



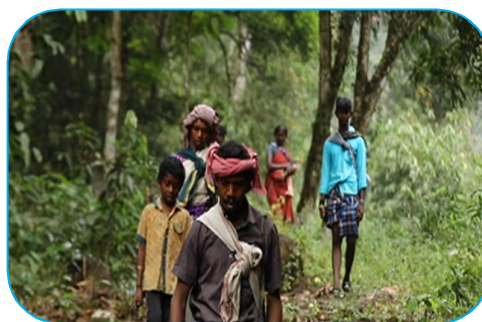
INDIGENOUS KNOWLEDGE, SOCIO-ECONOMIC CONDITIONS, AND FOREST CONSERVATION: A STUDY OF THE KADAR TRIBE IN KERALA

Dr. Padmanabhan N.

Principal (Retired), CAS College, Madayi, Kannur, Kerala.

ABSTRACT

The Kadar is one of Kerala's Particularly Vulnerable Tribal Groups and have historically maintained a close relationship with the forests of the southern Western Ghats. Their livelihood practices, ecological knowledge, customary institutions, and cultural traditions have developed within forest environments and are closely connected with the sustainable use of natural resources. At the same time, changes in forest administration, conservation regimes, livelihood opportunities, education, land rights, and access to public services have transformed Kadar society. This paper examines the relationship between indigenous knowledge, socio-economic conditions, and forest conservation among the Kadar of Kerala. It is based primarily on published research, government reports, legal documents, institutional records, and studies of participatory conservation. The study argues that Kadar knowledge should not be treated merely as cultural heritage but as a practical ecological resource capable of contributing to contemporary conservation. However, conservation cannot be socially sustainable when the community remains economically insecure or excluded from meaningful decision-making. Recognition of forest rights, improvement of education and health services, livelihood diversification, documentation of traditional ecological knowledge, and genuine community participation are therefore essential for combining social justice with biodiversity conservation.



KEYWORDS: Kadar Tribe; Indigenous Knowledge; Forest Conservation; Socio-economic Conditions; Western Ghats; Forest Rights..

1. INTRODUCTION

Background of the Study

The relationship between indigenous communities and forests is one of the important questions in contemporary environmental history and development studies. Forests are not merely physical spaces containing timber and wildlife; for forest-dependent communities they constitute sources of food, medicine, livelihood, cultural identity, social memory, and spiritual meaning.¹ The Kadar of Kerala provide an especially significant case because their historical existence has been closely associated with the forest ecosystems of the southern Western Ghats. They are officially recognized as a Particularly Vulnerable Tribal Group (PVTG), and their settlements are concentrated mainly in the forested areas of Palakkad and Thrissur districts.²

The Kadar have traditionally depended on gathering forest produce, hunting and fishing, wage labour, and other forest-related activities. Their intimate knowledge of plants, animals, water sources, seasons, forest paths, and ecological conditions developed through long interaction with the

environment. Such knowledge is transmitted through observation, experience, oral communication, and participation in community life.³ The significance of this knowledge has become increasingly visible as conservation studies have moved from purely protectionist approaches towards participatory and community-oriented models.

The geographical setting of the Kadar is particularly important. The Anamalai-Parambikulam-Vazhachal landscape forms part of the biologically rich Western Ghats and contains important forests, rivers, wildlife habitats, and protected areas. Kadar settlements have existed within or adjacent to these landscapes, making their socio-economic life inseparable from forest governance.⁴ The Parambikulam landscape, for example, continues to contain Kadar settlements in which household organization, livelihood, and cultural practices have evolved in direct relation to the surrounding forest environment.

Modern conservation policies, however, have often introduced a different understanding of the forest. Colonial and post-colonial forest administration increasingly defined forests through legal categories, territorial boundaries, scientific management, protected areas, and restrictions on resource use. The Forest (Conservation) Act, 1980 and the Wild Life (Protection) Act, 1972 strengthened the legal framework for forest and wildlife protection, while the National Forest Policy of 1988 emphasized ecological stability and environmental conservation.⁵ These policies were important for biodiversity protection, but their implementation sometimes created tensions between state conservation objectives and customary livelihood practices.

