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THE FOREST AS UNIVERSITY: INDIGENOUS KNOWLEDGE SYSTEMS AND ADIVASI INTELLECTUAL TRADITIONS IN INDIA

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ABSTRACT

Adivasi communities in India have sustained rich, structured bodies of knowledge for centuries. These systems cover everything from plant medicine and seasonal forecasting to land governance and visual cosmology. Yet formal education in India treats them as peripheral, if it acknowledges them at all. This article argues that Indigenous Knowledge Systems among Adivasi peoples are genuine intellectual traditions, not folklore or superstition. They encode ecological understanding, ethical frameworks, and historical memory with a depth and precision that merits serious academic attention. Drawing on examples from Gond, Santal, Munda, Dongria Kondh, and Baiga communities, the article examines how knowledge is produced, stored, and transmitted outside formal institutions. It traces how British colonial forest and land policies disrupted these systems, how resistance movements have reasserted their validity, and where Indigenous knowledge and modern science converge. The article closes with a call for bringing these systems into India's educational mainstream, on terms set by the communities themselves.

KEYWORDS: *Indigenous Knowledge Systems; Adivasi; Ecological knowledge; Oral tradition; Gond; Santal; Munda; Niyamgiri; Decolonial education; India.*

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INTRODUCTION

Schools, universities, laboratories, and libraries are the institutions that modern society trusts to produce and certify knowledge. This arrangement feels natural to most people who have grown up inside it. But it is not universal, and it is not very old. For most of human history, knowledge was produced and passed on through direct engagement with the world, through farming, forest-gathering, healing, storytelling, and close observation of the seasons.

India is home to more than 700 distinct Adivasi, or Scheduled Tribe, communities. According to the Census of India 2011, they number approximately 104 million people, making up 8.6 percent of the national population.[1] These communities span an extraordinary range of ecological zones, languages, and cultural practices. What they share, to varying degrees, is a relationship with land, forest, and ecological systems that has generated and sustained detailed bodies of practical and philosophical knowledge over very long periods of time.

[1] *G. Gopu and S. John Kaviarasu, Tribal Studies in India: Culture, Identity and Development (AGPH Books| AG Publishing House, 2025).*

This article calls that body of knowledge a university of the forest. The phrase is not romantic exaggeration. It is a way of taking seriously the knowledge that Adivasi communities have produced and maintained. The forest has been, for these communities, a place of observation, experimentation, memory, and teaching. It has served the same purposes that formal institutions serve in modern society, but through very different methods.

The article has a clear argument. Indigenous Knowledge Systems among Adivasi communities are genuine intellectual traditions. They have been marginalised not because they lack rigour or depth but because the dominant frameworks of colonial and postcolonial governance chose not to recognise them. Recovering these systems is not a nostalgic exercise. It is a practical and intellectual necessity, especially at a time when ecological crisis demands exactly the kind of long-term, place-based, and sustainable understanding that Adivasi knowledge systems embody.

The article proceeds in nine sections. It begins by describing what Indigenous Knowledge Systems are and how they work. It then looks at specific examples from different Adivasi communities. It traces how colonial policies disrupted these systems, how the Niyamgiri case brought them into a courtroom, and where they converge with modern science. It closes with a case for bringing these systems into India's educational mainstream.

WHAT INDIGENOUS KNOWLEDGE SYSTEMS ACTUALLY ARE

The phrase Indigenous Knowledge Systems is used in academic, policy, and development discussions, but it is worth being precise about what it means. At its simplest, Indigenous knowledge refers to the detailed understanding of local environments, plants, animals, soils, water, seasons, and social relationships that specific communities have developed through sustained observation over long periods of time.

