Building Resilience in the Margins: Reimagining Climate Federalism in India through Case Studies on Indigenous Communities in the Eastern Himalayan Landscape

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KEYWORDS

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ABSTRACT

In a developing country like India, climate change has far-reaching consequences, impacting ecosystems, food and water security, public health, and infrastructure, which in turn undermine economic growth and deepen existing socio-economic vulnerabilities. This challenge is particularly acute in the Eastern Himalayan states of Northeast India, where over 135 recognized tribal groups and nearly 500 sub-tribes inhabit an ecologically fragile landscape. Despite protections under the Sixth Schedule of the Indian Constitution, Indigenous communities have remained largely excluded from India's centralised climate governance. This disconnect is especially concerning as climate change disproportionately affects these communities, threatening their traditional livelihoods, cultural practices, and overall resilience. This paper seeks to critically examine India's climate federalism framework, assessing the inclusivity of Indigenous communities in existing climate laws, policies, and administrative structures. Judicial interventions, particularly the outcomes of climate litigation like the *MK Ranjitsinh & Ors v Union of India* case, will be examined to understand the impact of such judgement of indigenous communities. Finally, the article will propose a framework toward creating a bottom-up, community-led climate governance model, that ensures meaningful participation of indigenous groups, ultimately fostering climate resilience among vulnerable communities inhabiting fragile landscapes.

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I. Introduction

India's vulnerability to the ill-effects of climate change is well documented. As one of the largest countries in the world in terms of population and size, with marked variations in topography and climatic conditions, plagued with social and economic challenges, India ranks high among regions vulnerable to climate hazards.[1] The 2022 IPCC report highlights South Asia, particularly India, as highly vulnerable to climate change due to increasing extreme weather events such as

[1] Eckstein, David, et al. *Global Climate Risk Index 2020: Who Suffers Most from Extreme Weather Events? Weather-Related Loss Events in 2018 and 1999 to 2018*. Germanwatch, 2019.

floods, landslides, droughts, cyclones, and heatwaves.[2] In addition, the dense population coupled with poverty, further adds to the risk of rise in health-related issues[3] and climate induced displacement.[4]

Besides international reports, internal studies by Indian governmental institutions have found high vulnerability and risk of climate change, with certain regions showcasing much higher risks.[5] The *National Climate Vulnerability Assessment Report* of 2021 found that three states in India's Eastern Himalayas—that is, Assam, Mizoram, and Arunachal Pradesh—were among the most vulnerable states to climate change.[6] A recent study by Halder and Yaseen also showcased the decreasing rainfall trends and increasing temperatures in the region, particularly in the states of Assam, Meghalaya, Tripura and Manipur.[7]

The Eastern Himalayan region is a transboundary landscape across several nations including Nepal, Bhutan, India, Bangladesh, Myanmar and China. The part of the landscape which falls in Indian territory is commonly referred to as 'Northeast India' and comprises eight states, namely Assam, Arunachal Pradesh, Mizoram, Nagaland, Meghalaya, Manipur, Tripura and Sikkim. It is considered one of the richest regions in terms of biodiversity[8] and is home to one of the world's largest ethnic diversities;[9] several Indigenous groups speaking numerous languages and dialects professing various religious belief systems.

These Indigenous communities of India's Northeast region have been historically dependent upon, and very closely interlinked with, the region's rich biodiversity, for sustenance, livelihood, and cultural practices. This age-old interdependence with nature has led to accumulation of deep ecological and traditional knowledge.[10] Based on this knowledge, the communities have well adapted to local climatic conditions and practiced sustainable resource management.[11] However, many of these communities fail to find a position in India's centralised climate governance structure. Although the Sixth Schedule of India's Constitution provides autonomy and self-governance to some indigenous communities of Northeast India, their role remains marginalised in national climate policies leading to inadequate participation in climate action.

This article examines the limitations of India's climate federalism framework to ensure inclusive climate governance. Judicial interventions, including the *MK Ranjitsinh & Ors v Union of India* case,[12] will be analysed, along with case studies from the Eastern Himalayan region, to propose an alternative governance model that prioritises community-led climate action.

Towards proposing an alternative climate governance model, this paper will analyse and attempt to address the following key questions:

1. What are the specific reasons behind climate vulnerabilities of Indigenous

[2] IPCC, *Climate Change 2022: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*, edited by H-O Pörtner et al., Cambridge University Press, 2022.
[3] ibid.
[4] Krishnan, Murali. "India: Migration from Climate Change Getting Worse." *DW*, 19 Apr. 2023; Singh, Harjeet, et al. "Costs of Climate Inaction: Displacement and Distress Migration." *ActionAid*, Dec. 2020.
[5] *National Climate Vulnerability Assessment Report*, Government of India Department of Science and Technology, 2021.
[6] ibid at 15-20.
[7] Halder, Bijay, and Zaher Mundher Yaseen. "Long-Term Climate Change Analysis in Northeast and Eastern India." *Geomatics, Natural Hazards and Risk*, vol. 15, no. 1, 2024, p. 26.
[8] Chatterjee, S. "Biodiversity Conservation Issues of Northeast India." *The International Forestry Review*, vol. 10, no. 2, 2008, pp. 315-324.
[9] Singh, B. "North-East India: Demography, Culture and Identity Crisis." *Modern Asian Studies*, vol. 21, no. 2, 1987, pp. 257-282.
[10] Tynsong, H, et al. "Traditional Ecological Knowledge of Tribal Communities of North East India." *Biodiversitas*, vol. 21, no. 7, Jul. 2020, pp. 3209-3224.
[11] Rawal, Ranbeer, et al. *The Himalayan Biodiversity: Richness, Representativeness, Uniqueness and Life-Support Values*. GB Pant Institute of Himalayan Environment and Development, 2013, at p. 33.
[12] *MK Ranjitsinh & Ors v Union of India & Ors* (2024) 3 SCR 1320.

communities in the Eastern Himalayan region?
2. How does India's climate federalism framework function, and what are its limitations in addressing indigenous concerns?
3. How have judicial interventions shaped climate governance for indigenous communities?
4. What lessons can be drawn from indigenous climate adaptation strategies, and how can they be integrated into policymaking?
5. What governance model can best ensure the meaningful participation of indigenous communities in climate governance?

