

Unity Journal
 Vol.7, 147-157, Feb 2026
<https://doi.org/10.3126/unityj.v7i1.90441>
 Prithvi Narayan Shah Research Center
 Directorate General of Military Training, Nepali Army
 Kathmandu, Nepal



Melting Mountains and Drowning Valleys: Climate Change as a threat to Nepal's Environmental and Socio-Economic Stability

Jigyasha Uprety

Law Student, Kathmandu School of Law, Nepal
 Corresponding Email: upretyjigyasha@gmail.com

ARTICLE INFO

Article history

Received: 31 Oct 2025

Accepted: 20 Jan 2026

Keywords

Climate change

Glacial retreat

Environmental security

Resilience theory

Climate governance

Adaptation

Socio-economic stability

ABSTRACT

Nepal's rapidly changing climate has exposed a fragile intersection between environmental degradation and socio-economic vulnerability. The melting glaciers, erratic rainfall, and recurrent floods threaten the ecosystems, livelihoods, and infrastructure. It makes climate change an ecological challenge as well as a national security issue. This article explores these changes through two complementary theoretical lenses, environmental security and resilience theory, using only secondary data and conceptual analysis. The environmental security framework shows how ecological stress turns into social and economic instability in countries where governance capacity remains limited. Resilience theory emphasizes the adaptive processes that can enable systems to absorb shocks and reorganize without collapsing. When we apply it to Nepal, these perspectives reveal a paradox. National policies such as the Climate Change Policy (2019), Nationally Determined Contribution 3.0 (2025), and National Adaptation Plan (2021) signify growing institutional commitment, yet implementation continues to be constrained by centralized decision-making, fragmented coordination, and insufficient local capacity. This paper argues that resilience in Nepal depends on integrating climate adaptation into development planning, decentralizing climate finance, and strengthening community-based ecosystem management. Although this article is limited to secondary datasets and policy analysis, it delves into climate change as a multifaceted problem that impacts both environmental and socio-economic stability. Ultimately, the study reframes climate change in Nepal as both a developmental and governance challenge, one that demands adaptive institutions, inclusive participation, and transformative policy reform to safeguard environmental and socio-economic security.

Introduction

Nepal's terrain is a striking blend of splendor and vulnerability. The towering Himalayas, which feed the great river systems of South Asia, are retreating at an alarming pace as glaciers shrink and snowlines recede (Bajracharya et al., 2020). In contrast, the valleys below face intensifying floods, landslides, and soil degradation that threaten both lives and livelihoods. Although Nepal's industrial footprint remains negligible, it endures some of the most severe

consequences of global warming. According to Crippa et al. (2025), Nepal's total greenhouse gas emissions are at 0.08%. Yet it endures some of the most severe consequences of global warming, as Eckstein et al. (2021) ranked Nepal 10th among the most affected countries in terms of annual average temperatures from 2000 to 2019. This paradox of low emissions yet high vulnerability sits at the very center of Nepal's climate dilemma.

The Intergovernmental Panel on Climate Change (IPCC), in its Fourth Assessment Report (2007), defines climate change as a persistent alteration in the state of the climate, identifiable through changes in the mean or variability of its properties over extended periods, typically decades or longer. Sapkota and Rijal (2016) identified the Himalayan region as a "white spot" on the global climate map, highlighting the scarcity of systematic research and reliable data from this ecologically critical zone (p. 8). This scientific gap not only complicates the assessment of regional climate dynamics but also limits the development of targeted adaptation strategies for countries like Nepal, where the consequences of climatic shifts are already profound.

The impacts of this climate transformation extend far beyond the environmental sphere. Climate instability disrupts agriculture, weakens energy reliability, and compounds rural poverty. Entire communities are forced to adapt to shifting rainfall patterns, water scarcity, and the growing frequency of climate-induced disasters. These effects reveal that climate change in Nepal is not only an environmental crisis but also a profound socio-economic challenge that affects livelihoods and national stability.

This article examines the dual dimensions of Nepal's climate crisis through the theoretical frameworks of environmental security and resilience theory. By drawing on secondary data from scientific studies, government reports, and international agencies, it interprets climate change as a threat multiplier that amplifies existing vulnerabilities. The objective is twofold: first, to analyze how climate change undermines Nepal's environmental and socio-economic foundations, and second, to explore policy pathways that can foster long-term resilience and sustainability.

