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Women and Environment: A Sociological Analysis of Dudhwa National Park

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Abstract:
This study explores the gendered dynamics of environmental engagement in Dudhwa National Park, located in the Terai region of Uttar Pradesh. Women from indigenous and rural communities, especially the Tharu tribe, are central to forest-based livelihoods. They gather firewood, water, herbs, and other forest produce, and possess rich ecological knowledge essential for biodiversity conservation. The primary objective is to examine the ecological roles of women and to analyze the socio-cultural and institutional barriers that limit their participation in environmental governance. Drawing on the theoretical frameworks of ecofeminism and feminist political ecology, the paper explores how women's traditional ecological knowledge and daily environmental practices are rendered invisible due to patriarchal structures, economic dependency, and tokenistic policy implementation. The study employs a qualitative methodology, including five detailed case studies that highlight women's roles in herbal medicine, organic farming, water management, and local conservation. Institutional mechanisms such as the Forest Rights Act (2006) and Joint Forest Management (JFM) often fail to ensure meaningful participation for women. The paper argues for inclusive, gender-sensitive policies that recognize and integrate women's contributions to biodiversity conservation and climate resilience. Empowering women in these contexts is essential not only for social justice but also for the effectiveness and sustainability of environmental efforts.

Keywords: *Ecology, Ecofeminism, Gender, Sustainability, Forest Rights, Climate Change*

1. Introduction

The relationship between humans and nature has long influenced social structures and survival strategies. In the context of accelerating climate change and environmental degradation, it is essential to re-examine this relationship through a gendered lens. Women, especially those living in rural, tribal, and forest-fringe communities, are deeply engaged with the environment. They gather firewood, fetch water, collect medicinal herbs, cultivate food, and care for livestock, making them indispensable to environmental sustainability. However, despite their ecological contributions, women often remain invisible in environmental policies and decision-making processes.

Sociological theories such as ecofeminism and political ecology offer critical frameworks for analyzing the intersection of gender, nature, and power. Ecofeminism posits that the marginalization of women and the exploitation of nature stem from the same patriarchal structures. Scholars like Vandana Shiva argue that rural and indigenous women act as custodians of biodiversity and sustainability through traditional knowledge and daily practices. Yet, their contributions are rarely recognized within formal conservation agendas. Ecofeminism also critiques binary thinking, such as man/woman and nature/culture, that reinforces hierarchical domination and ecological injustice. Political ecology complements this analysis by examining how power relations, economic structures, and state policies shape environmental outcomes. It emphasizes that environmental challenges affect women and men differently due to existing inequalities in labor roles, resource access, and political voice. Conservation measures like protected area restrictions or Joint Forest Management (JFM) schemes often disproportionately burden women, who

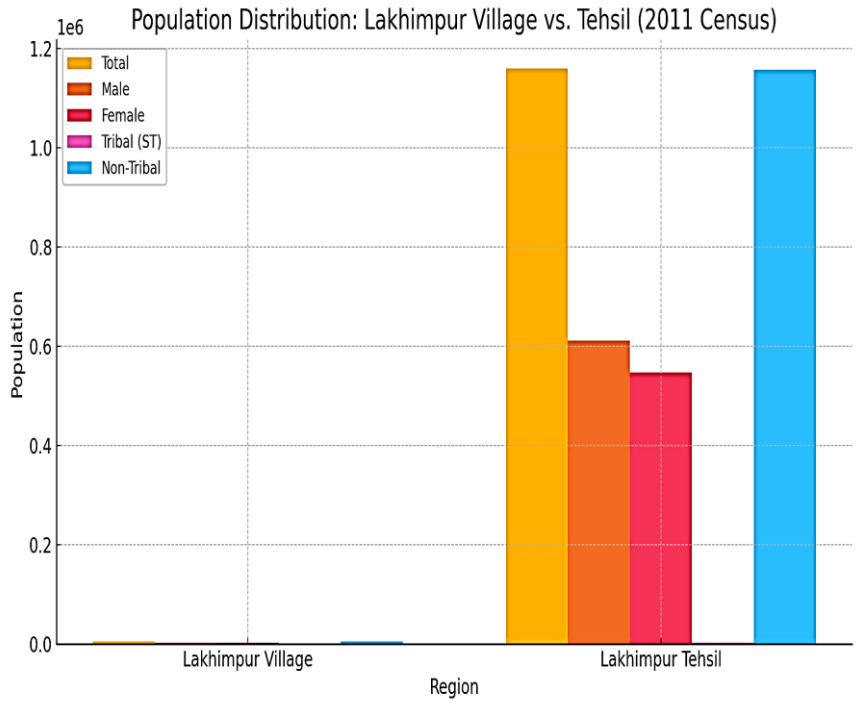
rely on forests for daily sustenance but are excluded from decision-making platforms such as Forest Rights Committees (Shiva, 2005).

