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5. Tribal Women and Nature: An Eco-feminist Perspective in North East India

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Abstract

This paper examines the intricate relationship between tribal women and natural resources in Northeast India through an ecofeminist lens. Drawing on secondary data analysis covering the period up to 2022-23, the study explores how indigenous women's traditional ecological knowledge, resource management practices, and cultural values contribute to environmental conservation. The research illuminates the changing dynamics of women's roles amid development pressures, extractive industries, and climate change. Findings reveal that tribal women in the region serve as primary environmental stewards while facing disproportionate impacts from ecological deterioration. The study concludes by proposing policy recommendations that acknowledge indigenous women's vital ecological contributions while addressing structural inequalities in resource access and decision-making processes.

Key Words: *Ecofeminism, Tribal women, Northeast India, Traditional ecological knowledge, Environmental conservation, Indigenous resource management*

1. Introduction

Northeast India, comprising eight states—Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, and Tripura—represents one of the world's most culturally diverse regions with over 220 ethnic communities.¹ This biodiversity hotspot contains approximately 8,000 flowering plant species and various endemic fauna.² Indigenous communities have resided in these landscapes for



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millennia, developing sophisticated ecological knowledge systems and sustainable resource management practices.

Among these communities, women play multifaceted roles as farmers, forest product collectors, water managers, and holders of traditional knowledge. Their intimate connection with natural resources stems from daily subsistence activities and cultural responsibilities that position them as primary environmental stewards.³ However, conventional development paradigms and research frameworks have frequently disregarded women's ecological contributions, thereby perpetuating gender biases in environmental conservation and resource governance.⁴

This paper employs an ecofeminist analytical framework to examine the relationship between tribal women and nature in Northeast India. Ecofeminism posits that the domination of women and exploitation of nature are interconnected processes rooted in patriarchal power structures.⁵ By applying this perspective, the study aims to uncover how indigenous women's experiences, knowledge systems, and practices contribute to environmental sustainability while identifying how development interventions impact their relationship with natural resources.

The research addresses three central questions:

1. How do tribal women in Northeast India interact with natural resources through their traditional roles and practices?
2. What challenges do these women face regarding access to and control over environmental resources amid modern development pressures?
3. How can policy frameworks better incorporate indigenous women's ecological knowledge and address their specific vulnerabilities?

Through rigorous analysis of secondary data from academic studies, government reports, and NGO assessments published between 2000 and 2023, this paper contributes to the growing discourse on gender, indigeneity, and environmental governance in India's northeastern frontier.

2. Methodology

This research employs a qualitative secondary data analysis approach, synthesizing existing literature and statistical data to examine the relationship between tribal women and nature in Northeast India. Secondary data analysis offers several advantages for this study, including access to diverse information sources across multiple states and tribal communities, the ability to identify regional

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patterns and temporal changes, and ethical considerations that minimize intrusion into indigenous communities.⁶

2.1 Data Sources

The analysis draws from four categories of secondary sources:

1. **Academic literature:** Peer-reviewed journal articles, books, and dissertations focused on tribal communities, gender dynamics, and environmental management in Northeast India published between 2000 and 2023.
2. **Government reports:** Official documents from central and state government agencies, including the Ministry of Tribal Affairs, Ministry of Environment, Forest and Climate Change, and state-level tribal welfare departments.
3. **NGO and international organization reports:** Publications from organizations working on indigenous rights, women's empowerment, and environmental conservation in the region.
4. **Statistical databases:** Census data, National Family Health Survey (NFHS-5), and specialized surveys on forest dependence, livelihood patterns, and climate vulnerability.

2.2 Data Analysis

The collected data underwent systematic content analysis following these steps:

1. **Categorization:** Documents were classified according to geographical focus, tribal communities studied, environmental domains covered, and methodological approaches.
2. **Thematic coding:** Key themes were identified through iterative readings, including women's resource management practices, traditional ecological knowledge, impacts of development interventions, and climate vulnerabilities.
3. **Comparative analysis:** Patterns were traced across different states and tribal communities to identify commonalities and variations in women's environmental relationships.
4. **Temporal analysis:** Changes in women's roles, resource access, and environmental governance mechanisms were assessed over time, with particular attention to recent developments (2018-2023).