Ultimately, this paper argues that Nepal's stability depends on recognizing climate change as a cross-sectoral issue, one that intersects with economic planning, environmental governance, and national development. Addressing it requires adaptation to ecological shifts and also a structural rethinking of how the state, institutions, and communities respond to emerging risks. That is when Nepal can transform the narrative from one of vulnerability to one of resilience and preparedness.

Theory and Analytical Approach

Nepal's climate predicament cannot be understood in isolation from broader theoretical perspectives that link ecological degradation, social vulnerability, and governance. The two frameworks, environmental security and resilience theory, offer complementary lenses for interpreting how climate change threatens both the environment and the socio-economic foundations of the state. They explain why environmental disruption in Nepal is not merely a scientific issue but a strategic concern with far-reaching implications for human welfare and national stability.

Environmental Security

Environmental security focuses on the conditions necessary to ensure human and national stability in the face of ecological change. It extends traditional security concerns by linking climate-driven shifts (e.g., resource scarcity, extreme weather) to human well-being and state stability. Under this framework, climate change is not just an environmental issue but a potential threat multiplier. For example, Barnett and Adger (2007) demonstrate that declining resource availability due to climate change can increase vulnerability and even heighten the risk of conflict. Also, the changing climatic conditions will increasingly challenge states' capacity to provide for citizens, creating "new challenges to states" and reshaping security policies (Adger et al., 2014, p. 758).

In Nepal, environmental security concerns are acute because many communities depend on fragile mountain ecosystems. Rapid glacial retreat has created dozens of potentially dangerous lakes; UNDP (2025) highlights that Nepal's glacial lake outburst floods (GLOFs) "trigger severe flooding, landslides and mudflows," directly endangering lives and infrastructure. In 2009, when the upper Mustang region had received less than 200mm of rain annually, the households of Dhey village were relocated to *Thangchung*, and in 2016, due to acute drought, 18 households from the village of *Samjong* were relocated (International Organization for Migration [IOM], 2019, p. 29). Such events often disrupt agriculture and hydropower, weaken food and water security, and strain government capacity. By treating these climate impacts as security challenges, the environmental security approach draws attention to how Nepal's environmental changes could undermine national development and stability if not addressed.

Resilience Theory

Resilience theory offers a complementary lens that focuses on adaptive capacity. Denton et al. (2014) define resilience as the ability of a social-ecological system "to anticipate, reduce, accommodate, or recover from the effects of a hazardous event or trend" (p. 1108). This perspective emphasizes that change is inevitable. It highlights the capacity of communities, ecosystems, and institutions to absorb shocks and reorganize without collapsing into a qualitatively different state. In practice, resilience theory brings attention to attributes like diversity, learning, and flexibility (Walker et al., 2004; Folke, 2006).

When applied to Nepal, resilience theory prompts analysis of how local and national systems can maintain functionality under climate stress. For example, strengthening local flood early-warning systems, diversifying mountain livelihoods, and preserving watershed forests are resilience-building strategies. Nepal's context, marked by high poverty and low climate adaptive capacity, makes resilience-building especially urgent. Emphasizing resilience thus means examining how Nepal's communities and governance structures can adapt to increasing floods, droughts, and glacial hazards. It shifts the focus from climate impacts only to the coping strategies and institutional capacities that can sustain socio-economic stability in the face of those impacts.

Integrative Relevance

By integrating these frameworks, this approach provides a balanced theoretical foundation. The environmental security lens identifies climate-driven threats to Nepal's environmental and

socio-economic stability (such as resource scarcity or disaster risk), while resilience theory highlights the capacities and responses that can mitigate those threats. In the following sections, we will use environmental security to frame the vulnerabilities and risks posed by climate change in Nepal, and use resilience theory to assess Nepal's ability to adapt and transform. When together, these theories guide our critical discussion: we examine how climate change functions as a destabilizing force and, in turn, how Nepal's institutions and communities might strengthen resilience to maintain stability. This integrated framing ensures that the analysis considers both the sources of insecurity and the opportunities for strengthening adaptation in Nepal's mountain environment and society.

