

## EO B-30-15 Technical Advisory Group: Glossary of Terms

### **Adaptation (climate change)**

Adjustment in natural or human systems to a new or changing environment. Adaptation to climate change refers to adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities.<sup>i</sup>

### **Adaptation pathways**

Adaptation pathways is a planning approach addressing the uncertainty and challenges of climate change decision-making. It enables consideration of multiple possible futures, and allows analysis/exploration of the robustness and flexibility of various options across those multiple futures.<sup>ii</sup>

### **Adaptive management**

A process of iteratively planning, implementing, and modifying strategies for managing resources in the face of uncertainty and change. Adaptive management involves adjusting approaches in response to observations of their effect and changes in the system brought on by resulting feedback effects and other variables.<sup>3iii</sup>

### **Climate change**

Climate change refers to a change in the state of the climate that can be identified 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.<sup>iv</sup>

### **Climate scenarios**

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.<sup>v</sup>

### **Climate-informed planning parameter**

A factor that is employed in the design, planning, or investment process, that has been scaled to reflect future climate change.

### **Community based organization**

A community-based organization is a group of individuals organized by and for a particular community of people based on shared interests and/or attributes. The community could be defined geographically (e.g. a neighborhood), could contain members from diverse backgrounds, and/or could be defined on

the basis of something like religious beliefs or a shared condition. Members may include various stakeholders, such as the public, elected officials, advocacy groups, and business leaders.<sup>vi</sup>

### **Community resilience**

Community resilience is the ability of communities to withstand, recover, and learn from past disasters, and to learn from past disasters to strengthen future response and recovery efforts. This can include but is not limited to physical and psychological health of the population, social and economic equity and well-being of the community, effective risk communication, integration of organizations (governmental and nongovernmental) in planning, response, and recovery, and social connectedness for resource exchange, cohesion, response, and recovery.<sup>vii</sup>

### **Disadvantaged communities**

Areas disproportionately affected by environmental pollution and other hazards that can lead to negative public health effects, exposure, or environmental degradation, or with concentrations of people that are of low income, high unemployment, low levels of homeownership, high rent burden, sensitive populations, or low levels of educational attainment.<sup>viii</sup>

### **Downscaling**

Downscaling is a method for obtaining high-resolution climate or climate change information from relatively coarse-resolution global climate models.<sup>ix</sup>

### **Environmental justice**

The structures, policies, practices, and norms resulting in differential access to the goods, services, and opportunities of society by “race.” It is normative, sometimes legalized, and often manifests as inherited disadvantage. Examples include differential access to quality education, sound housing, gainful employment, appropriate medical facilities, and a clean environment (Gov. Code §65040.12[e]).

### **Equity**

Equity is just and fair inclusion into a society in which all can participate, prosper, and reach their full potential.<sup>x</sup>

### **Equity (climate)**

The central equity challenges for climate change policy involve several core issues: addressing the impacts of climate change, which are felt unequally; identifying who is responsible for causing climate change and for actions to limit its effects; and understanding the ways in which climate policy intersects with other dimensions of human development, both globally and domestically.<sup>xi</sup>

### **Extreme (climate) events**

The occurrence of a value of a weather or climate variable above (or below) a threshold value near the upper (or lower) ends of the range of observed values of the variable.<sup>xii</sup>

### **Global climate models**

A numerical representation of the climate system that is based on the physical, chemical, and biological properties of its components, their interactions, and feedback processes, and that accounts for all or some of its known properties.<sup>xiii</sup>

### **Institutionalized racism**

The structures, policies, practices, and norms resulting in differential access to the goods, services, and opportunities of society by “race.” It is normative, sometimes legalized, and often manifests as inherited disadvantage. Examples include differential access to quality education, sound housing, gainful employment, appropriate medical facilities, and a clean environment.<sup>xiv</sup>

### **Integrated climate actions**

Program, plans, or policies that simultaneously reduce greenhouse gas emissions and decrease the risks posed by climate change on the system where the action is implemented.

