

THE ROLE OF THE SCIENTIFIC COMMUNITY IN STRENGTHENING DISABILITY-INCLUSIVE CLIMATE RESILIENCE

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The climate crisis disproportionately impacts over one billion persons with disabilities globally—the world’s largest minority group—80% of whom live in low and middle-income countries, including Small Island States.¹ During climate emergencies individuals with disabilities face two to four times higher mortality rates and are at disproportionate risk from slow onset climate change, despite having contributed little to global warming.² Persons with disabilities must galvanize climate action amidst a discriminatory social and institutional environment that views them as “the least worth saving.”³ These circumstances impel the question: what can the scientific community do to accelerate critically needed disability-inclusive climate resilience?

Climate harm disproportionately impacts persons with disabilities because of their socioeconomic marginalization and invisibility within government and civil society at large. In climate emergencies, persons with disabilities are excluded from disaster, health, and humanitarian services.^{2,4} Slow onset climate change such as sea level rise, hotter weather, and subsequent water and food scarcity, amplify existing exclusion and add further barriers.⁴ Consequently, disability-inclusive climate adaptation is required now more than ever. Yet, the Intergovernmental Panel on Climate Change (IPCC) reported in 2022 that globally “almost negligible evidence was found for the inclusion of this group.”⁵

Existing literature patently demonstrates the detrimental impact climate change has on persons with disabilities,^{2,4} however research gaps contribute to continuing severe climate policy shortcomings.⁶ Researchers and practitioners can provide a critical contribution to disability climate resilience through disability climate change knowledge production, ensuring disability-inclusive climate governance across sectors, positioning disability centrally within climate literacy, and by supporting strategic litigation.

Research indicates that risk of heat-related illness is affected by ambulatory and cognitive disability, medication, and socioeconomic factors.⁷ Heat heightens the risk of negative mental health outcomes, with pre-existing psychosocial disability tripling the risk of mortality during heatwaves.⁸ Antipsychotics, antidepressants, and other medications can effect thermoregulation in persons with both psychosocial and physical disabilities.² Clinical trials inclusive of persons with

disabilities are therefore necessary to determine the effects of medications on thermoregulation during hot weather. Disproportionate rates of poverty among persons with disabilities limit the availability of electricity or air conditioning. Future research must further consider specific types of disabilities or subgroups, as well as the intersecting concerns of gender, race, and Indigenous People with disabilities. Paramount is research identifying effective specific interventions and adaptation approaches across the heterogeneous disability population. Such research is vital if climate adaptation is to reach beyond the privileged.

Researchers have both an opportunity and responsibility to strengthen and utilize disability data. Doing so would enable better targeting of disability populations through mapping, compiling morbidity and mortality statistics, and assessing disability-related initiatives. Such data, collected with organizations of persons with disabilities (OPDs) would improve the provision of services, disaster risk management, and humanitarian assistance to currently overlooked persons with disabilities. Critically, researchers and practitioners can aid the development of global indicators to assess and monitor the extent to which disability is mainstreamed, targeted, and funded within climate adaptation.

Climate change disproportionately impacts persons with disabilities, thus it is imperative to integrate disability across health, climate policy⁶ and all other sectors. Public health responses and top-down systems fail to collaborate with or learn from persons with disabilities regarding climate harms and effective interventions. Hence, participatory research on public health must draw on lived experiences of disability and climate change. OPDs, together with other decision-makers, can best develop an understanding of barriers, innovate, and implement inclusive practices. Indeed, the IPCC concluded that “[i]nclusive governance that prioritizes equity and justice in adaptation planning and implementation leads to more effective and sustainable adaptation outcomes.”⁵ Additionally, healthcare professionals should have training on the effect of climate change on persons with disabilities and disability competency.²

Evidence suggests that disability is excluded from climate mitigation and adaptation measures.^{4,5} Persons with disabilities must be included from the outset and not as an afterthought⁴ to prevent maladaptation. The IPCC determined that “access to appropriate technology” strengthens climate resilience development.⁵ High-tech and low-cost solutions are both needed, e.g., accessible green public transportation and solar-powered hearing aids. Accessible multistakeholder platforms could

provide both climate resources and accountability for persons with disabilities. Technology is most impactful when it reaches marginalized disability populations. OPDs can enable equitable distribution, for example, of low-cost solar ovens that mitigate emissions.

The potential for developing climate adaptation and mitigation interventions which benefit persons with disabilities is wide-ranging, from ecological restoration to increasing access to water, food, and green livelihoods. For instance, in geographically high climate risk settings, climate change is reducing persons with disabilities' access to water⁵ and sanitation; and reduced water access increases the risk of infectious and water-borne diseases for the entire community.⁹ Scientists and practitioners can provide technical assistance and collaborate with OPDs to develop person-centered culturally and environmentally appropriate initiatives. Including persons with disabilities in climate adaptation and mitigation approaches will result in more flexible innovative approaches for the whole society.