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2.3 Limitations

This methodology presents certain limitations that merit acknowledgment:

1. Secondary data may contain biases or gaps in original research designs that cannot be corrected retrospectively.
2. Available literature is unevenly distributed across Northeast Indian states, with more extensive coverage of certain communities (e.g., Khasi, Bodo, Naga) than others.
3. Statistical data on tribal women's resource management often lacks gender-disaggregated specificity, particularly regarding newer environmental challenges.
4. The absence of primary fieldwork constrains the capacity to verify interpretations or address emerging issues not yet documented in the literature.

Despite these limitations, triangulation across multiple data sources enhances the reliability of findings, while the ecofeminist theoretical framework provides analytical coherence to the diverse information streams.

3. Theoretical Framework: Ecofeminism in Indigenous Contexts

3.1 Core Principles of Ecofeminism

Ecofeminism emerged in the 1970s as a theoretical perspective linking environmental degradation with women's oppression.⁷ The framework posits that patriarchal systems employ similar mechanisms of control over both women and nature, characterized by reductionism, domination, and commodification.⁸ While early ecofeminist writings often essentialized women's connection to nature, contemporary approaches emphasize that gender-nature relationships are socially constructed and historically contingent.⁹

This paper applies Vandana Shiva's¹⁰ conceptualization of ecofeminism, which foregrounds women's material relationship with environmental resources while acknowledging indigenous women's agency in resource governance. Shiva's framework is particularly appropriate for analyzing Northeast Indian contexts because it:

1. Recognizes the economic significance of women's daily environmental interactions
2. Honors indigenous women's traditional ecological knowledge



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3. Critiques colonial and post-colonial development paradigms that marginalize subsistence economies
4. Acknowledges women's resistance to environmental exploitation

3.2 Indigenous Ecofeminism in Northeast India

The classical ecofeminist framework requires adaptation for Northeast Indian contexts, where tribal social structures sometimes diverge from mainstream patriarchal patterns. In matrilineal societies like the Khasi and Garo of Meghalaya, women inherit property and maintain significant decision-making authority over natural resources.¹¹ However, even in these communities, women's traditional environmental roles face pressures from market integration, state forestry policies, and changing aspirations.

This study employs what Kelkar and Nathan¹² term "indigenous ecofeminism"—an analytical approach that contextualizes gender-nature relationships within specific tribal cosmologies, livelihood systems, and governance structures.

This perspective recognizes that:

1. Tribal women's environmental knowledge emerges from culturally specific ontologies that may not separate humans from nature
2. Women's resource management practices often reflect community adaptations to particular ecological niches
3. Colonial and post-colonial interventions have transformed traditional gender-environment dynamics
4. Contemporary tribal women navigate multiple knowledge systems and institutional arrangements

By applying this theoretical lens, the paper examines how Northeast Indian tribal women's environmental relationships reflect both cultural continuities and adaptations to changing socio-ecological conditions.



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4. Traditional Ecological Knowledge and Women's Resource Management Practices

4.1 Agrobiodiversity Conservation

Tribal women in Northeast India serve as principal custodians of agricultural biodiversity through their roles as seed keepers, cultivators, and food processors. Data analysis reveals that women maintain an average of 15-30 crop varieties per household across the region, with particularly high diversity in Nagaland and Arunachal Pradesh.¹³

The Apatani women of Arunachal Pradesh cultivate over 42 rice varieties adapted to different soil and climate conditions, maintaining genetic diversity critical for climate resilience.¹⁴ Similarly, Dimasa women in Assam preserve 26 traditional rice landraces through complex selection practices.¹⁵ These conservation efforts gain significance against alarming regional biodiversity loss, with agricultural diversity declining 23% between 2000 and 2022 as commercial monocultures expand.¹⁶

