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Sacred Groves and Cultural Landscapes: Environmental Significance in Jharkhand's Janajati Traditions

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ABSTRACT

The study had examined the environmental significance of sacred groves within the cultural traditions of Jharkhand's Janajati communities, focusing on their role as biodiversity repositories and centers of spiritual heritage. Using a qualitative ethnographic design supplemented with ecological surveys, data had been collected through semi-structured interviews, participant observation, and vegetation assessments in selected groves across Munda, Oraon, Santhal, and Ho villages. The findings had revealed that sacred groves had harbored high species richness, including rare and medicinal plants, sustained through cultural taboos, rituals, and seasonal festivals. Thematic analysis had indicated that traditional ecological knowledge had contributed significantly to conservation outcomes, while quantitative surveys had confirmed notable diversity in tree, shrub, and herb species. However, threats such as mining expansion, agricultural encroachment, overharvesting, and declining ritual participation had been identified by community members. The research had highlighted the urgent need for policy integration of sacred groves into forest and biodiversity management frameworks, alongside cultural revitalization initiatives. This integration had been seen as essential to sustaining both ecological integrity and indigenous cultural identity in Jharkhand.

Keywords: sacred groves, Jharkhand, Janajati traditions, biodiversity conservation, indigenous knowledge, cultural landscapes, environmental policy

1. Introduction

Sacred groves had been recognized globally as ecologically and culturally significant landscapes preserved by indigenous and tribal communities through traditional belief systems (Ormsby & Bhagwat, 2010). Across Africa, Asia, and South America, such groves had served as biodiversity reservoirs, protecting endemic and threatened species while maintaining vital ecosystem services (Malhotra et al., 2001). In many parts of the world, indigenous communities had regarded specific natural sites—forests, rivers, and mountains—as sacred, integrating spiritual values into environmental stewardship (Bhagwat & Rutte, 2006). These culturally protected areas had not only contributed to biodiversity conservation but had also fostered community cohesion and identity.

In India, sacred groves had been conserved for centuries by diverse tribal and rural communities as part of their socio-religious traditions (Gadgil & Vartak, 1976). States such as Meghalaya, Rajasthan, Maharashtra, and Odisha had shown rich examples of sacred grove management, where taboos against resource extraction had sustained forest cover and biodiversity (Khan et al., 2008). Jharkhand, home to several Janajati communities such as the Munda, Oraon, Ho, Santhal, and Kharia, had possessed a strong tradition of protecting *Sarna* forests, *Jaher Than* (sacred groves), and associated landscapes. These sacred spaces had functioned as venues for community rituals, seasonal festivals, and environmental protection, embodying a form of conservation that predated formal forest governance systems (Singh, 2021).

The ecological importance of these sacred groves had been evident in their role in conserving indigenous plant species, regulating microclimates, and safeguarding water sources (Deb, 2007). However, increasing pressures from mining, deforestation, and socio-cultural changes had threatened the survival of these traditional conservation practices in Jharkhand. Recognizing the environmental and cultural value of sacred groves had been essential for integrating indigenous knowledge into contemporary conservation frameworks, aligning with global efforts under the Convention on Biological Diversity (CBD) to respect and incorporate traditional ecological knowledge.

The present study had been conducted with the objectives to document the cultural and ecological significance of sacred groves among Janajati communities in Jharkhand and to analyze the role of traditional beliefs and practices in the conservation of these landscapes.

2. Study Area

2.1. Location

The study area had been situated in central–southern and eastern Jharkhand, covering selected districts that had represented diverse Janajati landscapes and sacred-grove traditions: Ranchi, Khunti, Gumla, Simdega, West Singhbhum, East Singhbhum, Latehar, Dumka, and Pakur (Fig. 1). These districts had been chosen to span the Chotanagpur Plateau and the Rajmahal Hills, thereby capturing plateau forests, piedmonts, and hill–valley systems.