Climate literacy compels disseminating information to the entire society and requires understanding not only about climate change, but also how disability marginalization intersects with climate change. Researchers can contribute by ensuring credible climate change related information is presented in plain language that is accessible to persons with disabilities. In the United States, only 3.9% of city public health department websites provide any climate change information.¹⁰ During climate emergencies such as heatwaves, floods, or wildfires, persons with disabilities require emergency information resources in multiple accessible formats, such as closed captions. Neither government institutions nor civil society are adequately learning from disability communities regarding the effects of climate change. Moreover, although one in four American adults have a disability,¹¹ a mere 10% of the scientific workforce live with a disability.¹² Increasing the access of persons with disabilities to STEM education and careers would increase the diversity of voices heard, and sensitivity to and knowledge regarding disability and climate change.

Countries not complying with Paris Agreement obligations or excluding disability-inclusive climate change adaptation and mitigation approaches are violating human rights obligations, including the UN Convention on the Rights of Persons with Disabilities.⁴ The lack of disability climate justice has compelled individuals with disabilities to pursue litigation. For example, an individual experiencing temperature-dependent multiple sclerosis lately filed suit against Austria asserting violation of his human rights for failure to set effective climate measures.¹³ Researchers

can assist strategic litigation by studying the effect of climate on health, acting as expert witnesses, or supporting amicus briefs.

At the front lines of climate change, persons with disabilities continue to experience rising sea levels, and losses of ancestral land, sacred spaces, community cohesion, and wellness, among other harms. Losses and damages focused on the most marginalized must be inclusive of persons with disabilities. Researchers can collaborate with disability communities to understand, minimize, and address losses and damages.

As the climate approaches catastrophic tipping points, scientists may wish to act together with OPDs and other stakeholders to shape government policy and educate, mobilize, and influence the public. The IPCC concludes with high confidence that “carefully designed and implemented laws, policies, processes, and interventions...on ...disability” often reduce climate risk.⁵ Yet, in 2022, climate adaptation policies in only 45 countries made any reference to persons with disabilities, health conditions, or chronic illness.⁶ This is a glaring omission of the world’s largest minority group. The global disability community has vocally advocated for inclusion in the UN Framework Convention on Climate Change. A disability constituency and disability action plan would increase disability climate leadership and action.^{2,4}

We hope that engaging readers with the subject of disability climate resilience will encourage them to move beyond established comfort zones and enter this emerging field. In addition to increasing knowledge production on disability and climate change, you may find persons with disabilities to be effective allies, collaborators, and colleagues. Indeed, these partnerships are required for disability climate justice and urgent, crucial, societal transformation.

¹ UN DESA. *Factsheet on Persons with Disabilities*.
<https://www.un.org/development/desa/disabilities/resources/factsheet-on-persons-with-disabilities.html>.

² Stein, P.J.S. & Stein, M.A. *The Lancet Global Health* 10(1), E24-E25 (2022).
[https://doi.org/10.1016/S2214-109X\(21\)00542-8](https://doi.org/10.1016/S2214-109X(21)00542-8).

³ Abbott, D. & Porter, S. *Disability & Society*, 28(6), 839-852 (2013).

⁴ Stein, P.J.S. & Stein, M.A. *Human Rights Quarterly* 44(1), 81-110 (2022). [doi:10.1353/hrq.2022.0003](https://doi.org/10.1353/hrq.2022.0003).

⁵ IPCC. *Climate Change 2022: Impacts, Adaptation, and Vulnerability* (eds. H.-O. Pörtner et al.) (Cambridge University Press, 2022).

⁶ Jodoin, S., Lofts, K. & Bowie-Edwards, A. *Disability Rights in National Climate Policies: Status Report* (Centre for Human Rights & Legal Pluralism & International Disability Alliance, 2022).

⁷ Sorensen, C. & Hess, J. *NEJM*, 387(15), 1404-1413.

⁸ Bouchama, A., et al. *Arch Intern Med*. 167(20), 2170–2176 (2007).
<https://doi.org/10.1001/archinte.167.20.ira70009>.

⁹ Groce, N. et al. *J Water Health* 2011 Dec;9(4):617-27 (2011). <http://doi:10.2166/wh.2011.198>.

¹⁰ Albright, K. et al. *Am J Public Health* 110(8):1184-1190. (2020).

¹¹ CDC. Disability and Health Data System. <http://dhds.cdc.gov>.

¹² NSF. *Women, Minorities, and Persons with Disabilities in Science and Engineering* (National Center for Science and Engineering Statistics, 2021). <https://nces.nsf.gov/pubs/nsf21321/report/employment>.

¹³ *Mex M v Austria*. European Court on Human Rights; Strasbourg, France (2021).