Together, ecofeminism and political ecology provide a comprehensive lens to understand women's environmental roles, not just as users of nature, but as active agents navigating and resisting structures of power. These perspectives are crucial for analyzing gendered ecological dynamics in forest-dependent regions like Dudhwa, where women's knowledge, labor, and rights must be acknowledged and integrated into sustainable development efforts.

2. Dudhwa National Park: Ecological and Social Context

Dudhwa National Park, situated in the Lakhimpur Kheri and Bahraich districts of Uttar Pradesh, is a vital part of the Terai Arc Landscape, a region rich in biodiversity and ecological importance. Spread over approximately 880 square kilometers, the park forms the core of the Dudhwa Tiger Reserve and includes the Kishanpur and Katarniaghat Wildlife Sanctuaries. It is characterized by dense sal forests, expansive grasslands, wetlands, and swamps, creating a mosaic of habitats that support a diverse array of flora and fauna. The park is home to several endangered species, including the Bengal tiger, Indian rhinoceros, swamp deer (barasingha), and Asian elephant. Its wetlands attract a variety of migratory birds, making it an important site for birdwatching and avian conservation. Dudhwa's unique ecological composition makes it not only a national treasure but also a globally significant conservation area. Equally important, however, is the social landscape surrounding the park. Dozens of villages, inhabited by indigenous communities such as the Tharu, as well as other marginalized groups like Dalits and backward castes, are located in and around the forest fringes. These communities have coexisted with the forest for generations and rely heavily on its resources for their daily needs, including fuelwood, fodder, timber, water, and non-timber forest products.

The Tharu people, in particular, have a deep cultural and spiritual connection to the forest. Their traditional ecological knowledge, based on centuries of interaction with local biodiversity, is reflected in their farming practices, food systems, folk medicine, and rituals. Women play a central role in maintaining this knowledge and in carrying out activities that ensure the sustainable use of natural resources. Despite this close relationship with nature, the creation and expansion of the national park have led to a series of conflicts and challenges. Conservation policies often restrict access to forest areas, disproportionately affecting local communities, especially women, who depend on them for their livelihoods. Resettlement schemes, bans on resource extraction, and the exclusionary nature of wildlife protection laws have created tensions between conservation goals and community rights.



Thus, the ecological significance of Dudhwa cannot be fully understood without considering its social context. The sustainability of conservation efforts in this region hinges not only on protecting wildlife but also on recognizing and integrating the role of local communities, particularly

women, as stewards of the environment.

3. Review of Literature

The intersection of gender and the environment has been a significant theme in sociological and ecological discourse. Scholars have long acknowledged the pivotal role women play in sustainable resource management, particularly in rural and forest-based communities like those surrounding Dudhwa National Park. However, this involvement is often under-recognized in formal governance and policy frameworks.

