

APPENDIX 3: GLOSSARY OF TERMS

Most definitions used in this guide are based on those used by the International Panel on Climate Change (IPCC), the leading global climate change research organization. The glossary of terms below uses IPCC definitions.

Adaptation: Initiatives and measures to reduce the vulnerability of natural and human systems against actual or expected climate change effects. Various types of adaptation exist, e.g. anticipatory and reactive, private and public, and autonomous and planned. Examples are raising river or coastal dikes, and substituting more temperature-shock resistant plants for sensitive ones, etc.

Adaptation benefits: The avoided damage costs or the accrued benefits following the adoption and implementation of adaptation measures.

Adaptive capacity: A system's ability and efforts in both physical elements (infrastructure, material wealth, technology) and social/institutional elements (human capital, governance, institutional strength) to adapt to climate change impacts.

Adaptation costs: Costs of planning, preparing for, facilitating and implementing adaptation measures, including transition costs.

Anthropogenic: Resulting from or produced by human beings.

Anthropogenic emissions: Emissions of greenhouse gases, greenhouse gas precursors, and aerosols associated with human activities, including the burning of fossil fuels, deforestation, land-use changes, livestock, fertilization, etc.

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 ranging from months to thousands or millions of years. The classic 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. In various parts of this report, different averaging periods, such as 20 years, are also used.

Climate change: 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, external forces, or to persistent anthropogenic changes in the composition of the atmosphere or in land use. Note that

the United Nations 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.

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.

Greenhouse effect: Greenhouse gases effectively absorb thermal infrared radiation, emitted by the Earth's surface, by the atmosphere itself due to the same gases, and by clouds. Atmospheric radiation is emitted in all directions, including downward to the Earth's surface. Thus, greenhouse gases trap heat within the surface-troposphere system. This is called the greenhouse effect.

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 thermal infrared 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 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 CO₂, N₂O and CH₄, the Kyoto Protocol deals with the greenhouse gases sulphur hexafluoride (SF₆), hydro fluorocarbons (HFCs) and perfluorocarbons (PFCs).

(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.

Integration: An approach to climate change planning that considers larger and related sustainability issues (i.e. economic, social, governance, environmental, etc.).

Integrated planning and action can deliver efficiency and effectiveness by adding value through policies, programmes, plans and actions that support, rather than undercut, each other. See mainstreaming.

Likelihood: The likelihood of an occurrence, an outcome or a result, where this can be estimated probabilistically, is expressed in IPCC reports using a standard terminology defined as follows:

TERMINOLOGY	LIKELIHOOD OF THE OCCURRENCE / OUTCOME
Virtually certain	>99% probability of occurrence
Very likely	>90% probability
Likely	>66% probability
More likely than not	>50% probability
About as likely as not	33 to 66% probability
Unlikely	<33% probability
Very unlikely	<10% probability
Exceptionally unlikely	<1% probability

Mainstreaming: The process by which climate risks to city plans, programmes, activities and policies are considered and adjusted to address these risks. Mainstreaming assumes that other projects can be enhanced – e.g. poverty reduction, urban sustainability, etc. – and their benefits can be increased by integrating climate planning with them. Mainstreaming helps to ensure that a city’s plans and policies are not at odds with climate risks now and in the future.

Mitigation: Technological change and substitution that reduce resource inputs and emissions per unit of output. Although several social, economic and technological policies would produce an emission reduction, with respect to climate change, mitigation means implementing policies to reduce greenhouse gas emissions and enhance carbon sinks

Participatory planning: A ground-up, community-based planning approach that works to involve all sectors of a community with a stake in climate planning, including local governments, the private sector, voluntary agencies and civil society.

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-organization, and the capacity to adapt to stress and change.

Sea level change/sea level rise: Sea level can change, both globally and locally, due to (i) changes in the shape of the ocean basins, (ii) changes in the total mass of water and (iii) changes in water density. Factors leading to sea level rise under global warming include increases in the total mass of water from the melting of land-based snow and ice, and changes in water density from an increase in ocean water temperatures and salinity changes. 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.

Sensitivity: Sensitivity is the degree to which a system is affected, either adversely or beneficially, by climate variability or climate 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).

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.

Strategic planning: A systematic decision-making process that provides a process to determine priorities, make wise choices and allocate scarce resources (i.e. time, money, skills) to achieve agreed-on objectives.

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.