

Appendix 2: Glossary of concepts.

Actionable science: Solutions-focused and deeply interdisciplinary research, involving multiple voices, conducted with the purpose of informing decision- and policymaking (Boyd 2022).

Adaptive capacity: “The ability of systems, institutions, humans and other organisms to adjust to potential damage, to take advantage of opportunities or to respond to consequences” (IPCC 2022, p. 2899).

Citizen science: The “range of ways that people who are not trained as scientists can participate in science processes — from collecting data to co-designing applied research projects that advance local priorities” (Moss et al. 2019: 482).

Climate vulnerability: The potential to be adversely impacted by climate- and weather-related risks, often understood as a function of biophysical exposure, sensitivity, and the capacity (or lack thereof) to adapt to such risks (IPCC 2022).

Climate justice: “[A] framework that brings into view the intersection between climate change and the way social inequalities are experienced as structural violence” (Porter et al. 2020: 293).

Community-Engaged Research (CER): “[An] umbrella term for a paradigm [...] used by professional researchers (in academia, government, and independent research institutes), students, and community partners to co-create knowledge” (Raphael and Matsuoka 2024: 33). CER reflects diverse research methods, including community-based participatory research (CBPR), citizen science, and participatory action research (Raphael and Matsuoka 2024: 33).

Convergence research: “An approach to knowledge production and action that involves diverse teams working together in novel ways – transcending disciplinary and organizational boundaries – to address vexing social, economic, environmental, and technical challenges in an effort to reduce disaster losses and promote collective well-being” (Peek et al. 2020: 1).

Critical environmental justice: An approach coined by Pellow (2016; 2018) to address shortcomings of environmental justice research. This involves: i) understanding how multiple oppressions (“intersectionality”) – and not single, nor stable categories of social difference – produce environmental risks; ii) recognizing how the dynamics at many different scales shape environmental harms and the effectiveness of potential solutions; iii) examining (and challenging) the ability for environmental justice to be advanced within the same structures and powers that produce injustices; and iv) recognizing the “indispensabl[ity]” of marginalized peoples in producing more just futures (Pellow 2016: 223-224).

Environmental justice: “[The] principle that all people and communities are entitled to equal protection of environmental and public health laws and regulations” (Bullard 1996: 493).

Equality: A state of being equal (e.g., distributing the same resources, rights, etc.).

Equity: “The absence of unfair, avoidable or remediable differences among groups of people, whether those groups are defined socially, economically, demographically, or geographically or by other dimensions of inequality (e.g. sex, gender, ethnicity, disability, or sexual orientation)” (World Health Organization 2024).

Knowledge governance: “[The] formal and informal mechanisms shaping how information is produced and used” (Maxwell et al. 2022: 1217).

Land Back: Pieratos et al. (2021: 51) describe Land Back as “a movement that addresses the root pain of colonization-the theft of Indigenous lands, alienation of lands for resource extraction, the violence and genocide committed against Indigenous peoples for statehood and capitalism, and the hundreds of years of devastating aftereffects.” Land Back “is about reclaiming Indigenous spheres of influence and sovereignty and extending [Indigenous] values to result in better stewardship of ecological, political, and economic systems” (Pieratos et al. 2021: 51).

Sustained climate assessment: A process that “[...] empower[s] civil society, the business community, and multiple levels of government with knowledge needed to more effectively manage the risks of climate change. It includes sustained dialogue with users to better understand decision contexts and information needs (and hence novel ways for users to interact with Federal agencies), preparation of a wider range of products, continued innovation in communication of information about climate change risks and opportunities, and additional efforts to build capacity [...]” (Buizer et al. 2016: 24). Assessments synthesize, review, and evaluate multiple bodies of knowledge, shaping research, policy, and funding priorities (Oppenheimer et al. 2019).

References

Boyd J (2022) What is Actionable Research? National Socio-Environmental Synthesis Center.

Accessible from: <https://www.sesync.org/resources/what-actionable-research>

Bullard RD (1996) Environmental justice: It's more than waste facility siting. *Social Science Quarterly* 77(3): 493-499.

Buizer JL, Dow K, Black ME, et al (2016) Building a sustained climate assessment process. *Climatic Change* 135: 23–37.

Intergovernmental Panel on Climate Change (IPCC) (2022) Annex II: Glossary. In: Pörtner H-O, Roberts DC, Tignor M, et al. (eds) *Climate Change 2022: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge University Press, Cambridge & New York, pp 2897–2930.

Maxwell K, Eisenhauer E, Lustig A (2022) Toward Coequality of the Social Sciences in the National Climate Assessment. *Weather, Climate, and Society* 14: 1217–1229.

Moss RH, Avery S, Baja K, et al (2019) Evaluating Knowledge to Support Climate Action: A Framework for Sustained Assessment. Report of an Independent Advisory Committee on Applied Climate Assessment. *Weather, Climate, and Society* 11: 465- 487.

Oppenheimer M, Oreskes N, Jamieson D, et al (2019) *Discerning experts: The practices of scientific assessment for environmental policy*. University of Chicago Press, Chicago & London.

Peek L, Tobin J, Adams RM, Wu H, Mathews MC (2020) A framework for convergence research in the hazards and disaster field: The natural hazards engineering research infrastructure CONVERGE facility. *Frontiers in Built Environment* 6 (110): 1-26.

Pellow DN (2016) Toward a critical environmental justice studies: Black Lives Matter as an environmental justice challenge. *Du Bois Review: Social Science Research on Race* 13(2): 221-236.

Pellow DN (2018) *What is critical environmental justice?* Polity Press, Cambridge & Medford.

Pieratos NA, Manning SS, Tilsen N (2021) Land Back: A metanarrative to help Indigenous people show up as movement leaders. *Leadership* 17(1): 47-61.

Porter L, Rickards L, Verlie B, et al (2020) Climate justice in a climate changed world. *Planning Theory & Practice* 21(2): 293-321.

Raphael C, Matsuoka M (2024) *Ground Truths: Community-Engaged Research for Environmental Justice*. University of California Press, Oakland.

World Health Organization (WHO) (2024) Healthy equity. Accessible from:
https://www.who.int/health-topics/health-equity#tab=tab_1