Women's seed selection criteria extend beyond yield maximization to include cooking quality, medicinal properties, ritual significance, and environmental adaptability. A 2021 study documented that Khasi women in Meghalaya evaluate rice varieties using eight distinct parameters compared to the three parameters typically employed by agricultural extension services.¹⁷

Table 1: Women's Role in Agrobiodiversity Conservation Across Northeast Indian States (2020-2022)

State	Average Crop Varieties per Household	Women's Primary Conservation Activities	Documented Rice Landraces Preserved by Women	Decline in Agricultural Diversity (2000-2022)
Arunachal Pradesh	28-30	Seed selection, storage, exchange networks	42	18%
Assam	15-20	Home gardens, seed banking, medicinal plant cultivation	26	25%
Manipur	20-24	Wetland management, vegetable diversity	38	22%
Meghalaya	25-28	Jhum field diversity, sacred grove protection	32	15%

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State	Average Crop Varieties per Household	Women's Primary Conservation Activities	Documented Rice Landraces Preserved by Women	Decline in Agricultural Diversity (2000-2022)
Mizoram	18-22	Forest gardens, wild food harvesting	24	27%
Nagaland	26-32	Terraced field management, seed exchange festivals	36	19%
Sikkim	15-18	Organic farming, medicinal plant knowledge	22	23%
Tripura	12-16	Home gardens, ritualized planting practices	18	30%

Source: Compiled from *Northeast Agricultural Biodiversity Assessment Report (2022)*¹⁸ and *Tribal Research Institute Data (2020-2022)*¹⁹

4.2 Forest Resource Management

Women's interactions with forest ecosystems form another critical dimension of their environmental stewardship. Forest products contribute approximately 20-40% of household income for tribal communities, with women collecting 70-85% of non-timber forest products (NTFPs) across the region.²⁰

A comprehensive 2022 assessment across 45 villages in Northeast India documented women gathering an average of 87 plant species for food, medicine, craft materials, and household use.²¹ Particularly significant is indigenous women's pharmacological knowledge—Adi women of Arunachal Pradesh utilize approximately 122 medicinal plant species for treating 52 different ailments²² while Meitei women in Manipur maintain specialized knowledge of aquatic and wetland medicinal plants.²³



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Women's forest management extends beyond extraction to include conservation practices. The Angami women of Nagaland maintain strict harvesting protocols to ensure sustainability, including seasonal restrictions, quantity limitations, and taboos against harvesting immature specimens.²⁴ Similarly, Khasi sacred groves (Law Kyntang) in Meghalaya reflect women's influence in establishing and maintaining conservation norms through spiritual sanctions and customary practices.²⁵

However, women's forest-based livelihoods face mounting pressures. Forest cover in Northeast India declined by approximately 1,020 sq km between 2019 and 2021,²⁶ while development projects have restricted access to traditional gathering areas. A 2023 survey revealed that 68% of tribal women across the region reported traveling 2-3 kilometers farther to collect forest products compared to a decade ago.²⁷

4.3 Water Resource Management

Tribal women's water management responsibilities encompass household provisioning, agricultural irrigation, and resource conservation. A recent time-use survey across 32 tribal villages revealed women spending an average of 2.5 hours daily on water-related activities, with significant seasonal variations.²⁸

The Apatanis' elaborate wet rice cultivation system in Arunachal Pradesh exemplifies women's water management expertise. Women maintain intricate irrigation channels using traditional knowledge of micro-topography and seasonal flow patterns.²⁹ Similarly, Khasi women in Meghalaya manage complex water harvesting systems that sustain agriculture in one of the world's wettest regions while preventing soil erosion.³⁰

Women's water management extends to wetland conservation, particularly in Assam and Manipur. The women-led Konamak fishing cooperative in Manipur's Loktak Lake implements sustainable harvesting practices while advocating against environmentally destructive development projects.³¹ These traditional water governance systems incorporate sophisticated environmental monitoring practices, with women tracking water quality through biological indicators and seasonal observations.³²

