Sustainable Jersey Climate Adaptation Task Force (SJ CATF): Glossary of Terms

Understanding the terminology associated with climate change and adaptation is critical when developing plans and actions to address the issue. This list is intended to develop a consistent vocabulary by providing municipalities with simple, easy to understand definitions for the most commonly-used terms associated with climate change and adaptation. To develop this list, the Sustainable Jersey Climate Adaptation Task Force researched a number of reputable sources, including the International Panel on Climate Change (IPCC), and various U.S. Agencies and regional climate organizations, and selected those definitions that best captured the meaning of the terms as they apply to climate change. A list of those sources is provided at the end of the glossary.

Adaptive capacity: The ability of a system (built, natural, or human) to adjust to climate change (including climate variability and climate extremes) to moderate potential damages, to take advantage of opportunities or to cope with the consequences. As a general rule, systems that have high adaptive capacity are better able to deal with climate change impacts.

Climate: The long-term average weather of a region including typical weather patterns, the frequency and intensity of storms, cold spells, and heat waves. Climate is not the same as weather.

Climate change: 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.

Climate change adaptation: An adjustment in natural, or human systems in response to actual or expected climate stimuli or their effects, which moderates harm or exploits benefit opportunities. Various types of adaptation can be distinguished, including anticipatory and reactive adaptation, private and public adaptation, and autonomous and planned adaptation.

Climate change impacts: The effects of existing or forecasted changes in climate on built, natural, and human systems.

Climate change mitigation: Any measure or activity taken to reduce greenhouse gas emissions and to enhance carbon sinks aimed at reducing the magnitude of climate change. Measures include energy conservation, using renewable energy such as wind or solar energy instead of coal, oil, or gas; and planting trees that absorb carbon dioxide from the atmosphere.

Climate risk management: An approach to systematically manage climate-related risks affecting activities, strategies, or investments, by taking account of the risk of current variability and extremes in weather as well as long-term climate change.

Climate Sensitivity: The average global air surface temperature change resulting from a doubling of pre-industrial atmospheric carbon dioxide (CO_2) concentrations. The IPCC estimates climate sensitivity at 1.5-4.5°C (2.7-8.1°F).

Climate variability: Variations in the mean state and other statistics of the climate on all temporal and spatial scales beyond that of individual weather events. Variability may be due to natural internal processes within the climate system (internal variability), or to variations in natural or anthropogenic external forcing (external variability)

Exposure: Whether or not a system is physically exposed to the changing climate condition or the associated impact.

Global Warming: The progressive gradual rise of the Earth's average surface temperature thought to be caused in part by increased concentrations of GHGs in the atmosphere.

Greenhouse gases (GHGs): Many chemical compounds found in the Earth's atmosphere act as "greenhouse gases." These gases allow sunlight to enter the atmosphere freely. When sunlight strikes the Earth's surface, some of it is reflected back towards space as infrared radiation (heat). Greenhouse gases absorb this infrared radiation and trap the heat in the atmosphere. The most common greenhouse gases are carbon dioxide from burning fossil fuels in vehicles and power plants, methane from landfills and livestock production, and nitrous oxide from farming. Other important greenhouse gases are hydrofluorocarbons, perfluorocarbons and sulfur hexafluoride

Hazard: A natural process or phenomenon (floods, storms, droughts, earthquakes) with potentially adverse effects on life, limb, property, socio-economic conditions and the environment. Hazards differ in severity, scale, and frequency and are often classified by cause (such as hydro-meteorological or geological).

Hazard mitigation: Measures taken in advance of a natural hazard or disaster to reduce or eliminate its impact on society and the environment. Climate change adaptation is a form of "hazard mitigation".

Likelihood and confidence (of a climate impact occurring): Likelihood refers to the probability of an outcome having occurred or occurring in the future; confidence is the assessment that any statement about an outcome will prove correct.

Magnitude: The scale (e.g., the area or number of people affected) and its intensity (e.g., the degree of damage caused) of a climate impact.

Maladaptation: An adjustment to climate conditions in a manner that has harmful unintended consequences, such as harms to other parts of a community or sector.

Natural hazards: Natural events that may harm people or their assets. Natural hazards can be classified by origin; either geological (such as earthquakes and volcanic eruptions), hydro-meteorological (such as floods, heat waves, storms), or biological (such as pests and locust swarms). Some natural hazards can be more likely to occur with human-induced climate change.

