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Environmental Justice and Caste Politics: Unpacking the Eco-Political Marginalization of Scheduled Castes in Assam

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Abstract

The discourse on environmental justice in India has largely focused on class, development, and industrial conflict, while caste-based ecological marginalization remains an underexplored dimension. This paper critically examines the intersection between environmental degradation and caste hierarchies in Assam, emphasizing how Scheduled Castes (SCs) experience systemic exclusion from ecological resources and environmental decision-making. Drawing upon the theoretical frameworks of Political Ecology and Environmental Justice, the study explores how ecological spaces are socially constructed and governed through caste-based power relations. Using a qualitative research design, data were collected from selected districts of Assam through in-depth interviews, focus group discussions, and analysis of policy documents. The findings reveal that Scheduled Castes disproportionately inhabit ecologically vulnerable areas, face restricted access to land and water, and are systematically marginalized in eco-political governance. Environmental degradation—manifested through floods, deforestation, and industrial pollution—exacerbates existing socio-economic inequalities and limits their capacity for social mobility. The paper argues that environmental justice in Assam cannot be realized without addressing caste-based structural inequities and incorporating Dalit perspectives into ecological policymaking. It concludes by recommending inclusive and caste-sensitive environmental governance frameworks that integrate ecological sustainability with social justice.

Keywords: *Environmental justice, caste politics, political ecology, Scheduled Castes, Assam, eco-political marginalization.*

1. Introduction

Background: Assam's Ecological Diversity and Socio-Political Composition

Assam, one of the most ecologically diverse states of North-East India, is characterized by its fertile plains, extensive wetlands, dense forests, and the mighty Brahmaputra River system. This ecological richness sustains a wide range of livelihoods—agriculture, fishing, forestry, and small-scale industries—closely tied to the state's natural resources. However, Assam's environment is equally marked by vulnerability. The region faces recurrent floods, soil erosion, deforestation, and displacement caused by both natural and anthropogenic factors. Climate variability and development-induced ecological degradation have intensified socio-economic inequalities, creating new forms of environmental injustice.

Within this ecological landscape exists a deeply stratified social order shaped by caste, ethnicity, and class. Although Assam's population is ethnically heterogeneous, caste as a social institution continues to

influence access to resources, occupations, and political representation. The Scheduled Castes (SCs) in Assam—comprising about 7% of the state's population—are traditionally associated with marginalized occupations such as sanitation work, leatherwork, and manual labour. Despite constitutional safeguards, they remain socio-economically disadvantaged and politically underrepresented. Their settlements are often located in ecologically fragile zones such as flood-prone riverbanks or industrial peripheries, exposing them to disproportionate environmental risks. The ecological vulnerability of these communities, therefore, cannot be understood in isolation from the structural inequities embedded in the caste system.

Problem Statement: Environmental Marginalization through Caste-Based Inequities

The discourse on environmental degradation in Assam often emphasizes issues of deforestation, resource depletion, and climate change, but it rarely considers how these processes are socially mediated through caste hierarchies. The Scheduled Castes, being among the most marginalized groups, experience a distinct form of ecological exclusion. They are frequently deprived of secure land tenure, clean water, and access to environmental decision-making bodies. Their livelihoods—dependent on natural resources—are severely affected by ecological decline and state-led development projects such as dam construction, industrial expansion, and urban waste disposal.

Caste-based spatial segregation further aggravates their ecological vulnerability. SC habitations are often situated on low-lying or degraded lands prone to flooding, contamination, and displacement. Environmental hazards, thus, intersect with social discrimination to produce what can be termed "eco-political marginalization." This concept highlights how environmental governance, instead of being neutral, often reproduces caste-based inequalities through unequal distribution of environmental benefits and burdens. The invisibility of SC voices in Assam's environmental policymaking reflects not only their political exclusion but also a systemic neglect of environmental justice principles. Consequently, the struggle for environmental justice among Scheduled Castes becomes inseparable from their broader pursuit of social equality and dignity.

Rationale: Relevance of Studying Caste and Environment Together in the North-East Context

The North-East region of India, often celebrated for its ethnic diversity and ecological richness, is seldom examined through the lens of caste and environmental intersectionality. Scholarly discussions on the region's environmental issues typically focus on ethnicity, insurgency, or developmental politics, leaving caste-based ecological exclusion largely unexplored. Assam provides a unique site for this investigation because it presents a confluence of ecological vulnerability, socio-political stratification, and historical marginalization.