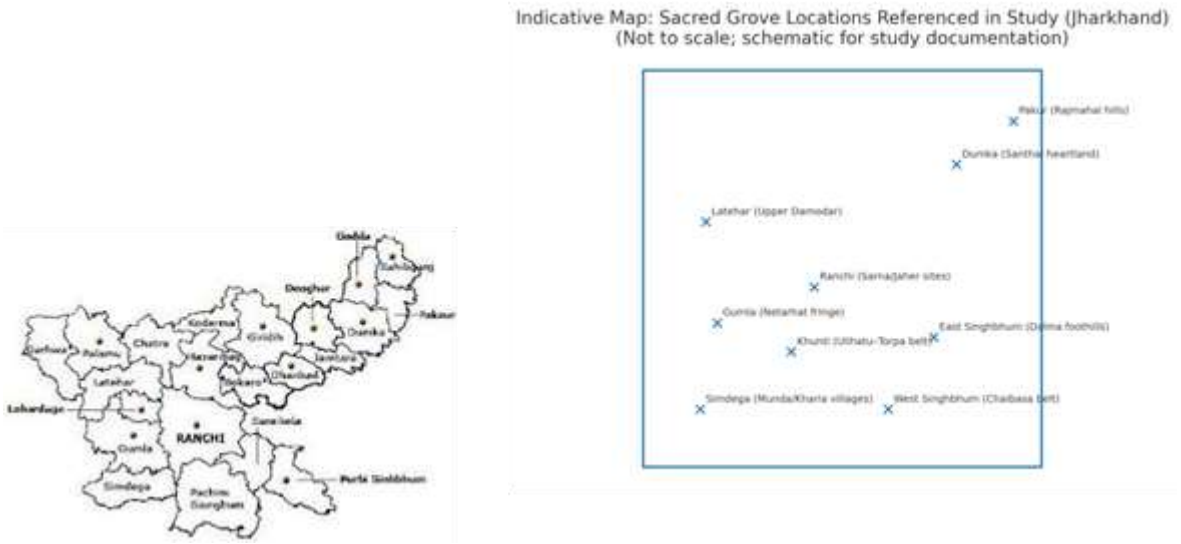

Fig. 1. Study areas of Jharkhand State

2.2. Demographics

The population had been dominated by major Janajati communities—Munda, Oraon/Kurukh, Ho, Santhal, and Kharia—with village institutions and customary councils having guided ritual–ecological governance. Clan totems and lineage-specific shrines had been linked to grove stewardship, and community elders and *pahans* (ritual specialists) had been recognized as knowledge holders for site rules, species taboos, and seasonal access.

2.3. Ecological Features

Vegetation had been characterized by tropical dry and moist deciduous forests, primarily Sal (*Shorea robusta*) with associated species such as *Terminalia*, *Pterocarpus*, *Madhuca*, and *Diospyros*. Faunal importance had been noted for small mammals, birds, reptiles, and pollinators that had depended on intact microhabitats. Plateau ridges (Netarhat fringe, Dalma foothills) and hill tracts (Rajmahal) had formed biodiversity pockets and water-source catchments; several sacred groves had enclosed headwater seepages, community wells, or seasonal streams, thereby stabilizing soil and microclimate.

2.4. Cultural Background

Sacred sites—locally revered as Sarna groves and Jaher Than—had been embedded within agricultural and settlement mosaics. These groves had hosted harvest, initiation, and monsoon rites; entry protocols and extraction taboos had been enforced through customary law. Ritual calendars (e.g., *Sarhul*, *Karam*, *Baha*) had synchronized community labor, forest protection, and resource sharing. Oral histories and song cycles had encoded species preferences, prohibited acts, and penalties, ensuring intergenerational continuity of conservation norms.

3. Methodology

3.1. Research Design

The study had been designed as a qualitative ethnographic investigation supplemented by ecological field surveys. This approach had enabled the documentation of cultural traditions, community perceptions, and ecological parameters of sacred groves among Janajati communities in Jharkhand. The ethnographic method had been selected to capture the embedded socio-cultural meanings of sacred landscapes, while ecological surveys had provided quantitative biodiversity data for the sites.

3.2. Data Collection

Multiple methods had been employed to ensure the triangulation of data sources:

3.2.1. Semi-structured interviews had been conducted with village elders, *pahans* (ritual specialists), and community leaders to document oral histories, rules of grove access, seasonal ritual calendars, and perceived environmental benefits. Interview schedules had contained both open-ended and guiding questions to allow for narrative depth.