The article is divided into seven Sections. The first Section is an introduction, followed by a second Section that outlines the impacts of climate change in the Eastern Himalayas, highlighting the social and economic vulnerabilities of Indigenous communities. The third Section critically examines India's climate federalism framework and its shortcomings. The fourth and fifth Sections explore case studies of Indigenous resilience strategies in the region and examine the role of judicial interventions. The sixth Section proposes a way forward with a new climate governance model embedding necessary structural reforms, prioritising community leadership in climate policymaking and implementation. The seventh Section concludes with policy recommendations.

II. **Climate Change and Vulnerabilities in the Eastern Himalayan Landscape**

The Himalayan region is the source of some of the most important rivers of Asia, upon which 1.3 billion people depend for their water needs.[13] It also contains the largest mass of ice outside the polar regions, and is often referred to as the 'Third Pole'.[14] This ice in the Himalayas, especially in the form of glaciers, is rapidly shrinking due to climate change.[15] Rising temperatures and ice loss are disrupting water availability, biodiversity, and ecosystem boundaries, while also contributing to global changes in climatic patterns like the seasonal monsoon winds.[16] This poses significant risks to water security, energy security, and agricultural production across Asia, putting millions of people at risk and their future uncertain.[17] At the heart of this vulnerability are the small Indigenous communities, who live on the slopes, foothills and the valleys of this great mountain range.

In the last two decades, the impact of climate change in the Eastern Himalayan landscape has been well documented through several detailed studies.

The International Centre for Integrated Mountain Development, an important transnational organisation based in Nepal, and working across the Hindu Kush / Himalayan region, published a crucial report in 2009. This report, which did assessments, field studies, and stakeholder consultations over a couple of years on the Eastern Himalayas, highlighted the vulnerability of the region as a result of "ecological fragility and economic marginality".[18] The report underscored the risk associated with the decline of natural resources and ecosystem services in the region, and its impact on the population, most of whom are heavily reliant of these resources.[19] In addition, poverty, poor infrastructure, low health indicators, underdevelopment and reliance on subsistence farming make the people more

[13] Mukherji, Aditi, et al. "Himalayan Waters at the Crossroads: Issues and Challenges." *International Journal of Water Resources Development*, vol. 31, no. 2, 2015, pp. 151-160.
[14] *A Scientific Assessment of the Third Pole Environment*. UNEP, 2022.
[15] ibid.
[16] Poornima, Ramesh, et al. "Climate Change Implications in the Himalayas." *The Himalayas in the Anthropocene*, edited by Anwesha Borthakur and Pardeep Singh, Springer, 2024, at pp. 237-277; Xu, Jianchu, et al. "The Melting Himalayas: Cascading Effects of Climate Change on Water, Biodiversity, and Livelihoods." *Conservation Biology*, vol. 23, no. 3, 2009, pp. 520-530.
[17] ibid.
[18] Sharma, Eklabya, et al. *Climate Change Impacts and Vulnerability in the Eastern Himalayas*. ICIMOD, 2009, at p. 1
[19] ibid at pp. 15-16.

vulnerable to climate change due to inadequate capacity to adapt.[20]

Between 2018 and 2019, a study was sponsored by the Ministry of Science and Technology, Government of India and the Swiss Agency for Development and Cooperation, and a report was prepared by the Indian Institute of Technology, Guwahati and Indian Institute of Technology, Mandi, both situated in Eastern and Western Himalayan regions respectively.[21]

According to the study, the Eastern Himalayan states of Assam and Mizoram were the most vulnerable to climate change. The report summarises the key reasons for this vulnerability into two major factors: topography and socio-economic factors. For example, on the vulnerability in Assam, the report states that there are six key factors that drive Assam's climate vulnerability.[22] First, the state fares poorly on various socio-economic, demographic, and health-related indicators, including high population density and low per capita income.[23] Second, it has the lowest forest area available per 1,000 rural households, limiting ecological resilience.[24] Third, the extent of irrigated land is minimal, making agriculture particularly vulnerable during dry periods.[25] Fourth, low access to institutional credit among farmers and limited crop insurance coverage further adds to their vulnerability and food security.[26] Fifth, participation in employment guarantee schemes like MGNREGA remains limited.[27] Lastly, Assam faces significant deficits in critical infrastructure and communication systems, further weakening its capacity to respond effectively to climate-related stresses.[28]

Similarly, in the case of Mizoram, the key factors for its vulnerability were on the broad lines of accessibility, infrastructure, communication, and topography. The report states that Mizoram's agricultural sector is highly sensitive to climate change as there is high yield variability, absence of crop insurance, low irrigation facilities, largest area under open forest, and over thirty percentage of its land area is under slope due to the hilly terrain, which makes agriculture challenging.[29]

Another study, which did a district wise climate vulnerability analysis of the Himalayan states, found that several districts of Assam were highly vulnerable to climate change.[30] In brief, the report concluded with similar concerns of poor socio-economic indicators.[31]