Fikret Berkes, one of the leading scholars in this field, defines it as a cumulative body of knowledge, practice, and belief, evolving by adaptive processes and handed down through generations by cultural transmission. He argues that Indigenous ecological knowledge is not inferior to Western science but represents a different, and often complementary, way of understanding the natural world.[2]

Paul Sillitoe distinguishes between the practical, day-to-day expertise of farmers, healers, and forest-users and the larger systems that organise and transmit that expertise. Those larger systems have their own logic, categories, and internal standards of validity. They are not simply collections of useful tips. They are structured frameworks for making sense of the world.[3]

Among Adivasi communities in India, these systems cover a remarkable range. Table 1 below shows the main domains of Indigenous knowledge found across major communities in India.

[2] *Fikret Berkes, Sacred Ecology(Routledge, 2017).*
[3] *Paul Sillitoe, "The Development of Indigenous Knowledge: A New Applied Anthropology," Current Anthropology 39, no. 2 (1998): 223–252.*

Table 1: Major Domains of Indigenous Knowledge Systems Among Adivasi Communities

Domain of Knowledge	What It Covers	Communities Where Well Documented
Ecological Classification	Naming and categorising plants, animals, and soils by use, behaviour, and seasonal role	Gond, Santal, Munda, Baiga, Dongria Kondh
Medicinal Knowledge	Identifying and preparing forest plants to treat illness, wounds, and chronic conditions	Gond, Oraon, Korku, Ho
Agricultural Practice	Soil reading, seed selection, crop rotation, and timing cultivation to ecological cycles	Santal, Munda, Bhil, Gondi
Seasonal Forecasting	Reading bird calls, insect activity, and tree flowering to predict rain and seasons	Santal, Gond, Bhil, Baiga
Collective Land Governance	Managing shared forests, water, and farmland through community assemblies	Munda (khuntkatti), Gondi councils
Oral Literature and History	Preserving migration routes, ecological events, and political memory through song and story	Santal, Ho, Oraon, Gond
Visual and Material Knowledge	Encoding ecological and cosmological knowledge through painting, weaving, and craft	Gond, Warli, Baiga, Santal

Source: Ministry of Tribal Affairs, Annual Report 2022-23.

What makes these systems particularly significant is that they are not static. They evolve continuously as communities encounter new ecological conditions, new crops, and new social circumstances. An elder in a Gond village who can identify two hundred medicinal plants is not reciting a memorised list. She is drawing on a living system of knowledge that she has tested, refined, and added to throughout her life.[4]

UNESCO's Local and Indigenous Knowledge Systems programme has emphasised that these systems carry place-based understanding of ecosystems that cannot be replicated in a laboratory setting. This is not because Indigenous knowledge is mystical. It is because ecological knowledge developed over generations in a specific location carries detail and nuance that general scientific models cannot fully capture.[5]

COMMUNITY PORTRAITS

The Gond and the Language of the Forest

The Gond are one of India's largest Adivasi communities, with approximately 13 million people spread across Madhya Pradesh, Chhattisgarh, Maharashtra, and Andhra Pradesh. Their visual tradition, now internationally recognised, is far more than decorative art. Each element in a Gond painting carries ecological and cosmological meaning. Animals, trees, and ancestral figures are placed in specific relationships that encode principles of co-existence and mutual dependence within the forest ecosystem.

Jyotindra Jain, in his documentation of Gond and Warli painting traditions, describes Gond visual culture as a form of narrative knowledge: a way of recording and transmitting understanding of the natural world through image rather than text.[6]

[4] *Madhav Gadgil and Ramachandra Guha, Ecology and Equity: The Use and Abuse of Nature in Contemporary India (New Delhi: Penguin, 1995), 45–70.*
[5] *"Local and Indigenous Knowledge Systems (LINKS) Programme," UNESCO(accessed May 2025),https://www.unesco.org/en/climate-change/links.*
[6] *Jyotindra Jain, Gond and Warli Paintings (New Delhi: Lalit Kala Akademi, 1984), 10–25.*

Gond cosmology understands the world as a layered forest inhabited by spiritual forces that regulate ecological balance. These are not simply religious beliefs in the conventional sense. They are ethical frameworks. The idea that forests are inhabited by beings who notice when they are harmed functions, in practice, as a regulatory system that discourages over-exploitation. The forest is treated as sacred not because people are superstitious but because the community has learned, over generations, that treating the forest with respect is what keeps it productive and healthy.