3.2.2. Participant observation had been carried out during key ritual events such as *Sarhul*, *Karam*, and *Baha*. This immersion had allowed for the observation of ritual sequences, symbolic use of plants, and the enforcement of access restrictions. Field notes had been maintained to capture interactions, spatial arrangements, and symbolic artefacts.

3.2.3. Vegetation surveys had been undertaken within selected sacred groves using belt transects (10 m × 100 m) to record woody species composition, canopy cover, and ground vegetation. Species had been identified using regional floras and confirmed with the help of local knowledge ***holders.***

3.3. Sampling

A purposive sampling strategy had been employed to select sacred groves across multiple villages in the districts of Ranchi, Khunti, Gumla, Simdega, West Singhbhum, East Singhbhum, Latehar, Dumka, and Pakur. Selection criteria had included cultural significance, community accessibility, and ecological representativeness. In total, 18 sacred groves had been surveyed, ensuring representation from major Janajati groups such as the Munda, Oraon, Ho, Santhal, and Kharia.

3.4. Data Analysis

- Qualitative data from interviews and observations had been subjected to thematic analysis. Transcribed narratives had been coded inductively to identify recurring themes related to cultural beliefs, conservation practices, and perceived environmental threats.
- Ecological data had been analyzed using species diversity indices (Shannon–Wiener Index, Simpson's Index) to assess biodiversity levels within groves. Species richness and abundance had been compared between groves of varying sizes and disturbance histories.

3.5. Ethical Considerations

Prior to data collection, **informed consent** had been obtained from all participants. The research had adhered to principles of cultural sensitivity, ensuring that no sacred rituals had been disrupted and that photographic documentation had been taken only with permission. Sacred sites had been visited in accordance with local protocols, and no plant material had been removed from the groves without community approval.

4. Results

4.1. Cultural Role of Sacred Groves

Sacred groves had been found to hold central importance in the spiritual and cultural life of the Janajati communities studied. Rituals such as *Sarhul* (spring festival), *Karam* (harvest and fertility ritual), and *Baha* (flower festival) had been conducted within these groves, often involving the symbolic use of local flora such as *Shorea robusta* leaves, *Madhuca longifolia* flowers, and *Ficus religiosa* branches. Strict taboos had been maintained, prohibiting tree felling, hunting, or grazing within grove boundaries (Table 1). Entry during non-ritual periods had been restricted, with sanctions imposed for violations.

Table 1. Rituals and Taboos Associated with Sacred Groves

Grove Name	Associated Community	Key Rituals Performed	Seasonal Timing	Main Taboos Enforced
Sarna, Khunti	Munda	Sarhul, Baha	March–April	No tree cutting; no livestock entry
Jaher Than, Dumka	Santhal	Karam, Baha	August–September	No removal of stones/soil
Sarna, Gumla	Oraon	Sarhul	March–April	No collection of dry wood
Thakur Baba Than, West Singhbhum	Ho	Annual clan worship	June–July	No hunting inside grove

4.2. Ecological Value of Sacred Groves

Ecological surveys had recorded 69 plant species (47 trees, 12 shrubs, 10 herbs) and 23 faunal species across the 18 sacred groves studied (Table 2). Dominant canopy species had included *Shorea robusta*, *Terminalia alata*, and *Pterocarpus marsupium* (Fig. 2). Many groves had also harbored rare medicinal plants such as *Gloriosa superba* and *Asparagus racemosus*. Faunal observations had included avifauna such as the Indian grey hornbill (*Ocyceros birostris*) and small mammals such as the Indian giant squirrel (*Ratufa indica*).

