Climate Change Glossary



Heat Wave Decarbonisation Adaptation Fuel Property Disaster Risk Climate Change Biodiversity Carbon Footprint Energy Security

Greenhouse Gases

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Process followed

- The team compiled the list of glossary terms, based on the IPCC special report (IPCC, 2012), and IPCC Assessment report 5, Working Groups I, II and III reports (IPCC, 2013; IPCC, 2014; and a special report (IPCC, 2018).
- 2. The terms identified were prioritised based on their importance for teaching, and hence categorised as high, medium and low. This is a comprehensive glossary that is more than sufficient for learners who are newly acquainted with the subject.
- 3. Certain terms from the IPCC glossaries were excluded mainly because of how much their definitions overlapped with others in the glossary. For e.g., 'climate extreme' was not included in the final list because the term 'extreme weather' was already in place. It is a more commonly used term and hence more applicable to learners.
- 4. The IPCC list also covered generic terms such as 'chronology' and 'coping'; the definitions for which had already been included in other glossaries such as the one on disaster risk and resilience. To reduce overlap, we excluded those as well.
- 5. The level of specificity and frequency of use of some terms also played a factor in their exclusion. While the final list covers a vast majority of definitions provided by the IPCC, terms such as 'adaptation options', 'adaptation management' were dropped in favour of more commonly-used ones such as 'adaptation limit', 'adaptation needs'.
- 6. We also checked the Synthesis Report (IPCC, 2014), which had a lot of definitions that were missing in the sources mentioned in point 1, including fundamental climate science terms such as 'ENSO', 'afforestation', 'albedo', 'ocean acidification' and 'radiative forcing'. Additionally, common policy terms such as 'climate finance', 'fuel poverty', 'REDD+' and 'energy access' were also drawn from the 2014 Synthesis Report.
- 7. In addition to the IPCC, we also skimmed through other public platforms such as the BBC and the Climate Reality Project, as well as other educational institutions' compilations (UC Davis) to double-check if there were some basic terms that the UN sources did not have. Terms such as the 'UNFCCC', the 'IPCC' itself, 'climate science' and 'weather' were added as a result.

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A

Abrupt Climate Change

A large-scale change in the climate system that takes place over a few decades or less, persists (or is anticipated to persist) for at least a few decades and causes substantial disruptions in human and natural systems.

AR5 WG1

Adaptation

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

a) Incremental Adaptation: Adaptation actions where the central aim is to maintain the essence and integrity of a system or process at a given scale.

b) Transformational Adaptation: Adaptation that changes the fundamental attributes of a system in response to climate change and its effects.

AR5 WG2

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.

AR5 WG2

Adaptive Capacity

The ability of systems, institutions, humans, and other organisms to adjust to potential damage, to take advantage of opportunities, or to respond to consequences.

Adaptation Deficit

The gap between the current state of a system and a state that minimizes adverse impacts from existing climate conditions and variability.

AR5 WG2

Adaptation Needs

The circumstances requiring action to ensure safety of populations and security of assets in response to climate impacts.

AR5 WG2

Adaptation Constraint

Factors that make it harder to plan and implement adaptation actions or that restrict options

AR5 WG2

Adaptation Limit

The point at which an actor's objectives (or system needs) cannot be secured from intolerable risks through adaptive actions. a) Hard adaptation limit: No adaptive actions are possible to avoid intolerable risks.

b) Soft adaptation limit: Options are currently not available to avoid intolerable risks through adaptive action.

AR5 WG2

Adaptive Governance

An emerging term in literature for the evolution of formal and informal institutions of governance that prioritize social learning in planning, implementation and evaluation of policy through iterative social learning to steer the use and protection of natural resources, ecosystem services and common pool natural resources, particularly in situations of complexity and uncertainty.

SR1.5

Aerosol

A suspension of airborne solid or liquid particles, with a typical size between a few nanometres and 10 μ m that reside in the atmosphere for at least several hours. The term aerosol, which includes both the particles and the suspending gas, is often

Α

used in this report in its plural form to mean aerosol particles. Aerosols may be of either natural or anthropogenic origin. Aerosols may influence climate in several ways: through both interactions that scatter and/or absorb radiation and through interactions with cloud microphysics and other cloud properties, or upon deposition on snow- or ice-covered surfaces thereby altering their albedo and contributing to climate feedback.

SR1.5

Afforestation

Planting of new forests on lands that historically have not contained forests.

AR5 SYR

Air Pollution

Degradation of air quality with negative effects on human health or the natural or built environment due to the introduction, by natural processes or human activity, into the atmosphere of substances (gases, aerosols) which have a direct (primary pollutants) or indirect (secondary pollutants) harmful effect.

SR1.5

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 and vegetation-covered surfaces and oceans have a low albedo. The Earth's planetary albedo varies mainly through varying cloudiness, snow, ice, leaf area and land cover changes.

AR5 SYR

Anthropocene

The 'Anthropocene' is a proposed new geological epoch resulting from significant human-driven changes to the structure and functioning of the Earth System, including the climate system. Originally proposed in the Earth System science community in 2000, the proposed new epoch is undergoing a formalization process within the geological community based on the stratigraphic evidence that human activities have changed the Earth System to the extent of forming geological deposits with a signature that is distinct from those of the Holocene, and which will remain in the geological record.

SR1.5

Anthropogenic

Resulting from or produced by human activities.

SR1.5

Anthropogenic Emissions

Emissions of greenhouse gases, greenhouse gas precursors, and aerosols caused by human activities. These activities include the burning of fossil fuels, deforestation, land use changes, livestock production, fertilization, waste management, and industrial processes.

AR5 WG2

Anthropogenic Removals

Anthropogenic removals refer to the withdrawal of GHGs from the atmosphere as a result of deliberate human activities. These include enhancing biological sinks of CO2 and using chemical engineering to achieve long-term removal and storage. Carbon capture and storage (CCS) from industrial and energy-related sources, which alone does not remove CO2 in the atmosphere, can reduce atmospheric CO2 if it is combined with bioenergy production (BECCS).