The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 represented an important shift in Indian forest policy by recognizing certain historical rights of forest-dwelling Scheduled Tribes and other traditional forest dwellers. The Act also recognized the importance of community participation and assigned a significant role to the Gram Sabha in the process of determining forest rights.⁶ For communities such as the Kadar, therefore, the central issue is not simply access to forest resources but the recognition of their historical relationship with the forest.

RESEARCH PROBLEM

The central research problem of this study arises from a contradiction. Kadar communities possess considerable ecological knowledge and have participated in forest-related conservation activities, yet their socio-economic position has remained vulnerable. Studies have identified problems including inadequate income, limited educational and infrastructural facilities, difficulties in accessing health services, insecure land rights, employment constraints, and the consequences of restrictions imposed through forest administration.⁷ This raises an important question: how can a community be expected to contribute effectively to forest conservation when its own socio-economic security remains uncertain?

A second problem concerns the treatment of indigenous knowledge. Traditional ecological knowledge is frequently recognized rhetorically but insufficiently incorporated into institutional decision-making. The knowledge of Kadar men and women regarding forest products, wildlife, seasons, landscape changes, and resource use can contribute to conservation, but it may weaken when younger generations become disconnected from forest-based occupations and when customary practices are restricted or undervalued.⁸ The challenge is therefore to establish a relationship between scientific conservation and indigenous knowledge without romanticizing either system.

RESEARCH OBJECTIVES AND HYPOTHESIS

The principal objective of the study is to examine the relationship between Kadar indigenous knowledge, socio-economic conditions, and forest conservation in Kerala. More specifically, the study seeks to: (1) examine the historical relationship between the Kadar and forest ecosystems; (2) assess major socio-economic conditions affecting the community; (3) identify important dimensions of Kadar ecological knowledge; (4) examine the community's contribution to forest and wildlife conservation; (5) analyze the effects of forest policies and rights legislation; and (6) suggest measures for combining community welfare with sustainable conservation.

The study proceeds from the proposition that **the effectiveness and sustainability of forest conservation are strengthened when indigenous ecological knowledge and the legitimate socio-**

economic interests of forest-dependent communities are recognized and incorporated into participatory forest governance. A related proposition is that the erosion of livelihood security and exclusion from decision-making can weaken the transmission of indigenous knowledge and reduce the potential contribution of the Kadar to conservation.

SIGNIFICANCE OF THE STUDY

The study is significant for three reasons. First, it contributes to the history and sociology of tribal communities in Kerala by connecting socio-economic change with environmental transformation. Second, it contributes to environmental studies by treating indigenous knowledge as an important component of conservation rather than as an obstacle to modern forest management. Third, it has policy relevance because Kerala continues to face the challenge of improving tribal welfare while protecting ecologically sensitive forest landscapes.⁹

SCOPE AND LIMITATIONS

The geographical focus is on the Kadar communities of Kerala, particularly their settlements in the forest landscapes of Palakkad and Thrissur. The study uses a historical and documentary approach and therefore does not claim to provide a new household-level statistical survey. Its findings are based on published research, government documents, institutional materials, legislation, conservation studies, and secondary literature. This limitation is important because socio-economic conditions can vary between settlements and across different periods.

2. LITERATURE REVIEW

Review of Previous Studies

The scholarly literature on indigenous communities and forests has established that local ecological knowledge can contribute substantially to environmental management. Studies of traditional resource management demonstrate that indigenous societies often develop rules concerning access, timing, harvesting, habitat use, and resource regeneration.¹⁰ These insights have influenced the broader intellectual development of political ecology, common-property studies, and community-based conservation.

Studies of the Western Ghats have similarly emphasized the relationship between biological diversity and cultural diversity. The Western Ghats contain numerous tribal communities whose livelihood systems have historically developed in close association with forests. Research by Manish Chandi on the Anamalais examined Kadar, Muthuvar, and Malai Malasar communities and documented changes in livelihood, resource use, settlement, and social organisation.¹¹ Such studies demonstrate that the history of forests cannot be separated from the history of forest-dependent communities.

