



# Glossary of Climate Change Terms

The definitions in this glossary were adapted from the Intergovernmental Panel on Climate Change (IPCC) Sixth Assessment Report (AR6) and have been tailored for clarity and relevance to The Resilience Institute. They will be reviewed and updated as new guidance and research becomes available.

## Adaptation (actions)

Actions taken to adjust to actual or expected climate conditions and their impacts to reduce harm or take advantage of potential opportunities. Adaptation actions may include changes to infrastructure, policies, governance, land use, economic incentives, education, monitoring, and community capacity-building. Community-based adaptation refers to locally driven adaptation processes that emphasize community knowledge, participation, and empowerment in addressing climate risks.

## Adaptive capacity

The ability of individuals, communities, institutions, and ecosystems to anticipate, prepare for, and respond to climate impacts, or to take advantage of opportunities that may arise. Adaptive capacity is determined by access to resources such as knowledge, social networks, infrastructure, financial resources, natural resources, and effective governance.

## Adaptation planning

The collection of participatory activities and steps undertaken to moderate potential harm or to take advantage of beneficial opportunities from climate phenomena.

## Climate

The long-term patterns of weather conditions in a region, including variables such as temperature, precipitation, and wind. These patterns are typically measured over periods of 30 years or longer. More rigorously, climate describes the statistical characteristics of weather, including the average conditions and the variability of key climate variables, over time periods that may range from months to thousands or even millions of years.

## Climate change

A long-term shift in the state of the climate system, reflected in changes in average conditions or variability of climate variables such as temperature and precipitation. Climate change refers to changes primarily driven by human activities (i.e., greenhouse gas emissions) altering the composition of the atmosphere, and is distinguished from climate variability, which describes naturally occurring fluctuations in the climate system.

## Climate extremes

Events in which a weather or climate variable (such as temperature, precipitation, or wind) exceeds the typical range of observed values for a particular place and time. When such conditions persist over longer periods, they may be classified as extreme climate events.

## Climate phenomenon

A climate-related atmospheric condition or hydrological process that produces identifiable impacts. Climate phenomena may occur as rapid-onset events (e.g., heat waves, heavy snow, drought) or gradual changes (e.g., shifts in seasonal temperatures and rainfall patterns), and their frequency, intensity, or timing may be influenced by climate change.

## Climate variability

Deviations of climate variables from the long-term average. These variations can occur over months, years, or decades and may result from fluctuations of internal processes within the climate system (such as ocean-atmosphere interactions) or from external influences from natural or anthropogenic processes (such as volcanic eruptions, changes in solar activity, or human activities).





## Co-benefits

Additional positive effects that arise from a policy or action intended to address another objective. For example, climate adaptation measures may also improve public health, support economic development, or reduce greenhouse gas emissions.

## Community

A group of people who are linked by social ties, share a common identity and geographical location or settings, and on this basis, engage in joint action. People who are, or perceive themselves to be, affected by a decision, strategy, or process. A community partner can be an individual, an organization, or a group within an organization. Community partners can change at different stages in a process.

## Consequence

The result or effect from climate impacts to people, livelihoods, infrastructure, resources, services, and social, economic, or cultural assets.

## Exposure

The presence of people, livelihoods, infrastructure, resources, services, and social, economic, or cultural assets in places where they could be adversely affected by climate-related hazards.



## Greenhouse gas

A greenhouse gas (GHG) is a compound found in the Earth's atmosphere—for example, carbon dioxide, methane, water vapor, and other human-made gases. These gases allow solar radiation to enter the atmosphere and strike the Earth's surface, warming it. Some of this energy is reflected towards space. A portion of this reflected energy, however, bounces off the GHGs, and becomes trapped in the atmosphere in the form of heat. The more GHG molecules there are in the atmosphere, the more outgoing energy is trapped, and the warmer the Earth will become.

## Hazard

A natural or human-induced physical event or trend that has the potential to cause harm to people and ecosystems, as well as damage and loss to property, infrastructure, or economic, social, and cultural activities.

## Impacts

The effects of climate-related hazards on natural and human systems. Impacts occur from the interaction of hazards, exposure, and vulnerability. Impacts may be adverse or beneficial and can affect lives, health and well-being, livelihoods, economic, cultural, and social assets, infrastructure, ecosystems and species, or services.

## Likelihood

The probability or chance of a hazard occurring, and how this likelihood changes in the future due to climate change.



## Livelihoods

The resources, capabilities, and activities that people and communities use to generate and sustain their means of living, enhance their well-being, and the well-being of future generations. Livelihoods are usually determined by the assets which people have access to, including human, natural, social, physical, or financial assets.

## Maladaptation

Adaptation actions intended to reduce impacts to climate change that unintentionally increase the risk of adverse climate-related outcomes to a community, group, or sector. This can occur by increasing greenhouse gas emissions, worsening inequities, reducing incentives to adapt, or limiting the ability of future generations to respond to climate change.

## Mitigation

Actions that reduce greenhouse gas emissions or enhance the removal of carbon from the atmosphere. Examples include using renewable energy, improving energy efficiency in buildings and transport, and increasing carbon storage through planting trees.

## Representative Concentration Pathways (RCPs)

RCPs represent scenarios that predict how concentrations of GHGs in the atmosphere will change in the future because of human activities. RCPs are used in CMIP5 climate model experiments and there are four RCPs (2.6, 4.5, 6.0 and 8.5) with a higher value representing higher GHG concentrations in 2100.

## Resilience

The ability of communities, social and economic systems, and ecosystems to anticipate, respond to, and recover from the impacts of climate phenomena while maintaining essential functions and well-being. Resilience varies across groups and systems depending on adaptive capacity and can be a positive attribute when it supports ongoing learning, adaptation, and transformation.

## Risk

The potential for adverse consequences from climate-related hazards on people, livelihoods, infrastructure, resources, services, and social, economic, or cultural assets. Risk arises from the likelihood of a climate-related hazard occurring combined with the exposure and vulnerability of the affected human or ecological system. Risks may be acute with a rapid onset such as high winds or intense rainfall, or chronic, with a slow onset such as shifts in seasonal temperatures and species migration patterns.

## Sensitivity

The degree to which people, livelihoods, infrastructure, resources, services, and social, economic, or cultural assets could be affected, either adversely or beneficially, by climate variability or change. Effects may be direct, such as damage to buildings from strong winds, or indirect, such as health impacts from heat stress on vulnerable populations.





## Shared Socioeconomic Pathways (SSPs)

SSPs represent scenarios that combine greenhouse gas concentration trajectories with assumptions about global socioeconomic development, including population growth, economic trends, technology change, and policy choices. SSPs are used in CMIP6 climate model experiments and are commonly expressed with a paired radiative forcing level (e.g., SSP1-1.9, SSP1-2.6, SSP2-4.5, SSP3-7.0, and SSP5-8.5).

## Vulnerability

The propensity or predisposition of people, livelihoods, infrastructure, resources, services, and social, economic, or cultural assets to be affected by climate phenomena. Vulnerability depends on the exposure to a climate hazard, the sensitivity of the affected system, and the capacity to cope and adapt.

## Weather

The short-term atmosphere conditions such as temperature, precipitation, and wind at a specific time and place. Weather can change dramatically in a place or region from day-to-day, whereas climate reflects the long-term patterns of these conditions.



 [resilienceinstitute.ca](https://resilienceinstitute.ca)

 [resilienceinstituteCanada](https://www.instagram.com/resilienceinstituteCanada)

 [resilienceinstitute.ca](https://twitter.com/resilienceinstitute.ca)