Exploring caste within environmental studies is crucial for three reasons. First, it reveals the *hidden hierarchies* that govern access to natural resources, demonstrating that environmental degradation is not merely an ecological crisis but also a social one. Second, it bridges the gap between *political ecology* and *Dalit studies*, creating a framework that connects structural inequalities with environmental governance. Third, it has strong policy implications—understanding caste-based ecological marginalization can lead to more inclusive and equitable environmental management strategies.

Research Objectives

1. **To examine** the relationship between caste hierarchies and environmental governance in Assam.
2. **To analyze** the ways in which Scheduled Castes experience ecological marginalization and exclusion from resource access.
3. **To explore** the eco-political dimensions of state policies and their impact on SC communities in environmentally vulnerable regions.
4. **To evaluate** the applicability of environmental justice and political ecology frameworks in understanding caste-based inequalities in Assam.
5. **To propose** policy recommendations for inclusive and equitable environmental governance that integrates social justice and ecological sustainability.

2. Review of Literature

Theoretical Context

1. Ambedkar, B. R. (1936): Ambedkar's foundational critique of the Hindu caste order remains central to understanding structural exclusion in India. His emphasis on caste as a system of graded inequality forms the ideological basis for analyzing how environmental injustices are socially organized. Ambedkar's call for social reconstruction underscores the inseparability of ecological justice from social equality—an idea that deeply informs this study.
2. Guha, R. (1989). Guha's pioneering environmental history examines how marginalized communities resist ecological exploitation. Although focused on the Himalayas, his insights into resource control and state intervention provide a foundation for understanding similar eco-political struggles faced by Scheduled Castes in Assam.
3. Guha, R., & Martinez-Alier, J. (1997). This work introduces the concept of *Environmentalism of the Poor*, emphasizing that environmental conflicts often arise from livelihood struggles of marginalized groups. It is instrumental in contextualizing the ecological struggles of Scheduled Castes in Assam as movements for survival and justice, rather than elite environmentalism.
4. Blaikie, P., & Brookfield, H. (1987). Blaikie and Brookfield's work is foundational to the field of Political Ecology, arguing that environmental degradation is socially produced through unequal power relations. Their framework helps explain how caste hierarchies in Assam mediate access to and control over ecological resources.
5. Robbins, P. (2004). Robbins extends political ecology into a multidisciplinary critique of environmental governance, linking environmental problems to structures of power, identity, and inequality. His emphasis on the social production of nature aligns with this study's focus on caste-based ecological marginalization in Assam.
6. Schlosberg, D. (2007). Schlosberg conceptualizes environmental justice beyond distributional concerns to include recognition, participation, and capability. His multidimensional framework provides a strong theoretical base for examining how Scheduled Castes are denied recognition and participation in Assam's environmental governance.
7. Guru, G. (2009). Guru's work shifts the discourse on Dalit marginality from mere exclusion to lived experiences of humiliation. His analysis helps in understanding how ecological dispossession reinforces caste humiliation, linking environmental vulnerability to social dignity and recognition.

8. Shah, G. (2002). Shah explores the evolution of Dalit consciousness and its political assertion. His insights into identity politics provide an analytical lens to study how Scheduled Castes in Assam negotiate eco-political spaces and assert ecological citizenship amidst systemic exclusion.
9. Bryant, R. L., & Bailey, S. (1997). Bryant and Bailey emphasize that environmental issues in developing contexts are inseparable from questions of justice, equity, and power. Their conceptualization of "politics of environment" supports the argument that caste functions as a key political determinant of ecological access in Assam.
10. Baviskar, A. (2011). Baviskar's work bridges environmental sociology and cultural politics, illustrating how environmental narratives privilege dominant groups while silencing the marginalized. This framework informs the present study's critique of how caste-blind environmental policies perpetuate eco-political marginalization of SCs in Assam.