The above studies and several others on the issue point at ecological fragility and socio-economic marginalisation. However, a fundamental issue, which many of these reports disregard, is the long history of political instability. For decades, Northeast India has been considered a disturbed region[32] that has witnessed long-standing conflicts between various ethnic groups[33] and against the Indian state.[34] This armed conflict has been fuelled by competition over land and resources.[35] The outcome of this conflict has led to several challenges in governance in the

[20] ibid.
[21] Barua, Anamika, et al. *Climate Vulnerability Assessment for the Indian Himalayan Region Using a Common Framework*. Indian Himalayas Climate Adaptation Programme, 2019.
[22] ibid at p. 31.
[23] ibid.
[24] ibid.
[25] ibid.
[26] ibid.
[27] ibid.
[28] ibid.
[29] ibid.
[30] Alam, Mir Khursheed, et al. "Assessing Climate-Relevant Vulnerability of the Indian Himalayan Region (IHR): A District-Level Analysis." *Natural Hazards*, vol. 112, 2022, pp. 1395-1421.
[31] ibid.
[32] Baruah, Sanjib. *In the Name of the Nation: India and Its Northeast*. Stanford University Press, 2020.
[33] Saikia, Pahi. *Ethnic Mobilisation and Violence in Northeast India*. 1st ed., Routledge India, 2016.
[34] Baruah, Sanjib. *India Against Itself: Assam and the Politics of Nationality*. University of Pennsylvania Press, 1999.
[35] ibid; Kikon, Dolly. *Living with Coal and Oil: Resource Politics and Militarization in Northeast India*. University of Washington Press, 2019.

region. At present, climate change and rapid industrialisation further add to the existing challenges as resource availability declines and economic distress increases. This has the potential to intensify existing tensions, leading to displacement, loss of livelihoods, and social instability.

Despite these challenges, in recent times, as the situation improves in the region, efforts have been made by the national and state governments to address climate-related vulnerabilities through various schemes and policies.[36] However, a lack of inclusive governance mechanisms and limited community participation has hindered effective resilience-building measures.[37] Additionally, the complex geopolitical landscape of the region, with cross-border migration, transboundary conflicts, and inadequate infrastructure, adds layers of uncertainty to climate adaptation planning.

Addressing climate vulnerability in the Eastern Himalayas, therefore, requires a multidimensional approach that integrates ecological conservation, socio-economic elevation, improved governance, and conflict resolution strategies to build long-term resilience for the region and its people.

The question which follows is whether the Indian climate governance framework adopted a multidimensional approach with adequate community participation and decision-making, and therefore whether the existing framework addresses the climate vulnerabilities of Indigenous people, as discussed above.

III. Examining India's Climate Federalism Framework

India's approach to climate governance has been defined by the principle of Common but Differentiated Responsibilities and Respective Capabilities (CBDR-RC) under the United Nations Framework Convention on Climate Change (UNFCCC).[38] This principle recognises that developed nations bear greater historical responsibility for greenhouse gas emissions and should, therefore, take the lead in mitigation efforts.[39] India has consistently positioned itself as a leader of the Global South, advocating for climate justice and sustainable development.[40] Despite a clear guiding principle, India's climate governance is complex. It is shaped by a highly centralised federal structure,[41] rapid development and poverty alleviation priorities, and the pressing need to address the growing challenges of climate change.

As a developing country, India has been at a conundrum between overcoming economic challenges and fighting climate change. As a nation with 200 years of colonial past, India's principal political priority has been development. This national vision was well articulated by Prime Minister Indira Gandhi in her famous speech at the United Nations Conference on the Human Environment in Stockholm. She emphasised that "poverty is the greatest polluter", reinforcing the idea that environmental action must be balanced with economic growth.[42] This dual imperative has shaped India's climate policy, which continues to navigate between the need for rapid development and growing international climate obligations. Towards realising this

[36] "Parliamentary Question: Schemes to Address Climate Change. Written Reply by Shri Kirti Vardhan Singh, Union Minister of State for Environment, Forest and Climate Change, to Lok Sabha." *Indian Press Information Bureau*, 10 Feb. 2025.
[37] Eriksen, Siri, et al. "Adaptation Interventions and Their Effect on Vulnerability in Developing Countries: Help, Hindrance or Irrelevance?" *World Development*, vol. 141, 2021, p. 9.
[38] Pillai, Aditya Valiathan, and Navroz Dubash. "The Limits of Opportunism: The Uneven Emergence of Climate Institutions in India." *Environmental Politics*, vol. 30, sup. 1, 2021, p. 94.
[39] Biniaz, Susan. "Common but Differentiated Responsibilities." *Proceedings of the American Society of International Law*, vol. 96, 2002, p. 358.
[40] Michaelowa, Katharina, and Axel Michaelowa. "India as an Emerging Power in International Climate Negotiations." *Climate Policy*, vol. 12, no. 5, 2012, p. 576.
[41] Pillai, Aditya Valiathan, and Navroz Dubash. "Climate Governance and Federalism in India." *Climate Governance and Federalism: A Forum of Federations Comparative Policy Analysis*, edited by Alan Fenna et al., Cambridge University Press, 2023, at pp. 177-197.
[42] "Looking Back at Stockholm 1972: What Indira Gandhi Said Half a Century Ago on Man & Environment." *Down to Earth*, 2 Jun. 2022.

dual imperative, the Central Government in India came up with initiatives like the National Action Plan on Climate Change (NAPCC), which, since its launch in 2008, has aimed to mainstream climate issues across multiple sectors through eight national missions.[43]

While broad policy directions are set by the Central Government, the true test of India's climate federalism lies in how states implement these policies, given their diverse capacities, priorities, and regional challenges. In this complex centre-state climate politics, one group that often gets overlooked are the country's Indigenous tribal communities. Therefore, it is imperative to understand what role governance structures like the Autonomous District Councils (ADC) under the Sixth Schedule of the Indian Constitution, which grants autonomy to indigenous people living in parts of Northeast India, would play in ensuring community involvement in climate governance.