SR1.5

B

С

Baseline/Reference

The baseline (or reference) is the state against which change is measured. A baseline period is the period relative to which anomalies are computed. The baseline concentration of a trace gas is that measured at a location not influenced by local anthropogenic emissions.

AR5 WG1

Biodiversity

The variability among living organisms from terrestrial, marine and other ecosystems. Biodiversity includes variability at the genetic, species and ecosystem levels

AR5 SYR

Biofuel

A fuel, generally in liquid form, produced from biomass. Biofuels currently include bioethanol from sugarcane or maize, biodiesel from canola or soybeans, and black liquor from the paper-manufacturing process.

SR1.5

Business As Usual (BAU)

Business as usual projections are based on the assumption that operating practices and policies remain as they are at present. Although baseline scenarios could incorporate some specific features of BAU scenarios (e.g., a ban on a specific technology), BAU scenarios imply that no practices or policies other than the current ones are in place.

AR5 WG2

Cancún Agreements

A set of decisions adopted at the 16th Session of the Conference of the Parties (COP) to the United Nations Framework **Convention on Climate** Change (UNFCCC), including the following, among others: the newly established Green Climate Fund (GCF), a newly established technology mechanism, a process for advancing discussions on adaptation, a formal process for reporting mitigation commitments, a goal of limiting global mean surface temperature increase to 2°C and an agreement on MRV—Measurement, Reporting and Verification for those countries that receive international support for their mitigation efforts.

AR5 SYR

Capacity

The combination of all the strengths, attributes, and resources available to an individual, community, society, or organization, which can be used to achieve established goals.

SREX

Capacity Building

The practice of enhancing the strengths and attributes of, and resources available to, an individual, community, society, or organization to respond to change.

AR5 WG2

Carbon Cycle

The term used to describe the flow of carbon (in various forms, e.g., as carbon dioxide (CO2)) through the atmosphere, ocean, terrestrial and marine biosphere and lithosphere. A process in which a relatively pure stream of carbon dioxide (CO2) from industrial and energy-related sources is separated (captured), conditioned, compressed and transported to a storage location for long-term isolation from the atmosphere. Sometimes referred to as carbon capture and storage.

SR1.5

Carbon Tax

A levy on the carbon content of fossil fuels. Because virtually all of the carbon in fossil fuels is ultimately emitted as carbon dioxide (CO2), a carbon tax is equivalent to an emission tax on CO2 emissions

AR5 SYR

Clean Development Mechanism (CDM)

A mechanism through which investors (governments or companies) from developed countries may finance greenhouse gas emission reduction or removal projects in developing countries, and receive Certified Emission Reduction Units for doing so, which can be credited towards the commitments of the respective developed countries. The CDM is intended to facilitate the two objectives of promoting sustainable development in developing countries and of helping industrialized countries reach their emissions commitments in a cost-effective way.

AR5 WG2

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. The classical period for averaging these variables is 30 years, as defined by the World Meteorological Organization. The relevant 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.

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. Note that the Framework Convention on Climate Change (UNFCCC), in its Article 1, 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."The UNFCCC thus makes a distinction between climate change attributable to human activities altering the atmospheric composition, and climate variability attributable to natural causes.

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Climate Feedback

An interaction in which a perturbation in one climate quantity causes a change in a second and the change in the second quantity ultimately leads to an additional change in the first. A negative feedback is one in which the initial perturbation is weakened by the changes it causes; a positive feedback is one in which the initial perturbation is enhanced. The initial perturbation can either be externally forced or arise as part of internal variability.

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Climate Finance

There is no agreed definition of climate finance. The term climate finance is applied both to the financial resources devoted to addressing climate change globally and to financial flows to developing countries to assist them in addressing climate change. The literature includes several concepts in these categories.

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Climate Governance

Purposeful mechanisms and measures aimed at steering social systems towards preventing, mitigating, or adapting to the risks posed by climate change (Jagers and Stripple, 2003).

SR1.5

Climate Justice

Justice that links development and human rights to achieve a human-centred approach to addressing climate change, safeguarding the rights of the most vulnerable people and sharing the burdens and benefits of climate change and its impacts equitably and fairly.

SR1.5

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 some of its known properties. The climate system can be represented by models of varying complexity; that is, for any one component or combination of components a spectrum or hierarchy of models can be identified. Climate models are applied as a research tool to study and simulate the climate and for operational purposes, including monthly, seasonal and interannual climate predictions

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Climate Resilient Development Pathways

Trajectories that strengthen sustainable development and efforts to eradicate poverty and reduce inequalities while promoting fair and cross-scalar adaptation to and resilience in a changing climate. They raise the ethics, equity and feasibility aspects of the deep societal transformation needed to drastically reduce emissions to limit global warming (e.g., to 1.5°C) and achieve desirable and liveable futures and well-being for all.

Climate Projection

A climate projection is the simulated response of the climate system to a scenario of future emission or concentration of greenhouse gases and aerosols, generally derived using climate models. Climate projections are distinguished from climate predictions by their dependence on the emission/ concentration/radiative-forcing scenario used, which is in turn based on assumptions concerning, for example, future socioeconomic and technological developments that may or may not be realized.

AR5 WG2

Climate Scenario

A plausible and often simplified representation of the future climate, based on an internally consistent set of climatological relationships that has been constructed for explicit use in investigating the potential consequences of anthropogenic climate change, often serving as input to impact models. Climate projections often serve as the raw material for constructing climate scenarios, but climate scenarios usually require additional information such as the observed current climate.