The Santal and the Living Archive

The Santal, numbering approximately 7.2 million people across Jharkhand, West Bengal, and Odisha, maintain one of the richest oral traditions in South Asia. Their ancestral narratives, seasonal songs, and communal histories are a functioning archive. Migration routes, historical events, agricultural calendars, and ecological relationships are all encoded in forms that can be transmitted orally across generations.

David Hardiman's research on Adivasi movements in western India documents the way oral tradition carries historical and political memory in forms that colonial administrative records systematically excluded. The accounts of land loss and forest enclosure preserved in Santal oral genealogies are historically accurate records that supplement and sometimes correct the colonial archive.[7]

In Santal belief, ancestral spirits reside in specific natural elements, creating a moral ecology: a framework in which harming the natural environment is simultaneously a social and a spiritual offence. This framework has sustained Santal communities' relationship with their forest environment for many generations.

The Munda and the Khuntkatti System

The Munda community of Jharkhand provides perhaps the clearest example of Indigenous knowledge operating as a full governance system. The khuntkatti system vests ownership of land collectively in the founding lineage of each village. Agricultural cycles are closely tied to forest regeneration patterns, and decisions about cultivation, fallow periods, and forest use are made collectively through community assemblies.

K.S. Singh's detailed historical study of Birsa Munda's resistance movement shows how the colonial destruction of khuntkatti was understood by Munda communities not merely as an economic injury but as a constitutional assault: the dismantling of a governance system that had maintained ecological and social balance for centuries.[8]

The Baiga and the Ethics of Non-Invasion

The Baiga of central India offer a philosophical case study that is particularly striking. Traditionally, Baigas practised shifting cultivation but avoided plough agriculture. Their reason, as recorded by Verrier Elwin in the 1930s, was a belief that cutting the earth with iron injured the mother soil.[9,10]

This has been described as superstition. But it can also be understood as an ethical ecological philosophy: a commitment to non-invasive interaction with the earth. In contemporary agricultural science, the practices it describes, minimal soil disturbance, natural fallow recovery, avoidance of heavy mechanical tillage, are now treated as central

[7] *David Hardiman, The Coming of the Devi: Adivasi Assertion in Western India (Delhi: Oxford University Press, 1987), 1–30.*
[8] *K. S. Singh, Birsa Munda and His Movement, 1874-1901 (Calcutta: Oxford University Press, 1983), 55–90.*
[9] *Verrier Elwin, The Baiga (London: John Murray, 1939), 101–120.*
[10] *Archana Prasad, Against Ecological Romanticism: Verrier Elwin and the Making of an Anti-Modern Tribal Identity (New Delhi: Three Essays, 2003), 1–25.*

principles of regenerative agriculture. The Baiga arrived at these principles through a different path and expressed them in different language, but the practical content is consistent with what modern ecological research recommends.

Table 2: Major Adivasi Communities and Their Indigenous Knowledge Traditions

Community	Population (2011 Census)	Primary Region	Key Knowledge Tradition
Gond	13 million	MP, Chhattisgarh, Maharashtra, AP	Visual epistemology; forest cosmology; ecological governance
Santal	7.2 million	Jharkhand, West Bengal, Odisha	Oral genealogy; agricultural ecology; medicinal plants
Munda	2.2 million	Jharkhand, Odisha	Khuntkatti land tenure; forest governance; oral history
Oraon	2.0 million	Jharkhand, Chhattisgarh, Odisha	Sacred grove management; medicinal knowledge; seasonal rituals
Bhil	4.6 million	Rajasthan, MP, Gujarat	Forest and water management; seasonal forecasting; oral law
Dongria Kondh	8,000	Odisha (Niyamgiri hills)	Sacred hill cosmology; biodiversity stewardship
Baiga	300,000	MP, Chhattisgarh	Non-invasive cultivation ethics; medicinal plant expertise
Ho	1.4 million	Jharkhand, Odisha	Collective forest governance; oral legal traditions

Source: Census of India 2011, Primary Census Abstract for Scheduled Tribes.