Critical Discussion

(a) *Environmental and Socio-Economic Dimensions of Climate Change in Nepal*

Nepal's environment and socio-economic systems are highly interdependent, and there is a network of relations that makes the country extremely sensitive to climatic shocks. Rising temperatures, shifting precipitation patterns, and the accelerated retreat of glaciers have already begun transforming the natural balance of Himalayan ecosystems. According to the Intergovernmental Panel on Climate Change (IPCC, 2021), the Himalayas are warming nearly twice as fast as the global average, leading to a rapid loss of ice mass and destabilization of mountain slopes. Wester et al. (2020) warn that if current trends persist, one-third of the Himalayan glaciers could disappear by the end of this century, intensifying the risk of glacial lake outburst floods (GLOFs), water scarcity, and biodiversity loss. Overall, this has created an increase in vector-borne diseases, landslides, floods, drought, and a decrease in soil fertility. These environmental transformations are not isolated ecological concerns; they are catalysts for social and economic instability across Nepal.

The country's geography amplifies its exposure to climate-related hazards. According to Dhungana et al. (2013), nearly 80 percent of Nepal's population lives in rural areas, where livelihoods depend on climate-sensitive sectors such as agriculture, forestry, and hydropower. Around 62% of the total labor force works in agriculture alone (Amadio et al., 2023). Erratic monsoon cycles have led to alternating periods of drought and flood, undermining food production and threatening the subsistence of millions. In recent years, landslides and flash floods have become more frequent, destroying farmland, infrastructure, and homes, particularly in the mid-hill and Terai regions. A (Ministry of Population and Environment, 2016) report highlights that climate-induced disasters cost Nepal approximately 2 percent of its GDP annually, with losses concentrated in energy and agriculture, two sectors critical for national development and employment. Therefore, its impact on GDP, labor productivity, and health is clearly evident.

These economic and environmental strains reinforce one another. Farmers are turning to short-term coping mechanisms like deforestation, overgrazing, or seasonal migration as a result of the declining agricultural yields brought on by unpredictable rainfall. Reduced water flows in the high mountains cause problems for hydropower production and irrigation, resulting in an energy shortage that limits industrial

productivity and urban expansion. The idea of environmental security, where ecological decline threatens social stability and institutional capacity, is best illustrated by this feedback loop between environmental degradation and economic insecurity (Barnett & Adger, 2007). The effects are already evident in Nepal: a decline in the number of people living in rural areas, a rise in reliance on remittances, and the increasing feminization of agricultural work as more men leave the country.

The environmental crisis also has significant implications for human welfare and social equity. Poor and marginalized groups, particularly women, small-scale farmers, and Indigenous communities, bear the greatest burden of environmental change. Their limited access to resources and decision-making processes reduces adaptive capacity, deepening existing social inequalities. This uneven distribution of risk reveals that climate change acts as a threat multiplier and magnifies vulnerabilities rooted in poverty, geography, and governance. Environmental degradation thus extends beyond ecology as it destabilizes livelihoods, widens inequality, and weakens the foundations of Nepal’s socio-economic stability.