Research specifically concerned with the Kadar has produced important findings. Sinitha Xavier's study of the problems and challenges of the Kadar tribe of Kerala identifies inadequate finance, employment insecurity, educational difficulties, health concerns, infrastructure deficiencies, displacement pressures, forest-resource depletion, and difficulties associated with implementation of forest legislation.¹² The study is significant because it shifts attention from an idealized image of the forest-dependent community towards the actual socio-economic difficulties experienced by Kadar households.

Another important study by Akshay Vijay Sawant and M. K. Shiva examined the socio-economic status and conservation role of Kadar communities in the Anamalais. Their findings indicate that Kadar communities play significant roles in conserving natural forests, wildlife, natural resources, traditional knowledge, and cultural practices, while simultaneously facing socio-economic disadvantages associated with inaccessible settlements, inadequate infrastructure, low literacy, poverty, and dependence on forest-related employment.¹³

The work of Amitha Bachan and colleagues provides particularly strong evidence concerning participatory conservation. Their research on Great Hornbill and Malabar Pied Hornbill conservation in the Anamalai Hills involved Kadar community members in monitoring and conservation activities. The study demonstrated the value of establishing genuine links between local communities and

conservation programmes.¹⁴ This evidence challenges the assumption that indigenous forest use is necessarily incompatible with biodiversity conservation.

Studies of forest rights in Kerala have further shown that legal recognition alone does not automatically guarantee effective access to rights. Research on the implementation of the Forest Rights Act indicates continuing problems involving awareness, institutional procedures, land claims, and the relationship between state agencies and tribal communities.¹⁵ Kjosavik and Shanmugaratnam have similarly demonstrated the continuing importance of land rights and the gap between legal recognition and practical entitlements among Adivasi communities in Kerala.¹⁶

Research Gap

Existing scholarship has generally examined one of three dimensions: Kadar socio-economic problems, indigenous participation in conservation, or the implementation of forest rights. There remains a need for an integrated interpretation linking these dimensions. The present study therefore treats socio-economic security, indigenous knowledge, and conservation not as separate subjects but as mutually connected components of the same ecological and social system.

Contribution of the Present Study

The present study contributes by placing Kadar indigenous knowledge at the centre of the relationship between welfare and conservation. It argues that the community's ecological knowledge should be understood as a form of practical environmental knowledge developed through historical interaction with the Western Ghats. At the same time, it avoids portraying the Kadar as an unchanging traditional society. The community has undergone significant social, economic, educational, and institutional changes, and these changes must be incorporated into any contemporary conservation strategy.

3. THEORETICAL AND CONCEPTUAL FRAMEWORK

Indigenous Knowledge and Ecological Knowledge

The conceptual foundation of the study is the idea of traditional ecological knowledge. Such knowledge may be understood as cumulative knowledge and practices developed by communities through long-term interaction with their environment.¹⁷ It includes knowledge of plants and animals, seasonal cycles, landscape characteristics, resource availability, and appropriate methods of extraction and use. In the Kadar context, this knowledge is embedded in everyday livelihood practices rather than existing as an isolated scientific category.

Political Ecology

Political ecology provides a second conceptual framework. It draws attention to the ways in which environmental resources are shaped by political institutions, laws, property relations, development policies, and unequal access to decision-making.¹⁸ From this perspective, forest conservation is not simply a technical exercise. Decisions about who can enter a forest, collect a resource, cultivate land, construct a settlement, or participate in management involve questions of rights and power.

Community-Based Conservation

The third concept is community-based conservation. Contemporary conservation increasingly recognizes that local communities can become partners in protecting biodiversity. The Kadar experience is particularly relevant because their participation in wildlife monitoring demonstrates how local ecological knowledge can complement scientific conservation.¹⁹ Conservation therefore becomes more effective when communities are not merely treated as beneficiaries or potential threats but as knowledge holders and institutional partners.

4. METHODOLOGY

Research Design

The study follows a qualitative, historical, and analytical research design. It is primarily a documentary study rather than a newly conducted household survey. The analysis combines historical interpretation with socio-economic and environmental perspectives to understand the changing relationship between the Kadar and forests.