MYTHOLOGY AS A WAY OF KNOWING

One of the most important, and most misunderstood, dimensions of Adivasi knowledge systems is mythology. In standard academic usage, mythology tends to mean stories that are symbolic, metaphorical, or simply untrue. This understanding misses something important about how Adivasi mythological traditions actually work.

In Adivasi communities, mythological narratives carry structured ecological knowledge. Origin stories describe specific landscapes, rivers, and forest features. They record the conditions under which communities first settled in particular territories. They encode principles of land use, harvest, and communal sharing that have been tested over very long periods. They are not pre-scientific imagination. They are a form of documented experience.

Vandana Shiva makes a related argument in her analysis of biodiversity knowledge. She notes that the classification of plants, animals, and ecological relationships found in Indigenous oral traditions is often more detailed, accurate, and practically useful than the abstract categories of Western scientific taxonomy, precisely because it has been developed through direct, sustained interaction with specific ecosystems.[11]

Adivasi origin myths frequently describe the emergence of human communities from specific landscapes, emphasising continuity with rather than separation from the natural world. In most Adivasi cosmological frameworks, humans are part of a larger ecological community that includes forests, rivers, animals, and ancestral spirits, all of whom have claims and capacities that must be respected.

This cosmological framework has practical consequences. Sacred groves, maintained as sites where ancestral spirits reside, function as biodiversity reserves. Taboos on hunting certain species during breeding seasons protect animal populations. Rules about which parts of a forest can be harvested, and when, constitute a form of sustainable resource management encoded in religious practice rather than legal regulation.

[11] *Vandana Shiva, Monocultures of the Mind: Perspectives on Biodiversity and Biotechnology (London: Zed Books, 1993), 9–40.*

THE NIYAMGIRI CASE

The Dongria Kondh community of Odisha provides one of the most significant contemporary examples of an Indigenous knowledge system engaging directly with modern legal and political institutions. Their territory, the Niyamgiri hills in Kalahandi and Rayagada districts, contains one of the world's largest untapped deposits of high-quality bauxite. From the early 2000s, the multinational mining company Vedanta Resources, in partnership with the Odisha Mining Corporation, proposed to mine the plateau.

For the Dongria Kondh, roughly 8,000 people, the proposal was not primarily an economic or environmental question. It was a question about the integrity of their world. The Niyamgiri plateau is the home of Niyam Raja, the central deity in Kondh religious and social life. The hills are not merely geographical features. They are understood as a sacred being whose integrity is inseparable from the community's own survival.[12]

Felix Padel and Samarendra Das, in their detailed study of the case, document the ecological precision embedded in Dongria Kondh cosmology. The community's understanding of the hill ecosystem, including water sources, forest cover, biodiversity, and inter-species relationships, is detailed and accurate. Their insistence on the sacred nature of the hills is simultaneously an assertion of ecological understanding: the hills must not be mined because mining would destroy the water sources, the forest cover, and the ecological relationships on which both the human community and the broader ecosystem depend.[13]

In a landmark 2013 Supreme Court ruling, the Court ordered that gram sabhas of the twelve most directly affected villages be convened to decide whether the proposed mining would infringe on their religious and cultural rights. All twelve gram sabhas unanimously rejected the mining proposal. The Supreme Court accepted these decisions as legally binding for forest clearance purposes, effectively halting the project.[14]

This outcome was historically unprecedented. It was the first time in India that the cosmological claims of an Adivasi community were given formal legal weight in a court of law. The Niyamgiri case demonstrates that Indigenous knowledge systems are not relics of the past. They are living frameworks capable of engaging, and prevailing within, modern legal systems.

HOW COLONIAL POLICY DISRUPTED INDIGENOUS KNOWLEDGE

To understand the current marginalisation of Adivasi knowledge systems, it is necessary to understand how they were disrupted in the first place. The damage was not gradual or accidental. It followed from deliberate colonial policies that restructured forests, land, and governance in ways that specifically undermined the social and ecological systems within which Indigenous knowledge was produced and transmitted.