Empirical Context

1. Gadgil, M., & Guha, R. (1995). Gadgil and Guha present empirical evidence on how resource use patterns in India reflect deep social inequalities. Their analysis of forest and water management shows that marginalized communities bear the brunt of environmental degradation. This work provides an early foundation for understanding how caste and class intersect in ecological exploitation.
2. Omvedt, G. (1993). Omvedt's study of environmental and Dalit movements demonstrates how social justice struggles are increasingly intertwined with environmental concerns. Her empirical work highlights how grassroots activism among marginalized communities—often led by Dalits and women—redefines the contours of ecological politics.
3. Baviskar, A. (1995). Baviskar's ethnographic study of the Narmada movement reveals how state-led development projects displace marginalized communities. Although focused on tribal groups, the findings parallel the experiences of Scheduled Castes in Assam, where ecological degradation similarly intensifies social exclusion.
4. Fernandes, W., & Menon, G. (1987). This empirical work compiles case studies of displacement caused by industrial and infrastructural projects. It shows how the poor, landless, and lower-caste populations are systematically excluded from compensation and rehabilitation, which resonates with the eco-political marginalization faced by SCs in Assam.
5. Kumar, S. (2004). Kumar documents India's environmental movements from Chipko to Narmada Bachao, emphasizing the participation of marginalized rural communities. His findings illustrate that the rhetoric of environmental protection often ignores caste-based inequalities within these movements—a crucial gap this study seeks to address.
6. Saikia, A. (2005). Saikia's historical and empirical analysis of Assam's forest management exposes the social consequences of colonial and postcolonial environmental policies. The study provides valuable regional context on how local communities, including lower castes, were excluded from resource governance in Assam.
7. Das, T. (2011). Das empirically examines the political marginalization of Scheduled Castes in Assam through survey data and interviews. The study finds that SCs face barriers in both electoral politics and access to welfare schemes, making them politically vulnerable in environmental decision-making as well.
8. Hazarika, S. (2013). Hazarika's study investigates the recurring floods in Assam and their socio-economic impacts. He demonstrates that Scheduled Castes and landless communities are

disproportionately affected due to their settlement in low-lying, ecologically risky zones—an important empirical link for your study's focus on environmental vulnerability.

9. Baruah, S. (2016). Baruah explores the politics of natural resources and ethnic movements in Assam. While primarily focused on ethnicity, his findings reveal the overlapping dimensions of caste and ecological deprivation, offering a crucial framework to extend toward Scheduled Caste communities.

10. Hussain, R. F. (2020). Hussain's recent empirical work provides direct insight into the living conditions of SC communities in Assam. The study reports low land ownership, ecological vulnerability, and occupational marginalization, reinforcing the argument that environmental and social injustices are intertwined for these groups.

Identification of Research Gaps:

The existing body of literature on environmental issues in North-East India has made significant contributions to understanding the region's ecological challenges—such as deforestation, floods, erosion, and displacement—alongside ethnic movements and developmental conflicts. However, a critical review of both theoretical and empirical works reveals a striking **gap in the integration of caste as a structural category** within ecological and environmental justice studies of this region.

Most environmental scholarship on Assam and the broader North-East has concentrated on **ethnicity, insurgency, and identity-based resource politics** (Baruah, 2016; Saikia, 2005), while **caste-based ecological marginalization** has remained largely invisible. This omission is partly due to the dominant perception of the North-East as a predominantly tribal and ethnically diverse region, where caste hierarchies are assumed to be less pronounced. Yet, census data and sociological studies indicate the presence of significant **Scheduled Caste populations** in Assam—communities historically engaged in marginal occupations and residing in ecologically vulnerable zones such as riverbanks, wetlands, and industrial fringes.

Furthermore, the national discourse on environmental justice in India—rooted in movements like *Chipko* and *Narmada Bachao Andolan*—has foregrounded **class, region, and gender**, but seldom **caste** as an analytical axis of ecological inequality (Schlosberg, 2007; Guha & Martinez-Alier, 1997). This neglect perpetuates a theoretical void where caste remains peripheral to debates on environmental access, governance, and citizenship.

In the context of Assam, very few studies (Das, 2011; Hussain, 2020) have empirically examined how Scheduled Castes interact with their ecological surroundings or how state-led environmental policies affect their livelihoods. While these studies highlight social exclusion and political marginality, they rarely extend their analysis to the **eco-political dimension**—that is, how caste determines exposure to environmental risks, access to natural resources, and participation in ecological governance.

Therefore, the present research seeks to **bridge this interdisciplinary gap** by situating the discourse on caste within the broader framework of political ecology and environmental justice. It aims to uncover how **caste-based hierarchies shape ecological vulnerability and governance** in Assam, and to highlight the **voices of Scheduled Castes** within environmental policy debates. By doing so, this study contributes to a more inclusive understanding of environmental justice—one that recognizes caste not as a peripheral identity but as a **central determinant of eco-political marginalization** in North-East India.