AR5 WG2

Climate Science

Climate science is the study of relatively long-term weather conditions, typically spanning decades to centuries but extending to geological timescales. The discipline is primarily concerned with atmospheric properties – for example temperature and humidity – and patterns of circulation, as well as interactions with the ocean, the biosphere, and, over longer timescales, the geosphere.

Nature

Climate Services

Climate services refers to information and products that enhance users' knowledge and understanding about the impacts of climate change and/or climate variability so as to aid decision-making of individuals and

SR1.5

organizations and enable preparedness and early climate change action. Products can include climate data products.

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Climate Smart Agriculture

Climate-smart agriculture (CSA) is an approach that helps to guide actions needed to transform and reorient agricultural systems to effectively support development and ensure food security in a changing climate. CSA aims to tackle three main objectives: sustainably increasing agricultural productivity and incomes, adapting and building resilience to climate change, and reducing and/or removing greenhouse gas emissions, where possible (FAO, 2018)

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Climate System

The climate system is the highly complex system consisting of five major components: the atmosphere, the hydrosphere, the cryosphere, the lithosphere, and the biosphere, and the interactions among them. The climate system evolves in time under the influence of its own internal dynamics and because of external forcings such as volcanic eruptions, solar variations, and anthropogenic forcings such as the changing composition of the atmosphere and land use change.

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Climate Target

Climate target refers to a temperature limit, concentration level, or emissions reduction goal used towards the aim of avoiding dangerous anthropogenic interference with the climate system. For example, national climate targets may aim to reduce greenhouse gas emissions by a certain amount over a given time horizon, for example those under the Kyoto Protocol.

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Co-benefits

The positive effects that a policy or measure aimed at one objective might have on other objectives, irrespective of the net effect on overall social welfare. Cobenefits are often subject to uncertainty and depend on local circumstances and implementation practices, among other factors. Co-benefits are also referred to as ancillary benefits.

AR5 WG2

Community-based Adaptation

Local, community-driven adaptation. Community-based adaptation focuses attention on empowering and promoting the adaptive capacity of communities. It is an approach that takes context, culture, knowledge, agency, and preferences of communities as strengths.

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Cultural Impacts

Impacts on material and ecological aspects of culture and the lived experience of culture, including dimensions such as identity, community cohesion and belonging, sense of place, worldview, values, perceptions, and tradition. Cultural impacts are closely related to ecological impacts, especially for iconic and representational dimensions of species and landscapes. Culture and cultural practices frame the importance and value of the impacts of change, shape the feasibility and acceptability of adaptation options, and provide the skills and practices that enable adaptation

AR5 WG2

Climate Variability

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

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Conference of the Parties (COP)

The supreme body of UN conventions, such as the United Nations Framework Convention on Climate Change (UNFCCC), comprising parties with a right to vote that have ratified or acceded to the convention. See also United Nations Framework Convention on Climate Change (UNFCCC).

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Common but Differentiated Responsibilities (CBDR)

Common but Differentiated Responsibilities and Respective Capabilities (CBDR-RC) is a key principle in the United Nations Framework Convention on Climate Change (UNFCCC) that recognises the different capabilities and differing responsibilities of individual countries in tacking climate change. The convention states: "... the global nature of climate change calls for the widest possible cooperation by all countries and their participation in an effective and appropriate international response, in accordance with their common but differentiated responsibilities and respective capabilities and their social and economic conditions." Since then the CBDR-RC principle has guided the UN climate negotiations

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Decarbonisation

The process by which countries or other entities aim to achieve a low carbon economy, or by which individuals aim to reduce their consumption of carbon.

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Decoupling

Decoupling (in relation to climate change) is where economic growth is no longer strongly associated with consumption of fossil fuels. Relative decoupling is where both grow but at different rates. Absolute decoupling is where economic growth happens but fossil fuels decline.

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Deforestation

Conversion of forest to non-forest.

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Disaster

Severe alterations in the normal functioning of a community or a society due to hazardous physical events interacting with vulnerable social conditions, leading to widespread adverse human, material, economic, or environmental effects that require immediate emergency response to satisfy critical human needs and that may require external support for recovery.

AR5 WG1

Disaster Management

Social processes for designing, implementing, and evaluating strategies, policies, and measures that promote and improve disaster preparedness, response, and recovery practices at different organizational and societal levels.

AR5 WG2

Disaster Risk

The likelihood over a specified time period of severe alterations in the normal functioning of a community or a society due to hazardous physical events interacting with vulnerable social conditions, leading to widespread adverse human, material, economic, or environmental effects that require immediate emergency response to satisfy critical human needs and that may require external support for recovery

SREX

Disaster Risk Management (DRM)

Processes for designing, implementing, and evaluating strategies, policies, and measures to improve the understanding of disaster risk, foster disaster risk reduction and transfer, and promote continuous improvement in disaster preparedness, response, and recovery practices, with the explicit purpose of increasing human security, well-being, quality of life, and sustainable development.

SREX

Disaster Risk Reduction (DRR)

Denotes both a policy goal or objective, and the strategic and instrumental measures employed for anticipating future disaster risk; reducing existing exposure, hazard, or vulnerability; and improving resilience.

SREX

Drought

A period of abnormally dry weather long enough to cause a serious hydrological imbalance. Drought is a relative term; therefore any discussion in terms of precipitation deficit must refer to the particular precipitationrelated activity that is under discussion. For example, shortage of precipitation during the growing season impinges on crop production or ecosystem function in general (due to soil moisture drought, also termed agricultural drought) and during the runoff and percolation season primarily affects water supplies (hydrological drought). Storage changes in soil moisture and groundwater are also affected by increases in actual evapotranspiration in addition to reductions in precipitation. A period with an abnormal precipitation deficit is defined as a meteorological drought. A megadrought is a very lengthy and pervasive drought, lasting much longer than normal, usually a decade or more

Disruptive innovation is demandled technological change that leads to significant system change and is characterized by strong exponential growth.

