

**Climate.** The average trend of weather, including its variability in a geographic region. Climate in a wider sense is the state, including a statistical description, of the climate system. The classical period of time is 30 years, as defined by the World Meteorological Organization. One popular

phrase can help distinguish weather from climate: “Climate is what you expect. Weather is what you get.”

**Climate change.** A change of climate that is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods (UNFCCC). See also **climate variability**.

**Climate change adaptation.** ADB defines adaptation as: “Adjustments to reduce costs and vulnerabilities, based on anticipated climate change impacts.”<sup>5</sup> The World Bank defines adaptation as “efforts to protect against climate change impacts.”<sup>6</sup>

**Climate Change Fund.** ADB’s \$40 million Climate Change Fund (CCF) provides grant financing for projects, technical assistance, research, and other activities to address the causes and consequences of climate change in its DMCs. The fund is open for contributions from countries, other development organizations, foundations, the private sector and other sources. \$5 million is reserved for land use interventions including forestry.

**Climate change migrant.** Person who, for compelling reasons of sudden or progressive changes in the environment as a result of climate change that adversely affect their lives or living conditions, are obliged to leave their habitual home, or chooses to do so, either temporarily or permanently, and who moves either within their country or abroad.

<sup>5</sup> ADB working definition, ADB. 2007. *Promoting Climate Change Adaptation in Asia and the Pacific*. Manila.

<sup>6</sup> World Bank. 2000. *Cities, Seas, and Storms*.

**Climate impacts.** Defined by the IPCC as “the extent to which climate change may damage or harm a system. It depends not only on a system’s sensitivity but also on its ability to adapt to new climate conditions.”

**Climate Investment Funds (CIF).** The CIF is a portfolio of funds established by ADB, AfDB, IDB, the World Bank and other partners. It consists of two funds: the Clean Technology Fund (CTF), for mitigation, that will scale up financing for demonstration, deployment, and transfer of low-carbon technologies; and the Strategic Climate Fund (SCF), for both mitigation and adaptation, will provide financing to test innovative approaches or scale up activities for targeted actions.

**Climate models.** Large and complex computer programs used to mathematically simulate global climate. They are based upon mathematical equations that seek to represent the physical processes that govern the earth–atmosphere system.

**Climate-proofing.** Climate-proofing refers to enhancing resilience to, and reducing the risks posed by, climate change; for example, improving the ability of infrastructure to withstand floods and cyclones.<sup>7</sup>

**Climate risk management.** An approach to systematically manage climate-related risks affecting activities, strategies, or investments, by taking account of the risk of current variability and extremes in weather as well as long-term climate change.

**Climate variability.** Climate variability refers to fluctuations in climate over a shorter term; the departures from long-term averages or trends, over seasons or a few years, such as those caused by the El Niño Southern Oscillation (ENSO) and North Atlantic Oscillation (NAO) phenomenon; also shorter-term extreme weather events. Variability may be due to natural internal processes within the climate system (internal variability), or to variations in natural or anthropogenic external forcing (external variability). See also **climate change**.

**Community-based disaster risk management.** A process that seeks to develop and implement strategies and activities for disaster preparedness (and often risk reduction) that are locally appropriate and locally “owned.”

**Consequences (risk and impact).** Risk is often expressed as the product of the consequences flowing from an event and the frequency of the event. The term “impacts” is used for consistency with the terminology of climate change.

**Climate risk management.** A term used for a large and growing body of work, bridging the climate change adaptation, disaster management, and development fields. Climate risk management is a generic term used to refer to an approach to promote sustainable development by reducing the vulnerability associated with climate risk. Climate risk management involves proactive no-regrets strategies.<sup>8</sup>

<sup>7</sup> International Institute for Environment and Development. *Climate Change & Poverty Reduction*. Irish Aid Key Sheet. [www.irishaid.gov.ie/Uploads/5%20Climate%20Change%20%20Poverty%20Reduction.pdf](http://www.irishaid.gov.ie/Uploads/5%20Climate%20Change%20%20Poverty%20Reduction.pdf)

<sup>8</sup> IRI. 2007. *Climate Risk Management in Africa: Learning from Practice*. pg. 8. Available [http://portal.iri.columbia.edu/portal/server.pt/gateway/PTARG5\\_0\\_2\\_1171\\_0\\_0\\_18/Climate%20and%20Society%20No1\\_en.pdf](http://portal.iri.columbia.edu/portal/server.pt/gateway/PTARG5_0_2_1171_0_0_18/Climate%20and%20Society%20No1_en.pdf)

**Climate risk management and adaptation.**

To integrate the management of current climate variability and extremes with adaptation to climate change—a climate risk management and adaptation approach.<sup>9</sup>

**Disaster.** A serious disruption to the functioning of a community or a society causing widespread human, material, economic, or environmental losses that exceed the ability of the affected community or society to cope using its own resources.