Recent data indicates increasing water insecurity affecting women's management practices. Approximately 47% of tribal villages reported declining water availability between 2018 and 2022,



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attributed to deforestation, climate change, and large-scale extractive projects.³³ These changes have increased women's labor burden, with collection times increasing by an average of 45 minutes daily over the past five years.³⁴

5. Challenges to Women's Environmental Stewardship

5.1 Development-induced Displacement and Resource Access

Large infrastructure projects, extractive industries, and commercial plantations have significantly transformed Northeast India's landscapes, often displacing tribal communities and restricting women's access to customary resources. Between 2000 and 2022, approximately 220,000 hectares of tribal lands were acquired for development projects across the region.³⁵

Hydroelectric dam construction represents a particularly significant disruption, with 168 large dams planned or under construction as of 2022.³⁶ These projects disproportionately impact women's livelihood activities—a 2021 study documented that post-displacement women lost 73% of income-generating activities tied to riparian ecosystems, compared to 47% for men.³⁷

Mining operations present another critical challenge, particularly in Meghalaya, where uranium and coal extraction have contaminated water sources traditionally managed by women. A 2022 health assessment documented elevated rates of reproductive health disorders in mining-affected villages, with women reporting a 56% increase in pregnancy complications.³⁸

Table 2: Development-Induced Impacts on Tribal Women's Resource Access (2018-2022)

Development Type	Land Acquired (hectares)	Households Displaced	Women's Specific Impacts	Compensation Gender Gap
Hydroelectric Projects	78,500	42,300	73% loss of riparian livelihoods; increased water collection time	Women received 32% less compensation on average

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Development Type	Land Acquired (hectares)	Households Displaced	Women's Specific Impacts	Compensation Gender Gap
Mining Operations	52,600	28,750	56% increase in reproductive health issues; contaminated domestic water sources	68% of women lacked independent compensation access
Industrial Corridors	43,200	31,400	Loss of gathering areas; 63% reduction in medicinal plant access	45% of women excluded from consultation processes
Wildlife Conservation	26,800	18,900	Criminalization of traditional harvesting; increased food insecurity	74% of women uninformed about compensation procedures
Commercial Plantations	18,900	15,700	Reduced crop diversity; increased chemical exposure	Plantation employment gender wage gap of 38%

Source: Compiled from Development Displacement Assessment Report (2022)³⁹ and Northeast Indigenous Women's Resource Rights Survey (2023)⁴⁰

The data reveals a consistent pattern across development interventions: women experience unique vulnerabilities due to their environmental dependencies while facing systematic exclusion from compensation and consultation processes. Approximately 62% of tribal women reported having no participation in development-related decision-making processes affecting their traditional resource areas.⁴¹

5.2 Erosion of Customary Institutions and Knowledge Systems

Tribal women's environmental stewardship traditionally operated within customary governance systems that recognized their specialized knowledge and resource management roles. However, these institutions face progressive erosion through formal legal frameworks, centralized resource management, and changing social norms.



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State forestry policies have particularly undermined women's customary forest management practices. The implementation of Joint Forest Management (JFM) committees, while ostensibly participatory, has marginalized women's traditional roles—a 2021 assessment of 76 JFM committees in Northeast India found women holding only 18% of leadership positions despite comprising 65% of forest product collectors.⁴²

Similar patterns emerge in water governance, where traditional women-centered water management systems have been replaced by male-dominated water user associations. In irrigation projects across Assam and Tripura, women constitute only 13% of management committee members despite performing 72% of agricultural water management activities.⁴³

This institutional marginalization accelerates the erosion of traditional ecological knowledge. A comparative assessment conducted between 2002 and 2022 documented a 37% decline in young women's knowledge of medicinal plants across six tribal communities.⁴⁴ Similarly, traditional seed varieties maintained by women have declined by approximately 45% over two decades as commercial varieties and agricultural extension services prioritize market-oriented production.⁴⁵

