



Climate Change-Glossary of terms

Climate Change Committee, Spring 2018

Introduction

Language is extremely important, especially when trying to express technically challenging topics like climate change. If the language is too technical, or complicated, the message will not be consistent and may lead to confusion among the recipients. This results in an inefficient effort, that may also include incorrect or incomplete results.

Striving for clarity, the Climate Change Committee believes it is important there be a common language all Canadian Institute of Planners (CIP) members can rely upon in climate change related communications, policies, and actions.

The following Glossary has been developed by the Committee and provides terms selected (with some minor revisions) from several recent and reliable sources:

- European Climate Adaptation Platform (Climate-ADAPT): <http://climate-adapt.eea.europa.eu/>
- IPCC's 4th assessment reports of the different working groups (Working Group I, II and III): <http://www.ipcc.ch/report/ar5/wg2/>
- United Nations Framework on Climate Change: Glossary of climate change acronyms and terms: http://unfccc.int/essential_background/glossary/items/3666.php
- Engineers Canada, Public Infrastructure Engineering Vulnerability Committee (PIEVC), Glossary: <https://pievc.ca/glossary>
- Climate Risk: Getting to Action. Professionals' Perspectives on Climate Change Challenges: First Summary of Discussions. SFU Adaptation to Climate Change Team, December 6th, 2016.

This Glossary has been prepared primarily for the use of CIP members; recognizing that our profession is involved in many different types of planning, terms have been categorized for clarity and simplicity:



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20 Terms CIP Members Should Know:

1. 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. Several types of adaptation can be distinguished, including anticipatory (before an event) and institutional (after an event) adaptation.

2. Adaptation strategy

Adaptation strategy refers to a broad plan of action that is implemented through policies and measures. A climate change adaptation strategy for a country, region, or municipality refers to a general plan of action for addressing the impacts of climate change, including climate variability and extremes. It may include a mix of policies and measures, selected to meet the overarching objective of reducing the country's vulnerability.

3. Baseline

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. Alternative interpretations of the reference conditions can give rise to multiple baselines.

4. Carbon market

A popular term (but misleading) for a trading system through which countries may buy or sell units of greenhouse-gas emissions in an effort to meet their national limits on emissions under the Paris Agreement. The term comes from the fact that carbon dioxide is the predominant greenhouse gas, and other gases are measured in units, called "carbon-dioxide equivalents."

5. Climate

Climate is long-term (months to many years) and weather is short term (today, tomorrow, a week). Technically, climate is a statistical description 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. The World Meteorological Organization (WMO) considers 30 years to be a "normal" period.

6. Climate change

Climate change refers to any change (higher or lower) in climate over time, whether due to natural variability (defined below) or as a result of human activity (anthropogenic). Climate change is any systematic change in the long-term statistics of climate elements (such as temperature, sea level, precipitation, humidity, or winds) sustained over several decades or longer. Climate change may be due to natural external forces;



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such as changes in solar emission or slow changes in the earth's orbital elements; natural internal processes of the climate system; or anthropogenic forces.

7. 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).

8. Community-based adaptation

Community-based adaptation focuses attention on empowering and promoting the adaptive capacity of communities. It is a proactive problem-solving and forward-looking approach that takes contexts, culture, knowledge, agency, preferences, and particularities of communities and their members as strengths.

9. Critical infrastructure

Critical infrastructures are those physical and information technology facilities, networks, services, and assets which, if disrupted or destroyed, would have a serious impact on the health, safety, security, or economic well-being of our communities. Critical infrastructure includes: energy installations and networks; communications and information technology; finance (banking, securities and investment); health care; food; water (dams, storage, treatment and networks); transport (airports, ports, intermodal facilities, railway and mass transit networks and traffic control systems); production, storage and transport of dangerous goods (e.g. chemical, biological, radiological, and nuclear materials); government (e.g. critical services, facilities, information networks, assets, and key national sites and monuments).