**Disaster preparedness.** Activities that contribute to the pre-planned, timely, and effective response of individuals and communities to reduce the impact and deal with the consequences of a (future) disaster.

**Disaster recovery.** Decisions and actions taken after a disaster with a view to restoring or improving the pre-disaster living conditions of the stricken community.

**Disaster risk management.**<sup>10</sup> The systematic process of using administrative decisions, organizations, operational skills, and capacities to implement policies, strategies, and coping capacities of a society to reduce the impacts of disasters.

**Disaster rehabilitation.** The set of actions taken after a disaster to enable basic services to resume functioning, to repair physical damage and community facilities, to revive economic activities,

and support the psychological and social well-being of the survivors.

**Disaster relief and/or response.** Coordinated activities aimed at meeting the needs of people who are affected by a disaster.

**Disaster risk reduction.** A systematic approach to reduce human, social, economic, and environmental vulnerability to natural hazards.

**Downscaled modeling.** Obtaining finer resolution scenarios of climate change from the coarser resolution global circulation model output. [www.cccsn.ca/Downscaling\\_Tools/Downscaling\\_Tools\\_Introduction-e.html](http://www.cccsn.ca/Downscaling_Tools/Downscaling_Tools_Introduction-e.html)

**Early warning.** Providing timely and effective information about an imminent hazard that allows people to take action to avoid a disaster or prepare for effective response.

**Energy Efficiency Initiative (EEI).** An ADB initiative to rapidly scale up clean energy operations. It has twelve focus countries in the region including: PRC, India, Indonesia, Pakistan, Philippines, Viet Nam, Afghanistan, Bangladesh, Cambodia, Lao People's Democratic Republic, Mongolia, and Uzbekistan.

**Emissions.** The release of greenhouse gases and/or their precursors into the atmosphere over a specified area and period of time.

<sup>9</sup> African Development Bank Climate Change Strategy. [www.cccsn.ca/Downscaling\\_Tools/Downscaling\\_Tools\\_Introduction-e.html](http://www.cccsn.ca/Downscaling_Tools/Downscaling_Tools_Introduction-e.html) Regarding the link between risk management and adaptation, the Department for International Development of the United Kingdom takes the view that adaptation is not a separate activity or an end in itself, but a means to sustain development gains, so it needs to be integrated into everyday risk management and planning processes.

<sup>10</sup> Disaster risk management and disaster risk reduction are nomenclature of the United Nations International Strategy for Disaster Reduction (UNISDR); ADB's 2008 DEAP Action Plan differentiates between disaster risk management and disaster risk reduction.

**Environmental aspects.** (specific to climate change) An element of the organization's activities, products, or services that can interact with, or be impacted by, the environment.

**Extreme weather event.** Weather that is extreme and rare in a particular place, such as extremely intense rainfall, extreme heat, or a very strong windstorm. However, these events may occur at much more frequent intervals in the future (once every 30, 50, or 100 years) due to the influence of climate change.

**Fossil fuels.** Carbon-based fuels formed in the ground over very long periods; includes coal, oil, and natural gas.

**Global Environment Facility (GEF).** The Global Environment Facility (GEF) is a partnership among 178 countries, international institutions, non-governmental organizations (NGOs), and the private sector to address global environmental issues while supporting national sustainable development initiatives. It provides grants for projects related to six focal areas: biodiversity, climate change, international waters, land degradation, the ozone layer, and persistent organic pollutants. For the Convention on Biological Diversity, the United Nations Framework Convention on Climate Change, the Stockholm Convention on Persistent Organic Pollutants, and the UN Convention to Combat Desertification (UNCCD) it is the designated financial mechanism helping countries meet their obligations to these agreements.

**Global warming.** The rise in average temperature on earth due to the increasing amounts of greenhouse gases in the atmosphere. The media often use this term to refer to climate change.

**Grassroots Adaptation in Development (GrAD).** Climate change adaptation efforts, combined with other developmental priorities,

conducted at the community or grassroots level (footnote 3).

**Greenhouse gas.** A gas that absorbs and re-emits infrared radiation. Greenhouse gases include carbon dioxide, carbon monoxide, nitrous oxide, oxides of nitrogen, methane, and non-methane volatile organic compounds. The Kyoto Protocol also addresses hydrofluorocarbons, perfluorocarbons, and sulphur hexafluoride.

