

GLOSSARY

Acclimatisation

The physiological *adaptation* to climatic variations.

Active layer

The top layer of soil or rock in *permafrost* that is subjected to seasonal freezing and thawing.

Adaptability

See *adaptive capacity*.

Adaptation

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, autonomous and planned adaptation:

Adaptation assessment

The practice of identifying options to adapt to *climate change* and evaluating them in terms of criteria such as availability, benefits, costs, effectiveness, efficiency and feasibility.

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 transition costs.

Adaptive capacity (in relation to climate change impacts)

The ability of a system to adjust to *climate change* (including *climate variability* and extremes) to moderate potential damages, to take advantage of opportunities, or to cope with the consequences.

Aerosols

A collection of air-borne solid or liquid particles, with a typical size between 0.01 and 10 μm , that reside in the *atmosphere* for at least several hours. Aerosols may be of either natural or *anthropogenic* origin. Aerosols may influence *climate* in two ways: directly through scattering and absorbing radiation, and indirectly through acting as condensation nuclei for cloud formation or modifying the optical properties and lifetime of clouds.

Afforestation

Direct human-induced conversion of land that has not been forested for a period of at least 50 years to forested land through planting, seeding and/or the human-induced promotion of natural seed sources.

Albedo

The fraction of solar radiation reflected by a surface or object, often expressed as a percentage. Snow-covered surfaces have a high albedo; the albedo of soils ranges from high to low; vegetation-covered surfaces and oceans have a low albedo. The Earth's albedo varies mainly through varying cloudiness, snow, ice, leaf area, and land-cover changes.

Algae

Photosynthetic, often microscopic and *planktonic*, organisms occurring in marine and freshwater *ecosystems*.

Alpine

The biogeographic zone made up of slopes above the *tree line* characterised by the presence of rosette-forming *herbaceous* plants and low, shrubby, slow-growing woody plants.

Anthropogenic

Resulting from or produced by human beings.

AOGCM

See *climate model*.

Aquaculture

The managed cultivation of aquatic plants or animals such as salmon or shellfish held in captivity for the purpose of harvesting.

Aquifer

A stratum of permeable rock that bears water. An unconfined aquifer is recharged directly by local rainfall, rivers and lakes, and the rate of recharge will be influenced by the permeability of the overlying rocks and soils.

Atmosphere

The gaseous envelope surrounding the Earth. The dry atmosphere consists almost entirely of nitrogen and oxygen, together with trace gases including *carbon dioxide* and *ozone*.

Baseline/reference

The baseline (or reference) is the state against which change is measured. It might be a 'current baseline', in which case it represents observable, present-day conditions. It might also be a 'future baseline', which is a projected future set of conditions excluding the driving factor of interest.

Biodiversity

The total diversity of all organisms and *ecosystems* at various spatial scales (from genes to entire *biomes*).

Biofuel

A fuel produced from organic matter or combustible oils produced by plants. Examples of biofuel include alcohol, black liquor from the paper-manufacturing process, wood, and soybean oil.

Biomass

The total mass of living organisms in a given area or volume; recently dead plant material is often included as dead biomass. The quantity of biomass is expressed as a dry weight or as the energy, carbon or nitrogen content.

Biome

Major and distinct regional element of the *biosphere*, typically consisting of several *ecosystems* (e.g., forests, rivers, ponds, swamps) within a region of similar *climate*. Biomes are characterized by typical communities of plants and animals.

Biosphere

The part of the Earth system comprising all *ecosystems* and living organisms in the *atmosphere*, on land (terrestrial biosphere), or in the oceans (marine biosphere), including derived dead organic matter, such as litter, soil organic matter, and oceanic detritus.

Biota

All living organisms of an area; the flora and fauna considered as a unit.

C₃ plants

Plants that produce a three-carbon compound during *photosynthesis*, including most trees and agricultural crops such as rice, wheat, soybeans, potatoes and vegetables.

C₄ plants

Plants, mainly of tropical origin, that produce a four-carbon compound during *photosynthesis*, including many grasses and the agriculturally important crops: maize, sugar cane, millet and sorghum.

Capacity building

In the context of climate change, capacity building is developing the technical skills and institutional capabilities in developing countries and economies in transition to enable their participation in all aspects of adaptation to, mitigation of, and research on climate change, and in the implementation of the Kyoto Mechanisms, etc.