Sources of Data

The sources include government publications of Kerala, KIRTADS materials, Census-related information, reports of the Scheduled Tribes Development Department, forest and wildlife legislation, the National Forest Policy, academic articles, institutional reports, and published studies relating to the Kadar and the Anamalai–Western Ghats region.²⁰ The use of multiple categories of sources permits comparison between official policy perspectives and community-oriented research.

Methods of Data Collection and Analysis

Data were collected through documentary review and thematic analysis. Information was organized under four principal themes: socio-economic conditions, indigenous knowledge, forest-resource dependence, and conservation participation. The analysis then examined relationships among these themes and interpreted them historically. No numerical findings have been invented where primary survey data were unavailable.

5. RESULTS / FINDINGS

The Kadar and the Forest Environment

The evidence demonstrates that the Kadar's relationship with the forest is not simply economic. Forest landscapes constitute the material basis of livelihood as well as an important source of cultural identity. Official Kerala sources identify Kadar settlements in areas including Kuriyarkutty, Parambikulam, Earthdam, Malakappara, Sholayar, Vazhachal, and neighbouring forest regions. The 2011 Census recorded 2,949 persons belonging to the Kadar community in Kerala, while the state's socio-economic survey provided a different household and population count because it used a different reference period and methodology.²¹

Socio-Economic Conditions

The socio-economic evidence indicates continuing vulnerability. Difficulties include limited employment opportunities, unstable income, dependence on wage labour and forest-linked activities, inadequate infrastructure, and challenges in accessing education and health services. These conditions are intensified by the geographical isolation of many settlements.²² The result is a paradox in which communities possessing considerable environmental knowledge may have relatively limited access to the economic resources required for improved living standards.

Education represents an important dimension of social change. Increased educational access has created new opportunities for Kadar children, but geographical distance, economic difficulties, and changes in traditional livelihood patterns can affect educational continuity. The decline of traditional occupations can create both opportunity and vulnerability: young people may gain access to new occupations, while at the same time the intergenerational transmission of ecological knowledge may weaken.²³

Land and forest rights constitute another major socio-economic issue. Historically, customary relationships with forest landscapes were not always matched by legally recognized ownership or community rights. The Forest Rights Act, 2006 created an important legal framework for addressing this historical problem, but its practical effectiveness depends upon awareness, documentation, institutional procedures, and recognition by local authorities.²⁴

Indigenous Knowledge

Kadar indigenous knowledge encompasses familiarity with forest plants, edible products, medicinal resources, wildlife behaviour, seasonal changes, water sources, forest routes, and resource availability. Such knowledge is practical, adaptive, and closely connected with livelihood. It is also dynamic: knowledge changes as the environment, economy, technology, and institutional rules change.²⁵

The significance of this knowledge becomes particularly clear in relation to wildlife. Kadar familiarity with forest landscapes can assist researchers and forest officials in locating nests, identifying habitat features, monitoring wildlife, and understanding seasonal changes. Participatory monitoring of hornbills in the Anamalai Hills provides a concrete example of how local knowledge can contribute to biodiversity research and conservation.²⁶

Kadar Contribution to Forest Conservation

The evidence supports the conclusion that Kadar people can play important roles in forest conservation. Research has documented community participation in monitoring wildlife and identified substantial Kadar involvement in the conservation of natural forests, wildlife, natural resources, traditional knowledge, and cultural practices.²⁷ This does not mean that every traditional practice is automatically sustainable; rather, it demonstrates that indigenous knowledge and conservation can interact constructively when institutions create appropriate conditions.

Participatory conservation is particularly valuable because it combines local observation with scientific methods. The hornbill conservation programme in the Anamalai landscape illustrates this potential. Kadar participants contributed to identifying and monitoring nests and to understanding forest conditions. Such programmes show that conservation outcomes can improve when local knowledge is treated as an asset rather than as a problem.²⁸

Forest Policies and Community Relations

The history of forest policy reveals a movement from state-centred control towards greater recognition of community rights. Earlier forest regimes often prioritized regulation and protection, whereas later policy frameworks increasingly acknowledged ecological sustainability and community participation. The National Forest Policy of 1988 placed ecological balance above the commercial exploitation of forests, while the Forest Rights Act of 2006 sought to recognize specified rights of forest-dwelling communities.²⁹

Nevertheless, policy implementation remains crucial. A legal right that is not understood, documented, processed, and recognized at the local level may have limited practical value. Studies of Kerala demonstrate that tribal communities have continued to experience difficulties concerning land claims, forest access, institutional procedures, and implementation of forest legislation.³⁰ Thus, the effectiveness of forest governance should be evaluated not merely by the existence of legislation but by its consequences for people and ecosystems.