3. Theoretical Framework

Integration of Political Ecology and Environmental Justice Theory

The present study draws upon the frameworks of **Political Ecology** and **Environmental Justice** to analyze the complex interrelations between caste, ecology, and governance in Assam. *Political Ecology* (Blaikie & Brookfield, 1987; Robbins, 2004) challenges the notion that environmental degradation is merely a biophysical phenomenon; instead, it emphasizes the political and socio-economic structures that shape ecological access and control. It underscores how power and inequality determine who benefits from and who bears the costs of environmental change.

Environmental Justice Theory (Schlosberg, 2007; Guha & Martinez-Alier, 1997) complements this by expanding the focus from distributive justice—fair allocation of environmental goods and burdens—to also include **recognitional justice** (acknowledging marginalized identities) and **procedural justice** (ensuring participation in decision-making). Within the context of Assam, this integrated approach enables a nuanced understanding of how Scheduled Castes face both material and symbolic exclusion from ecological resources, while also being underrepresented in environmental governance structures.

Incorporation of Subaltern Studies and Dalit Environmentalism Perspectives

To deepen the sociological dimension, the study incorporates insights from **Subaltern Studies** and **Dalit Environmentalism**. Subaltern Studies, emerging from postcolonial scholarship (Guha, 1982; Spivak, 1988), seeks to recover the voices of marginalized groups excluded from dominant historical and political narratives. Applying this lens to environmental discourse allows for the recovery of **Scheduled Caste narratives** that have been overlooked in mainstream ecological debates of Assam.

Dalit Environmentalism (Guru, 2009; Narayan, 2010) further extends this approach by highlighting how caste-based exclusion extends into ecological spaces. It argues that environmental degradation for Dalit and SC communities is not only a livelihood issue but also a **question of dignity and rights**. Integrating these perspectives makes it possible to understand the *embodied experience* of environmental injustice—how pollution, displacement, and ecological vulnerability reproduce social hierarchies of purity and pollution. Thus, this study situates SC communities as **eco-political subjects**, not merely victims of environmental decline but active agents asserting their ecological citizenship.

4. Research Methodology

Research Design:

The study adopts a **qualitative-descriptive and analytical research design**. This approach enables an in-depth understanding of the lived experiences of Scheduled Caste communities and the socio-political structures shaping their environmental realities. The qualitative design allows the researcher to explore meanings, perceptions, and narratives that quantitative data may fail to capture.

Area of Study

The empirical work focuses on **selected districts of Assam**—notably *Nagaon, Dibrugarh, and Cachar*—which have significant Scheduled Caste populations and are prone to ecological vulnerabilities such as flooding, industrial pollution, and land degradation. These regions offer representative sites for studying the intersection of caste, livelihood, and environmental governance.

Sampling

The study employs **purposive sampling** to identify respondents from marginalized Scheduled Caste communities who are directly affected by environmental degradation. The sample includes community

leaders, local activists, and affected households. Selection is based on criteria such as caste affiliation, ecological exposure, and livelihood dependency on natural resources.

Data Collection Methods

Primary Data:

- *In-depth Interviews*: Conducted with SC community members, local government officials, and NGO representatives to gather narratives of exclusion and participation.
- *Focus Group Discussions (FGDs)*: Organized to capture collective perceptions and community-level strategies for coping with environmental challenges.

Secondary Data:

- Government reports.
- Environmental and development policy documents.
- Scholarly articles, NGO reports, and historical records on ecology and caste in Assam.

Data Analysis

Data were analyzed using **thematic and discourse analysis**. Thematic analysis helped identify recurring patterns of exclusion, vulnerability, and agency in respondents' narratives. Discourse analysis was applied to policy documents and interviews to uncover underlying power relations, linguistic framing, and representations of caste in environmental governance.

5. Objective-Wise Analysis on Caste, Ecology, and Marginalization

Objective 1: To examine the spatial relationship between Scheduled Caste settlements and ecologically degraded zones in Assam.

Findings: Scheduled Caste (SC) habitations are disproportionately concentrated in ecologically vulnerable areas — particularly along riverbanks, embankments, and industrial peripheries in districts such as **Nagaon, Dibrugarh, and Cachar**. This settlement pattern is a historical outcome of caste-based land exclusion, where SCs were denied ownership of fertile or secure lands and pushed to degraded zones.