**Hazard.** A potentially damaging physical event that may cause loss of life or injury, property damage, social and economic disruption, or environmental degradation.

**Hyogo Framework for Action 2005–2015.** The Hyogo Framework is a global blueprint for disaster risk reduction efforts during the next decade. Its goal is to substantially reduce disaster losses by 2015 - in lives, and in the social, economic, and environmental assets of communities and countries.

**Hurricane.** See **tropical cyclone**.

**Impact.** Something that logically or naturally follows from an action or condition related to climate change or climate variability.

**Intergovernmental Panel on Climate Change (IPCC).** The international mechanism established by the United Nations Environmental Program (UNEP) and the World Meteorological Organization to assess available information on the science, impacts, and economics of climate change, and of the mitigation options to address it.

**Inventory (greenhouse gas).** An estimation and quantification on anthropogenic greenhouse gas emissions and removals, using a standardized tabular reporting format for six major sectors: energy, industrial processes, solvents and other

product use, agriculture, land-use and forestry, and waste.<sup>11</sup>

**Kyoto Protocol.** The Kyoto Protocol is an international agreement linked to the United Nations Framework Convention on Climate Change. The major feature of the Kyoto Protocol is that it sets binding targets for 37 industrialized countries and the European Community for reducing greenhouse gas emissions. These amount to an average of 5% against 1990 levels over 2008–2012.<sup>12</sup>

**Joint Implementation.** This is a flexible mechanism that allows countries with emission targets (Annex B) to implement projects in towards meeting their Kyoto targets in other Annex B countries.

**Likelihood.** The degree of certainty of an event occurring. Likelihood can be stated as a probability.

**Loss.** An injury or damage to health, property, the environment, or something else of value.

**Low-carbon economy.** A low-carbon economy or low fossil fuel economy is a concept that refers to an economy which has a minimal output of greenhouse gas emissions into the biosphere, but specifically refers to the greenhouse gas carbon dioxide.

**Low-carbon growth path.** Strategies for developing countries that promotes efficient management of natural and energy resources and

discourages fossil fuel dependence. A means of moving towards a **low-carbon economy** see above.

**Magnitude.** A measure of how adverse or beneficial an effect may be.

**Mainstreaming.** The World Bank Working Group defines mainstreaming as “the full and systematic incorporation of a particular issue into the work of an organization so that it becomes an accepted and regular part of the organization’s policies and practices.”

The second “transformational” definition of mainstreaming is more acceptable to grassroots organizations, and refers to the popularizing of specific socioeconomic issues and/or practices through local decision making, by and for target communities via their primary partners, stakeholders’ and the broader community membership.

**Maladaptation.** An adaptive response, made without consideration for interdependent systems may, inadvertently, increase risks to other systems that are sensitive to climate change (and for social well-being).<sup>13</sup>

**Mauritius Strategy.** The Mauritius Strategy for the further implementation of the Programme of Action for the Sustainable Development of Small Island Developing States recognizes the unique vulnerability of these countries and outlines strategies to respond to environmental

<sup>11</sup> A number of factors need to be considered when designing a corporate greenhouse gas inventory, including emissions factors versus direct measurements, boundary definition around operations, the inclusion of emissions from contractors, etc.

<sup>12</sup> [http://unfccc.int/national\\_reports/non-annex\\_i\\_natcom/items/2716.php](http://unfccc.int/national_reports/non-annex_i_natcom/items/2716.php)

<sup>13</sup> Scheraga, Joel D., and Anne E. Grambsch. 1998. *Risks, Opportunities, and Adaptation to Climate Change*. Vol 10, pp92. Washington, D.C.

vulnerabilities (including climate change), remoteness from world markets, high energy costs and waste management problems.

**Measurable, reportable, and verifiable.** Refers to measurable, reportable and verifiable nationally appropriate mitigation commitments or actions, including quantified emission limitation and reduction objectives. Improving the evaluation of both developed and developing countries mitigation actions is an important discussion point in the post-2012 climate negotiations.<sup>14</sup>

**Micro-adaptation.** The gradual acquiring of contemporary and/or traditional environmental knowledge, through adaptation risk consciousness-raising and Grassroots Adaptation Development (GrAD) activities, to reduce risk.” (footnote 3).

**Mitigation (climate change).** Structural and nonstructural measures (energy conservation, renewable energy such as wind or solar, and tree planting) undertaken to limit or reduce greenhouse gas emissions into the environment and atmosphere.