SR1.5

Early Warning System

The set of technical, financial and institutional capacities needed to generate and disseminate timely and meaningful warning information to enable individuals, communities and organizations threatened by a hazard to prepare to act promptly and appropriately to reduce the possibility of harm or loss. Dependent upon context, EWS may draw upon scientific and/or Indigenous knowledge. EWS are also considered for ecological applications e.g., conservation, where the organization itself is not threatened by hazard but the ecosystem under conservation is (an example is coral bleaching alerts), in agriculture (for example, warnings of ground frost, hailstorms) and in fisheries (storm and tsunami warnings).

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Ecosystem

An ecosystem is a functional unit consisting of living organisms, their non-living environment, and the interactions within and between them. The components included in a given ecosystem and its spatial boundaries depend on the purpose for which the ecosystem is defined: in some cases they are relatively sharp, while in others they are diffuse. Ecosystem boundaries can change over time. Ecosystems are nested within other ecosystems, and their scale can range from very small to the entire biosphere. In the current era, most ecosystems either contain people as key organisms, or are influenced by the effects of human activities in their environment.

AR5 WG1

Ecosystem-Based Adaptation

The use of biodiversity and ecosystem services as part of an overall adaptation strategy to help people to adapt to the adverse effects of climate change. Ecosystem-based adaptation uses the range of opportunities for the sustainable management, conservation, and restoration of ecosystems to provide services that enable people to adapt to the impacts of climate change. It aims to maintain and increase the resilience and reduce the vulnerability of ecosystems and people in the face of the adverse effects of climate change.

AR5 WG2

Ecosystem Services

Ecological processes or functions having monetary or non-monetary value to individuals or society at large. These are frequently classified as (1) supporting services such as productivity or biodiversity maintenance, (2) provisioning services such as food, fiber, or fish, (3) regulating services such as climate regulation or carbon sequestration, and (4) cultural services such as tourism or spiritual and aesthetic appreciation.

El Niño-Southern Oscillation (ENSO)

The term El Niño was initially used to describe a warm-water current that periodically flows along the coast of Ecuador and Peru, disrupting the local fishery. It has since become identified with a basin-wide warming of the tropical Pacific Ocean east of the dateline. This oceanic event is associated with a fluctuation of a globalscale tropical and subtropical surface pressure pattern called the Southern Oscillation. This coupled atmosphereocean phenomenon, with preferred time scales of two to about seven years, is known as the El Niño-Southern Oscillation (ENSO). It is often measured by the surface pressure anomaly difference between Tahiti and Darwin or the sea surface temperatures in the central and eastern equatorial Pacific. During an ENSO event, the prevailing trade winds weaken, reducing upwelling and altering ocean currents such that the sea surface temperatures warm, further weakening the trade winds. This event has a great impact on the wind, sea surface temperature and precipitation patterns in the tropical Pacific. It has climatic effects throughout the Pacific region and in many other parts of the world, through global teleconnections. The cold phase of ENSO is called La Niña.

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Emergent Risks

A risk that arises from the interaction of phenomena in a complex system, for example, the risk caused when geographic shifts in human population in response to climate change lead to increased vulnerability and exposure of populations in the receiving region

Emission 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 socioeconomic development, technological change) and their key relationships. Concentration scenarios, derived from emission scenarios, are used as input to a climate model to compute climate projections.

AR5 WG2

Emissions Trading

A market-based instrument aiming at meeting a mitigation objective in an efficient way. A cap on GHG emissions is divided in tradeable emission permits that are allocated by a combination of auctioning and handing out free allowances to entities within the jurisdiction of the trading scheme. Entities need to surrender emission permits equal to the amount of their emissions (e.g., tonnes of CO2). An entity may sell excess permits to entities that can avoid the same amount of emissions in a cheaper way. Trading schemes may occur at the intracompany, domestic, or international level (e.g., the flexibility mechanisms under the Kyoto Protocol and the EU-ETS) and may apply to carbon dioxide (CO2), other greenhouse gases (GHGs), or other substances.

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Enabling Conditions

Conditions that affect the feasibility of adaptation and mitigation options, and can accelerate and scale-up systemic transitions that would limit temperature increase to 1.5°C and enhance capacities of systems and societies to adapt to the associated climate change, while achieving sustainable development, eradicating poverty and reducing inequalities.

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Energy Access

Access to clean, reliable and affordable energy services for cooking and heating, lighting, communications and productive uses

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Energy Security

The goal of a given country, or the global community as a whole, to maintain an adequate, stable and predictable energy supply. Measures encompass safeguarding the sufficiency of energy resources to meet national energy demand at competitive and stable prices and the resilience of the energy supply; enabling development and deployment of technologies; building sufficient infrastructure to generate, store and transmit energy supplies and ensuring enforceable contracts of delivery.

AR5 SYR

Equality

A principle that ascribes equal worth to all human beings, including equal opportunities, rights, and obligations, irrespective of origins. Inequality: Uneven opportunities and social positions, and processes of discrimination within a group or society, based on gender, class, ethnicity, age, and (dis) ability, often produced by uneven development. Income inequality refers to gaps between highest and lowest income earners within a country and between countries.

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Equity

Equity is the principle of fairness in burden sharing and is a basis for understanding how the impacts and responses to climate change, including costs and benefits, are distributed in and by society in more or less equal ways. It is often aligned with ideas of equality, fairness and justice and applied with respect to equity in the responsibility for, and distribution of, climate impacts and policies across society, generations, and gender, and in the sense of who participates and controls the processes of decisionmaking.

Distributive equity: Equity in the consequences, outcomes, costs and benefits of actions or policies. In the case of climate change or climate policies for different people, places and countries, including equity aspects of sharing burdens and benefits for mitigation and adaptation.