Analysis: This spatial marginalization reflects what political ecologists describe as the *"unequal geography of risk"* (Blaikie & Brookfield, 1987), where environmental hazards are unevenly distributed along social hierarchies. The SC settlements' proximity to floodplains and polluted industrial zones signifies how **caste acts as a spatial determinant of environmental vulnerability**.

Implication: Environmental degradation and caste-based segregation operate together — reinforcing both ecological exposure and social exclusion. The marginalized geographies are both a *consequence* and an *instrument* of structural inequality.

Objective 2: To analyze the patterns of exclusion from land ownership, water rights, and ecological resources among Scheduled Castes.

Findings: Landlessness remains a defining feature of SC households across rural Assam. Bureaucratic hurdles, informal tenancy, and historical land tenure systems have prevented them from acquiring cultivable land. Access to clean water and common property resources is also limited due to persistent caste discrimination — reflected in restrictions on drawing water, collecting fuelwood, or grazing livestock in upper-caste areas.

Analysis: In the framework of *Environmental Justice Theory* (Schlosberg, 2007), these patterns exemplify **distributive injustice** — an unequal allocation of ecological goods and bads. Moreover, caste-based resource exclusion transforms environmental entitlements into instruments of social control, echoing Ambedkar's critique of *"graded inequality"*.

Implication: Ecological citizenship for SCs remains structurally denied. Land and water — the primary means of livelihood and survival — become contested terrains where caste defines access, entitlement, and dignity.

Objective 3: To document case-specific manifestations of ecological and social marginalization.

Case (a): Flood-Prone Villages in Majuli and Morigaon

- Recurrent floods cause annual displacement of SC fishing and artisanal communities.
- Relief measures focus on physical infrastructure rather than livelihood restoration.
- Floods act as a *social filter*, magnifying the unequal recovery capacities between caste groups.

Case (b): Industrial Pollution in Dibrugarh

- Tea factories and oil refineries contaminate water and soil near SC-dominated zones.
- Health problems (skin and respiratory diseases) are widespread.
- Compensation schemes seldom reach SC households due to weak representation.

Analysis: These cases illustrate the **ecological articulation of caste** — environmental degradation functioning as a mechanism that sustains social stratification. Political Ecology helps explain how local environmental governance is captured by dominant interests, marginalizing SCs both spatially and economically.

Implication: Development and disaster management policies in Assam fail to address the *social dimension of environmental risk*, thereby institutionalizing caste-blind governance.

Objective 4: To understand the lived experiences and narratives of ecological dispossession and resilience among Scheduled Castes.

Findings: Field narratives highlight the moral and emotional dimensions of ecological suffering. Respondents' statements such as *"We are the first to lose our homes and the last to get any help"* reveal the perception of systemic neglect. However, community responses — including the formation of **self-help groups**, **afforestation drives**, and **local advocacy** — demonstrate emerging forms of *eco-political agency*.

Analysis: Drawing from Subaltern Studies and Dalit Environmentalism, these narratives signify **"resistance through resilience"** — where marginalized communities transform environmental adversity into a platform for political assertion. The subaltern voice redefines environmental justice beyond distributive equity, emphasizing recognition, dignity, and collective agency.

Implication: SC communities in Assam are evolving from ecological victims to ecological citizens, reframing environmental participation as a site of **social empowerment and identity assertion**.

Objective 5: To synthesize the eco-political dynamics linking caste-based marginalization with environmental degradation.

Findings: Across all cases, environmental and social marginalization are deeply intertwined. Caste hierarchies determine who suffers the most from floods, pollution, and displacement, while also deciding who has the least say in environmental governance.

Analysis: This aligns with the concept of **"eco-political marginalization"** — the structural intersection of caste, power, and ecology. Political Ecology explains the power-laden distribution of environmental risks, while Environmental Justice foregrounds the procedural exclusion of SCs from decision-making. Together, they expose the **politicization of environmental inequality**.

Implication: The findings reaffirm that addressing ecological degradation in Assam requires recognizing it as a **social justice issue**, not merely an environmental or developmental concern.

6. Objective-Wise Analysis: Environmental Justice and Social Exclusion

Objective 1: To examine the extent and nature of Scheduled Caste representation in environmental policy and governance structures in Assam.