India's climate policy is formally centralised under the purview of the central government, but the implementation of climate action largely depends on states. Recognising this, each state has tailor-made strategies to combat climate change, taking into account their own ambitions, local environment, and socio-economic conditions. These strategies are referred to as State Action Plans on Climate Change (SAPCCs).

The SAPCCs did not emerge organically from state governments but were mandated by the central government as part of a broader effort to integrate climate policy across different levels of governance.[44] Despite their intended role in fostering localised climate action, these plans have been widely criticised for their limited impact, with some experts arguing that they fail to address India's pressing climate challenges.[45] A key shortcoming was that many SAPCCs merely replicated the NAPCC, largely because states did not conduct thorough assessments of their own vulnerabilities.[46] Moreover, the strong influence of the central government over SAPCCs restricted their scope, particularly by prioritising adaptation over mitigation to align with India's international climate negotiation strategies.[47] This top-down approach was further weakened by the absence of a dedicated financial framework, as states were expected to fund their SAPCC initiatives through discretionary expenditures under the 12th Five-Year Plan and smaller central funding pools.[48] The lack of substantial financial support from the central government ultimately diminished state enthusiasm and capacity for effective climate action.[49] This top-heavy approach underscores the centralised nature of India's climate federalism.

Given the objectives of this article, it is crucial to examine whether the SAPCCs integrated Indigenous communities into the climate decision-making process and assess their role. To achieve this, SAPCC of the Eastern Himalayan state of Assam is analysed.[50] A close analysis of the Assam SAPCCs, showcases the following.

A. *Limited Inclusion of Indigenous Communities in Climate Governance*

The Assam SAPCC recognises a narrow role for Indigenous communities, limited to forest and biodiversity management. The document mentions participatory approaches, involving Joint Forest Management Committees (JFMCs) and Biodiversity Management Committees (BMCs), which often include Indigenous

[43] Pandve, Harshal. "India's National Action Plan on Climate Change." *Indian Journal of Occupational and Environmental Medicine*, vol. 13, no. 1, 2009, pp. 17-19.
[44] Pillai & Dubash (n 38) *supra* at 186.
[45] ibid; Kumar, Vineet. *Coping with Climate Change: An Analysis of India's State Action Plans on Climate Change*. Centre for Science and Environment, 2018.
[46] ibid.
[47] ibid; Dubash, Navroz, and Anu Jogesh. *From Margins to Mainstream? State Climate Planning in India as a "Door Opener" to a Sustainable Future*. Centre for Policy Research, 18 Feb. 2014.
[48] ibid.
[49] Pillai & Dubash (n 38) *supra* at 186.
[50] *Assam State Action Plan on Climate Change (Version 2)*. Government of Assam Department of Environment and Forests, 2022.

members. However, there is no explicit mechanism to ensure direct Indigenous leadership in climate decision-making. While community-based resource management exists, the governance framework does not formally integrate Indigenous knowledge systems into climate policy formulation. This exclusion limits the ability of Assam's climate strategy to benefit from the deep ecological understanding and traditional adaptation practices of Indigenous communities.

B. *Lack of a Targeted Approach*

The SAPCC acknowledges climate risks such as extreme weather events, flooding, and resource depletion that affect rural communities. However, it does not differentiate the specific vulnerabilities of Indigenous populations, who rely heavily on traditional livelihoods such as shifting agriculture and forest-based activities. These communities often experience socio-political marginalisation, making them even more susceptible to climate-induced displacement and loss of resources. Despite recognising broader climate risks, the report does not propose targeted adaptation strategies that address the unique challenges indigenous groups face.

C. *Role of Autonomous District Councils (ADCs) in Climate Governance*

SAPCC limits the involvement of Autonomous District Councils (ADCs) exclusively to afforestation and biodiversity conservation efforts through collaboration with the Forest Department at the implementation level rather than in decision-making. The absence of substantial authority for ADCs in shaping state climate policy limits the ability of Indigenous communities to participate in climate policymaking and governance. Without institutionalised participation, ADCs remain peripheral actors in Assam's climate governance framework.

The above analysis clearly indicates the top-heavy approach in climate governance, even at the state level. There is sufficient evidence of disproportionate impact of climate change on Indigenous communities and their heightened vulnerability (as discussed in Section I). However, their participation in formal climate governance remains minimal. Despite this marginalisation, across Northeast communities have continued to practice and preserve traditional climate resilience practices, which can be meaningfully integrated into the existing framework.

IV. **Indigenous Climate Resilience: Case Studies from Assam and Meghalaya**

Indigenous peoples have long maintained a profound and symbiotic relationship with nature, serving as stewards of rich biodiverse regions. Their traditional knowledge and sustainable practices have been instrumental in preserving ecosystems and supporting their livelihoods. Notably, although they constitute less than 5% of the global population, Indigenous communities protect 80% of the world's remaining biodiversity, playing a crucial role in climate resilience.[51] However, this role of Indigenous communities remains out of the public discourse on climate change. This section highlights two case studies of the role of Indigenous communities in climate resilience from the Eastern Himalayas.

The two case studies follow a qualitative case study approach, drawing on document analysis, stakeholder interviews, and field observations from Assam and Meghalaya. The primary sources include the Assam State Action Plan on Climate Change (ASAPCC) and supplementary government publications, as well as academic and policy research from various institutions. These sources have been triangulated with field reports and interviews with experts and community members to ensure robust and context-specific insights.