6. DISCUSSION

Indigenous Knowledge and Modern Conservation

The Kadar case challenges a simple opposition between indigenous use and modern conservation. Historically, conservation debates sometimes assumed that forests could be protected only by reducing human presence. Contemporary ecological thinking increasingly recognizes that human communities can possess valuable knowledge and can participate in monitoring and management. The Kadar experience demonstrates the possibility of complementarity between scientific conservation and indigenous knowledge.³¹

The strongest evidence comes from participatory wildlife conservation. Kadar participation in hornbill monitoring demonstrates that local ecological knowledge can produce information useful to formal conservation programmes. Their knowledge of terrain, forest conditions, animal movements, and nesting habitats can reduce the practical difficulties faced by external researchers and officials.³²

Socio-Economic Security and Conservation

The relationship between welfare and conservation is equally important. Conservation policies that restrict access to traditional resources without providing secure and culturally appropriate alternatives may generate economic stress. Conversely, programmes that improve education, health, housing, livelihood security, and legal rights can create conditions in which communities have stronger incentives and capacities to participate in conservation.³³

This argument does not suggest that conservation should be abandoned in favour of unrestricted resource extraction. Rather, it suggests that conservation and community welfare should be planned together. The objective should be to protect biodiversity while ensuring that legitimate rights and livelihood concerns are addressed through transparent and participatory institutions.

Comparison with Previous Studies

The present findings broadly agree with earlier research. Xavier's study emphasized socio-economic hardship and administrative difficulties; Sawant and Shiva identified both socio-economic backwardness and substantial conservation participation; Chandi documented livelihood and resource-use changes among the communities of the Anamalais; and Bachan and colleagues demonstrated the value of participatory wildlife monitoring.³⁴ The present study brings these strands together by arguing that socio-economic vulnerability, knowledge erosion, and conservation cannot be treated as independent problems.

At the same time, the findings require caution against romanticizing indigenous communities. Indigenous knowledge is not a fixed body of timeless wisdom, and communities respond to economic pressures, markets, state regulations, education, and changing environmental conditions.³⁵ A balanced approach therefore requires respect for indigenous knowledge while also subjecting conservation practices to ecological evidence, community deliberation, and legal safeguards.

7. CONCLUSION

Summary of Major Findings

The study finds that the Kadar possesses a historically developed relationship with the forest environment of the southern Western Ghats. Their indigenous knowledge includes practical understanding of plants, animals, seasonal patterns, forest resources, and landscape conditions. At the same time, the community has experienced socio-economic difficulties associated with income insecurity, geographical isolation, limited infrastructure, employment constraints, and uncertainties surrounding land and forest rights.³⁶

The study also finds substantial evidence of Kadar participation in conservation. Their involvement in hornbill monitoring and other forest-related activities demonstrates that indigenous knowledge can contribute directly to biodiversity conservation. The evidence therefore supports a model in which local communities and scientific institutions work together rather than operating in isolation.

Answer to the Research Questions

The first research question concerned the relationship between Kadar indigenous knowledge and the forest. The evidence shows that the relationship is historical, practical, cultural, and economic. The second concerned socio-economic conditions. The evidence indicates continuing vulnerability despite improvements in access to state welfare and development programmes. The third concerned conservation. The evidence demonstrates that Kadar participation can make a meaningful contribution to forest and wildlife protection.³⁷

The final question concerned the relationship between welfare and conservation. The study concludes that these objectives should be integrated. Conservation is more likely to be socially legitimate and ecologically durable when the community has secure rights, adequate livelihood opportunities, access to education and health services, and meaningful participation in decision-making.

8. RECOMMENDATIONS

The first recommendation is that Kadar indigenous ecological knowledge should be systematically documented with the informed participation and consent of community members. Such documentation should recognize community ownership of knowledge and should not facilitate commercial exploitation without appropriate safeguards.