Vandana Shiva (1988), in her seminal work Staying Alive, argues that women, especially those from agrarian and tribal societies, have historically served as stewards of biodiversity. According to Shiva, women's roles in seed preservation, water management, and food production connect them intrinsically to ecological sustainability. This ecofeminist perspective contends that the exploitation of nature is linked to the marginalization of women, particularly in patriarchal and capitalist systems.

Ostrom's (1990) theory of common-pool resource management, although not explicitly gender-focused, provides a foundational framework for understanding the success of community-led environmental governance. Her principles—such as clearly defined boundaries, collective decision-making, and graduated sanctions—support the inclusion of all stakeholders, including women, for sustainable outcomes.

Bina Agarwal (1992) adds a critical dimension by focusing on the structural exclusion of women from formal forest governance institutions. She emphasizes that although women are deeply involved in using and managing natural resources, their representation in community-level decision-making is often minimal or symbolic. Agarwal advocates for participatory and gender-sensitive approaches to resource management, noting that sustainability is unachievable without active female engagement.

This aligns with Jackson's (1993) critique of development projects that assume women's environmental roles without adequately addressing the systemic inequalities they face.

Rocheleau, Thomas-Slayter, and Wangari (1996) introduced the concept of feminist political ecology, which explores how gender, class, and ethnicity interact to shape people's relationship with the environment. Their work underscores that women's environmental roles are shaped not just by biology or tradition but by social, economic, and political structures that determine access and control over resources.

In terms of policy impact, Buchy and Subba (2003) observed that gender-blind forest governance frameworks lead to inequitable outcomes, often burdening women further while excluding them from benefits.

Kelkar (2009) discusses gendered vulnerabilities in the context of climate change and argues that women in South Asia face disproportionate risks due to limited access to resources, education, and institutional support. This is increasingly evident in the Dudhwa region, where environmental changes and human-wildlife conflict affect women's livelihoods more severely.

Arora-Jonsson (2011) critiques the assumption that women are inherently virtuous caretakers of nature. She argues that policies built on such essentialist assumptions risk oversimplifying women's experiences and may inadvertently reinforce gender stereotypes, thereby hindering transformative participation.
FAO's (2011) global report further supports this, stating that closing the gender gap in agriculture and forestry could significantly enhance productivity and sustainability. This is particularly relevant in forest-fringe regions like Dudhwa, where women serve as primary cultivators and resource managers.

Sontakke (2012) In the context of India, studied women's participation in Joint Forest Management (JFM) in Maharashtra and found that despite policy provisions for inclusion, most women were unaware of their roles or felt excluded from critical decisions. This resonates with the reality in many villages near Dudhwa, where women are often listed on paper as committee members but remain absent or silent in meetings.

Singh (2013), who highlights the Tharu tribe's sustainable practices, especially those maintained by women. The study notes that Tharu women play a significant role in managing forest produce, herbal medicine, and agroforestry systems, which contribute to both household livelihoods and biodiversity conservation.

Government reports, including India's Fifth National Report to the Convention on Biological Diversity (MoEFCC, 2014), acknowledge gender disparities in biodiversity conservation. However, they also reveal significant implementation gaps, particularly in Protected Areas (PAs) like Dudhwa, where conservation often overlooks the socio-cultural dynamics of forest communities.

Sarkar (2015) studied eco-development initiatives near Jim Corbett National Park and found that while such programs aimed to integrate women, their benefits were skewed toward men unless there was deliberate gender-sensitive planning. This suggests that without targeted interventions, conservation projects may unintentionally reinforce existing social hierarchies.

The lack of legal literacy and institutional support is another constraint. Tiwari and Bisht (2017), in their study of tribal women in North India, found that although women possess a deep understanding of forest ecology, their knowledge is rarely recognized in formal conservation strategies. They recommend that the policy should not only ensure women's participation but also institutionalize their indigenous knowledge systems.