Carbon cycle

The term used to describe the flow of carbon (in various forms, e.g., *carbon dioxide*) through the *atmosphere*, ocean, terrestrial *biosphere* and lithosphere.

Carbon dioxide (CO₂)

A naturally occurring gas fixed by *photosynthesis* into organic matter. A by-product of fossil fuel combustion and *biomass* burning, it is also emitted from land-use changes and other industrial processes. It is the principal *anthropogenic greenhouse gas* that affects the Earth's radiative balance. It is the reference gas against which other greenhouse gases are measured, thus having a Global Warming Potential of 1.

Carbon sequestration

The process of increasing the carbon content of a *reservoir*/pool other than the *atmosphere*.

CDM (Clean Development Mechanism)

The CDM allows *greenhouse gas* emission reduction projects to take place in countries that have no emission targets under the *United Nations Framework Convention on Climate Change (UNFCCC) Kyoto Protocol*, yet are signatories.

Climate

Climate in a narrow sense is usually defined as the 'average weather', or more rigorously, as the statistical description in terms of the mean and variability of relevant quantities over a period of time ranging from months to thousands or millions of years. These quantities are most often surface variables such as temperature, precipitation, and wind. 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 (WMO).

Climate change

Climate change refers to any change in *climate* over time, whether due to natural variability or as a result of human activity. This usage differs from that in the *United Nations Framework Convention on Climate Change (UNFCCC)*, which defines 'climate change' as: 'a change of climate which 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'. See also *climate variability*.

Climate model

A numerical representation of the *climate system* based on the physical, chemical, and biological properties of its components, their interactions and *feedback* processes, and accounting for all or some of its known properties. The climate system can be represented by models of varying complexity (i.e., for any one component or combination of components a hierarchy of models can be identified, differing in such aspects as the number of spatial dimensions, the extent to which physical, chemical, or biological processes are explicitly represented, or the level at which empirical parameterisations are involved. Coupled *atmosphere/ ocean/sea-ice General Circulation Models (AOGCMs)* provide a comprehensive representation of the climate system. More complex models include active chemistry and biology. Climate models are applied, as a research tool, to study and simulate the climate, but also for operational purposes, including monthly, seasonal, and interannual *climate predictions*.

Climate prediction

A climate prediction or climate forecast is the result of an attempt to produce an estimate of the actual evolution of the climate in the future.

Climate projection

The calculated response of the *climate system* to *emissions* or concentration *scenarios* of *greenhouse gases* and *aerosols*, or *radiative forcing scenarios*, often based on simulations by *climate models*. Climate projections are distinguished from *climate predictions*, in that the former critically depend on the emissions/ concentration/*radiative forcing* scenario used, and therefore on highly uncertain assumptions of future socio-economic and technological development.

Climate (change) scenario

A plausible and often simplified representation of the future *climate*, based on an internally consistent set of climatological relationships and assumptions of *radiative forcing*, typically constructed for explicit use as input to climate change impact models. A 'climate change scenario' is the difference between a climate *scenario* and the current climate.

Climate system

The climate system is defined by the dynamics and interactions of five major components: *atmosphere*, hydrosphere, *cryosphere*, land surface, and *biosphere*. Climate system dynamics are driven by both internal and external forcing, such as volcanic eruptions, solar variations, or human-induced modifications to the planetary radiative balance, for instance via *anthropogenic* emissions of *greenhouse gases* and/or land-use changes.

Climate threshold

The point at which external forcing of the *climate system*, such as the increasing atmospheric concentration of *greenhouse gases*, triggers a significant climatic or environmental event which is considered unalterable, or recoverable only on very long time-scales, such as widespread bleaching of *corals* or a collapse of oceanic circulation systems.

Climate variability

Climate variability refers to variations in the mean state and other statistics (such as standard deviations, statistics of extremes, etc.) of the *climate* on all temporal and spatial scales beyond that of individual 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*.

Committed to extinction

This term describes a species with dwindling population that is in the process of inescapably becoming extinct in the absence of human intervention.

Cryosphere

The component of the *climate system* consisting of all snow and ice (including *permafrost*) on and beneath the surface of the Earth and ocean.

Deforestation

Natural or *anthropogenic* process that converts forest land to non-forest.