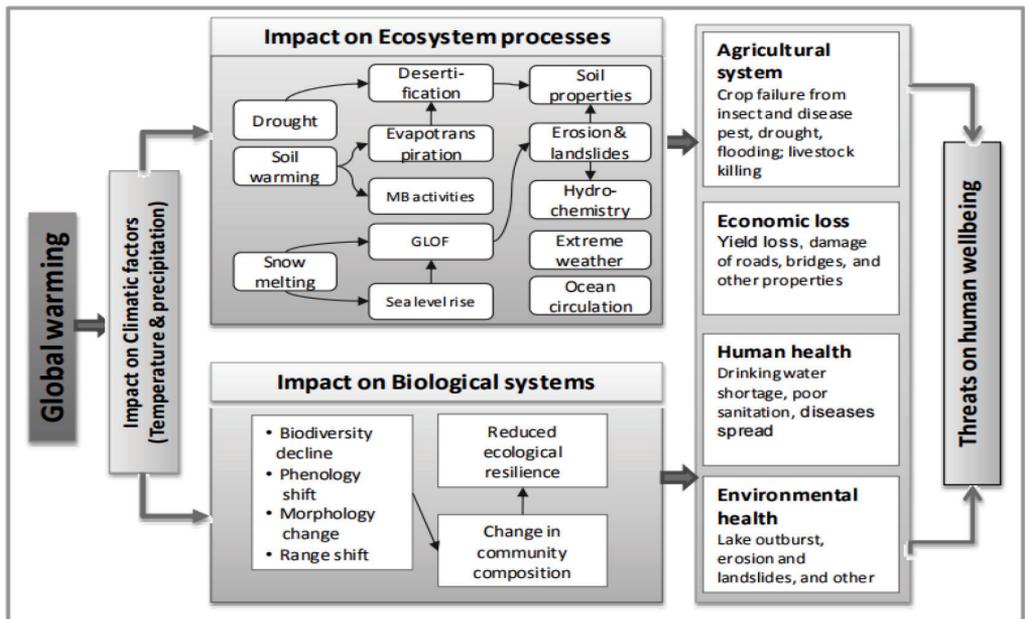


Fig. 1 *Impacts of global warming*

Note: Reprinted from “Global warming in Nepal: Challenges and policy imperatives,” by P. Chaudhary & K. P. Aryal, 2009, *Journal of Forest and Livelihood*, 8(1). p. 4–13

The above figure helps us better understand how global warming impacts the climate factors, further impacting the biological and ecological systems that eventually threaten human well-being. It shows how one problem builds up a chain reaction, causing a threat to socioeconomic wellbeing with risks to human health, environment, economy, and agricultural system.

(b) ***Governance and Institutional Challenges in Climate Response***

Nepal's vulnerability to climate change is not merely a function of geography; it is equally shaped by governance capacity and institutional coherence. Although the country has made notable progress in formulating climate-related policies, the National Adaptation Programme of Action (NAPA, 2010), the Climate Change Policy (2019), and the Nationally Determined Contribution (NDC 2020) implementation remain uneven and fragmented. The Ministry of Forests and Environment (MoFE) leads climate governance, yet coordination across ministries, provincial governments, and local bodies is inconsistent. Weak inter-agency collaboration often results in duplication of projects, poor data sharing, and inadequate integration of climate concerns into sectoral planning.

Nationally Determined Contribution 3.0 (2025) has set several targets to achieve by 2035 in several sectors, including energy, health, agriculture, transportation, etc. For Nepal to achieve those, we require strong coordination among all levels of governance.

National Climate Change Policy 2019, while realizing the problem of multi-sectoral issues of climate change among the inter-sectoral agencies and the lack of coordination among them, has tried to solve it. It has tried integrating them in the plan and programs of the concerned line ministries of the Federation and Provinces and Local Levels, including the inter-thematic policies, strategies, and working policies in policy no. 9. Yet it seems to be vague and unsystematic. In policy no. 10, the role of the local level is limited to raising awareness, monitoring and evaluating, and conducting adaptation and mitigation programs under the federal and provincial governments. Though it has given some room for formulating policies, directives, and standards for the local level, the structure still seems very much centralized, with a lack of proper financing.

According to the National Adaptation Plan 2021, implementation modality and constitutional arrangements, a District Climate Change Coordination Committee (DCCCC) is to be established at the district level, and will help facilitate implementation of adaptation actions at the district level. Likewise, the Executive Board at the local level oversees and provides strategic guidance to coordinate the implementation of climate change adaptation actions. Even based on this, we can see the limited roles and autonomy for local bodies to function swiftly when required.

These institutional limitations directly undermine environmental security. When local governments lack the technical or financial capacity to prepare for floods, droughts, or glacial lake outburst floods (GLOFs), environmental hazards often escalate into human and economic crises. As Barnett and Adger (2007) argue, climate change becomes a *threat multiplier* precisely because weak institutions fail to transform environmental stress into adaptive governance. In Nepal, overlapping mandates between the National Planning Commission, MoFE, and local disaster-management units illustrate this vulnerability.

Another governance challenge lies in limited policy coherence between climate action and development priorities. Many national policies still treat environmental management as an addition to economic growth rather than a precondition for it. For example, while Nepal has established a Climate Change Council and endorsed a Green

Resilient Inclusive Development (GRID) framework, bureaucratic turnover and donor dependency slow down project execution. Consequently, local adaptation plans of action (LAPAs) designed to empower vulnerable communities frequently stall due to funding delays and insufficient technical support.