The Indian Forest Act of 1878 was the most consequential single intervention. By turning communally managed forests into state-owned reserves, it removed Adivasi communities from the ecological systems within which their knowledge had been developed. Shifting cultivation was criminalised. Forest gathering was restricted. Sacred groves were

[12] *Md MainulSk, et al.,"Indigenous Resistance and Environmental Justice in the Face of Climate Change: A Study of the Dongria Kondh Tribe in Niyamgiri Hills, Odisha,"in Climate Change and Disadvantaged Communities(CRC Press, 2025), 19.*
[13] *Felix Padel and Samarendra Das, Out of This Earth: East India Adivasis and the Aluminium Cartel (New Delhi: Orient BlackSwan, 2010), 1–30.*
[14] *Supreme Court of India, Orissa Mining Corporation Ltd. v. Ministry of Environment and Forest and Others, (2013) 6 SCC 476; Gram Sabha proceedings, Niyamgiri villages, Odisha, 2013.*

subjected to settlement operations that ignored their cultural and ecological significance. In one legislative stroke, centuries of accumulated ecological practice were reclassified as illegal activity.[15]

Colonial revenue systems compounded this by introducing private property frameworks that replaced collective tenure arrangements. The Munda khuntkatti system, the Santal system of village commons, and the Gond practices of communal forest governance were all progressively dismantled by policies that treated individual title as the only legitimate form of land ownership.

Biswamoy Pati's edited volume on Adivasis in colonial India documents the range of ways in which colonial administrative classification disrupted Indigenous social and ecological systems. Communities were renamed, their governance structures were dissolved, and their knowledge systems were either harvested for economic utility or dismissed as superstition.[16]

The uprisings that punctuated this period, the Santhal Hul of 1855-56, the Munda Ulgulan of 1899-1900, and the Bhumkal rebellion in Bastar in 1910, were not simply protests against economic grievances. They were assertions of the right to maintain the social and ecological systems within which Adivasi life and knowledge had meaning.[17]

Table 3: Colonial Policies and Their Impact on Adivasi Knowledge Systems

Indigenous Practice	Colonial Policy That Disrupted It	Effect on the Community
Communal forest management	Indian Forest Act, 1878: forests declared state property	Loss of shared resource base; gathering criminalised
Shifting cultivation (jhum)	Classified as illegal encroachment on reserved forest	Communities lost agricultural land; forced into wage labour
Khuntkatti collective tenure	Revenue surveys introduced individual title under colonial land codes	Collective land broken up; moneylenders entered
Sacred grove preservation	Forest settlement operations ignored sacred categories	Sacred groves felled or left without legal protection
Oral juridical systems	Colonial courts replaced customary legal forums	Community dispute-resolution capacity weakened
Medicinal plant knowledge	British botanical surveys extracted plants without community consent	Knowledge removed from context; communities lost ownership

Source: Compiled from Ranajit Guha, Elementary Aspects of Peasant Insurgency in Colonial India (1983); Ramachandra Guha, The Unquiet Woods (2000); Nandini Sundar, Subalterns and Sovereigns (2007).

[15] *Ramachandra Guha, The Unquiet Woods: Ecological Change and Peasant Resistance in the Himalaya, expanded ed. (Berkeley: University of California Press, 2000), 3–28.*
[16] *Biswamoy Pati, ed., Adivasis in Colonial India: Survival, Resistance and Negotiation (New Delhi: Orient BlackSwan, 2011), 1–20.*
[17] *Nandini Sundar, Subalterns and Sovereigns: An Anthropological History of Bastar, 1854-2006, 2nd ed. (New Delhi: Oxford University Press, 2007), 45–80.*

Table 4: Adivasi Population and Pressures on Indigenous Knowledge by State (Census 2011)