Detection and attribution

Detection of change in a system (natural or human) is the process of demonstrating that the system has changed in some defined statistical sense, without providing a reason for that change. *Attribution* of such an observed change in a system to *anthropogenic climate change* is usually a two-stage process. First, the observed change in the system must be demonstrated to be associated with an observed regional climate change with a specified degree of *confidence*. Second, a measurable portion of the observed regional climate change, or the associated observed change in the system, must be attributed to *anthropogenic* climate forcing with a similar degree of confidence.

Confidence in such *joint attribution* statements must be lower than the confidence in either of the individual attribution steps alone due to the combination of two separate statistical assessments.

Disturbance regime

Frequency, intensity, and types of disturbances, such as fires, insect or pest outbreaks, floods and *droughts*.

Drought

The phenomenon that exists when precipitation is significantly below normal recorded levels, causing serious hydrological imbalances that often adversely affect land resources and production systems.

Ecological community

A community of plants and animals characterised by a typical assemblage of species and their abundances. See also *ecosystem*.

Ecological corridor

A thin strip of vegetation used by wildlife, potentially allowing movement of biotic factors between two areas.

Ecosystem

The interactive system formed from all living organisms and their abiotic (physical and chemical) environment within a given area. Ecosystems cover a hierarchy of spatial scales and can comprise the entire globe, *biomes* at the continental scale or small, well-circumscribed systems such as a small pond.

Ecosystem approach

The ecosystem approach is a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way. An ecosystem approach is based on the application of appropriate scientific methodologies focused on levels of biological organisation, which encompass the essential structure, processes, functions and interactions among organisms and their environment. It recognises that humans, with their cultural diversity, are an integral component of many *ecosystems*. The ecosystem approach requires adaptive management to deal with the complex and dynamic nature of ecosystems and the absence of complete knowledge or understanding of their functioning. Priority

targets are conservation of *biodiversity* and of the ecosystem structure and functioning, in order to maintain ecosystem services.

Ecosystem services

Ecological processes or functions having monetary or non-monetary value to individuals or society at large. There are (i) supporting services such as productivity or *biodiversity* maintenance, (ii) provisioning services such as food, fibre, or fish, (iii) regulating services such as climate regulation or *carbon sequestration*, and (iv) cultural services such as tourism or spiritual and aesthetic appreciation.

Ecotone

Transition area between adjacent *ecological communities* (e.g., between forests and grasslands).

Emissions scenario

A plausible representation of the future development of emissions of substances that are potentially radiatively active (e.g., *greenhouse gases*, *aerosols*), based on a coherent and internally consistent set of assumptions about driving forces (such as demographic and socio-economic development, technological change) and their key relationships

Endemic

Restricted or peculiar to a locality or region. With regard to human health, endemic can refer to a disease or agent present or usually prevalent in a population or geographical area at all times.

Eutrophication

The process by which a body of water (often shallow) becomes (either naturally or by pollution) rich in dissolved nutrients, with a seasonal deficiency in dissolved oxygen.

Externalities

Occur when a change in the production or consumption of one individual or firm affects indirectly the well-being of another individual or firm. Externalities can be positive or negative. The impacts of pollution on *ecosystems*, water courses or air quality represent classic cases of negative externality.

Extinction

The global disappearance of an entire species.

Extirpation

The disappearance of a species from part of its range; local *extinction*.

Extreme weather event

An event that is rare within its statistical reference distribution at a particular place. Definitions of 'rare' vary, but an extreme weather event would normally be as rare as or rarer than the 10th or 90th percentile. By definition, the characteristics of what is called 'extreme weather' may vary from place to place. Extreme weather events may typically include floods and *droughts*.

Food chain

The chain of *trophic relationships* formed if several species feed on each other. See *food web* and *trophic level*.

Food security

A situation that exists when people have secure access to sufficient amounts of safe and nutritious food for normal growth, development and an active and healthy life. Food insecurity may be caused by the unavailability of food, insufficient purchasing power, inappropriate distribution, or inadequate use of food at the household level.

Forest limit/line

The upper elevational or latitudinal limit beyond which natural tree regeneration cannot develop into a closed forest stand. It is typically at a lower elevation or more distant from the poles than the *tree line*.

Generalist

A species that can tolerate a wide range of environmental conditions.