5.3 Climate Change Vulnerabilities

Climate change introduces new challenges to tribal women's environmental stewardship in Northeast India. Regional climate data indicates a 1.3°C temperature increase since 1990, altered precipitation patterns with 12% greater monsoon intensity, and increased frequency of extreme weather events.⁴⁶

These changes disproportionately affect women's resource-dependent activities. A vulnerability assessment across 38 tribal villages documented that 78% of women reported climate-induced challenges to their agricultural activities, including unpredictable rainfall, new pest infestations, and crop failures.⁴⁷ Similarly, 64% of women forest product gatherers reported declining availability of key species, altered fruiting patterns, and increased competition from commercial harvesters adapting to changing conditions.⁴⁸

Water-related impacts particularly affect women's responsibilities, with 72% reporting increased time spent on water collection during drought periods.⁴⁹ Additionally, climate-induced disasters create gendered impacts—women in flood-affected communities in Assam experienced a 240% increase in work burden during displacement, compared to 90% for men.⁵⁰

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Table 3: Climate Change Impacts on Tribal Women's Resource Management (2018-2023)

Climate Change Impact	Affected States	Women's Specific Vulnerabilities	Adaptation Strategies Employed by Women
Rainfall variability	All 8 states	78% report agricultural disruption; increased irrigation labor by 3.2 hours daily	Crop diversification; reviving drought-resistant varieties; altered planting schedules
Extreme precipitation events	Assam, Meghalaya, Tripura	240% increased work burden during floods; waterborne disease management	Traditional flood-resistant housing techniques; medicinal plant preservation
Temperature increases	Arunachal Pradesh, Sikkim, Nagaland	Altered forest product availability (64% report changes); heat stress during field work	Shifting gathering times; identifying new resource areas; heat-resistant crop varieties
Ecosystem shifts	All states, most severe in Assam and Mizoram	52% decline in medicinal plant availability; new pest species	Botanical knowledge adaptation; domestic conservation of threatened species
Drought frequency	Manipur, parts of Assam, Mizoram	72% increased water collection time (average 2.1 additional hours daily)	Traditional water conservation techniques; reviving community watersheds

Source: Compiled from *Northeast Climate Vulnerability Assessment (2022)*⁵¹ and *Tribal Women's Climate Adaptation Survey (2023)*⁵²

Despite these vulnerabilities, tribal women demonstrate significant adaptive capacity. Women-led initiatives across the region include seed-saving networks for climate-resilient varieties, community-based disaster preparedness, and the revival of traditional water conservation practices.⁵³ However, women's participation in formal climate adaptation planning remains minimal, with only 12% of climate program beneficiaries across Northeast India being tribal women, despite their frontline environmental roles.⁵⁴



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6. Women's Environmental Activism and Resistance

6.1 Collective Mobilization for Resource Rights

Amid intensifying resource pressures, tribal women in Northeast India have organized collective responses to defend their environmental interests. These movements employ diverse strategies ranging from direct action to legal advocacy, often framing resistance within cultural frameworks that emphasize women's traditional resource stewardship.

The Naga Mothers Association (NMA), established in 1984, has expanded its initial focus on social issues to encompass environmental protection, successfully challenging mining concessions in western Nagaland through legal intervention and community mobilization.⁵⁵ Similarly, the Borok Women's Forum in Tripura has organized against forest displacement, documenting how industrialization threatens both biodiversity and women's livelihood security.⁵⁶

Anti-dam movements feature prominent women's leadership, particularly in Arunachal Pradesh and Manipur. The Idu Mishmi women's opposition to the Dibang Multipurpose Project resulted in significant project modifications through strategic employment of both constitutional provisions and cultural assertions of women's sacred relationship with river systems.⁵⁷ In Manipur, women-led resistance against the Mapithel Dam has sustained for over two decades, emphasizing interconnections between ecological integrity and women's economic autonomy.⁵⁸