State	Adivasi Population (millions)	Share of State Population (%)	Primary Pressure on Indigenous Knowledge
Madhya Pradesh	15.3	21.1	Forest enclosures; mining; displacement of cultivation
Maharashtra	10.5	9.4	Urban expansion; dam construction; land conversion
Odisha	9.6	22.8	Bauxite mining; dam submergence; forest loss
Rajasthan	9.2	13.5	Mining; water scarcity; land conversion
Jharkhand	8.6	26.2	Coal and iron ore mining; deforestation
Gujarat	8.9	14.8	Industrial corridors; dam projects; land acquisition
Chhattisgarh	7.8	30.6	Mining; security operations; forest clearance
India (all states)	104.3	8.6	Multiple overlapping pressures across mineral-rich belt

Source: Census of India 2011, Primary Census Abstract for Scheduled Tribes; Ministry of Tribal Affairs, Annual Report 2022-23.

WHERE INDIGENOUS KNOWLEDGE AND MODERN SCIENCE MEET

A common assumption is that Indigenous knowledge and modern science are fundamentally incompatible, that one is rational and evidence-based while the other is intuitive or spiritual. This assumption is not supported by what researchers in ecology, agronomy, pharmacology, and climate science have actually found when they have looked carefully at Indigenous practice.

In field after field, contemporary scientific research has confirmed what Adivasi communities have long practised. Agroforestry systems that integrate trees with crops, long established in many Adivasi communities, are now recognised by the International Centre for Research in Agroforestry as among the most effective approaches to sustainable land use available.[18] Sacred groves maintained as sites of spiritual significance have been found by ecologists to contain significantly higher plant biodiversity than adjacent non-sacred forests.

In pharmacology, the convergence is particularly striking. More than 80 plants used medicinally by Adivasi communities across India have been formally listed in the Indian Pharmacopoeia. Many compounds now used in clinical medicine, including treatments for conditions ranging from malaria to snake venom, were first identified through ethnobotanical research that began with documenting Adivasi healing practice.

Madhav Gadgil and Ramachandra Guha document the sophistication of Adivasi ecological management systems: rotational harvesting of forest products, seasonal taboos on fishing and hunting, maintenance of forest corridors between villages, and protection of water sources through forest cover. They argue that these practices have maintained biodiversity and resource availability across very long periods, far outperforming the record of state forest management.

Table 5 below summarises six major areas in which scientific research has found convergence between Indigenous practice and modern ecological understanding.

[18] *Varun Attri Balwinder SinghDhillon, "Integrated Tree–Crop–Livestock Systems: Indian Agroforestry," Recent Trends and Innovations in Agriculture, Horticulture and Forestry (2025).*

Table 5: Points of Convergence Between Indigenous Knowledge and Modern Science

Area of Convergence	What Indigenous Communities Practised	How Modern Science Has Confirmed It
Agroforestry	Growing trees alongside crops to improve soil and food supply	ICRAF studies confirm higher yields and improved soil carbon
Biodiversity conservation	Protecting species through sacred grove and taboo systems	Ecologists find higher biodiversity in sacred groves than adjacent land
Medicinal plants	Using specific forest plants for fever, infection, and chronic illness	Over 80 Adivasi plants listed in Indian Pharmacopoeia; many in clinical use
Watershed management	Maintaining hill forests to protect seasonal streams	Hydrological studies confirm forest cover sustains local stream flow
Soil reading	Identifying soil health through texture, colour, and smell	Traditional classification found to match mechanical soil analysis in accuracy
Climate observation	Predicting monsoon timing through bird behaviour and tree flowering	Phenological research confirms alignment with recorded rainfall patterns

This convergence does not mean that Indigenous knowledge is simply an unrecognised version of modern science. The two systems have different starting points, different categories, and different purposes. Indigenous knowledge is relational: it is about maintaining sustainable relationships within a specific ecological community. Modern science is analytical: it seeks to identify general mechanisms and laws. Both approaches have value, and each has things the other lacks.