Gender equity: Ensuring equity in that women and men have the same rights, resources and opportunities. In the case of climate change gender equity recognizes that women are often more vulnerable to the impacts of climate change and may be disadvantaged in the process and outcomes of climate policy.

Inter-generational equity: Equity between generations that acknowledges that the effects of past and present emissions, vulnerabilities and policies impose costs and benefits for people in the future and of different age groups.

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Exposure

The presence of people, livelihoods, species or ecosystems, environmental functions, services, and resources, infrastructure, or economic, social, or cultural assets in places and settings that could be adversely affected.

AR5 WG2

Externalities/External Costs/External Benefits

Externalities arise from a human activity when agents responsible for the activity do not take full account of the activity's impacts on others' production and consumption possibilities, and no compensation exists for such impacts. When the impacts are negative, they are external costs. When the impacts are positive, they are external benefits.

AR5 WG2

Extreme Weather Event

An extreme weather event is an event that is rare at a particular place and time of year. Definitions of rare vary, but an extreme weather event would normally be as rare as or rarer than the 10th or 90th percentile of a probability density function estimated from observations. By definition, the characteristics of what is called extreme weather may vary from place to place in an absolute sense. When a pattern of extreme weather persists for some time, such as a season, it may be classed as an extreme climate event, especially if it yields an average or total that is itself extreme (e.g., drought or heavy rainfall over a season).

F

Flood

The overflowing of the normal confines of a stream or other body of water, or the accumulation of water over areas not normally submerged. Floods include river (fluvial) floods, flash floods, urban floods, pluvial floods, sewer floods, coastal floods and glacial lake outburst floods

AR5 SYR

Food Security

A state that prevails when people have secure access to sufficient amounts of safe and nutritious food for normal growth, development and an active and healthy life.

AR5 SYR

Fossil Fuel Emissions

Emissions of greenhouse gases (in particular carbon dioxide), other trace gases and aerosols resulting from the combustion of fuels from fossil carbon deposits such as oil, gas and coal.

AR5 WG1

Fuel Poverty

A condition in which a household is unable to guarantee a certain level of consumption of domestic energy services (especially heating) or suffers disproportionate expenditure burdens to meet these needs.

Feasibility

The degree to which climate goals and response options are considered possible and/or desirable. Feasibility depends on geophysical, ecological, technological, economic, social and institutional conditions for change. Conditions underpinning feasibility are dynamic, spatially variable, and may vary between different groups. See also Enabling conditions.

SR1.5

G

Geoengineering

Geoengineering refers to a broad set of methods and technologies that aim to deliberately alter the climate system in order to alleviate the impacts of climate change. Most, but not all, methods seek to either (1) reduce the amount of absorbed solar energy in the climate system (Solar Radiation Management) or (2) increase net carbon sinks from the atmosphere at a scale sufficiently large to alter climate (Carbon Dioxide Removal). Scale and intent are of central importance. Two key characteristics of geoengineering methods of particular concern are that they use or affect the climate system (e.g., atmosphere, land or ocean) globally or regionally and/or could have substantive unintended effects that cross national boundaries.

Global Warming

The estimated increase in global mean surface temperature (GMST) averaged over a 30-year period, or the 30-year period centered on a particular year or decade, expressed relative to preindustrial levels unless otherwise specified. For 30-year periods that span past and future years, the current multidecadal warming trend is assumed to continue.

SR1.5

Governance

There is a corresponding shift from government defined strictly by the nation-state to a more inclusive concept of governance, recognizing the contributions of various levels of government (global, international, regional, local) and the roles of the private sector, of nongovernmental actors, and of civil society.

SREX

Greenhouse Gases (GHGs)

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 terrestrial radiation emitted by the Earth's surface, the atmosphere itself and by clouds. This property causes the greenhouse effect. Water vapour (H2O), carbon dioxide (CO2), nitrous oxide (N2O), methane (CH4) and ozone (O3) are the primary GHGs in the Earth's atmosphere. Moreover, there are a number of entirely human-made GHGs in the atmosphere, such as the halocarbons and other chlorine- and bromine-containing substances, dealt with under the Montreal Protocol.

Hazard

The potential occurrence of a natural or human-induced physical event that may cause loss of life, injury, or other health impacts, as well as damage and loss to property, infrastructure, livelihoods, service provision, and environmental resources.

SREX

Heat Wave

A period of abnormally and uncomfortably hot weather.

AR5 SYR

Human Security

A condition that is met when the vital core of human lives is protected, and when people have the freedom and capacity to live with dignity. In the context of climate change, the vital core of human lives includes the universal and culturally specific, material and non-material elements necessary for people to act on behalf of their interests and to live with dignity.

Impacts

The consequences of realized risks on natural and human systems, where risks result from the interactions of climate-related hazards (including extreme weather and climate events), exposure, and vulnerability. Impacts generally refer to effects on lives; livelihoods; health and well-being; ecosystems and species; economic, social and cultural assets; services (including ecosystem services); and infrastructure. Impacts may be referred to as consequences or outcomes, and can be adverse or beneficial.

SR1.5

Impact Assessment

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

AR5 WG2

Indigenous People

Indigenous peoples and nations are those that, having a historical continuity with pre-invasion and pre-colonial societies that developed on their territories, consider themselves distinct from other sectors of the societies now prevailing on those territories, or parts of them. They form, at present, principally non-dominant sectors of society and are often determined to preserve, develop, and transmit to future generations their ancestral territories, and their ethnic identity, as the basis of their continued existence as peoples, in accordance with their own cultural patterns, social institutions, and common law system.

AR5 WG2

Industrial Revolution

A period of rapid industrial growth with far-reaching social and economic consequences, beginning in Britain during the second half of the 18th century and spreading to Europe and later to other countries including the United States. The invention of the steam engine was an important trigger of this development. The industrial revolution marks the beginning of a strong increase in the use of fossil fuels and emission of, in particular, fossil carbon dioxide (CO2).