The first case study focuses on Assam's Mising community, an indigenous tribal community who have been living on the floodplains of the Brahmaputra since time immemorial. They have developed innovative architectural designs to withstand recurrent flooding. As a

[51] "Values of Indigenous Peoples Can Be a Key Component of Climate Resilience." *UNFCCC*, 6 Aug. 2021.

riparian community living along the Brahmaputra, the Misings have adapted their housing structures and livelihood practices to changing environmental conditions. The analysis draws primarily on field assessment and interviews, supplemented by research studies and government reports.

The second case study examines the Khasi Hills REDD+ project in Meghalaya, a pioneering initiative integrating traditional ecological knowledge and community institutions with international climate mitigation frameworks. The study highlights how Indigenous forest management practices align with global conservation efforts while maintaining local livelihoods. The REDD+ project serves as an example of community-led governance and sustainable resource management. The analysis for this case study was based on interviews of members from the community running the project, government officials, and secondary resources like academic papers and news reports.

Both cases were selected to represent different aspects of climate resilience: structural adaptation in Assam and ecological conservation in Meghalaya.

A. *Case Study 1: Climate Resilience Strategies of Assam's Mising Community*

The Mising community, an Indigenous tribal group, lives along the Brahmaputra River in Assam. They have a long history of adapting to the extreme variability in the flow in the Brahmaputra. The Brahmaputra is a river which is characterised by high rates of sediment discharge, rapid channel aggradation, accelerated rates of basin denudation and unique patterns of river morphology.[52] The Mising community has, over the many years of their inhabitation in the basin, adapted to this changing landscape. They have adopted several adaptation and climate resilience strategies.

Conversations with members from the community during a field visit and further observations revealed that the community has followed unique practices in architecture, agriculture, and settlement patterns. The Mising people have unique stilt houses locally known as *Chang Ghar*, that are made of bamboo on elevated platforms. The process of building these houses is usually simple and done by the household, sometimes with assistance from the members of the village. It involves cutting bamboo, which is abundant in rural areas of Assam, and then making a frame for the house. The frame is the foundation of the house on which a high platform, made of wood or bamboo is placed. This platform is a raised floor, often several feet high, and it prevents flood damage, as high levels of flood waters flow beneath the structure of the platform. As they are made of bamboo, these structures are lightweight, flexible, and designed to withstand high water levels and flows without collapsing. Also, they can be easily disassembled and moved to another location, as and when required. The Brahmaputra is notoriously known for constantly changing its course[53] and as a result, the river sometimes washes away villages, which forces the Mising people living there to relocate. In such cases, the *Chang Ghar* are disassembled and moved.

Beyond housing, the Misings have developed adaptive agricultural practices, which include seasonal crop rotation, flood-resistant crop varieties like *bao dhaan* (deep-water rice), and keeping livestock like water buffalo and poultry like ducks, that can withstand floods. As one of the wettest regions in the world, Assam faces flood each year,[54] and as a result the flood-resistant crop of the Mising people, ensure them a good harvest and food security every year. In addition to growing flood-resistant rice, they also shift to fishing during monsoon season and most families own small country made fishing boats. The community

[52] Mahanta, Chandan, et al. *Physical Assessment of the Brahmaputra River*. IUCN, 2014, at p. 15.

[53] Islam, Md Raihanul, et al. "Reconstruction of Avulsion History of the Brahmaputra River: Rare Example of a Giant Braided River Course Alteration Through Multi-Channel Multi-Avulsion Processes." *Evolving Earth*, vol. 2, 2024, 100034, pp. 3-11.

[54] Halder, Bijay, et al. "Large-Scale Flood Hazard Monitoring and Impact Assessment on Landscape: Representative Case Study in India." *Sustainability*, vol. 15, no. 14, 2023, 11413, pp. 2-3.

also engages in traditional disaster preparedness strategies, such as early warning systems through oral communication networks and Indigenous flood forecasting techniques based on natural indicators like river behaviour and animal movements.

Despite their resilience, challenges remain. Government rehabilitation programs often fail to recognise Indigenous practices, instead they promote modern concrete houses through various beneficiary schemes, which are ill-suited for their landscape. Furthermore, many of the climate adaptation strategies practiced by the community are not mentioned in the ASAPCC and are not integrated into various climate resilience measures undertaken by the government. Also, unlike many other tribes of Assam, the Mising people do not enjoy self-governance under the Sixth Schedule of the Constitution.

B. *Case Study 2: Community-Led Climate Mitigation Efforts among the Khasi Community in Meghalaya*

In Meghalaya, the Khasi Hills REDD+ project is a significant example of Indigenous-led environmental governance. The initiative began in 2013 and was India's first community-based REDD+ project.[55] It was managed by the indigenous Khasi community in collaboration with international climate organizations.[56] The project aims to combat deforestation while providing economic incentives for sustainable forest management.[57]

The Khasi community has an age-old practice of conserving patches of forests in the form of "sacred groves".[58] These forest patches hold cultural and spiritual significance and are considered abodes of holy spirits and deities.[59] Several of these forest patches today hold rich biodiversity and are the source of many water streams.[60] Under the REDD+ framework, these traditional conservation methods have been formalised into a structured program that generates carbon credits.

Interviews with members of the village council supervising the project revealed that the project involves 10 Indigenous Khasi governments (Hima) with 62 villages, covering 27,000 hectares of forest land and benefiting nearly 5,000 families.[61] It also ensures that local communities retain control over their natural resources. From conversations with officials of the state forest department has confirmed that the project has not only halted deforestation but has also facilitated large-scale regeneration of degraded forests. As a result, several wildlife species that had once disappeared are now making a comeback. Additionally, the initiative has provided significant economic benefits to Indigenous communities through carbon trading, creating a sustainable model of conservation and livelihood support.