4. Methodology

This study adopts a qualitative and exploratory research approach to understand women's roles in environmental sustainability in the Dudhwa region. It focuses on capturing lived experiences through participant observation, semi-structured interviews, informal interactions, and detailed case studies. Five case narratives were developed to highlight individual women's ecological knowledge, daily practices, and the social and institutional barriers they face. Observation helped document their routine engagement with natural resources and community dynamics.

5. Women's Roles in Environmental Management

Here are five case studies. Each case highlights a different aspect of women's engagement with environmental management and the barriers they face, in the Dudhwa region:

S.D., a 52-year-old woman from a Tharu village near Dudhwa, is known in her community for her deep knowledge of local herbs used for healing common illnesses. She inherited this knowledge from her mother and passed it on to younger women informally. Though highly respected locally, her expertise is never acknowledged in any formal development or conservation program. She has never been invited to speak at village meetings and remains unaware of her legal rights, despite her role in sustaining traditional ecological knowledge.

K.T., aged 38, formed a self-help group with ten other women in her village to promote organic kitchen gardening and composting. The group has become a local model for low-cost, sustainable food production. Despite their success, they receive no institutional support or funding. Kamla has attempted to engage with local governance bodies but was turned away by male officials who dismissed her ideas as irrelevant. Her story reflects the gap between grassroots innovation and formal recognition.

R.J., a 28-year-old mother of three, is deeply involved in daily environmental care fetching water, growing food, and managing household waste. However, she has never attended a village meeting. Cultural norms in her family discourage her from speaking in public spaces. Though literate, she lacks the confidence and encouragement to participate in local decision-making. Rani's situation represents the silent exclusion many women face despite being active environmental stewards in their homes.

B.S, 45, has keenly observed changes in water availability and crop failure patterns in her village over the past decade. She attributes these shifts to erratic rainfall and shrinking green cover. Though her insights could contribute meaningfully to community-level planning, they remain confined to informal discussions among women. Her observational knowledge has never been documented or sought by government or NGO officials, reflecting the systemic neglect of women's local ecological intelligence.
M.B., 34, was listed as a member of the local environmental committee on official records. However, she was never informed about meetings or decisions. When she tried to attend a session, male members ignored her input. Frustrated but determined, she started a small awareness campaign in her neighbourhood to educate women about their rights and the importance of environmental participation. Her case exemplifies tokenism in governance structures and the challenges women face in claiming their rightful space.

The five case studies reveal the multifaceted roles women play in environmental management and the systemic barriers they face in gaining recognition and participation in governance. SD's case illustrates how traditional ecological knowledge, though crucial for sustainable practices, remains undervalued when held by women, especially older, rural, or indigenous individuals. KT's leadership highlights women's capacity for grassroots innovation and collective action, yet the absence of institutional support points to a disconnect between policy frameworks and local realities. RJ's narrative underscores the weight of patriarchal norms that silence women in public forums, despite their active environmental labour. Her exclusion exemplifies how cultural expectations limit women's agency. BS's observations of environmental change demonstrate the importance of everyday ecological knowledge, often overlooked by formal scientific or governance bodies. MB's experience with tokenism reveals how mere representation without meaningful involvement fails to empower women or improve environmental outcomes.

Collectively, these cases highlight that women are not passive beneficiaries but active agents of environmental stewardship. However, systemic barriers, social, economic, and institutional, prevent their full participation. For environmental governance to be inclusive and effective, it must recognize and integrate women's knowledge, experiences, and leadership into formal decision-making processes and policy implementation.

6. Challenges and Constraints

The five case studies from the Dudhwa region reflect the complex and interrelated challenges women face in environmental engagement. One of the most significant barriers is low educational attainment, which limits women's ability to access information, participate in training, and understand governance structures. For instance, Rani, despite her active involvement in environmental care, feels unqualified to speak in public forums due to limited education and exposure. This reflects a broader pattern where women remain unaware of their rights and are thus excluded from participating meaningfully in decision-making processes. Cultural norms rooted in patriarchy further reinforce these exclusions. SD, although a respected knowledge-keeper within her community, has never been consulted by local authorities, reflecting the undervaluation of women's traditional ecological knowledge. Women like MB, even when officially listed on committees, face tokenism and symbolic participation, with decisions still dominated by male members.