Persistence and reversibility (of a climate impact): Persistence is the continuance of the effects of an impact after its immediate cause has ceased or has first begun (as in the case of a chronic impact like a drought); reversibility is the degree to which the system can be restored to its pre-impact status.

Precipitation: Rain, hail, mist, sleet, snow or any other moisture that falls to the Earth.

Priority sectors/systems: Those planning areas which your community or government determines to be most important for focusing your preparedness efforts, based on your community's vulnerabilities to climate change and associated risks.

Resilience: The ability of a system to absorb disturbances while retaining the same basic structure and ways of functioning; the capacity to self-organize and rebound from stress and change.

Risk: The probability of harmful consequences due to interaction between hazards and vulnerable conditions.

Sector: A general term used to describe any resource, ecological system, species, management area, activity, or other area of interest that may be affected by climate change. General examples include forests (a resource), wetlands (an ecological system), salmon (a species), water supply (a management area), agriculture (an activity), or human health.

Sensitivity: The degree to which a built, natural, or human system is directly or indirectly affected by changes in climate conditions (e.g., temperature and precipitation) or specific climate change impacts (e.g., sea level rise, increased water temperature). If a system is likely to be affected as a result of projected climate change, it should be considered sensitive to climate change.

Systems: Built, natural, and human networks, organisms, resources, services, assets, and infrastructure that benefit a community or region and could potentially be affected by climate change. Built systems can refer to networks of facilities, buildings, and transportation infrastructure such as roads and bridges. Natural systems can refer to ecological networks of fish, wildlife, and natural resources like water. Human systems can refer to networks of public health clinics, courts, and government.

Vulnerability: The degree to which a system is susceptible to (sensitive), and unable to cope with (adaptive capacity) adverse effects of climate change, including climate variability and extremes. Vulnerability is a function of the

character, magnitude, and rate of climate change and variability to which a system is exposed, as well as the system's sensitivity and adaptive capacity.

Weather: The condition of the atmosphere at a particular place and time. Some familiar characteristics of the weather include wind, temperature, humidity, atmospheric pressure, cloudiness, and precipitation. Weather can change from hour to hour, day to day, and season to season.

Definitions were drawn from:

- *Glossary of Emergency Management Terms (2007),* Alexander, April 2007, 1 (http://www.oes.ca.gov/Operational/OESHome.nsf/PDF/Glossary%20of%20Emergency%20Management%20Terms/$file/Glossary%20of%20Emergency%20Management%20Terms.doc).

- ICLEI – Local Governments for Sustainability and King County, Washington, *Preparing for Climate Change: A Guidebook for Local, Regional, and State Governments*. (http://www.cses.washington.edu/cig/fpt/planning/guidebook/gateway.php);

- The IPCC's 4th Assessment Report (http://www.ipcc.ch/pdf/assessment-report/ar4/wg2/ar4-wg2-app.pdf);

- Pew Center on Global Climate Change, *Glossary of Key Terms,* (http://www.pewclimate.org/global-warming-basics/glossary);

- United Nations Development Programme(UNDP), *Adaptation to Climate Change*, (http://www.undp.org/climatechange/adapt/definitions.html);

- UN-Habitat, Participatory Vulnerability and Adaptation Assessment, *A toolkit based on the Experience of Sorsogon City, Philippines* (http://www.unhabitat.org.ph/tools-and-technologies/253-vaa-toolkit);

- United Nations International Strategy for Disaster Reduction (http://www.unisdr.org/eng/terminology/terminology-2009-eng.html);

- United States Department of Energy (DOE), Energy Information Administration, *Greenhouse Gases, Climage Change, and Energy*, (http://www.eia.doe.gov/oiaf/1605/ggccebro/chapter1.html)

- United States Environmental Protection Agency (EPA), *A Student's Guide to Global Climate Change* (http://www.epa.gov/climatechange/kids/glossary.html);

- The World Bank Group, *Climate Resilient Cities, A Primer on Reducing Vulnerabilities to Disasters* (www.worldbank.org/eap/climatecities);

- The World Bank Group, *Pro-Poor Adaptation to Climate Change in Urban Centers, Case Studies of Vulnerability and Resilience in Kenya and Nicaragua* (http://siteresources.worldbank.org/EXTSOCIALDEVELOPMENT/Resources/244362-1232059926563/5747581-1239131985528/ESW_propoorurbanadaptationReport4947GLBweb2.pdf);

- The World Bank Group, *Natural Hazards, Unnatural Disasters – the Economics of Effective Prevention* (http://www.gfdrr.org/gfdrr/nhud-home)