Despite its success, several challenges remain. Analysing the Meghalaya State Action Plan on Climate Change (MSAPCC) reveals that, much like in Assam, the role of Indigenous governance structures, such as the Autonomous District Councils under the Sixth Schedule, is limited, primarily confined to biodiversity conservation and forest protection. Beyond the MSAPCC, a significant challenge in REDD+ projects is ensuring equitable benefit-sharing and sustained community participation. During the current study in Meghalaya, issues relating to equitable benefit sharing were not found. However, across the world in several REDD+

[55] Poffenberger, Mark. "Restoring and Conserving Khasi Forests: A Community-Based REDD Strategy from Northeast India." *Forests*, vol. 6, no. 12, 2015, pp. 4477-4494.
[56] ibid.
[57] ibid.
[58] Bhattacharjee, S. "Indigenous Nature Conservation in Meghalaya: Environmental and Religious Dimensions of Tribal Land Ownership Among the Khasi Community." *Environmental Humanities in India*, edited by Debajyoti Biswas and John Ryan, Springer, 2025, pp. 71-73.
[59] ibid.
[60] Rahman, Azera Parveen. "Invoking Tradition and Science to Revive Meghalaya's Ponds." *Mongabay-India*, 30 Nov. 2020.
[61] The village councils have come together and formed their own registered organisation to oversee the project. The society also published annual reports each year regarding the performance of the project: *2021 Plan Vivo Annual Report*. Ka Synjuk Ki Hima Arliang Wah Umiam Mawphlang Welfare Society, 2022, at pp. 4-8.

projects, a key challenge has been that community leaders receive a disproportionate share of the benefits, leaving marginalised groups with minimal gains.[62] This raises concerns of similar instances happening in Meghalaya. Moreover, climate finance mechanisms like REDD+ must be adapted to local socio-economic realities to prevent external influences from undermining indigenous decision-making and self-governance.

Both case studies demonstrate the significance of indigenous participation in climate adaptation and governance. The Mising community's architectural and agricultural innovations exemplify grassroots resilience, while the Khasi Hills REDD+ project showcases how traditional forest conservation can align with global climate mitigation efforts. These examples highlight the need for policies that respect and incorporate indigenous strategies rather than imposing external frameworks.

However, as formal governance structures have overlooked these practices, it is important to look towards the judiciary, which has actively shaped and defined environmental policy in India.

V. **Impact of Judicial Intervention and Climate Litigation**

Since the 1980s, the Indian judiciary has played an active role in environmental matters through judicial intervention.[63] This trend of intervention by the Indian judiciary also translated into ensuring environmental justice for communities, especially those concerning rights of land and participation in environmental decision-making.

This Section of the article delves into significant cases that underscore these developments, including the *Niyamgiri* case,[64] the *Lafarge Umiam Mining* case,[65] the National Green Tribunal's (NGT) interventions in the Baghjan gas leak incident,[66] which went up to the Supreme Court[67] and led to the formation of an expert committee to assess the damages from the event on the local biodiversity and the community, and the implications of the *MK Ranjitsinh* case[68] on climate rights.

In the *Niyamgiri* case, officially known as *Orissa Mining Corporation Ltd v Ministry of Environment and Forests*, the Supreme Court of India set a precedent by recognising the rights of Indigenous communities over their traditional lands.[69] The primary issue in the case was a proposed mining of bauxite in the Niyamgiri Hills by a multinational corporation called Vedanta Resources Limited, which threatened traditional homelands of the Dongria Kondh tribe and their sacred mountain.[70] The Court recognised their cultural, spiritual, and religious rights over the Niyamgiri hill over the company's claim and further upheld the authority of the *Gram Sabhas* (village councils) under the Forest Rights Act 2006 to decide on matters concerning their land and resources.[71] This judgment was a landmark in affirming that Indigenous communities have the ultimate say in projects affecting their environment and livelihoods, thereby embedding the principle of environmental justice within the framework of Indigenous rights.

Furthering the ethos of public participation, the *Lafarge Umiam Mining* case highlighted the importance of informed decision-making

[62] Aryal, Kishor, et al. "REDD+ at Risk: Emerging Ten Questions That REDD+ Must Answer." *Environmental Science & Policy*, vol. 156, 2024, 103744, p. 5.
[63] Fata, Elizabeth. "Actions and Reactions: The Evolution of Environmental Common Law and Judicial Activism in India and the United States." *University of Miami International and Comparative Law Review*, vol. 23, 2015, p. 234; Faure, Michael, and A Raja. "Effectiveness of Environmental Public Interest Litigation in India: Determining the Key Variables." *Fordham Environmental Law Review*, vol. 21, no. 2, 2010, p. 239.
[64] *Orissa Mining Corporation Ltd v Ministry of Environment and Forest & Ors* (2013) 6 SCR 881.
[65] *Lafarge Umiam Mining Pvt Ltd v Union of India* (2011) INSC 461.
[66] *Bonani Kakkar v Oil India Limited* in Original Application No. 43/2020 (EZ).
[67] *Bonani Kakkar v Oil India Limited* Civil Appeal No. 2201 of 2021.
[68] *MK Ranjitsinh v Union of India* (2024) 3 SCR 1320.
[69] *Orissa Mining Corporation* (n 64) *supra*.
[70] ibid.
[71] ibid.

in environmental governance.[72] The case involved the extraction of limestone in Meghalaya, which raised concerns about ecological degradation and the rights of local communities.[73] The Supreme Court emphasised that environmental clearances must not only assess ecological impacts but also ensure that affected communities are adequately informed and consulted.[74] This judgment reinforced the necessity for transparency and inclusivity, ensuring that public hearings under the environmental impact assessments (EIA) mechanism genuinely incorporate the voices of local populations, thus promoting a more democratic approach to environmental decision-making.