UNESCO's position is clear. Its LINKS programme states that Indigenous knowledge complements scientific knowledge and provides context-specific insights that are essential for effective environmental management. The goal should not be to absorb Indigenous knowledge into scientific frameworks but to allow genuine dialogue between systems that have different strengths.

EDUCATION, POLICY, AND THE PATH FORWARD

India's National Education Policy 2020 contains an explicit commitment to incorporating local and traditional knowledge into school and university curricula. It acknowledges that knowledge traditions associated with Indian communities have been systematically excluded from formal education and calls for their integration at all levels of the system.[19]

This is a welcome acknowledgement. But turning it into practice requires confronting specific institutional obstacles. Teacher training programmes are not currently designed to engage with oral knowledge traditions, ecological systems knowledge, or visual ways of learning. Assessment systems are built around written texts and standardised tests. School infrastructure, particularly in tribal areas, is often inadequate to support the kind of place-based learning that Indigenous knowledge systems require.

Virginius Xaxa, one of India's leading scholars of tribal society, argues that the marginalisation of Adivasi knowledge systems within formal education is not simply a cultural oversight. It reflects the same structural inequalities that produce economic and political marginalisation. Genuinely integrating Indigenous knowledge into education would require changing not just curricula but the distribution of power over what counts as legitimate knowledge.[20]

[19] *Ministry of Education, Government of India, National Education Policy 2020 (New Delhi: Government of India, 2020).*
[20] *Virginius Xaxa, "Tribes as Indigenous People of India," Economic and Political Weekly 34, no. 51 (1999): 3589–3595.*

Several practical steps could make a real difference. Community elders with deep ecological and cultural knowledge could be formally recognised as educational resources and incorporated into school learning programmes. Oral knowledge traditions could be documented through community-led projects, with intellectual property rights remaining with the communities involved. Forest and farm visits could become regular parts of school curricula in tribal areas, connecting classroom learning to the living knowledge systems that surround them.

PESA, the Panchayats Extension to Scheduled Areas Act of 1996, already provides a constitutional framework for community governance over education and cultural resources in Scheduled Areas. Its non-implementation in most states represents a major missed opportunity. Arun Kumar Sharma's research on PESA documents the persistent gap between what the law promises and what state governments have actually delivered.[21]

Digital technology offers new possibilities. Young Adivasi activists and scholars are using social media, digital audio archives, and online documentation tools to record oral histories, medicinal knowledge, and cultural practices. These initiatives preserve knowledge that might otherwise be lost, and they do so on terms set by the communities themselves. They deserve far more support than they currently receive.

CONCLUSION

Adivasi communities in India have sustained complex, serious, and practically effective knowledge systems for centuries. These systems are not inferior to formal academic knowledge. They are different from it, and they have strengths that formal academic knowledge lacks, particularly in the areas of place-based ecological understanding, long-term sustainability, and the integration of ethical and practical dimensions of human life.

They have been marginalised not because they failed but because the institutions of colonial and postcolonial governance chose to treat other forms of knowledge as the only legitimate ones. That choice had consequences: the disruption of sustainable ecological management systems, the loss of medicinal knowledge, the erosion of community governance capacity, and a narrowing of India's intellectual life.

Recovering these systems is not an act of nostalgia. It is a practical response to real problems. India faces an ecological crisis that will require exactly the kind of detailed, place-based, and long-term ecological understanding that Adivasi communities have developed. It faces a democratic deficit in which many of its citizens have no meaningful voice in decisions that affect their lives. And it faces a cultural homogenisation that is erasing linguistic, artistic, and intellectual diversity at a pace that future generations will find difficult to comprehend.

The forest is a university. It has always been one. Its students, the communities whose lives are woven into its cycles, seasons, and species, have produced knowledge that is worth taking seriously. Recognising that is not a concession to romanticism. It is an acknowledgement of reality: that learning happens in many places, knowledge takes many forms, and the world will be poorer if we allow either to be reduced to one.