Economic dependence is another major challenge. As seen in the case of KT, who leads a self-help group, women often struggle to secure financial support for sustainable initiatives. The lack of independent

income restricts their mobility and confidence to engage with governance systems. Furthermore, unpaid household labour, as observed in all five cases, severely limits the time and energy women can devote to public or institutional involvement. Institutional barriers also persist. MB's experience illustrates how procedural and structural exclusions prevent women from actively influencing governance despite policy provisions. Finally, environmental stressors such as unpredictable rainfall and resource scarcity, observed by BS, add to women's burdens. Their coping strategies and observations are rarely integrated into official adaptation or development plans.

Overall, these challenges show that while women are key environmental actors, they remain marginalized by cultural norms, economic dependency, institutional shortcomings, and the growing impacts of environmental change. Addressing these requires systemic reforms that truly empower women's participation and leadership.

7. Conclusion

The relationship between women and the environment in the Dudhwa National Park region is emblematic of a broader socio-ecological paradox: while women are central to environmental sustainability, they remain marginalized in policy, planning, and governance. This paper has illustrated how women from indigenous and rural communities, especially the Tharu tribe, possess intricate ecological knowledge derived from centuries of interaction with forests, water bodies, and agricultural systems. They are deeply engaged in the sustainable use of natural resources, playing critical roles in firewood collection, water management, herbal medicine, composting, and subsistence agriculture. Despite this indispensable engagement, their contributions are often undervalued, unrecognized, and excluded from formal conservation structures and decision-making processes. Through the combined lens of ecofeminism and political ecology, this study underscores that the marginalization of women is not incidental but systemic. Ecofeminist perspectives reveal how patriarchal structures not only dominate women but also exploit nature, viewing both as passive and subordinate. Political ecology further explains how gender intersects with class, caste, and institutional power, resulting in unequal access to environmental resources and participation. Together, these frameworks reveal that women's environmental roles are shaped not just by tradition or biology but by entrenched socio-political forces that determine authority, recognition, and voice.

The case studies from Dudhwa reflect the lived realities of many rural women. They show that women are not only stewards of biodiversity but also innovators and change-makers. However, challenges such as illiteracy, lack of financial independence, patriarchal norms, and tokenistic institutional practices prevent women from exercising agency and leadership in environmental governance. Even when policy provisions such as the Forest Rights Act (2006) and Joint Forest Management (JFM) aim to be inclusive, their implementation on the ground often fails to ensure meaningful participation of women. Environmental stressors like deforestation, erratic rainfall, shrinking water resources, and human-wildlife conflict further compound gender inequalities. As environmental degradation intensifies, women's labour burdens increase, and their vulnerability grows. This underscores the need to incorporate women's voices and indigenous knowledge into policy-making and conservation planning. Ignoring their insights not only perpetuates injustice but also weakens the effectiveness of environmental programs.

True ecological sustainability in Dudhwa and similar regions cannot be achieved without social justice. Empowering women is not merely an act of inclusion but a strategic imperative for effective conservation. This requires rethinking institutional frameworks, investing in education and legal literacy, ensuring access to financial resources, and creating participatory spaces that enable women to lead. It also means shifting from symbolic gestures of inclusion to substantive engagement with women's knowledge, concerns, and visions for sustainable development.

In conclusion, the future of environmental governance in ecologically sensitive areas like Dudhwa lies in recognizing women not as passive recipients of policy but as proactive agents of change. Their

traditional ecological wisdom, labour, and lived experiences must form the bedrock of any strategy aimed at biodiversity conservation, climate resilience, and sustainable development. Only when gender equity becomes a core principle of environmental policy will the vision of a just and ecologically balanced future be truly realized.

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