The National Green Tribunal (NGT) has also been instrumental in addressing the impacts of development projects on indigenous communities. In the aftermath of the Baghjan gas leak in Assam, the NGT took cognisance of the extensive environmental damage and the displacement of Indigenous communities in Assam.[75] The tribunal directed Oil India Limited (OIL) to pay substantial compensation and formed a committee to assess the environmental and human costs of the disaster.[76] The Committee was further reconstituted by the Supreme Court upon appeal.[77] The NGT and Supreme Court's intervention highlighted the accountability of corporate entities in environmental catastrophes and underscored the necessity of safeguarding Indigenous communities from the adverse effects of industrial activities.

The *MK Ranjitsinh* case[78] further solidified the recognition of climate rights within the constitutional framework. The Supreme Court held that the adverse effects of climate change directly impinge upon fundamental rights, including the right to equality and the right to life under Articles 14 and 21 of the Constitution.[79] The Court acknowledged that vulnerable communities, particularly Indigenous groups, are disproportionately affected by climate change, facing threats to their homes, livelihoods, and cultural practices and states that:[80]

> "*... forest dwellers or tribal and indigenous communities are at a high risk of losing not only their homes but also their culture, which is inextricably intertwined with the places they live in and the resources of that place ... Indigenous communities often lead traditional lives, whose dependence on the land is of a different character from the dependence which urban populations have on the land. Traditional activities such as fishing and hunting may be impacted by climate change, affecting the source of sustenance for such people. Further, the relationship that indigenous communities have with nature may be tied to their culture or religion. The destruction of their lands and forests or their displacement from their homes may result in a permanent loss of their unique culture. In these ways too, climate change may impact the constitutional guarantee of the right to equality*."

The judgment clearly recognises a distinct right against the adverse effects of climate change, especially to Indigenous communities, mandating the state to adopt measures that mitigate climate impacts and protect their rights.

Collectively, these judgements highlight that the judiciary has been proactive in safeguarding the rights of indigenous communities against environmental degradation and ensuring their participation

[72] *Lafarge Umiam Mining Pvt Ltd* (n 65) *supra*.
[73] ibid.
[74] ibid.
[75] *Bonani Kakkar* (n 66) *supra*; *see* Chakravarty, Abhishek, and Mahesh Menon. "Baghjan Blowout Shows Why We Need to Fix Liabilities." *Down To Earth*, 19 Jun. 2020; Dutta, U, and S Kalita. "An Analytical Case Study of the Oil Well Blowout at Baghjan Oil Field, Assam: A Human and Environmental Perspective." *Environmental Monitoring and Assessment*, vol. 196, 2024.
[76] ibid.
[77] *Bonani Kakkar* (n 67) *supra*.
[78] *MK Ranjitsinh* (n 68) *supra*.
[79] ibid.
[80] ibid.

in decision-making processes. However, the extent to which these judgments have enhanced the role of these communities in climate governance remains nuanced. The recognition of the forest rights of Indigenous communities in India through the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act 2006 began a process of involvement of Indigenous people in forest governance by vesting forest dwelling Indigenous communities with responsibility to conserve and manage forests.[81] However, this recognition remains largely confined to the domain of forest governance and does not extend meaningfully to the broader spheres of environmental and climate governance. A close review of India's central climate framework, particularly the NAPCC, reveals a notable omission.[82] It does not acknowledge the role of Indigenous or tribal communities in climate action. Instead, it centres its strategy around technological advancement, energy efficiency, and sector-specific mitigation, with an emphasis on top-down implementation through centrally designed missions.[83] Similarly, as highlighted previously in this paper, an analysis of the SAPCCs for the states of Assam and Meghalaya shows some references to local ecological knowledge and community forest practices, but there is a lack of institutional integration of Indigenous governance bodies, such as the Autonomous District Councils (ADCs), into the core climate policy-making and implementation processes. Similarly, despite the judicial mandate for public participation in environmental decision making, the Draft Environment Impact Assessment (EIA) notification of 2020 was an attempt to dilute public participation in the EIA process.[84] It is true that judicial interventions have established legal frameworks that protect indigenous lands and promote consultation, but the translation of these legal safeguards into substantive empowerment and participatory governance structures requires sustained effort from the state. The state has to actively adopt and incorporate these legal recognitions into its climate governance and policy framework.

VI. **Toward a Community-Led Climate Governance Model**

India's commitment towards climate action has been strengthened through its ambitious Nationally Determined Contributions (NDCs) and accelerated energy transitions, often making pledges towards net zero targets on various international forums.[85] However, challenges remain in ensuring inclusive and equitable climate policymaking, in which marginalised groups like indigenous communities, have a strong voice.[86] This study has demonstrated that marginalised communities, particularly Indigenous populations, continue to be sidelined in climate decision-making, contributing to an inclusion gap that limits their participation in shaping climate policies. This gap is particularly pronounced in Sixth Schedule areas, where despite a constitutionally mandated Indigenous governance structure, their participation in climate policymaking processes and implementation is minimal. This creates barriers to effective climate action.

