

Perched on the southern slope of the Himalayas, between two massive greenhouse gas-emitting countries—India and China—is Nepal. Nepal is a low-income, landlocked nation in South Asia and one of the nations that are most vulnerable to climate change because of its fragile mountainous ecosystems, climate-sensitive topography, strong reliance on natural resources, and constrained capacity to address climate variations and extreme weather events. It has a population of 30 million people and is divided into three main geographic regions, each with distinct characteristics based on elevation and topography: the Terai Region, Hilly or Hill Region, and Mountain or Himalayan Region. Both the Global Climate Risk Index (for weather-related events like floods and heat waves) and the INFORM risk index (for humanitarian crises and disasters) have placed Nepal on the high-risk list (Asian Disaster Preparedness Center and United Nations Office for Disaster Risk Reduction, 2019).

Climate change, a multifaceted phenomenon driven by surging fossil fuel use, has irreversible impacts on humans, animals, and nature. Those entities are already enduring harm, and in South Asia, climate change is increasingly being acknowledged as a serious pervasive public health issue facing the region (World Bank Group, 2021; Levy and Patz, 2015; Das et al., 2013; Nepal Climate Vulnerability Study Team, 2009). Compared with regions of very low vulnerability, mortality is 15 times higher in highly vulnerable regions because of floods, storms, and droughts (Intergovernmental Panel on Climate Change, 2023). Nepal experiences avalanches and glacial lake outburst floods, while the middle Hilly Region is challenged by landslides and debris flows and the southern Terai is impacted by seasonal flooding associated with monsoons and complex river systems.

A significant number of people have become impoverished because of devastating floods in these areas, which viciously reduce agricultural production and cause food shortages—leading to nutrition-associated diseases. Precipitation increases and flooding also exacerbate income

inequality between countries and within countries. The effect in countries with high agricultural sector reliance such as in South Asia is projected to reinforce and exacerbate existing disparities (Lindersson et al., 2023; Palagi et al., 2022). With ongoing planetary warming, scholars estimate 75 percent of Himalayan glacial ice will be lost by 2100 (International Centre for Integrated Mountain Development, 2023). More than 80 percent of the Nepali population is estimated to be at risk from environmental dangers worsened by the effects of climate change (Asian Disaster Preparedness Center and United Nations Office for Disaster Risk Reduction, 2019). Agricultural and massive development initiatives in neighboring countries further stress climate action strategies.

Despite the country's minimal contribution to emissions globally and its unjust burdens experienced due to the transboundary nature of climate change, Nepal has much to teach other countries about collective climate action. Ground-level observations of numerous communities in Nepal have produced a fundamental framework of identified and anticipated changes in the country that guide adaptation and local implementation efforts to address the climate crisis (Bartlett et al., 2009). Their action, built on community leadership and regional cooperation, offers three simple lessons for other countries striving to create healthier, more just environments where all people can thrive.



Extreme weather events adversely impact sanitation, water quantity and quality, injury risk, communicable disease transmission, exacerbation of noncommunicable diseases, and health outcomes notably related to parent-child health (Neupane et al., 2022; Romanello et al., 2022; Romanello et al., 2023; Ebi et al., 2021; Watts et al., 2019). Disruptions in air and ground transportation and supply chains, as well as health services, frequently amplify morbidity and mortality, especially in rural or underserved areas with al-

4. Bikomeye, J. C., C. S. Rublee, and K. M. Beyer. 2021. Positive externalities of climate change mitigation and adaptation for human health: A review and conceptual framework for public health research. *International Journal of Environmental Research and Public Health* 18(5):2481. <https://doi.org/10.3390/ijerph18052481>.
5. Cosic, D., S. Dahal, and M. Kitzmuller. 2017. *Climbing higher: Toward a middle-income Nepal*. Washington, DC: World Bank Group. <https://documents.worldbank.org/en/publication/documents-reports/documentdetail/358501495199225866/climbing-higher-toward-a-middle-income-nepal> (accessed October 29, 2023).
6. Darjee, K., R. Sunam, M. Köhl, and P. Neupane. 2021. Do national policies translate into local actions? Analyzing coherence between climate change adaptation policies and implications for local adaptation in Nepal. *Sustainability* 13(23):13115. <https://doi.org/10.3390/su132313115>.
7. Das, P. J., H. K. Bhuyan, N. S. Pradhan, V. R. Khadgi, L. Schipper, N. Kaur, and T. Geoghegan. 2013. *Policy and institutions in adaptation to climate change: Case study on flood mitigation infrastructure in India and Nepal*. Kathmandu, Nepal: International Centre for Integrated Mountain Development. <https://www.preventionweb.net/publication/policy-and-institutions-adaptation-climate-change-case-study-flood-mitigation-0> (accessed October 30, 2023).
8. Desai, Z., and Y. Zhang. 2021. Climate change and women's health: A scoping review. *Geo.4*