Moreover, corruption and institutional opacity erode public trust, a crucial element of environmental security. Studies have shown that in post-disaster recovery programs, funds are often misallocated or poorly monitored (Gverdsiteli & Martinez, 2025). This erodes citizen confidence in the state's ability to safeguard communities against climate threats, perpetuating a sense of insecurity. When governance systems are perceived as unreliable, households resort to informal coping mechanisms, such as out-migration, over-exploitation of forest resources, or dependence on remittances, which can increase ecological stress.

Ultimately, Nepal's climate governance illustrates the classic tension between policy ambition and administrative reality. While frameworks exist on paper, the institutional culture required for proactive, integrated, and adaptive management remains underdeveloped. Strengthening environmental security in Nepal, therefore, depends not only on infrastructure and technology but also on governance reform, transparent budgeting, inter-sectoral coordination, and capacity-building at the local level. Addressing these systemic issues would enable climate policy to function not as crisis management, but as long-term risk prevention and social stabilization.

(c) ***Pathways for Adaptation and Reform***

Resilience thinking reframes climate change not solely as a threat but as a test of adaptive capacity, the ability of societies and ecosystems to absorb shocks, reorganize, and continue to function (Walker et al., 2004; Folke, 2006). For Nepal, this means moving from short-term, project-based responses toward an integrated strategy that enhances flexibility, learning, and inclusiveness at every level of governance. The countries with decentralized, participatory adaptation frameworks exhibit greater recovery potential after extreme events. Applying this insight to Nepal reveals that resilience must be cultivated simultaneously within communities, institutions, and ecosystems, which basically means strengthening the existing framework of Nepal's federal system. The 2021 Green, Resilient and Inclusive Development (GRID) vision places local governments at the center of climate resilience efforts (World Bank, 2022). Using this framework effectively can help us strengthen our climate resilience.

Due to Nepal's state of economy and technology, it is important to increase people's ability to adapt to change while the long-term efforts to minimize and reduce emissions are being carried out. Different strategies could be establishing small hydropowers, tolerant crop varieties, mixed cropping, etc (Chaudhary & Aryal, 2009).

At the community level, resilience depends on empowering local knowledge systems and diversifying livelihoods. Mountain communities have long practiced rotational grazing, mixed cropping, and forest stewardship (Adhikari, 2024). These are the traditions that align with modern adaptive principles. Strengthening these practices

through technical support and climate information services can enhance food security and reduce disaster vulnerability. Community forest user groups, which manage nearly one-third of Nepal's forests, offer an institutional model for collective action (Community Conservation, 2025). Expanding their role in watershed management and carbon-credit initiatives would blend ecological restoration with income generation.

Institutional resilience requires governance structures capable of anticipating and learning from crises. Nepal's federal system provides an opportunity to embed climate considerations into provincial and municipal planning. However, resilience theory suggests that "decentralized Resilience," the presence of multiple pathways for system recovery, is vital (Sustainability Directory, 2025). Building redundancy (having multiple pathways and backups) in Nepal's adaptation framework means equipping local governments with both financial autonomy and technical training. Transparent monitoring and evaluation systems can transform adaptation from donor-driven projects into sustained policy processes. Integrating disaster-risk reduction, land-use planning, and water-resource management under a unified national resilience strategy would also minimize overlapping mandates and improve accountability.

Ecological resilience, in turn, hinges on protecting and restoring natural buffers such as forests, wetlands, and alpine meadows. These ecosystems regulate water flows, reduce landslide risks, and sustain biodiversity. The National Adaptation Plan (2021) identifies ecosystem-based adaptation (EbA) as a cost-effective solution for Nepal's mountain and mid-hill regions. A UNEP project in the Himalaya is actively restoring degraded forests and rangelands to improve water retention and soil fertility. Implementing EbA at scale can generate co-benefits, including carbon sequestration (capturing and storing carbon dioxide from the atmosphere), eco-tourism revenue, and community stewardship. Resilience theory emphasizes that healthy ecosystems enhance the capacity of human systems to cope with uncertainty; thus, environmental restoration serves as both climate action and social protection.