The second recommendation is to strengthen community participation in forest and wildlife monitoring. Kadar knowledge holders, including women and elders, should be incorporated into conservation programmes as knowledge partners and trained conservation personnel where appropriate.

The third recommendation is to accelerate transparent implementation of legitimate forest and land rights. Government agencies should simplify procedures, improve legal awareness, and ensure that eligible claims are processed without unnecessary administrative delay.

The fourth recommendation is to strengthen education, healthcare, transport, housing, drinking water, and communication facilities in Kadar settlements while respecting the ecological character of forest landscapes.

The fifth recommendation is to develop sustainable livelihood programmes that reduce destructive dependence on forest resources without severing the community's relationship with the forest. Value addition to permitted non-timber forest products, community-based ecotourism where ecologically appropriate, conservation employment, handicrafts, and skill development may provide alternatives.

The sixth recommendation is that forest officials, researchers, and Kadar representatives should participate jointly in local conservation planning. Conservation programmes should be evaluated not only by ecological indicators but also by their effects on community welfare, cultural continuity, and rights.

Finally, Kadar conservation knowledge should be incorporated into Kerala's broader environmental education and biodiversity programmes. The community should be recognized not simply as a population living inside or near forests but as a historical knowledge-bearing community whose participation can strengthen the ecological future of the Western Ghats.

REFERENCES:-

1. Madhav Gadgil and Ramachandra Guha, *This Fissured Land: An Ecological History of India* (Berkeley: University of California Press, 1992), 1–12.
2. Seetha Kakkoth, "The Primitive Tribal Groups of Kerala: A Situational Appraisal," *Studies of Tribes and Tribals* 3, no. 1 (2005): 47–49.
3. M. S. Mahendrakumar, "Ecocultural Adaptation of the Kadars of Kerala," *Studies of Tribes and Tribals* 3, no. 2 (2005): 99–101.
4. Manish Chandi, *Tribes of the Anamalais: Livelihood and Resource-Use Patterns of Communities in the Rainforests of the Indira Gandhi Wildlife Sanctuary and Valparai Plateau*, NCF Technical Report No. 16 (Mysore: Nature Conservation Foundation, 2008), 1–90.
5. Government of India, *The Wild Life (Protection) Act, 1972*, Act No. 53 of 1972, secs. 18–35; Government of India, *The Forest (Conservation) Act, 1980*, Act No. 69 of 1980, secs. 2–3; Ministry of Environment and Forests, Government of India, *National Forest Policy, 1988*, paras. 2.2–2.3.
6. Government of India, *The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006*, Act No. 2 of 2007, secs. 3–5.
7. Sinitha Xavier, "The Problems and Challenges of the Kadar Tribe of Kerala," *Contemporary Voice of Dalit* 10, no. 2 (2018): 204–210.
8. Fikret Berkes, *Sacred Ecology*, 4th ed. (New York: Routledge, 2018), 1–10, 11–27.
9. Government of Kerala, Scheduled Tribes Development Department, *Development of Scheduled Tribes in Kerala: Government Programmes and Policies* (Thiruvananthapuram: Government of Kerala), relevant sections on tribal welfare, education, health, housing, livelihood, and infrastructure.