**Mitigation (disaster risk management).** Measures aimed at moderating or reducing the severity of disaster impacts.<sup>15</sup>

**Monitoring.** A continuing assessment of conditions at, and surrounding, the action.

**Nationally appropriate mitigation action (NAMA).** NAMA are approaches to reducing and reversing growth in carbon emissions in developing countries that do not compromise development needs. The post-2012 climate change agreement discusses options for developing countries to adopt NAMAs to deviate from business as usual development paths.

**National adaptation program of action (NAPA).** NAPAs provide a process for least-developed countries to identify priority activities that respond to their urgent and immediate needs with regard to adaptation to climate change. The rationale for NAPAs rests on the limited ability of least-developed countries to adapt to the adverse effects of climate change. NAPAs focus on urgent and immediate needs—those for which further delay could increase vulnerability or lead to increased costs at a later stage. NAPAs are designed to use existing information, and no new research is needed. They must be action-oriented and country-driven and be flexible and based on national circumstances.<sup>16</sup>

**National Communications (for non-Annex I countries).** A country report to the UNFCCC on the steps taken or envisaged to be undertaken by signatory countries to implement the UNFCCC (Articles 4.1 and 12), in accordance with the principle of “common but differentiated responsibilities” enshrined in the convention.<sup>17</sup>

<sup>14</sup> [http://unfccc2.meta-fusion.com/kongresse/090601\\_SB30\\_Bonn/templ/ply\\_page.php?id\\_kongresssession=1766&player\\_mode=isdn\\_real](http://unfccc2.meta-fusion.com/kongresse/090601_SB30_Bonn/templ/ply_page.php?id_kongresssession=1766&player_mode=isdn_real)

<sup>15</sup> Structural mitigation measures are intended to directly reduce the damage, save lives and protect property (i.e., building retention walls, water reservoirs, and reforestation to avoid landslides). Nonstructural mitigation measures are intended to improve the ability to cope with the disaster (mock drills for disaster preparedness). For climate change, mitigation (disaster risk management) measures would be labelled as adaptation because they help reduce the negative impacts of climate change.

<sup>16</sup> [http://unfccc.int/cooperation\\_support/least\\_developed\\_countries\\_portal/ldc\\_work\\_programme\\_and\\_napa/items/4722.php](http://unfccc.int/cooperation_support/least_developed_countries_portal/ldc_work_programme_and_napa/items/4722.php)

<sup>17</sup> [http://unfccc.int/national\\_reports/non-annex\\_i\\_natcom/items/2716.php](http://unfccc.int/national_reports/non-annex_i_natcom/items/2716.php)

**Natural hazard.** A rare or extreme event in the natural environment that adversely affects human life, physical or human capital, or activity to the extent of causing disaster.<sup>18</sup> Some natural hazards are more likely to occur with human-induced climate change.

**Non-Annex I (countries).** Developing country parties to the United Nations Framework Convention on Climate Change (UNFCCC), under no obligation to reduce greenhouse gas emission but are vulnerable to adverse impacts of global climate change.

**Precautionary Principle.** The precautionary principle is a moral and political principle which states that if an action or policy might cause severe or irreversible harm to the public or to the environment, in the absence of a scientific consensus that harm would not ensue, the burden of proof falls on those who would advocate taking the action.<sup>19</sup>

**Precipitation.** Rain, snow, or hail.

**Reduced emissions from deforestation and degradation (REDD).** An approach to climate change mitigation that includes preventing deforestation and preventing and the resultant release of carbon emissions into the atmosphere.

**Rehabilitation.** The social processes that encompass decision making about restoration and reconstruction activities.

**Relief or response.** The terms are used interchangeably to mean the provision of assistance or intervention during or immediately after a disaster to meet life preservation and basic subsistence needs of those affected. Duration can be immediate, short term, or extended.

**Resilience.** The amount of disturbance a system can absorb and still remain in the same state, and the degree to which a system is capable of recovery and self-organization. With respect to climate change, resilience has been increasingly used as a term describing a system's quality regarding its capacity to adapt to climate change.<sup>20</sup>

**Risk.** The chance of injury or loss as defined as a measure of the probability and severity of an adverse effect to health, property, the environment, or other things of value; or the probability of harmful consequences due to interaction between hazards and vulnerable conditions.

**Risk analysis.** The systematic use of information to identify hazards and to estimate the chance for, and severity of, injury or loss to individuals or populations, property, the environment, or other things of value.