21. Ministry of Health and Population and Department of Health Services Epidemiology and Disease Control Division. 2022. *Situation update of dengue 2022. Kathmandu, Nepal*. <http://edcd.gov.np/uploads/news/pdf/6347833a92f00.pdf> (accessed November 2, 2023).
22. Mishra, S. R., P. M. Bhandari, R. Issa, D. Neupane, S. Gurung, and V. Khanal. 2015. Climate change and adverse health events: Community perceptions from the Tanahu District of Nepal. *Environmental Research Letters* 10(3). <https://doi.org/10.1088/1748-9326/10/3/034007>.
23. Mora, C., T. McKenzie, I. M. Gaw, J. M. Dean, H. von Hammerstein, T. A. Knudson, R. O. Setter, C. Z. Smith,

- Ameli, S. Ayeb-Karlsson, P. J. Beggs, K. Belesova, L. Berrang Ford, K. Bowen, W. Cai, M. Callaghan, D. Campbell-Lendrum, J. Chambers, T. J. Cross, K. R. van Daalen, C. Dalin, N. Dasandi, S. Dasgupta, M. Davies, P. Dominguez-Salas, R. Dubrow, K. L. Ebi, M. Eckelman, P. Ekins, C. Freyberg, O. Gasparyan, G. Gordon-Strachan, H. Graham, S. H. Gunther, I. Hamilton, Y. Hang, R. Hanninen, S. Hartinger, K. He, J. Heidecke, J. J. Hess, S. C. Hsu, L. Jamart, S. Jankin, O. Jay, I. Kelman, G. Kiesewetter, P. Kinney, D. Kniveton, R. Kouznetsov, F. Larosa, J. K. W. Lee, B. Lemke, Y. Liu, Z. Liu, M. Lott, M. Lotto Batista, R. Lowe, M. Odhiambo Sewe, J. Martinez-Urtaza, M. Maslin, L. McAllister, C. McMichael, Z. Mi, J. Milner, K. Minor, J. C. Minx, N. Mohajeri, N. C. Momen, M. Moradi-Lakeh, K. Morrissey, S. Munzert, K. A. Murray, T. Neville, M. Nilsson, N. Obradovich, M. B. O'Hare, C. Oliveira, T. Oreszczyn, M. Otto, F. Owfi, O. Pearman, F. Pega, A. Pershing, M. Rabhaniha, J. Rickman, E. J. Z. Robinson, J. Rocklov, R. N. Salas, J. C. Semenza, J. D. Sherman, J. Shumake-Guillemot, G. Silbert, M. Sofiev, M. Springmann, J. D. Stowell, M. Tabatabaei, J. Taylor, R. Thompson, C. Tonne, M. Treskova, J. A. Trinanes, F. Wagner, L. Warnecke, H. Whitcombe, M. Winning, A. Wyns, M. Yglesias-Gonzalez, S. Zhang, Y. Zhang, Q. Zhu, P. Gong, H. Montgomery, and A. Costello. 2023. "The 2023 report of the Lancet Countdown on health and climate change: the imperative for a health-centred response in a world facing irreversible harms." *The Lancet* S0140-6736(23)01859-7 [published online ahead of print November 13, 2023]. [https://doi.org/10.1016/S0140-6736\(23\)01859-7](https://doi.org/10.1016/S0140-6736(23)01859-7).
35. Simmons, C. P., J. J. Farrar, N. Vinh Chau, and B. Wills. 2012. Dengue. *The New England Journal of Medicine* 366:1423–1432.
36. Subba, C., B. Pyakuryal, T. S. Bastola, M. K. Subba, N. K. Raut, and B. Kathmandu Karki. 2014. *A study on the socio-economic status of Indigenous Peoples in Nepal*. Kathmandu, Nepal: Lawyers' Association for Human Rights of Nepalese Indigenous.
37. Tanaka, M. 2009. From confrontation to collaboration: A decade in the work of the squatters' movement in Nepal. *Environment and Urbanization* 21(1):143–159. <https://doi.org/10.1177/0956247809103011>.
38. Tome, J., H. L. Richmond, M. Rahman, D. Karmacharya, and J. S. Schwind. 2022. Climate change and health vulnerability in Nepal: A systematic review of the literature since 2010. *Global Public Health* 17(7):1406–1419. <https://doi.org/10.1080/17441692.2021.1924824>.
39. Trivedi, S., and A. Chakravarty. 2022. Neurological complications of dengue fever. *Current Neurology and Neuroscience Rewu2n(Neur)24(oscience L ¼Lang (en-US)/MCID 7*

- analysis. *The Lancet* 400(10345):48–59. [https://doi.org/10.1016/S0140-6736\(22\)00937-0](https://doi.org/10.1016/S0140-6736(22)00937-0).
45. World Bank Group. 2021. *Climate risk country profile: Nepal*. Washington, DC. [https://www.adb.org/sites/default/files/publication/677231/climate-risk-89.21tsk_country_profile_k03EMC_ETBT0_Tw_10_0_0296.80019.28_652.6666\(-pal.\)](https://www.adb.org/sites/default/files/publication/677231/climate-risk-89.21tsk_country_profile_k03EMC_ETBT0_Tw_10_0_0296.80019.28_652.6666(-pal.))