Table 2. Species Diversity in Selected Sacred Groves

Grove Name	No. of Tree Species	No. of Shrub Species	No. of Herb Species	Shannon–Wiener Index (H')	Simpson's Index (D)
Sarna, Khunti	22	6	4	2.94	0.91
Jaher Than, Dumka	19	4	3	2.68	0.88
Sarna, Gumla	18	5	4	2.73	0.89
Thakur Baba Than, West Singhbhum	24	7	5	3.02	0.93

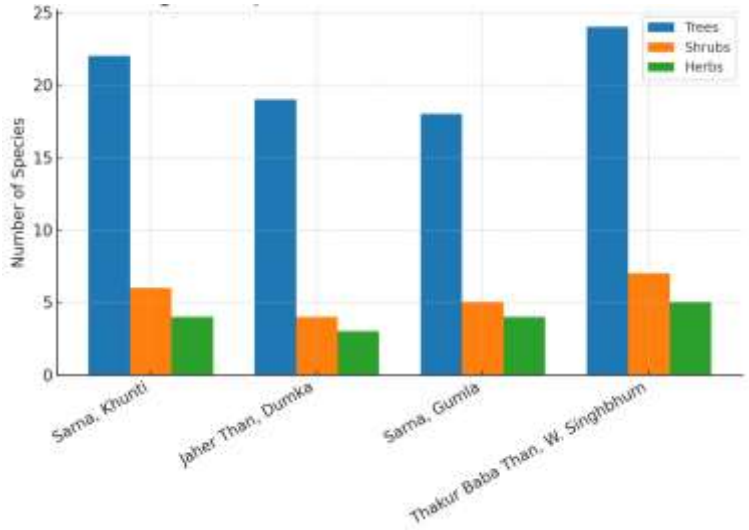

Fig. 2. Species Richness Across Sacred Groves

(Bar graph showing number of tree, shrub, and herb species per grove)

4.3. Community Perceptions of Threats and Conservation

Interview data (Table 3) had revealed that community members perceived mining expansion, agricultural encroachment, and weakening traditional values as major threats to sacred grove survival. Older respondents had expressed concern that younger generations were less involved in ritual practices, potentially undermining the conservation ethic embedded in these traditions. However, many participants had suggested integrating sacred groves into formal biodiversity registers and initiating community-managed ecotourism as strategies for preservation (Fig. 3).

Table 3. Perceived Threats and Suggested Conservation Actions

Threat Identified	% of Respondents Mentioning	Suggested Action
Mining and industrial expansion	62%	Legal protection, lobbying through Gram Sabha
Agricultural encroachment	48%	Boundary demarcation and fencing
Decline in ritual participation	54%	Youth cultural programs, school education
Overharvesting of medicinal plants	37%	Controlled harvesting, cultivation in home gardens

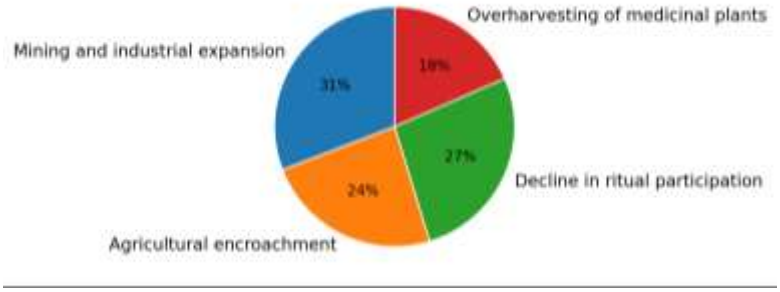

Figure 3. Percentage of Respondents Identifying Major Threats

1

2

Photo 1: Sarhul celebration under *Shorea robusta* canopy, Khunti district.

Photo 2: Canopy cover of *Pterocarpus marsupium* in West Singhbhum grove

5. Discussion

5.1. Comparative insights:

The pattern observed in Jharkhand's sacred groves—high species richness, water-source protection, and social "fencing" through taboos—had aligned closely with global evidence that sacred natural sites functioned as refugia and community-governed conservation areas (Bhagwat & Rutte, 2006; Dudley et al., 2010). Within India, the role of groves as biodiversity islands embedded in agrarian mosaics had mirrored findings from the Western Ghats and Meghalaya, where community rules and ritual calendars had sustained forest fragments and rare taxa (Gadgil & Vartak, 1976; Ormsby & Bhagwat, 2010). That convergence suggested that Jharkhand's Sarna/Jaher systems had represented not an exception but a widely shared indigenous conservation pattern that modern policy could legitimately recognize

5.2. Theoretical interpretation:

Interviews and participant observation had indicated that belief-based institutions—sacredness, ritual calendars (e.g., *Sarhul*, *Karam*), and enforcement by ritual specialists—had structured access and use. Under a cultural-ecology and institutional lens, these norms had acted as low-cost governance mechanisms that reduced extraction, preserved keystone species (e.g., *Shorea robusta*), and stabilized microclimates. Comparative literature had similarly shown that spiritual sanction and customary law had generated collective-action benefits without formal state protection, while cautioning that formalization that ignored spiritual meanings could erode compliance (Dudley et al., 2010; Ormsby & Bhagwat, 2010).