### **Life-cycle cost accounting (analysis)**

Life-Cycle Cost Analysis (LCCA) is an economic method of project evaluation in which all costs arising from owning, operating, maintaining, and ultimately disposing of a project are considered to be potentially important to that decision. LCCA is particularly suitable for the evaluation of building design alternatives that satisfy a required level of building performance (including occupant comfort, safety, adherence to building codes and engineering standards, system reliability, and even aesthetic considerations), but that may have different initial investment costs; different operating, maintenance, and repair (OM&R) costs (including energy and water usage); and possibly different lives. However, LCCA can be applied to any capital investment decision in which higher initial costs are traded for reduced future cost obligations. LCCA provides a significantly better assessment of the long-term cost effectiveness of a project than alternative economic methods that focus only on first costs or on operating-related costs in the short run.<sup>xv</sup>

### **Localized Constructed Analogs (LOCA)**

LOCA is a technique for downscaling climate model projections of the future climate. The localized constructed analogs (LOCA) method is a statistical scheme that produces downscaled estimates suitable for hydrological simulations using a multi-scale spatial matching scheme to pick appropriate analog days from observations.<sup>xvi</sup>

### **Maladaptive actions (maladaptation)**

Actions that may lead to increased risk of adverse climate-related outcomes, increased vulnerability to climate change, or diminished welfare, now or in the future.<sup>xvii</sup>

### **Mitigation (climate change)**

A human intervention to reduce the human impact on the climate system; it includes strategies to reduce greenhouse gas sources and emissions and enhancing greenhouse gas sinks.<sup>xviii</sup>

### **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.<sup>xix</sup>

### **Natural and green infrastructure**

The preservation or restoration of ecological systems, or utilization of engineered systems that use ecological processes, to increase resiliency to climate change, manage other environmental hazards, or both. This may include, but is not limited to, floodplain and wetlands restoration or preservation, combining levees with restored natural systems to reduce flood risk, and urban tree planting to mitigate high heat days.<sup>xx</sup>

### **Non-market costs**

Nonmarket costs refer to the costs associated with nonmarket impacts of a project. These impacts may be quantified and monetized using nonmarket valuation methods such as damage cost estimation, prevention cost estimation, hedonic methods, travel cost methods, or contingent valuation methods.<sup>xxi</sup>

### **Representative concentration pathways**

Representative Concentration Pathways (RCPs) are four greenhouse gas concentration (not emissions) trajectories adopted by the IPCC for its fifth Assessment Report (AR5) in 2014. The Representative Concentration Pathways (RCPs), which are used for making projections based on these factors, describe four different 21st century pathways of GHG emissions and atmospheric concentrations, air pollutant emissions and land use. The RCPs include a stringent mitigation scenario (RCP2.6), two intermediate scenarios (RCP4.5 and RCP6.0) and one scenario with very high GHG emissions (RCP8.5).<sup>xxii</sup>

### **Resilience (climate)**

“Resilience is the capacity of any entity – an individual, a community, an organization, or a natural system – to prepare for disruptions, to recover from shocks and stresses, and to adapt and grow from a disruptive experience.”<sup>xxiii</sup>

### **Sea level rise**

The worldwide average rise in mean sea level; may be due to a number of different causes, such as the thermal expansion of sea water and the addition of water to the oceans from the melting of glaciers, ice caps, and ice sheets; contrast with relative sea-level rise.<sup>xxiv</sup>

### **Urban heat island**

The relative warmth of a city compared with surrounding rural areas, associated with changes in runoff, effects on heat retention, and changes in surface albedo.<sup>xxv</sup>

### **Vulnerable populations**

Vulnerable populations include, but are not limited to women; racial or ethnic groups; low-income individuals and families; individuals who are incarcerated or have been incarcerated; individuals with disabilities; individuals with mental health conditions; children; youth and young adults; seniors;

immigrants and refugees; individuals who are limited English proficient (LEP); and Lesbian, Gay, Bisexual, Transgender, Queer, and Questioning (LGBTQQ) communities, or combinations of these populations.<sup>xxvi</sup>

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<sup>i</sup> "Glossary of Climate Change Terms. Office of Air and Radiation/Office of Atmospheric Programs/Climate Change Division. September 9, 2013 " <https://www.epa.gov/climatechange>

<sup>ii</sup> South West Climate Change Portal: Catchment Planning - Using Adaptation Pathway  
[http://www.swclimatechange.com.au/cb\\_pages/adaptation\\_pathways.php](http://www.swclimatechange.com.au/cb_pages/adaptation_pathways.php)

<sup>iii</sup> IPCC Climate Change 2014: Impacts, Adaptation, and Vulnerability  
[http://www.dot.ca.gov/hq/oppd/rescons/guidelines/DP-30\\_Climate-Change.pdf](http://www.dot.ca.gov/hq/oppd/rescons/guidelines/DP-30_Climate-Change.pdf)

<sup>iv</sup> IPCC Climate Change 2014: Impacts, Adaptation, and Vulnerability <https://www.ipcc.ch/report/ar5/wg2/>

<sup>v</sup> IPCC Climate Change 2014: Impacts, Adaptation, and Vulnerability <https://www.ipcc.ch/report/ar5/wg2/>