AR5 SYR

Informal Sector

Commercial enterprises (mostly small) that are not registered or that otherwise fall outside official rules and regulations. Among the businesses that make up the informal sector, there is great diversity in the value of the goods or services produced, the numbers employed, the extent of illegality, and the connection to the formal sector. Many informal enterprises have some characteristics of formal-sector enterprises, and some people are in informal employment in the formal sector as they lack legal protection or employment benefits.

AR5 WG2

Informal Settlement

A term given to settlements or residential areas that, by at least one criterion, fall outside official rules and regulations. Most informal settlements have poor housing (with widespread use of temporary materials) and are developed on land that is occupied illegally with high levels of overcrowding. In most such settlements, provision for safe water, sanitation, drainage, paved roads, and basic services is inadequate or lacking. The term slum is often used for informal settlements, although it is misleading as many informal settlements develop into good quality residential areas, especially where governments support such development.

AR5 WG2

Institutions

Institutions are rules and norms held in common by social actors that guide, constrain, and shape human interaction. Institutions can be formal, such as laws and policies, or informal, such as norms and conventions. Organizations—such as parliaments, regulatory agencies, private firms, and community bodies—develop and act in response to institutional frameworks and the incentives they frame. Institutions can guide, constrain, and shape human interaction through direct control, through incentives, and through processes of socialization.

AR5 WG2

Integrated Water Resource Management

A process which promotes the coordinated development and management of water, land and related resources in order to maximize economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems.

SR1.5

Integrated Coastal Zone Management

An integrated approach for sustainably managing coastal areas, taking into account all coastal habitats and uses.

Intergovernmental Panel on Climate Change (IPCC)

The Intergovernmental Panel on Climate Change (IPCC) was set up by the World Meteorological Organization (WMO) and United Nations Environment to provide an objective source of scientific information. In 2013 the IPCC provided more clarity about the role of human activities in climate change when it released its Fifth Assessment Report. It is categorical in its conclusion: climate change is real and human activities are the main cause.

UN

Insurance/Reinsurance

A family of financial instruments for sharing and transferring risk among a pool of at-risk households, businesses, and/or governments.

SREX

K

Kyoto Protocol

The Kyoto Protocol to the United Nations Framework Convention on Climate Change (UNFCCC) is an international treaty adopted in December 1997 in Kyoto, Japan, at the Third Session of the Conference of the Parties (COP3) to the UNFCCC. It contains legally binding commitments, in addition to those included in the UNFCCC. Countries included in Annex B of the Protocol (mostly OECD countries and countries with economies in transition) agreed to reduce their anthropogenic greenhouse gas (GHG) emissions by at least 5% below 1990 levels in the first commitment period (2008–2012). The Kyoto Protocol entered into force on 16 February 2005 and as of May 2018 had 192 Parties (191 States and the European Union).

SR1.5

Land Grab

Large acquisitions of land or water rights for industrial agriculture, mitigation projects, or biofuels that have negative consequences on local and marginalized communities.

AR5 WG2

Land Use and Land Use Change

Land use refers to the total of arrangements, activities, and inputs undertaken in a certain land cover type (a set of human actions). The term land use is also used in the sense of the social and economic purposes for which land is managed (e.g., grazing, timber extraction, and conservation). Land use change refers to a change in the use or management of land by humans, which may lead to a change in land cover. Land cover and land use change may have an impact on the surface albedo, evapotranspiration, sources and sinks of greenhouse gases, or other properties of the climate system and may thus give rise to radiative forcing and/or other impacts on climate, locally or globally.

Livelihoods

The resources used and the activities undertaken in order to live. Livelihoods are usually determined by the entitlements and assets to which people have access. Such assets can be categorized as human, social, natural, physical, or financial.

AR5 WG2

Local Disaster Risk Management (LDRM)

The process in which local actors (citizens, communities, government, non-profit organizations, institutions, and businesses) engage in and have ownership of the identification, analysis, evaluation, monitoring, and treatment of disaster risk and disasters, through measures that reduce or anticipate hazard, exposure, or vulnerability; transfer risk; improve disaster response and recovery; and promote an overall increase in capacities. LDRM normally requires coordination with and support from external actors at the regional, national, or international levels. Community-based disaster risk management is a subset of LDRM where community members and organizations are in the center of decisionmaking.

SREX

Lock-in

Lock-in occurs when a market is stuck with a standard even though participants would be better off with an alternative. In this report, lock-in is used more broadly as path dependence, which is the generic situation where decisions, events or outcomes at one point in time constrain adaptation, mitigation or other actions or options at a later point in time.

AR5 SYR

Loss and Damage

Research has taken Loss and Damage (capitalized letters) to refer to political

debate under the UNFCCC following the establishment of the Warsaw Mechanism on Loss and Damage in 2013, which is to 'address loss and damage associated with impacts of climate change, including extreme events and slow onset events, in developing countries that are particularly vulnerable to the adverse effects of climate change.'

SR1.5

Low Regrets Policy

A policy that would generate net social and/or economic benefits under current climate and a range of future climate change scenarios.

AR5 WG2

migration of refugees, displaced persons, economic migrants, and persons moving for other purposes, including family reunification.'

SR1.5

Mitigation (of disaster risk and disaster)

The lessening of the potential adverse impacts of physical hazards (including those that are human-induced) through actions that reduce hazard, exposure, and vulnerability.

AR5 WG2

Mitigation (of climate change)

A human intervention to reduce the sources or enhance the sinks of greenhouse gases.

AR5 WG2

Ν

IVI

Maladaptation

Actions that may lead to increased risk of adverse climate-related outcomes, including via increased GHG emissions, increased vulnerability to climate change, or diminished welfare, now or in the future. Maladaptation is usually an unintended consequence.