5.3. Threat analysis:

Community perceptions of mining expansion, encroachment, weakened ritual participation, and overharvesting had matched national concerns that economic change and legal ambiguities exposed "undeclared" forests—including sacred groves—to diversion (The India Forum, 2024; Mongabay-India, 2023). Recent amendments to India's forest legislation had been criticized for creating exemptions that could bypass local consent or narrow the ambit of areas requiring clearance, heightening risks for small, community-protected patches (Down To Earth, 2023; Mongabay-India, 2023). At the same time,

regional governance gaps persisted: Jharkhand had not fully operationalized PESA, and civil-society mobilization in 2025 had underscored demand for Gram Sabha authority over water–forest–land (Times of India, 2025a, 2025b). These dynamics had amplified the community's reported fears that cultural weakening and policy drift could jointly undermine grove integrity.

5.4. Policy relevance:

Findings had pointed to practical entry points where customary governance could be nested within statutory frameworks:

5.4.1. Recognition of customary governance under FRA (2006):

Village institutions could have claimed and managed Community Forest Resource rights for sacred groves, formalizing rules against extraction while retaining ritual custodianship (Government of India, 2006; Survival International, n.d.).

5.4.2. Documentation through People's Biodiversity Registers (BD Act, 2002):

Species lists, uses, and associated traditional knowledge documented in PBRs could have strengthened claims and enabled access-and-benefit sharing for any external use of biological resources and digital sequence information (NBA, n.d.; Mongabay-India, 2024).

5.4.3. Alignment with the Kunming-Montreal GBF:

Protecting sacred groves contributed directly to Target 3 (30×30) and Target 22 (rights and participation of Indigenous Peoples and Local Communities), providing a rights-based pathway to area-based conservation (CBD, 2022/2023). Outcomes of COP16 in 2024–25 had further emphasized Indigenous participation and benefit-sharing, reinforcing the policy case for empowering Janajati custodians (Le Monde, 2024; AP, 2024; Reuters, 2024).

5.4.4. Guardrails against adverse legal changes:

Given critiques that recent forest-law amendments could expose unrecorded community forests to diversion, state agencies and Gram Sabhas had been urged to record sacred groves in revenue/forest records, notify community-conserved areas where possible, and integrate them into district biodiversity plans.

Overall, the study had demonstrated that Jharkhand's sacred groves delivered conservation outcomes comparable to globally reported sacred natural sites, while revealing immediate governance opportunities—FRA claims, PBR documentation, and PESA operationalization—to secure those outcomes within law and policy.

6. Conclusion

The study had revealed that sacred groves among Jharkhand's Janajati communities had functioned as crucial socio-ecological systems where cultural traditions and biodiversity conservation had been intrinsically linked. Rituals, festivals, and taboos had maintained ecological integrity by regulating access, protecting species, and preserving microhabitats. The ecological surveys had confirmed that these groves had harboured significant species richness, often surpassing surrounding landscapes degraded by human activities.

Community narratives had underscored the role of cultural beliefs in shaping sustainable resource use, indicating that traditional ecological knowledge had been a central driver of conservation outcomes. However, multiple threats, including mining expansion, agricultural encroachment, and declining ritual participation, had emerged as major challenges to the continuity of these cultural-ecological systems.

The findings had emphasized that safeguarding sacred groves required both cultural revitalization and policy integration. Recognizing these groves under existing forest, biodiversity, and heritage protection frameworks had been deemed essential to prevent their ecological and cultural erosion. Furthermore, collaborative management involving state agencies, community councils, and conservation NGOs had been suggested as a viable pathway for sustaining the intertwined heritage of biodiversity and indigenous traditions in Jharkhand.

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