Glacier

A mass of land ice flowing downhill (by internal deformation and sliding at the base) and constrained by the surrounding topography (e.g., the sides of a valley or surrounding peaks). A glacier is maintained by accumulation of snow at high altitudes, balanced by melting at low altitudes or discharge into the sea.

Globalisation

The growing integration and interdependence of countries worldwide through the increasing volume and variety of cross border transactions in goods and services, free international capital flows, and the more rapid and widespread diffusion of technology, information and culture.

Greenhouse effect

The process in which the absorption of infrared radiation by the *atmosphere* warms the Earth. In common parlance, the term 'greenhouse effect' may be used to refer either to the natural greenhouse effect, due to naturally occurring *greenhouse gases*, or to the enhanced (*anthropogenic*) greenhouse effect, which results from gases emitted as a result of human activities.

Greenhouse gas

Greenhouse gases are those gaseous constituents of the *atmosphere*, both natural and *anthropogenic*, that absorb and emit radiation at specific wavelengths within the spectrum of infrared radiation emitted by the Earth's surface, the atmosphere, and clouds. This property causes the *greenhouse effect*. Water vapour (H₂O), *carbon dioxide* (CO₂), nitrous oxide (N₂O), methane (CH₄) and *ozone* (O₃) are the primary greenhouse gases in the Earth's atmosphere. As well as CO₂, N₂O, and CH₄, the *Kyoto Protocol* deals with the greenhouse gases sulphur hexafluoride (SF₆), hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs).

Gross primary production

The total carbon fixed by plant through *photosynthesis*.

Habitat

The locality or natural home in which a particular plant, animal, or group of closely associated organisms lives.

Heat island

An urban area characterised by ambient temperatures higher than those of the surrounding non-urban area. The cause is a higher absorption of solar energy by materials of the urban fabric such as asphalt.

Human system

Any system in which human organisations play a major role. Often, but not always, the term is synonymous with 'society' or 'social system' e.g., agricultural system, political system, technological system, economic system;

Hydrographic events

Events that alter the state or current of waters in oceans, rivers or lakes.

Hydrological systems

The systems involved in movement, distribution, and quality of water throughout the Earth, including both the hydrologic cycle and water resources.

Hypoxic events

Events that lead to a deficiency of oxygen.

(climate change) Impact assessment

The practice of identifying and evaluating, in monetary and/or non-monetary terms, the effects of *climate change* on natural and *human systems*.

(climate change) Impacts

The effects of *climate change* on natural and *human systems*. Depending on the consideration of *adaptation*, one can distinguish between potential impacts and residual impacts:

Potential impacts: all impacts that may occur given a projected change in climate, without considering adaptation.

Residual impacts: the impacts of climate change that would occur after adaptation. See also *aggregate impacts*, *market impacts*, and *non-market impacts*.

Industrial revolution

A period of rapid industrial growth with far-reaching social and economic consequences, beginning in England during the second half of the 18th century and spreading to Europe and later to other countries including the USA. The industrial revolution marks the beginning of a strong increase in combustion of fossil fuels and related emissions of *carbon dioxide*.

Integrated assessment

An interdisciplinary process of combining, interpreting and communicating knowledge from diverse scientific disciplines so that all relevant aspects of a complex societal issue can be evaluated and considered for the benefit of decision-making.

Integrated water resources management (IWRM)

The prevailing concept for water management which, however, has not been defined unambiguously. IWRM is based on four principles that were formulated by the International Conference on Water and the Environment in Dublin, 1992: (1) fresh water is a finite and vulnerable resource, essential to sustain life, development and the environment; (2) water development and management should be based on a participatory approach, involving users, planners and policy-makers at all levels; (3) women play a central part in the provision, management and safeguarding of water; (4) water has an economic value in all its competing uses and should be recognised as an economic good.

Irrigation water-use efficiency

Irrigation *water-use efficiency* is the amount of *biomass* or seed yield produced per unit irrigation water applied, typically about 1 tonne of dry matter per 100 mm water applied.

Joint attribution

Involves both *attribution* of observed changes to regional *climate change* and attribution of a measurable portion of either regional climate change or the associated observed changes in the system to *anthropogenic* causes, beyond natural variability. This process involves statistically linking climate-change simulations from *climate models* with the observed responses in the natural or managed system. *Confidence* in joint attribution statements must be lower than the confidence in either of the individual attribution steps alone due to the combination of two separate statistical assessments.