SR1.5

Migration

The International Organization for Migration (IOM) defines migration as 'The movement of a person or a group of persons, either across an international border, or within a State. It is a population movement, encompassing any kind of movement of people, whatever its length, composition and causes; it includes

Nationally Determined Contributions (NDCs)

A term used under the United Nations Framework Convention on Climate Change (UNFCCC) whereby a country that has joined the Paris Agreement outlines its plans for reducing its emissions. Some countries' NDCs also address how they will adapt to climate change impacts, and what support they need from, or will provide to, other countries to adopt low-carbon pathways and to build climate resilience. According to Article 4 paragraph 2 of the Paris Agreement, each Party shall prepare, communicate and maintain successive NDCs that it intends to achieve. In the lead up to

21st Conference of the Parties in Paris in 2015, countries submitted Intended Nationally Determined Contributions (INDCs). As countries join the Paris Agreement, unless they decide otherwise, this INDC becomes their first Nationally Determined Contribution (NDC).

SR1.5

Net Zero Emissions

Net zero emissions are achieved when anthropogenic emissions of greenhouse gases to the atmosphere are balanced by anthropogenic removals over a specified period. Where multiple greenhouse gases are involved, the quantification of net zero emissions depends on the climate metric chosen to compare emissions of different gases (such as global warming potential, global temperature change potential, and others, as well as the chosen time horizon).

SR1.5

Ocean Acidification

Ocean acidification refers to a reduction in the pH of the ocean over an extended period, typically decades or longer, which is caused primarily by uptake of carbon dioxide (CO2) from the atmosphere, but can also be caused by other chemical additions or subtractions from the ocean. Anthropogenic ocean acidification refers to the component of pH reduction that is caused by human activity

AR5 SYR

Ρ

Paris Agreement

The Paris Agreement under the UNFCCC was adopted on December 2015 in Paris, France, at the 21st session of the Conference of the Parties (COP) to the UNFCCC. The agreement, adopted by 196 Parties to the UNFCCC, entered into force on 4 November 2016 and as of May 2018 had 195 Signatories and was ratified by 177 Parties. One of the goals of the Paris Agreement is 'Holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels', recognising that this would significantly reduce the risks and impacts of climate change. Additionally, the Agreement aims to strengthen the ability of countries to deal with the impacts of climate change.

SR1.5

Path Dependence

The generic situation where decisions, events, or outcomes at one point in time constrain adaptation, mitigation, or other actions or options at a later point in time.

Pathways

The temporal evolution of natural and/ or human systems towards a future state. Pathway concepts range from sets of quantitative and qualitative scenarios or narratives of potential futures to solution oriented decisionmaking processes to achieve desirable societal goals. Pathway approaches typically focus on biophysical, technoeconomic, and/or socio-behavioural trajectories and involve various dynamics, goals and actors across different scales.

SR1.5

Peri-Urban Areas

Peri-urban areas are those parts of a city that appear to be quite rural but are in reality strongly linked functionally to the city in its daily activities.

SR1.5

Projection

A projection is a potential future evolution of a quantity or set of quantities, often computed with the aid of a model. Unlike predictions, projections are conditional on assumptions concerning, for example, future socioeconomic and technological developments that may or may not be realized.

AR5 WG2

Poverty

Poverty is a complex concept with several definitions stemming from different schools of thought. It can refer to material circumstances (such as need, pattern of deprivation, or limited resources), economic conditions (such as standard of living, inequality, or economic position), and/or social relationships (such as social class, dependency, exclusion, lack of basic security, or lack of entitlement).

AR5 WG2

Poverty Trap

Poverty trap is understood differently across disciplines. In the social sciences, the concept, primarily employed at the individual, household, or community level, describes a situation in which escaping poverty becomes impossible due to unproductive or inflexible resources. A poverty trap can also be seen as a critical minimum asset threshold, below which families are unable to successfully educate their children, build up their productive assets, and get out of poverty. Extreme poverty is itself a poverty trap, since poor persons lack the means to participate meaningfully in society. In economics, the term poverty trap is often used at national scales, referring to a self-perpetuating condition where an economy, caught in a vicious cycle, suffers from persistent underdevelopment (Matsuyama, 2008). Many proposed models of poverty traps are found in the literature.

AR5 WG2

R

Radiative Forcing

The strength of drivers is quantified as Radiative Forcing (RF) in units watts per square meter (W/m2) as in previous IPCC assessments. RF is the change in energy flux caused by a driver and is calculated at the tropopause or at the top of the atmosphere.

AR5 SYR

Reducing Emissions from Deforestation and Forest Degradation (REDD+)

An effort to create financial value for the carbon stored in forests, offering incentives for developing countries to reduce emissions from forested lands and invest in low carbon paths to sustainable development (SD). It is therefore a mechanism for mitigation that results from avoiding deforestation. REDD+ goes beyond reforestation and forest degradation and includes the role of conservation, sustainable management of forests and enhancement of forest carbon stocks. The concept was first introduced in 2005 in the 11th Session of the Conference of the Parties (COP) in Montreal and later given greater recognition in the 13th Session of the COP in 2007 at Bali and inclusion in the Bali Action Plan which called for 'policy approaches and positive incentives on issues relating to reducing emissions from deforestation and forest degradation in developing countries (REDD) and the role of conservation, sustainable management of forests and enhancement of forest carbon stock in developing countries'.

AR5 SYR

Region

A region is a territory characterized by specific geographical and climatological features. The climate of a region is affected by regional and local scale features like topography, land use characteristics and lakes, as well as remote influences from other regions.

AR5 WG1

Renewable energy

Renewable energy is energy from sources that will renew themselves within our lifetime. Renewable energy sources include wind, sun, water, biomass (vegetation) and geothermal heat.