Finally, resilience building in Nepal requires regional and international cooperation. Transboundary river management with India and China, early-warning data sharing, and access to climate finance under mechanisms such as the Green Climate Fund can amplify domestic efforts. As resilience is not merely local but embedded within global networks of support and learning. Strengthening these linkages will allow Nepal to translate vulnerability into adaptive transformation.

In essence, fostering resilience in Nepal involves re-imagining development itself. Climate adaptation cannot remain a peripheral agenda; it must define the architecture of economic planning, education, and infrastructure. By operationalizing resilience theory through participatory governance, ecosystem restoration, and regional cooperation, Nepal can shift from crisis management toward long-term stability and self-reliance.

Conclusion

Nepal stands at a pivotal juncture between environmental fragility and developmental aspiration. The country's mountains and valleys, long celebrated as natural assets, are becoming increasingly volatile under the pressures of a changing climate. This paper has shown that climate change, through its cascading effects on ecosystems and livelihoods, is not only an environmental challenge but also a profound threat to national security and socio-economic stability. Framed through the lenses of Environmental Security and Resilience Theory, Nepal's experience illustrates how ecological degradation can destabilize social systems, while adaptive capacity determines whether crises evolve into collapse or transformation.

The environmental and socio-economic analysis revealed that rising temperatures, erratic monsoons, and glacial retreat are destroying the foundations of Nepal's rural economy. When agricultural yields decline, hydropower systems fail, and communities migrate, the country's environmental vulnerabilities quickly manifest as developmental and security crises. These risks are increased by governance weaknesses, fragmented institutions, centralized resource control, and limited local capacity, which prevent timely, coordinated adaptation. The persistence of these gaps underscores the environmental security argument: that institutional fragility magnifies ecological stress into systemic instability.

Yet, the same findings point to a path forward. Resilience theory offers a framework for envisioning adaptive reform grounded in flexibility, inclusion, and learning. Building resilience in Nepal requires strengthening community-based management systems, decentralizing climate finance, and integrating adaptation into all levels of planning, from national development policy to village disaster preparedness. Ecosystem-based adaptation and cross-border cooperation on water and data management can further reinforce stability. These measures must not be viewed as auxiliary to development but as its core foundation.

In conclusion, addressing Nepal's climate vulnerability is both an environmental and political imperative. The melting mountains and flooding valleys symbolize not only the ecological crisis but also the urgency of institutional transformation. Nepal's long-term stability depends on its capacity to convert vulnerability into resilience to shift from reactive governance to anticipatory adaptation. If pursued with coherence and commitment, such a transition can safeguard both the natural heritage of the Himalayas and the socio-economic well-being of the people who depend on it.

References

- Adhikari, A. (2024, December 10). *Exploring the heart of Jumla through its farming systems*. ICIMOD Blog. <https://blog.icimod.org/transforming-livelihoods/exploring-the-heart-of-jumla-through-its-farming-systems/>
- Amadio, M., Behrer, P., Bosch, L., Kaila, H., Krishnan, N., & Molinario, G. (n.d.). *Climate risks, exposure, vulnerability, and resilience in Nepal*. World Bank. <http://hdl.handle.net/10986/40597>
- Arias, P. A., et al. (2021). Technical summary. In V. Masson-Delmotte et al. (Eds.), *Climate change 2021: The physical science basis* (Working Group I contribution to the Sixth Assessment Report of the IPCC, pp. 33–144). Cambridge University Press.