Findings: Despite constitutional safeguards ensuring representation for Scheduled Castes, environmental policy institutions in Assam — such as the State Pollution Control Board, Forest Management Committees, and Disaster Management Authorities — have minimal or no SC representation. Decision-making remains technocratic, centralized, and caste-insensitive. As a result, environmental challenges directly affecting SC settlements (flood control, rehabilitation, pollution management) are overlooked or inadequately addressed.

Analysis: This exclusion exemplifies **procedural injustice**, a key dimension of Environmental Justice Theory (Schlosberg, 2007). It highlights how formal participation mechanisms fail to accommodate marginalized voices, resulting in what Fraser (1997) termed *"misrecognition"* — the systemic denial of representation in public institutions. Political Ecology perspectives further clarify that environmental decision-making is embedded within existing power hierarchies, wherein dominant castes monopolize ecological governance.

Implication: Without inclusive representation, environmental governance in Assam reproduces caste-based hierarchies, transforming ecology into a **site of administrative exclusion** rather than collective empowerment. Ensuring participatory justice thus becomes essential for substantive environmental democracy.

Objective 2: To analyze how environmental degradation functions as a mechanism of social control and reinforces caste hierarchies.

Findings: Empirical evidence from flood-prone and industrial zones reveals that SC communities are disproportionately confined to environmentally degraded regions. Post-flood rehabilitation and relocation schemes often assign them to marginal lands with minimal economic potential. Such spatial relegation limits social mobility and perpetuates dependence on dominant caste groups or state welfare systems.

Analysis: Environmental degradation here operates as a **structural instrument of social control**, sustaining caste subordination through spatial and economic marginalization. Political Ecology elucidates that power is exercised not only through economic dominance but also through control over ecological

space. In this context, caste determines who occupies degraded ecologies and who benefits from resource recovery and rehabilitation.

Implication: Ecological vulnerability, rather than being a neutral phenomenon, is **socially produced and politically managed**. The systematic confinement of SCs to risky environments represents a continuation of caste-based oppression through environmental means — an "ecological reproduction of social hierarchy."

Objective 3: To assess the procedural and distributive dimensions of injustice in environmental governance affecting Scheduled Castes.

Findings: Environmental governance in Assam reflects both **procedural** and **distributive inequities**. Procedural inequity is visible in the absence of SC participation in planning and policy formulation, while distributive inequity manifests in the unequal sharing of environmental benefits (e.g., compensation, relief, access to clean water) and burdens (e.g., floods, pollution). Large-scale projects — flood embankments, industrial expansions, and urban renewals — disproportionately displace SC populations without adequate rehabilitation.

Analysis: Schlosberg's multidimensional justice framework (2007) and Ambedkar's social justice vision converge here: justice is incomplete without recognition, participation, and redistribution. Environmental governance in Assam, by ignoring caste inequities, perpetuates **structural invisibility-** treating SCs as peripheral beneficiaries rather than legitimate ecological stakeholders.

Implication: Caste-blind environmental policies undermine the democratic essence of sustainability. A shift toward **caste-sensitive environmental governance** is critical to ensure equitable outcomes and inclusive participation.

Objective 4: To explore the linkages between ecological vulnerability and socio-economic inequality among Scheduled Castes.

Findings: The data reveal a direct correlation between ecological risk and socio-economic deprivation. SC households living in flood-prone and polluted regions exhibit lower income levels, reduced access to healthcare, and fragile livelihood security. Environmental hazards such as floods, soil erosion, and contamination exacerbate their economic instability, deepening the cycle of poverty.

Analysis: This relationship embodies what political ecologists term *"the environmentalization of poverty"*- where environmental degradation intensifies pre-existing social inequalities. Ecological vulnerability is thus not merely an outcome of natural conditions but a **reflection of unequal power and capital relations**. The intersection of caste and class amplifies exposure to risk while reducing adaptive capacity.

Implication: Environmental injustice in Assam cannot be delinked from structural socio-economic inequality. Addressing one without the other perpetuates incomplete reform. Policies must therefore integrate livelihood resilience with social justice frameworks to reduce caste-ecological vulnerability.

Objective 5: To interpret environmental injustice through the lens of caste-based exclusion and recognize its implications for environmental citizenship.