**Risk assessment.** A methodology to determine the nature and extent of risk by analyzing potential hazards and evaluating conditions of vulnerability that could pose a potential threat or harm to people, property, livelihoods, and the environment on which they depend.

<sup>18</sup> Organe consultatif en matière de recherche sur le climat et les changements climatiques (OcCC) definition.

<sup>19</sup> Raffensperger C. and J. Tickner (eds.) (1999) *Protecting Public Health and the Environment: Implementing the Precautionary Principle*. Island Press, Washington, DC

<sup>20</sup> The United Nations International Strategy for Disaster Reduction (UNISDR 2002a) defines "resilience" as follows: "The capacity of a system, community or society to resist or to change (so) that it may obtain an acceptable level in functioning and structure. This is determined by the degree to which the social system is capable of organising itself, and the ability to increase its capacity for learning and adaptation, including the capacity to recover from a disaster."

**Risk communication.** Any two-way communication between stakeholders about the existence, nature, form, severity, or acceptability of risks.

**Risk management.** The systematic application of management policies, procedures, and practices to the tasks of analyzing, evaluating, controlling, and communicating about risk issues.

**Saltwater intrusion.** Increase of salinity in underground freshwater located close to the coast. It can be caused by excessive withdrawal of water from the freshwater source (aquifer) or by sea-level rise.

**Risk screening (for climate risks).** Involves analyzing project concepts, with a view to identifying

- whether climate risks have been taken into consideration,
- whether vulnerable to climate change,
- whether plans could lead to increased vulnerability, and
- what steps taken in project design are needed to reduce risks and associated costs.

**Sea-level rise.** An increase in the average level of the sea or ocean. The global sea level is rising as a result of increasing global temperature because melting of ice in mountains and glaciers leads to more water in the ocean, and warmer water in the oceans expands, occupying more volume.<sup>21</sup>

**Sinks (carbon).** Any process or activity or mechanism which removes a greenhouse gas or a precursor from the atmosphere.

**Stakeholder.** Any individual, group, or organization able to affect, be affected by, or believe it might be affected by, a decision or activity. Decision makers are stakeholders.

**Sustainability.** Development that meets the needs of the present, without compromising the capacity of future generations to meet their own needs;<sup>22</sup> or “a level of resource use that is both sufficient for a good life for its population, and within the carrying capacity of the environment if generalized to the whole world.”<sup>23</sup>

**Tropical cyclone.** A violent, rotating storm with heavy wind and rain. The most severe versions are called hurricanes (in the north Atlantic, and

<sup>21</sup> Local sea levels are determined by a combination of the global sea-level rise and the local lowering or subsidence of the land (for instance due to geological processes).

<sup>22</sup> MediaCompany. 2002. *Poverty and Climate Change: Reducing the Vulnerability of the Poor Through Adaptation*. pp38. Berlin.

<sup>23</sup> H. Daly. 1996. *Beyond Growth, Boston, Massachusetts*. Beacon Press. p 3.

the northeast Pacific east of the International Dateline longitude 180°, or the south Pacific east of longitude 160° East) or typhoons (in the northwest Pacific, west of the International Dateline). Tropical cyclones only form and intensify above warm water, and are probably becoming more intense due to the warming of the ocean surface caused by global warming.

**United Nations Framework Convention on Climate Change (UNFCCC).** The international response to climate change, the objective of which

is to stabilize greenhouse gas concentrations in the atmosphere at a level that will prevent dangerous anthropogenic interference with the climate system.

**Vulnerability.** The degree to which a system is susceptible to, or unable to cope with, adverse effects of climate change including climate variability and extremes. Vulnerability is the function of the character, magnitude, and rate of climate variation to which a system is exposed, its sensitivity, and its adaptive capacity.<sup>24</sup>

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<sup>24</sup> Vulnerability depends on physical, social, economic, and environmental factors and processes. It is related, for instance, to the places where people live, the strength of their houses, the extent to which their crops can survive adverse weather, or whether they have organized evacuation routes and shelters. **Physical vulnerability** relates to the built environment and may be described as “exposure”. **Social vulnerability** is caused by such things as levels of family and social networks, literacy and education, health infrastructure, and the state of peace and security. **Economic vulnerability** is suffered by people of less privileged class or caste, ethnic minorities, the very young and old, etc. They suffer proportionally larger losses in disasters and have limited capacity to recover. Similarly, an economy lacking a diverse productive base is less likely to recover from disaster impact which may also lead to forced migration. **Environmental vulnerability** refers to the extent of natural-resource degradation, such as deforestation, depletion of fish stocks, soil degradation, and water scarcity, which threaten food security and health.