Kyoto Protocol

The Kyoto Protocol was adopted at the Third Session of the Conference of the Parties (COP) to the *UN Framework Convention on Climate Change (UNFCCC)* in 1997 in Kyoto, Japan. It contains legally binding commitments, in addition to those included in the UNFCCC. Countries included in Annex B of the Protocol (most member countries of the Organisation for Economic Cooperation and Development (OECD) and those with economies in transition) agreed to reduce their *anthropogenic greenhouse gas* emissions (CO₂, CH₄, N₂O, HFCs, PFCs, and SF₆) by at least 5% below 1990 levels in the commitment period 2008 to 2012. The Kyoto Protocol entered into force on 16 February 2005.

Large-scale singularities

Abrupt and dramatic changes in the state of given systems, in response to gradual changes in driving forces. For example, a gradual increase in atmospheric *greenhouse gas* concentrations may lead to such large-scale singularities as slowdown or collapse of the *thermohaline circulation* or collapse of the West Antarctic *ice sheet*. The occurrence, magnitude, and timing of large-scale singularities are difficult to predict.

Last Glacial Maximum

The Last Glacial Maximum refers to the time of maximum extent of the *ice sheets* during the last glaciation, approximately 21,000 years ago.

Littoral zone

A coastal region; the zone between high and low watermarks.

Microclimate

Local climate at or near the Earth's surface.

Millennium Development Goals (MDGs)

A list of ten goals, including eradicating extreme poverty and hunger, improving maternal health, and ensuring environmental sustainability, adopted in 2000 by the UN General Assembly, i.e., 191 States, to be

reached by 2015. The MDGs commit the international community to an expanded vision of development, and have been commonly accepted as a framework for measuring development progress.

Mitigation

An *anthropogenic* intervention to reduce the anthropogenic forcing of the *climate system*; it includes strategies to reduce *greenhouse gas sources* and emissions and enhancing *greenhouse gas sinks*.

Nitrogen oxides (NO_x)

Any of several oxides of nitrogen.

No regrets policy

A policy that would generate net social and/or economic benefits irrespective of whether or not *anthropogenic climate change* occurs.

Normalised difference vegetation index (NDVI)

A satellite-based remotely sensed measure of the 'greenness' of the vegetation cover.

Ocean acidification

Increased concentrations of CO₂ in sea water causing a measurable increase in acidity (i.e., a reduction in ocean pH). This may lead to reduced calcification rates of calcifying organisms such as *corals*, molluscs, *algae* and crustacea.

Opportunity costs

The cost of an economic activity forgone through the choice of another activity.

Ozone

The triatomic form of oxygen (O₃), a gaseous atmospheric constituent. In the *troposphere*, it is created both naturally and by photochemical reactions involving gases resulting from human activities (*photochemical smog*). In high concentrations, tropospheric ozone can be harmful to many living organisms. Tropospheric ozone acts as a *greenhouse gas*. In the *stratosphere*, ozone is created by the interaction between solar ultraviolet radiation and molecular oxygen (O₂). Depletion of stratospheric ozone, due to chemical reactions that may be enhanced by *climate change*, results in an increased ground-level flux of ultraviolet (UV) B radiation.

Particulates

Very small solid exhaust particles emitted during the combustion of fossil and biomass fuels. Particulates may consist of a wide variety of substances. Of greatest concern for health are particulates of less than or equal to 10 nm in diameter, usually designated as PM₁₀.

Phenology

The study of natural phenomena that recur periodically (e.g., development stages, migration) and their relation to climate and seasonal changes.

Photochemical smog

A mix of photochemical oxidant air pollutants produced by the reaction of sunlight with primary air pollutants, especially hydrocarbons.

Photosynthesis

The synthesis by plants, *algae* and some bacteria of sugar from sunlight, *carbon dioxide* and water, with oxygen as the waste product. See also *carbon dioxide fertilisation*, *C₃ plants* and *C₄ plants*.

Recalcitrant

Recalcitrant organic material or recalcitrant carbon stocks resist decomposition.

Reforestation

Planting of forests on lands that have previously contained forests but that have been converted to some other use.