Findings: Caste hierarchies decisively influence who participates in environmental decision-making and who reaps ecological benefits. SC communities, despite being the most affected, remain peripheral in the discourse of "environmental citizenship." Their ecological responsibilities are disproportionately high (as

manual laborers, waste collectors, or flood victims), while their rights to resources, representation, and restoration remain minimal.

Analysis: Environmental citizenship, as theorized by Dobson (2003), emphasizes participatory rights and responsibilities in sustaining the environment. However, in Assam's caste-stratified context, this ideal remains inaccessible to SCs. Caste functions as a gatekeeping mechanism that regulates entry into the domain of ecological rights, effectively creating **graded citizenship** within the environmental sphere.

Implication: Achieving environmental justice thus requires reimagining citizenship beyond formal equality, incorporating recognition of **social difference and historical disadvantage**. Only then can ecological democracy become inclusive and transformative.

7. Conclusion:

The discussion and analysis reveal that environmental degradation and caste-based exclusion in Assam are deeply interconnected, forming what may be termed **eco-political marginalization**—a structural intersection where power, ecology, and social hierarchy converge. Drawing upon **Political Ecology** and **Environmental Justice** theories, the findings demonstrate that Scheduled Castes (SCs) occupy the lowest strata of both social and environmental hierarchies, facing distributive and procedural injustices in access to land, water, and policy representation. Caste functions as a decisive determinant of **environmental citizenship**, regulating who participates in ecological governance and who remains excluded from its benefits. State-led eco-development projects, though framed as socially neutral, often reproduce inequity by overlooking caste-sensitive dimensions of environmental risk. Moreover, an intersectional lens reveals that caste, class, and gender jointly amplify ecological vulnerability—particularly among SC women, who bear the heaviest burdens of displacement, pollution, and livelihood loss. Thus, environmental degradation in Assam cannot be understood in isolation from social structures of domination; it mirrors and reinforces historical hierarchies. True environmental justice, therefore, demands an inclusive, participatory, and caste-conscious ecological framework that integrates social equity with sustainability and redefines environmental governance as an instrument of both ecological and social emancipation.

8. Recommendations

Based on the empirical and theoretical analysis, achieving environmental justice for Scheduled Castes in Assam requires **multi-dimensional, caste-sensitive interventions**:

1. **Inclusive Environmental Governance:** Institutionalize SC representation in all environmental policy and decision-making bodies, including State Pollution Control Boards, Forest Management Committees, and Disaster Management Authorities, ensuring their voices influence planning, implementation, and monitoring.
2. **Caste-Sensitive Policy Frameworks:** Integrate caste analysis into environmental planning, disaster management, and eco-development projects to ensure that benefits and burdens are equitably distributed. Policies should recognize SC vulnerabilities in flood-prone zones, industrial areas, and degraded ecosystems.
3. **Empowerment through Ecological Education:** Implement community-based environmental awareness programs targeting SC settlements, focusing on climate adaptation, sustainable livelihoods, and participatory resource management to strengthen ecological agency and environmental citizenship.

4. **Sustainable Livelihood Models:** Promote SC-inclusive livelihood strategies, such as agroforestry, ecotourism, and community-based resource management, which reduce ecological vulnerability while improving economic security.
5. **Intersectional Approach to Environmental Justice:** Policies must consider the compounding effects of caste, class, and gender inequalities. Special attention should be given to SC women, who disproportionately bear ecological burdens, through targeted welfare schemes and support programs.
6. **Participatory Disaster Management and Rehabilitation:** Develop participatory frameworks for flood control, industrial disaster mitigation, and climate adaptation that prioritize SC communities' needs, ensuring timely compensation, secure relocation, and restoration of livelihoods.
7. **Monitoring and Accountability Mechanisms:** Establish transparent monitoring systems for environmental projects to assess caste-based impacts and ensure accountability, with independent audits and community representation in oversight committees.
8. **Promotion of Dalit Environmental Leadership:** Support grassroots SC environmental leaders and collectives to engage in advocacy, ecological restoration, and policy dialogue, transforming marginalized communities into active agents of ecological governance.
9. **Integration of Social Justice in Environmental Planning:** Ensure that environmental policies explicitly link ecological sustainability with social equity, recognizing SC communities' rights to land, water, and natural resources as central to achieving true environmental justice.
10. **Future Research and Policy Feedback Loops:** Encourage longitudinal studies on SC ecological vulnerability and adaptive strategies, providing evidence-based insights for iterative improvements in inclusive environmental governance.

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