10. Disaster 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 climate change planning, disaster risks are those that could potentially lead to losses in lives, health status, livelihoods, assets, and services, which could occur to a particular community or a society over some specified future time period. Comment: The definition of disaster risk reflects the concept of disasters as the outcome of continuously present conditions of risk. Disaster risk comprises different types of potential losses which are often difficult to quantify. Nevertheless, with knowledge of the prevailing hazards and the patterns of population and socio-economic development, disaster risks can be assessed and mapped, in broad terms at least.



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11. Emissions

Refers to greenhouse gases released into the air that are produced by numerous activities including burning fossil fuels, industrial agriculture, and thawing permafrost to name a few.

12. Extreme weather

Extreme weather is an event out of the norm, that seems to be happening with greater frequency. A thunderstorm, for example to be extreme would be one that lasts a shorter time than typical for the area, while including more intense periods of rain, stronger winds than usual and may result in more community damage. Weather forecasts more regularly predict extreme weather events, ironically making these events the “new norm”.

13. Greenhouse gases (GHG)

Short Answer

Greenhouse gases are generated by the burning of fossil fuels: gasoline, diesel fuel, natural gas, propane. Burning of fossil fuels generates CO_2 which effectively absorbs thermal infrared radiation, emitted by the Earth’s surface, by the atmosphere itself due to the same gases, and by clouds.

Longer Answer

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 thermal infrared radiation emitted by the Earth’s surface, the atmosphere itself, and by clouds. This property causes the greenhouse effect. Water vapour (H_2O), carbon dioxide (CO_2), nitrous oxide (N_2O), methane (CH_4), and ozone (O_3) are the primary greenhouse gases in the Earth’s atmosphere. Moreover, there are a number of entirely human-made greenhouse gases in the atmosphere, such as the halocarbons and other chlorine- and bromine-containing substances, dealt with under the Montreal Protocol. Beside CO_2 , N_2O and CH_4 , the Paris Agreement, and other international agreements with the greenhouse gases sulphur hexafluoride (SF_6), hydrofluorocarbons (HFCs), and perfluorocarbons (PFCs).

14. Impacts

The term “impacts” is used primarily to refer to the effects on natural and human systems of extreme weather and climate events and of climate change. Impacts generally refer to effects on lives, livelihoods, health status, ecosystems, economic, social, and cultural assets, services (including environmental), and infrastructure due to the interaction of climate changes or hazardous climate events occurring within a specific time period, and the vulnerability of an exposed society or system. Impacts are also referred to as consequences and outcomes. The impacts of climate change on geophysical systems, including floods, droughts, and sea level rise, are a subset of impacts called physical impacts.



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15. Impact assessments (climate change)

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

16. Intergovernmental Panel on Climate Change (IPCC)

Established in 1988 by the World Meteorological Organization and the UN Environment Programme, the IPCC surveys world-wide scientific and technical literature and publishes assessment reports that are widely recognized as the most credible existing sources of information on climate change. The IPCC also works on methodologies and responds to specific requests from the Convention's subsidiary bodies. The IPCC is independent of the Convention.

17. Mainstreaming

Climate policy mainstreaming means incorporating this specialized policy within municipal tools including Official Community Plans and Zoning By-laws for implementation. Without mainstreaming, climate policy rests in the purview of the academic and not-for-profit sectors, where it may be completed to satisfy funding requirements, and may not have the political or technical support to be implemented at the community level.

18. Maladaptation

Any changes in natural or human systems that inadvertently increase vulnerability to climatic stimuli; an adaptation that fails in reducing vulnerability, but increases it instead.

19. Mitigation

The longer-term cousin of climate adaptation. Mitigation is a type of intervention used to reduce the anthropogenic forces of the climate system; it includes strategies and measures to reduce greenhouse gas sources and emissions including the use of 'sinks', which are natural features that absorb carbon such as forests. Planners address mitigation through intensification, active transportation, promoting public transit, encouraging the use of renewable energy, and reducing fossil fuel use with vehicle traffic.

20. Resilience

The ability of a social or ecological system, community, or society exposed to hazards to resist, absorb, accommodate, and recover from the effects of a hazard and/or disturbance in a timely and efficient manner, while retaining the same basic structure and ways of functioning, the capacity for self-organisation, and the capacity to adapt to stress and change, including through the preservation and restoration of its essential basic structures and functions.