

RESEARCH ARTICLE

FOREST-BASED LIVELIHOODS IN TRANSITION: A STUDY OF THE
HALAKKIVAKKALIGA COMMUNITY IN UTTARA KANNADA DISTRICT,
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Received-13.04.2026, Revised-06.05.2026, Accepted-29.05.2026

Abstract: Forest-based livelihoods have historically supported the subsistence, nutrition and cultural identity of indigenous communities, but these systems are increasingly shaped by agriculture, wage labor and market integration. This study examines the livelihood transition of the Halakki Vakkaliga community in Uttara Kannada district, Karnataka, using an ex post facto design and data collected from 500 respondents through a structured interview schedule. The findings show that the sample was largely middle-aged and older, with 29.20% in the 51–60 age group and 43.20% illiterate; most households had small landholdings of 0.10–0.60 acres (75.40%) and medium annual income (75.40%). Agriculture remained the dominant occupation for 81.60% of families, but 44.60% combined agriculture with wage earning, indicating livelihood diversification. Forest dependence remained strongest for fuelwood, used by 100% of respondents, while use of wild fruits such as jamun (38.40%), karonda (31.40%) and amla (29.80%) persisted at moderate levels. The study concludes that the Halakki Vakkaliga community is experiencing a transition from diversified forest dependence toward agriculture and wage-based livelihoods, with important implications for ecological knowledge, cultural continuity and livelihood security.

Keywords: Forest livelihoods, Halakki Vakkaliga, Indigenous community, NTFPs, Livelihood transition, Uttara Kannada

INTRODUCTION

Forests constitute one of the most important natural resource bases supporting the livelihoods, culture and identity of indigenous communities across the world. In India, forests have historically sustained the subsistence economy of tribal communities by providing a wide range of timber and non-timber forest products (NTFPs), including edible fruits, leafy vegetables, mushrooms, medicinal plants, fibres, honey, bamboo, resins and fuelwood. Beyond their economic significance, forests are deeply embedded in the cultural, spiritual and social life of indigenous societies, influencing traditional beliefs, rituals, folklore, healthcare systems and community institutions. Forests remain indispensable for the livelihoods of more than 275 million forest-dependent people in India, particularly tribal households that rely on forest resources to supplement agricultural production, improve household nutrition, generate seasonal income and reduce vulnerability during periods of economic hardship [Singh *et al.*, (2024)].

However, increasing demographic pressure, agricultural expansion, infrastructure development, conservation regulations, market integration and climate variability have significantly altered patterns

of forest dependence over the past few decades. Consequently, many tribal communities are experiencing a gradual transition from predominantly forest-based livelihoods towards diversified livelihood systems that combine agriculture, wage labour, livestock rearing and small-scale enterprises. Livelihood transition refers to the dynamic process through which households modify their economic activities, resource-use strategies and livelihood portfolios in response to ecological, economic, institutional and socio-cultural changes. Rather than representing a complete abandonment of traditional practices, livelihood transition often involves diversification of income sources while retaining selected components of traditional ecological knowledge and forest-resource use. For indigenous communities, this process is strongly influenced by changing access to common property resources, government development programmes, market opportunities, educational attainment and evolving aspirations of younger generations.

Within this broader context, the Western Ghats represent one of the world's most significant biodiversity hotspots, characterized by exceptional species richness, high levels of endemism and remarkable ecological heterogeneity. The ecological significance of the Western Ghats extends beyond

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biodiversity conservation, as these forests provide essential ecosystem services, including watershed protection, carbon sequestration, climate regulation and soil conservation. Simultaneously, they support the livelihoods of thousands of rural and tribal households whose survival remains closely linked to forest resources.

Among the districts located within the central Western Ghats, Uttara Kannada occupies a unique ecological and cultural position because of its extensive forest cover, diverse vegetation types and rich indigenous heritage. The district contains tropical evergreen, semi-evergreen, moist deciduous and coastal ecosystems that harbour considerable plant and animal diversity. Rural households in Uttara Kannada have traditionally depended upon forests for fuelwood, fodder, medicinal plants, wild edible species, construction materials and numerous non-timber forest products. Nevertheless, rapid socio-economic transformation, improved road connectivity, agricultural commercialization, educational expansion, migration and changing employment opportunities have influenced traditional livelihood systems, resulting in measurable changes in patterns of forest-resource utilization.

The HalakkiVakkaliga community represents one of the distinctive indigenous communities inhabiting the coastal and forested landscapes of Uttara Kannada district. Traditionally recognized for their intimate association with agriculture, forests and indigenous cultural practices, the HalakkiVakkaligas have developed extensive knowledge regarding local biodiversity, medicinal plants, wild foods, seasonal resource availability and sustainable harvesting practices. Their livelihood systems have historically integrated rainfed agriculture with the collection of forest products, livestock rearing, artisanal activities and reciprocal community labour. These studies highlight the community's role in maintaining biocultural diversity within the Western Ghats landscape.