Recent quantitative analysis indicates increasing women's environmental activism across the region—documented women-led environmental protests increased from 23 annually (2000-2010) to 42 annually (2011-2022), reflecting both growing ecological pressures and women's political assertiveness.⁵⁹

6.2 Alternative Development Initiatives

Beyond resistance, tribal women advance alternative development models that integrate environmental sustainability with gender justice. Women-managed community forests in Nagaland and Meghalaya demonstrate higher biodiversity indicators and more equitable resource access compared to conventional management approaches.⁶⁰



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Particularly notable are women's agricultural cooperatives implementing agroecological principles. The North East Network has documented 34 women-led farming collectives across the region that combine traditional knowledge with innovative practices, achieving 30-45% higher crop diversity while maintaining comparable yields to conventional farming.⁶¹

Indigenous women entrepreneurs increasingly develop forest-based enterprises that incentivize conservation. A comprehensive 2022 assessment identified 128 women-led green enterprises across Northeast India, primarily in sustainable harvesting, handicrafts, and eco-tourism.⁶² These initiatives demonstrate promising economic outcomes, with participating women reporting average income increases of 37% while maintaining sustainable harvesting practices.⁶³

Women-led watershed management initiatives provide another successful model. In Meghalaya, the Nongtraw watershed program managed primarily by Khasi women restored 12 degraded springs while implementing sustainable land management across 860 hectares.⁶⁴ Similarly, Adi women in Arunachal Pradesh have established community conservation reserves that integrate livelihood activities with habitat protection for endangered species.⁶⁵

These initiatives share common principles: centering women's traditional ecological knowledge, ensuring women's leadership in governance structures, and addressing interconnected social and environmental objectives. Their effectiveness suggests viable alternatives to development models that marginalize both women and environmental concerns.

7. Policy Implications and Recommendations

7.1 Recognizing and Valuing Women's Ecological Knowledge

Analysis reveals a persistent gap between tribal women's substantial environmental contributions and their recognition in policy frameworks. This disconnect compromises both gender equality and conservation outcomes.

Based on the findings, the following policy measures are recommended:

1. **Documentation and legitimization:** Government agencies and research institutions should systematically document tribal women's traditional ecological knowledge, particularly regarding agrobiodiversity, medicinal plants, and water management. This documentation

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should inform policy development while ensuring indigenous communities maintain intellectual property rights.

2. **Education integration:** Environmental education curricula in Northeast India should incorporate women's traditional ecological knowledge alongside conventional scientific perspectives, acknowledging indigenous women as knowledge producers rather than passive recipients of environmental information.
3. **Extension services reform:** Agricultural and forestry extension programs should recruit tribal women as knowledge agents and redesign services to address women's specific needs. Recent pilot programs employing tribal women as agricultural extension workers in Nagaland demonstrated 62% higher adoption rates of sustainable practices compared to conventional approaches.⁶⁶
4. **Economic valuation:** Policy frameworks should develop mechanisms to value women's environmental contributions in economic terms. A 2022 assessment estimated that tribal women's biodiversity conservation activities in Meghalaya provided ecosystem services worth approximately ₹38,000 per hectare annually—value currently unrecognized in economic accounting.⁶⁷

7.2 Securing Women's Resource Rights

Strengthening women's tenure security and resource rights emerges as a critical policy priority based on the research findings:

1. **Gender-sensitive land documentation:** Land titling and forest rights implementation should explicitly recognize women's customary usage rights. Recent experiences in Manipur demonstrate that joint titling increased women's decision-making power regarding land use by 58% compared to single (male) titling.⁶⁸
2. **Customary law recognition:** Legal frameworks should acknowledge and support gender-progressive elements of customary resource governance while addressing discriminatory practices. The selective recognition approach adopted in Nagaland, which strengthens women's traditional resource usufruct rights while reforming inheritance restrictions, offers a potential model.⁶⁹

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3. **NTFP policy reform:** Forest policies should secure tribal women's access rights to non-timber forest products through community forest resource rights, minimum support prices for gathered products, and elimination of exploitative middlemen. Pilot programs in Assam demonstrated that secure NTFP rights increased women's incomes by 42% while improving conservation outcomes.⁷⁰
4. **Water rights protection:** Water governance frameworks should recognize women's traditional roles in water management through guaranteed representation in decision-making bodies and protection of customary water sources from privatization or pollution.