As rightly highlighted by Pillai and Dubash in their paper to India's federal structure, its climate governance framework is also top-heavy, with areas like environmental governance and policy-making placed in the concurrent list, where in case of a conflict between state and centre, the central laws

[81] Khanna, Shomona. "Forest Rights and the Forest Rights Act." *The Oxford Handbook of Environmental and Natural Resources Law in India*, edited by Philippe Cullet et al., Oxford University Press, 2024.
[82] *National Action Plan on Climate Change*. Government of India, Prime Minister's Council on Climate Change, 2008.
[83] ibid.
[84] Kapoor, Meenakshi, and Krithika Dinesh. "2020 EIA Notification Remains a Draft, Yet MoEFCC Continues to Edit 2006 Version." *The Wire Science*, 29 Sept. 2022.
[85] Shah, Anish. "India Is Showing Developing Economies How to Move from Climate Ambition to Action." *World Economic Forum*, 14 Jan. 2025.
[86] "Climate Change Is a Matter of Justice – Here's Why." *UNDP Climate Promise*, 30 Jun. 2023; *Indigenous Peoples and Climate Change: Emerging Research on Traditional Knowledge and Livelihoods*. International Labour Organization, 2017.

prevail.[87] The structural dominance of the central government is further accentuated by its fiscal dominance and the allocation of major sources of tax revenue.[88] Therefore, a truly inclusive climate governance model must shift from a predominantly top-down approach to one that empowers not just the state governments but also local governments prioritising community leadership and a bottom-up approach. To create such a governance framework, some of the key recommendations to consider would be as follows.

A. *Institutional Recommendations*

1. Recognition of Indigenous communities as active stakeholders rather than passive recipients of climate policies.
2. Institutional recognition of Indigenous governance structures, ensuring that Autonomous District Councils (ADCs) and other traditional bodies play a central role in climate planning.
3. Multi-level coordination between national, state, and local governance institutions must be strengthened to ensure climate policies are responsive to local realities. Climate governance must move beyond consultation and toward institutionalised co-governance, where Indigenous communities and institutions have a formal role in shaping climate action at all levels. This will ensure that climate governance frameworks are both participatory and adaptive to local conditions.
4. Institutional linkages between Indigenous governance structures and scientific institutions can help bridge the gap between traditional and modern climate adaptation strategies. Such collaborations could enhance adaptive capacity by combining Indigenous resilience practices, such as the Mising community's stilt house architecture for flood adaptation in Assam, with contemporary climate modelling tools.

B. *Policy Recommendations*

1. Integration of traditional ecological knowledge (TEK) into climate policies, as Indigenous communities have long-standing expertise in environmental management.[89] For example, the Khasi Hills REDD+ project, showcases how combination of traditional forest conservation practices with global climate finance mechanisms can yield positive results.
2. Integration of climate resilience strategies into broader development policies, such as integrating adaptation measures into national level employment schemes like MGNREGA, which can enhance the adaptive capacity of vulnerable populations.

C. *Economic and Financial Recommendations*

1. Direct financial allocation to state-level climate institutions and ADCs must take place to enable tailored climate action that reflects local needs rather than being solely dictated by national-level priorities.
2. Equitable benefit-sharing mechanisms must be established to ensure that financial and economic benefits from climate initiatives reach Indigenous communities rather than being concentrated among bureaucratic and corporate stakeholders.
3. Climate finance mechanisms must prioritise direct financial support for community-led adaptation projects, reducing reliance on intermediaries that may dilute agency of Indigenous communities.

D. *Social and Capacity Recommendations*

1. Capacity-building programs are essential for Indigenous institutions and community leaders with the legal, financial, and technical knowledge necessary to ensure that they can effectively engage with climate governance mechanisms.

[87] Pillai & Dubash (n 38) *supra* at 180-182.
[88] ibid.
[89] Burgos-Ayala, A, et al. "Indigenous and Local Knowledge in Environmental Management for Human-Nature Connectedness: A Leverage Points Perspective." *Ecosystems and People*, vol. 16, no. 1, 2020, p. 290.

2. Promoting visibility and awareness about Indigenous-led climate action strategies in the mainstream climate discourse.

VII. **Conclusion**

This article has analysed various reports to highlight the climate vulnerability and risks that exists in the Eastern Himalayan landscape in India's Northeastern states. The broad factors for this vulnerability have been socio-economic, topographic, demographic, and the challenges in communication, infrastructure, and agriculture practices. This vulnerability is exacerbated by the marginalisation of the region's Indigenous communities in the climate governance framework.

The article has demonstrated that despite progress in India's climate action and steps taken to improve its climate governance framework, significant gaps remain when it comes to the inclusion of Indigenous communities. On the one hand, the Indian judiciary has actively recognised Indigenous rights and advocated for a participatory environmental governance structure in several cases like *Lafarge Umiam* and *MK Ranjitsinh*. However, climate policies continue to rely on centralised, top-down approaches, often failing to integrate Indigenous governance structures, traditional ecological knowledge, and local adaptation strategies.

Case studies from Assam and Meghalaya illustrate both the successes and challenges of Indigenous-led climate action, from the Mising community's flood resilience strategies to the Khasi Hills REDD+ initiative. The study highlights the need for a shift toward a more decentralised and community-driven climate governance model, as discussed in the previous section, which integrates the experiences and approaches of local communities in climate resilience strategies in fragile landscapes like the Eastern Himalayas.

Finally, it is important to acknowledge the climate commitments and ambitions India has at a national level and strike a balance with local aspirations and autonomy. This can be done only when Indigenous governance structures like ADCs are meaningfully integrated into climate policymaking, and not merely consulted for legitimacy. Climate finance and development programs must ensure equitable benefit-sharing and long-term community engagement, preventing the marginalisation of Indigenous voices in critical climate adaptation efforts. Future policy directions should focus on enhancing institutional capacities, ensuring financial devolution, and creating legal mandates for indigenous representation in climate governance bodies. By shifting toward a community-led model, India can build a climate governance framework that is not only effective in mitigating and adapting to climate change but also just, inclusive, and sustainable in the long term.