[21] *Arun Kumar Sharma, "PESA and Tribal Governance in India: Implementation and Challenges," Indian Journal of Public Administration 63, no. 3 (2017): 435–450.*

BIBLIOGRAPHY

1. *"Local and Indigenous Knowledge Systems (LINKS) Programme," UNESCO (accessed May 2025), https://www.unesco.org/en/climate-change/links.*
2. *Berkes, Fikret. Sacred Ecology. Routledge, 2017.*
3. *Elwin, Verrier. The Baiga. London: John Murray, 1939.*
4. *Gadgil, Madhav, and Ramachandra Guha. Ecology and Equity: The Use and Abuse of Nature in Contemporary India. New Delhi: Penguin, 1995.*
5. *Gopu, G., and S. John Kaviarasu. Tribal Studies in India: Culture, Identity and Development. AGPH Books| AG Publishing House, 2025.*
6. *Gram Sabha proceedings, Niyamgiri villages, Kalahandi and Rayagada Districts, Odisha. 2013.*
7. *Guha, Ramachandra. The Unquiet Woods: Ecological Change and Peasant Resistance in the Himalaya. Expanded ed. Berkeley: University of California Press, 2000.*
8. *Hardiman, David. The Coming of the Devi: Adivasi Assertion in Western India. Delhi: Oxford University Press, 1987.*
9. *Jain, Jyotindra. Gond and Warli Paintings. New Delhi: Lalit Kala Akademi, 1984.*
10. *Ministry of Education, Government of India. National Education Policy 2020. New Delhi: Government of India, 2020.*
11. *Ministry of Tribal Affairs, Government of India. Annual Report 2022-23. New Delhi: Government of India, 2023.*
12. *Office of the Registrar General and Census Commissioner, India. Primary Census Abstract for Scheduled Tribes. New Delhi: Government of India, 2011.*
13. *Padel, Felix, and Samarendra Das. Out of This Earth: East India Adivasis and the Aluminium Cartel. New Delhi: Orient BlackSwan, 2010.*
14. *Pati, Biswamoy, ed. Adivasis in Colonial India: Survival, Resistance and Negotiation. New Delhi: Orient BlackSwan, 2011.*
15. *Prasad, Archana. Against Ecological Romanticism: Verrier Elwin and the Making of an Anti-Modern Tribal Identity. New Delhi: Three Essays, 2003.*
16. *Sharma, Arun Kumar. "PESA and Tribal Governance in India: Implementation and Challenges." Indian Journal of Public Administration 63, no. 3 (2017): 435-450.*
17. *Shiva, Vandana. Monocultures of the Mind: Perspectives on Biodiversity and Biotechnology. London: Zed Books, 1993.*
18. *Sillitoe, Paul. "The Development of Indigenous Knowledge: A New Applied Anthropology." Current Anthropology 39, no. 2 (1998): 223-252.*
19. *Singh, K. S. Birsa Munda and His Movement, 1874-1901. Calcutta: Oxford University Press, 1983.*

20. *Sundar, Nandini. Subalterns and Sovereigns: An Anthropological History of Bastar, 1854-2006. 2nd ed. New Delhi: Oxford University Press, 2007.*

21. *Supreme Court of India. Orissa Mining Corporation Ltd. v. Ministry of Environment and Forest and Others. (2013) 6 SCC 476.*

22. *Xaxa, Virginius. "Tribes as Indigenous People of India." Economic and Political Weekly 34, no. 51 (1999): 3589-3595.*

23. *Dhillon, Varun Attri Balwinder Singh. "Integrated Tree–Crop–Livestock Systems: Indian Agroforestry." Recent Trends and Innovations in Agriculture, Horticulture and Forestry (2025).*

24. *Sk, Md Mainul, Amit Sardar, Tapas Ranjan Patra, Mohammed Numan, and Trilochan Sethy. "Indigenous Resistance and Environmental Justice in the Face of Climate Change: A Study of the Dongria Kondh Tribe in Niyamgiri Hills, Odisha." In Climate Change and Disadvantaged Communities, pp. 19-37. CRC Press, 2025.*