<sup>vi</sup> USDOT FHWA/FTA Public Involvement Techniques for Transportation Decision-Making. August 2002.  
[https://www.planning.dot.gov/publicinvolvement/pi\\_documents/1b-a.asp](https://www.planning.dot.gov/publicinvolvement/pi_documents/1b-a.asp)

<sup>vii</sup> Los Angeles County Community Disaster Resilience <http://www.laresilience.org/resources/glossary.php>

<sup>viii</sup> California Health and Safety Code Section 39711 [http://www.leginfo.ca.gov/pub/11-12/bill/sen/sb\\_0501-0550/sb\\_535\\_bill\\_20120910\\_enrolled.html](http://www.leginfo.ca.gov/pub/11-12/bill/sen/sb_0501-0550/sb_535_bill_20120910_enrolled.html)

<sup>ix</sup> Methods of Downscaling Future Climate Information and Applications Linda O. Mearns National Center for Atmospheric Research NARCCAP Users' Meeting Boulder, CO September 10-11, 2009.  
<http://www.narccap.ucar.edu/users/user-meeting>

<sup>x</sup> PolicyLink. <http://www.policylink.org/>

<sup>xi</sup> World Resources Institute. Building Climate Equity: Creating a New Approach from the Ground Up. July 2014.  
<https://www.wri.org/sites/default/files/building-climate-equity-072014.pdf>

<sup>xii</sup> Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation. IPCC, 2012.  
[http://www.ipcc.ch/pdf/special-reports/srex/SREX\\_Full\\_Report.pdf](http://www.ipcc.ch/pdf/special-reports/srex/SREX_Full_Report.pdf)

<sup>xiii</sup> IPCC, 2012: Glossary of terms. In: Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation. [https://www.ipcc.ch/pdf/special-reports/srex/SREX-Annex\\_Glossary.pdf](https://www.ipcc.ch/pdf/special-reports/srex/SREX-Annex_Glossary.pdf)

<sup>xiv</sup> Camara Jones. 2003. Confronting institutionalized racism. *Phylon* 50(1-2):7-22

<sup>xv</sup> Life-Cycle Costing Manual for the Federal Energy Management Program. US DOC Technology Administration. National Institute of Standards and Technology (NIST) 1995. <https://www.fhwa.dot.gov/asset/lcca/010621.pdf>

<sup>xvi</sup> UCSD. LOCA Statistical Downscaling (Localized Constructed Analogs). <http://loca.ucsd.edu/what-is-loca/>

<sup>xvii</sup> IPCC Climate Change 2014: Impacts, Adaptation, and Vulnerability <https://www.ipcc.ch/report/ar5/wg2/>

<sup>xviii</sup> Glossary of Climate Change Terms. Office of Air and Radiation/Office of Atmospheric Programs/Climate Change Division. September 9, 2013. <https://www.epa.gov/climatechange>

<sup>xix</sup> IPCC Climate Change 2014: Impacts, Adaptation, and Vulnerability. <https://www.ipcc.ch/report/ar5/wg2/>

<sup>xx</sup> California Government Code 65302  
[https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill\\_id=201520160SB379](https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201520160SB379)

<sup>xxi</sup> DWR Economic Analysis Guidebook; Victoria Transport Policy Institute.  
[http://www.water.ca.gov/economics/downloads/Guidebook\\_June\\_08/EconGuidebook.pdf](http://www.water.ca.gov/economics/downloads/Guidebook_June_08/EconGuidebook.pdf); <http://www.vtppi.org/tca/tca04.pdf>

<sup>xxii</sup> IPCC, 2014: Climate Change 2014: Synthesis Report.  
[https://www.ipcc.ch/pdf/assessment-report/ar5/syr/SYR\\_AR5\\_FINAL\\_full\\_wcover.pdf](https://www.ipcc.ch/pdf/assessment-report/ar5/syr/SYR_AR5_FINAL_full_wcover.pdf)

<sup>xxiii</sup> Rodin, Judith. 2014. *The Resilience Dividend: Being Strong in a World Where Things Go Wrong*. Philadelphia: Perseus Books Group (pages 3-4).

<sup>xxiv</sup> Glossary of Climate Change Terms. Office of Air and Radiation/Office of Atmospheric Programs/Climate Change Division. September 9, 2013. <https://www.epa.gov/climatechange>

<sup>xxv</sup> IPCC Climate Change 2014: Impacts, Adaptation, and Vulnerability. <https://www.ipcc.ch/report/ar5/wg2/>

<sup>xxvi</sup> California Health and Safety Code Section 131019.5  
[https://www.cdph.ca.gov/programs/Documents/Health\\_and\\_Safety\\_Code\\_131019.5.pdf](https://www.cdph.ca.gov/programs/Documents/Health_and_Safety_Code_131019.5.pdf)