7.3 Gender-Responsive Climate Adaptation

As climate change intensifies in Northeast India, adaptation policies require explicit gender dimensions:

1. **Vulnerability assessment:** Climate vulnerability assessments should employ gender-disaggregated data collection and analysis to identify women's specific adaptation needs. A 2023 pilot using this approach in Manipur revealed critical gender differences in climate impacts that standard assessments had overlooked.⁷¹
2. **Women-led adaptation initiatives:** Climate financing mechanisms should allocate dedicated resources to support women-led adaptation initiatives building on traditional ecological knowledge. Early evidence from Nagaland indicates that women-managed climate adaptation funds achieved 40% higher community participation rates than conventional programs.⁷²
3. **Disaster preparedness:** Disaster management frameworks should incorporate tribal women's traditional knowledge of early warning systems and sustainable rebuilding practices while addressing women's specific vulnerabilities during displacement.
4. **Agrobiodiversity conservation:** Agricultural policies should support women seed-keepers through community seed banks, farmer field schools centered on women's traditional varieties, and protection against biopiracy of indigenous crop genetics.

7.4 Participatory Environmental Governance

Reforming environmental decision-making processes to ensure meaningful participation by tribal women represents a final critical policy direction:

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1. **Representation quotas:** Environmental committees, forest management groups, and water user associations should implement minimum 50% representation requirements for women, accompanied by capacity building to ensure effective participation.
2. **Free, prior, informed consent:** Development planning affecting tribal territories should implement gender-sensitive consent processes that specifically consult women through culturally appropriate mechanisms and address their distinct concerns.
3. **Environmental impact assessment:** EIA procedures should require specific assessment of impacts on women's resource-dependent activities and traditional ecological knowledge systems, with equal weight given to these concerns as technical parameters.
4. **Traditional institution strengthening:** Rather than replacing customary institutions with standardized models, policies should strengthen traditional governance systems while supporting gender-progressive reforms from within communities.

8. Conclusion

This study demonstrates that tribal women in Northeast India maintain complex, multifaceted relationships with their natural environments that contribute significantly to both livelihood security and ecological sustainability. Their roles as knowledge holders, resource managers, and environmental stewards constitute a living ecofeminist praxis grounded in daily interactions with agricultural landscapes, forests, and water systems.

The research identifies persistent patterns across tribal communities whereby women's environmental contributions remain undervalued in policy frameworks and development interventions. This marginalization reflects both patriarchal biases within state institutions and colonial legacies that privilege formal scientific knowledge over indigenous women's experiential expertise.

Contemporary challenges—including development-induced displacement, climate change, market integration, and institutional reforms—transform women's environmental relationships in complex ways. While creating new vulnerabilities, these changes also catalyze women's collective agency through resistance movements and alternative development initiatives that reassert the importance of gender-nature connections.



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The findings suggest that advancing environmental sustainability in Northeast India requires addressing gender justice simultaneously. Policies that recognize women's ecological knowledge, secure their resource rights, ensure their participation in governance, and support their adaptation initiatives offer promising pathways toward both social equity and environmental conservation.

Future research should employ participatory methodologies that center tribal women as knowledge producers rather than research subjects, exploring how their environmental practices adapt to changing conditions while maintaining cultural continuities. Additionally, comparative studies across matrilineal and patrilineal communities could yield valuable insights into how diverse gender systems shape human-nature relationships in indigenous contexts.

As Northeast India navigates competing demands for conservation and development, tribal women's ecofeminist practices offer vital perspectives on sustainable pathways forward—perspectives that merit recognition, protection, and amplification in both scholarly discourse and policy formation.

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