- Bajracharya, S. R., Maharjan, S. B., Shrestha, F., Sherpa, T. C., Wagle, N., & Shrestha, A. B. (2020). *Inventory of glacial lakes and identification of potentially dangerous glacial lakes in the Koshi, Gandaki, and Karnali river basins of Nepal, the Tibet Autonomous Region of China, and India* (S. Thomas & R. Chettri, Eds.). ICIMOD & UNDP. <https://doi.org/10.53055/ICIMOD.773>
- Barnett, J., & Adger, W. N. (2007). Climate change, human security and violent conflict. *Political Geography*, 26(6), 639–655.
- Barnett, J., et al. (2014). Human security. In C. B. Field et al. (Eds.), *Climate change 2014: Impacts, adaptation, and vulnerability* (Part A: Global and sectoral aspects, pp. 755–791). Cambridge University Press. https://www.ipcc.ch/site/assets/uploads/2018/02/WGIIAR5-Chap20_FINAL.pdf
- Chaudhary, P., & Aryal, K. P. (2009). Global warming in Nepal: Challenges and policy imperatives. *Journal of Forest and Livelihood*, 8(1), 4–13. <https://www.nepjol.info/index.php/JFL/article/view/1877>
- Community Conservation. (2025, July 2). *Nepal's community forest groups: Incubators of democracy*. <https://communityconservation.org/nepals-community-forest-groups-incubators-of-democracy/>
- Crippa, M., et al. (2025). *GHG emissions of all world countries: 2025 report*. Publications Office of the European Union. https://edgar.jrc.ec.europa.eu/report_2025
- Denton, F., et al. (2014). Climate-resilient pathways: Adaptation, mitigation, and sustainable development. In C. B. Field et al. (Eds.), *Climate change 2014: Impacts, adaptation, and vulnerability* (Part A: Global and sectoral aspects, pp. 1101–1131). Cambridge University Press. https://www.ipcc.ch/site/assets/uploads/2018/02/WGIIAR5-Chap20_FINAL.pdf
- Dhungana, H., Pain, A., Khatri, D., Gurung, N., & Ojha, H. (n.d.). *Climate change and rural institutions in Nepal* (DIIS Working Paper). Danish Institute for International Studies. https://www.academia.edu/126148347/Climate_change_and_rural_institutions_in_Nepal
- Eckstein, D., Künzel, V., & Schäfer, L. (2021). *Global climate risk index 2021: Who suffers most from extreme weather events? Weather-related loss events in 2019 and 2000–2019*. Germanwatch e.V. <https://www.germanwatch.org/en/19777>
- Folke, C. (2006). Resilience: The emergence of a perspective for social–ecological systems analyses. *Global Environmental Change*, 16(3), 253–267. <https://doi.org/10.1016/j.gloenvcha.2006.04.002>
- Government of Nepal, Ministry of Forests and Environment. (2019). *National climate change policy, 2076 (2019)*. https://www.icimod.org/wp-content/uploads/2021/07/National-Climate-Change-Policy_english_2019_compressed.pdf
- Government of Nepal, Ministry of Forests and Environment. (2021). *National Adaptation Plan of Nepal 2021–2050*. https://unfccc.int/sites/default/files/resource/NAP_Nepal_2021.pdf
- Government of Nepal. (2025). *Nepal's Nationally Determined Contribution (NDC) 3.0*. <https://unfccc.int/sites/default/files/2025-05/Nepal%20NDC3.pdf>

- Gverdtsiteli, G., & Kukutschka, R. M. B. (2025, February 11). *How corruption undermines global climate efforts*. Transparency International. <https://www.transparency.org/en/news/how-corruption-undermines-global-climate-efforts>
- International Organization for Migration. (2019). *Migration in Nepal: A country profile 2019*. https://publications.iom.int/system/files/pdf/mp_nepal_2019.pdf
- Sapkota, R., & Rijal, K. (2016). *Climate change and its impacts in Nepal*. Researchgate.
- United Nations Development Programme. (2025, July 1). *Green Climate Fund approves \$36.1 million to help Nepal protect lives and livelihoods from glacial flood risks*. <https://www.undp.org/press-releases/green-climate-fund-approves-361-million-help-nepal-protect-lives-and-livelihoods-glacial-flood-risks>
- Walker, B., Holling, C. S., Carpenter, S. R., & Kinzig, A. P. (2004). Resilience, adaptability and transformability in social–ecological systems. *Ecology and Society*, 9(2), Article 5. <https://doi.org/10.5751/ES-00650-090205>
- Wester, P., Singh Rathore, B. M., Sharma, E., & Molden, D. (2020). The Hindu Kush Himalaya call to action: Sustaining mountain environments and improving livelihoods. *Mountain Research and Development*, 40(1). <https://doi.org/10.1659/mrd-journal-d-20-00040.1>
- World Bank. (2022, September 15). *Integrating climate change into Nepal's development strategy key to build resilience, says new World Bank Group report* [Press release]. <https://www.worldbank.org/en/news/press-release/2022/09/15/integrating-climate-change-into-nepal-s-development-strategy-key-to-build-resilience-says-new-world-bank-group-report>