10. Madhav Gadgil and Fikret Berkes, "Traditional Resource Management Systems," *Resource Management and Optimization* 8 (1991): 127–141, especially 127–132.
11. Chandi, *Tribes of the Anamalais*, 15–30.
12. Xavier, "Problems and Challenges of the Kadar Tribe of Kerala," 204–215.
13. Akshay Vijay Sawant and M. K. Shivaa, "Socio-economic Status and Role of Kadar Tribes in Conservation, in Anamalais," *International Journal of Chemical Studies* 7, no. 3 (2019): 3847–3851, especially 3847–3849.
14. Amitha Bachan K. H., Ragupathy Kannan, S. Muraleedharan, and Shenthil Kumar, "Participatory Conservation and Monitoring of Great Hornbills and Malabar Pied Hornbills with the Involvement of Endemic Kadar Tribe in the Anamalai Hills of Southern Western Ghats, India," *Raffles Bulletin of Zoology*, Supplement 24 (2011): 37–43, especially 37–39.
15. Darley Jose Kjosavik and Nadarajah Shanmugaratnam, "The Persistent Adivasi Demand for Land Rights and the Forest Rights Act 2006 in Kerala, India," *Social Sciences* 10, no. 5 (2021): 158.
16. Kjosavik and Shanmugaratnam, "Persistent Adivasi Demand for Land Rights," 158.
17. Berkes, *Sacred Ecology*, 3–18. Berkes treats traditional ecological knowledge as cumulative knowledge and practice developed through the interaction of human communities and their environments.
18. Paul Robbins, *Political Ecology: A Critical Introduction*, 2nd ed. (Chichester: Wiley-Blackwell, 2012), 3–15.
19. Bachan et al., "Participatory Conservation and Monitoring," 37–43.
20. Government of Kerala, Kerala Institute for Research, Training and Development Studies of Scheduled Castes and Scheduled Tribes (KIRTADS), *Scheduled Tribes of Kerala*, entry on the Kadar; Government of Kerala, Scheduled Tribes Development Department, relevant statistical and developmental publications.
21. Gouthami V. and Amitha Bachan K. H., "Distribution and Demography of Kadar Ethnic Community Endemic to the Western Ghats," research article, 2019, reporting 21 Kadar settlements across Kerala and Tamil Nadu and discussing their distribution between Thrissur, Palakkad, and Tamil Nadu. The authors' survey identified 686 families and a total population of 2,266 across the 21 settlements studied.
22. Xavier, "Problems and Challenges of the Kadar Tribe of Kerala," 204–215.
23. Sawant and Shivaa, "Socio-economic Status and Role of Kadar Tribes in Conservation," 3848–3849.
24. Government of India, *The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006*, secs. 3–5, 6.
25. Sabeena C. S., K. H. Amitha Bachan, K. M. M. Nasser, and P. Niyas, "Ethnobotanical Studies on the Endemic Kadar Tribes of Anamalai's, Western Ghats—India," *Meridian* 5, no. 1 (2016): 42–44, especially 42–43.
26. Bachan et al., "Participatory Conservation and Monitoring," 37–40.
27. Sawant and Shivaa, "Socio-economic Status and Role of Kadar Tribes in Conservation," 3847–3851.
28. Bachan et al., "Participatory Conservation and Monitoring," 37–43.
29. Government of India, Ministry of Environment and Forests, *National Forest Policy, 1988*, paras. 2.1–2.3; Government of India, *Forest Rights Act, 2006*, secs. 3–5.
30. Xavier, "Problems and Challenges of the Kadar Tribe of Kerala," 209–214.
31. Gadgil and Berkes, "Traditional Resource Management Systems," 127–141; Berkes, *Sacred Ecology*, 3–18.
32. Bachan et al., "Participatory Conservation and Monitoring," 39–43.
33. M. S. Mahendrakumar, "Ecocultural Adaptation of the Kadars of Kerala," *Studies of Tribes and Tribals* 3, no. 2 (2005): 101–104.
34. Xavier, "Problems and Challenges of the Kadar Tribe of Kerala," 204–215; Sawant and Shivaa, "Socio-economic Status and Role of Kadar Tribes in Conservation," 3847–3851; Chandi, *Tribes of the Anamalais*, 1–90; Bachan et al., "Participatory Conservation and Monitoring," 37–43.
35. M. S. Mahendrakumar, "Ecocultural Adaptation of the Kadars of Kerala," 102–104.

36. P. S. Udayan, G. Satheesh, K. V. Tushar, and I. Balachandran, "Medicinal Plants Used by the Kaadar Tribes of Sholayar Forest, Thrissur District, Kerala," *Indian Journal of Traditional Knowledge* 4, no. 2 (2005): 159–163.
37. Sabeena C. S., K. H. Amitha Bachan, K. M. M. Nasser, and P. Niyas, "Ethnobotanical Studies on the Endemic Kadar Tribes of Anamalai's, Western Ghats—India," *Meridian* 5, no. 1 (2016): 42–44.



Dr. Padmanabhan N.

Principal (Retired), CAS College, Madayi, Kannur, Kerala.