UC Davis Science and Climate

Representative Concentration Pathways (RCPs)

Scenarios that include time series of emissions and concentrations of the full suite of greenhouse gases (GHGs) and aerosols and chemically active gases, as well as land use/land cover (Moss et al., 2008). The word representative signifies that each RCP provides only one of many possible scenarios that would lead to the specific radiative forcing characteristics. The term pathway emphasizes that not only the long-term concentration levels are of interest, but also the trajectory taken over time to reach that outcome (Moss et al., 2010).

AR5 SYR

Resilience

The capacity of social, economic, and environmental systems to cope with a hazardous event or trend or disturbance, responding or reorganizing in ways that maintain their essential function, identity, and structure, while also maintaining the capacity for adaptation, learning, and transformation.

AR5 WG2

Risk

The potential for consequences where something of value is at stake and where the outcome is uncertain, recognizing the diversity of values. Risk is often represented as probability of occurrence of hazardous events or trends multiplied by the impacts if these events or trends occur. Risk results from the interaction of vulnerability, exposure, and hazard. In this report, the term risk is used primarily to refer to the risks of climatechange impacts.

AR5 WG2

Risk Assessment

The qualitative and/or quantitative scientific estimation of risks. Plans, actions, or policies to reduce the likelihood and/or consequences of risks or to respond to consequences.

AR5 WG2

Risk Perception

The subjective judgment that people make about the characteristics and severity of a risk.

AR5 WG2

Risk Transfer

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.

SREX

S

Scenario

A plausible description of how the future may develop based on a coherent and internally consistent set of assumptions about key driving forces (e.g., rate of technological change, prices) and relationships. Note that scenarios are neither predictions nor forecasts, but are useful to provide a view of the implications of developments and actions.

AR5 WG2

Sea-Level Change

Sea level can change, both globally and locally (relative sea level change) due to (1) a change in ocean volume as a result of a change in the mass of water in the ocean, (2) changes in ocean volume as a result of changes in ocean water density, (3) changes in the shape of the ocean basins and changes in the Earth's gravitational and rotational fields, and (4) local subsidence or uplift of the land.

SR1.5

Sea Surface Temperature

The sea surface temperature is the subsurface bulk temperature in the top few meters of the ocean, measured by ships, buoys, and drifters.

SR1.5

Sequestration

The uptake (i.e., the addition of a substance of concern to a reservoir) of carbon containing substances, in particular carbon dioxide (CO2), in terrestrial or marine reservoirs. Biological sequestration includes direct removal of CO2 from the atmosphere through land-use change (LUC), afforestation, reforestation, revegetation, carbon storage in landfills and practices that enhance soil carbon in agriculture (cropland management, grazing land management).

AR5 SYR

Sink

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

AR5 SYR

Solar Radiation Modification

Solar radiation modification refers to the intentional modification of the Earth's shortwave radiative budget with the aim of reducing warming. Artificial injection of stratospheric aerosols, marine cloud brightening and land surface albedo modification are examples of proposed SRM methods.

SR1.5

Storm Surge

The temporary increase, at a particular locality, in the height of the sea due to extreme meteorological conditions (low atmospheric pressure and/or strong winds). The storm surge is defined as being the excess above the level expected from the tidal variation alone at that time and place

AR5 SYR

Stressors

Events and trends, often not climaterelated, that have an important effect on the system exposed and can increase vulnerability to climate-related risk.

AR5 WG2

Socioeconomic Scenario

A scenario that describes a possible future in terms of population, gross domestic product, and other socioeconomic factors relevant to understanding the implications of climate change.

AR5 WG2

Social Protection

In the context of development aid and climate policy, social protection usually describes public and private initiatives that provide income or consumption transfers to the poor, protect the vulnerable against livelihood risks, and enhance the social status and rights of the marginalized, with the overall objective of reducing the economic and social vulnerability of poor, vulnerable, and marginalized groups.

AR5 WG2

Sustainability

A dynamic process that guarantees the persistence of natural and human systems in an equitable manner.

AR5 WG2

Sustainable Development

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

SREX

2030 Agenda for Sustainable Development

A UN resolution in September 2015 adopting a plan of action for people, planet and prosperity in a new global development framework anchored in 17 Sustainable Development Goals (UN, 2015).

AR5 WG2

Technology transfer

A broad set of processes covering the flows of know-how, experience and equipment for mitigating and adapting to climate change among different stakeholders

UNFCCC

Tipping Point

A level of change in system properties beyond which a system reorganizes, often abruptly, and does not return to the initial state even if the drivers of the change are abated. For the climate system, it refers to a critical threshold when global or regional climate changes from one stable state to another stable state. The tipping point event may be irreversible.

AR5 SYR

Traditional Knowledge

The knowledge, innovations, and practices of both indigenous and local communities around the world that are deeply grounded in history and experience. Traditional knowledge is dynamic and adapts to cultural and environmental change, and also incorporates other forms of knowledge and viewpoints. Traditional knowledge is generally transmitted orally from generation to generation. It is often used as a synonym for indigenous knowledge, local knowledge, or traditional ecological knowledge.

AR5 WG2

Transformation

A change in the fundamental attributes of natural and human systems.

AR5 WG2

U

United Nations Framework Convention on Climate Change (UNFCCC)

The UNFCCC was adopted in May 1992 and opened for signature at the 1992 Earth Summit in Rio de Janeiro. It entered into force in March 1994 and as of May 2018 had 197 Parties (196 States and the European Union). The Convention's ultimate objective is the 'stabilisation of greenhouse gas

Weather

The state of the atmosphere with regard to temperature, cloudiness, rainfall, wind and other meteorological conditions. It is not the same as climate which is the average weather over a much longer period.

BBC

concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system.' The provisions of the Convention are pursued and implemented by two treaties: the Kyoto Protocol and the Paris Agreement.

SR1.5



Vulnerability

The propensity or predisposition to be adversely affected. Vulnerability encompasses a variety of concepts and elements including sensitivity or susceptibility to harm and lack of capacity to cope and adapt.







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