Reservoir

A component of the *climate system*, other than the *atmosphere*, that has the capacity to store, accumulate or release a substance of concern (e.g., carbon or a *greenhouse gas*). Oceans, soils, and forests are examples of carbon reservoirs. The term also means an artificial or natural storage place for water, such as a lake, pond or *aquifer*, from which the water may be withdrawn for such purposes as irrigation or water supply.

Resilience

The ability of a social or ecological system to absorb disturbances while retaining the same basic structure and ways of functioning, the capacity for self-organisation, and the capacity to adapt to stress and change.

Respiration

The process whereby living organisms convert organic matter to *carbon dioxide*, releasing energy and consuming oxygen.

Sea-level rise

An increase in the mean level of the ocean. *Eustatic sea-level rise* is a change in global average sea level brought about by an increase in the volume of the world ocean. *Relative sea-level rise* occurs where there is a local increase in the level of the ocean relative to the land, which might be due to ocean rise and/or land level subsidence. In areas subject to rapid land-level uplift, relative sea level can fall.

Sensitivity

Sensitivity is the degree to which a system is affected, either adversely or beneficially, by *climate variability* or change. The effect may be direct (e.g., a change in crop yield in response to a change in the mean, range or variability of temperature) or indirect (e.g., damages caused by an increase in the frequency of coastal flooding due to *sea-level rise*).

Sink

Any process, activity, or mechanism that removes a *greenhouse gas*, an *aerosol*, or a precursor of a greenhouse gas or aerosol from the *atmosphere*.

Social cost of carbon

The value of the *climate change impacts* from 1 tonne of carbon emitted today as CO₂, aggregated over time and discounted back to the present day; sometimes also expressed as value per tonne of *carbon dioxide*.

Socio-economic scenarios

Scenarios concerning future conditions in terms of population, *Gross Domestic Product* and other socio-economic factors relevant to understanding the implications of *climate change*.

Stakeholder

A person or an organisation that has a legitimate interest in a project or entity, or would be affected by a particular action or policy.

Sustainable development

Development that meets the cultural, social, political and economic needs of the present generation without compromising the ability of future generations to meet their own needs.

Threshold

The level of magnitude of a system process at which sudden or rapid change occurs. A point or level at which new properties emerge in an ecological, economic or other system, invalidating predictions based on mathematical relationships that apply at lower levels.

Tsunami

A large wave produced by a submarine earthquake, *landslide* or volcanic eruption.

Uncertainty

An expression of the degree to which a value (e.g., the future state of the *climate system*) is unknown. Uncertainty can result from lack of information or from disagreement about what is known or even knowable. It may have many types of sources, from quantifiable errors in the data to ambiguously defined concepts or terminology, or uncertain *projections* of human behaviour. Uncertainty can therefore be represented by quantitative measures (e.g., a range of values calculated by various models) or by qualitative statements (e.g., reflecting the judgement of a team of experts).

United Nations Framework Convention on Climate Change (UNFCCC)

The Convention was adopted on 9 May 1992, in New York, and signed at the 1992 Earth Summit in Rio de Janeiro by more than 150 countries and the European Community. Its ultimate objective is the 'stabilisation of *greenhouse gas* concentrations in the *atmosphere* at a level that would prevent dangerous *anthropogenic* interference with the *climate system*'. It contains commitments for all Parties. Under the Convention, Parties included in Annex I aim to return greenhouse gas emissions not controlled by the Montreal Protocol to 1990 levels by the year 2000. The Convention entered in force in March 1994.

Urbanisation

The conversion of land from a natural state or managed natural state (such as agriculture) to cities; a process driven by net rural to- urban migration through which an increasing percentage of the population in any nation or region come to live in settlements that are defined as 'urban centres'.

Vernalisation

The biological requirements of certain crops, such as winter cereals, which need periods of extreme cold temperatures before emergence and/or during early vegetative stages, in order to flower and produce seeds. By extension, the act or process of hastening the flowering and fruiting of plants by treating seeds, bulbs or seedlings with cold temperatures, so as to induce a shortening of the vegetative period.

Vulnerability

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

Welfare

An economic term used to describe the state of well-being of humans on an individual or collective basis. The constituents of well-being are commonly considered to include materials to satisfy basic needs, freedom and choice, health, good social relations, and security.

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