Despite this rich ecological knowledge, evidence suggests that the nature of forest dependence among the Halakki Vakkaligas is undergoing significant transformation. Against this background, the present study investigates the transition of forest-based livelihoods among the Halakki Vakkaliga community in Uttara Kannada district of Karnataka. Specifically, the study examines the extent of dependence on forest resources, identifies major forest products contributing to household livelihoods, analyses emerging livelihood diversification strategies and interprets these changes within the broader framework of livelihood transition and sustainable rural development. By documenting contemporary

patterns of forest-resource utilization and their relationship with changing socio-economic conditions, the study contributes empirical evidence to the growing discourse on indigenous livelihoods, traditional ecological knowledge and biocultural sustainability in the Western Ghats. The findings are expected to inform policies aimed at strengthening sustainable forest management, promoting diversified livelihood opportunities, conserving indigenous knowledge systems and enhancing the long-term well-being of forest-dependent tribal communities.

MATERIALS AND METHODS

The study adopted an ex post facto research design to examine livelihood transition and forest dependence among the Halakki Vakkaliga community in Uttara Kannada district, Karnataka. A structured interview schedule was used to collect information on demographic characteristics, livelihood patterns, forest resource use and cultural participation from 500 respondents.

The study was conducted in Belambar, Badiger, Hegde and Jaddigadde villages of Uttara Kannada district in Karnataka state. Uttara Kannada is a geographically diverse district along the western part of Karnataka, extending from the Arabian Sea coast to the forested foothills and higher reaches of the Western Ghats; the district is widely known for its high forest cover, ecological diversity and strong dependence of rural communities on forest and farm resources [Census of Karnataka, 2011; Ground Water Department, 2012; Centre for Ecological Sciences, IISc, 2013; Census of India, 2001]. The district's landscape includes coastal, transitional and hilly forested zones, which create varied livelihood settings for indigenous and agrarian communities.

The selected villages represent rural settlements where Halakki Vakkaliga households maintain close links with agriculture, wage labor and forest-based resource use. These villages provide an appropriate setting for studying livelihood change because they are embedded in a landscape where farming, forest access and cultural practices continue to interact in daily life. Census and district sources confirm the presence of villages such as Jaddigadde and Hegde in Uttara Kannada, supporting their relevance as field sites for community-level research [Census of India, 2001].

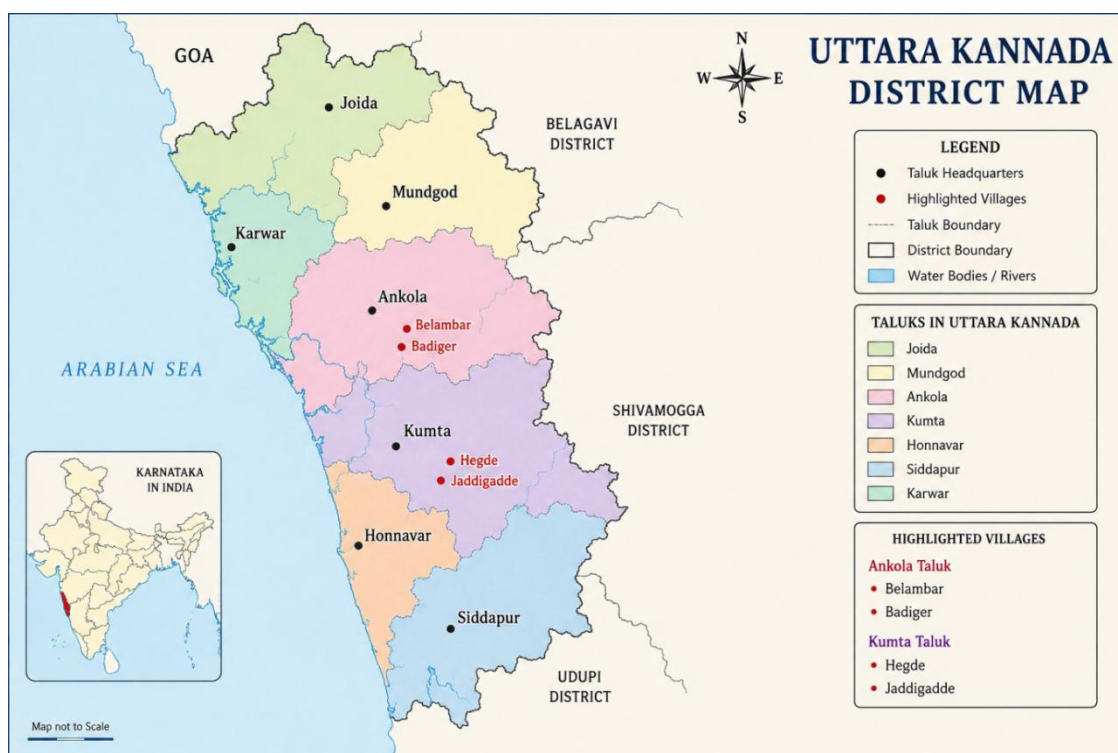


Figure 1: Map of Uttara Kannada district showing the study area

A total of 500 respondents belonging to the Halakki Vakkaliga community were selected from the four villages. The respondents were interviewed using a pretested schedule to obtain data on age, education, family type, marital status, house type, landholding, family occupation, annual income and forest use. The sample was distributed across the villages to capture the livelihood conditions of households in the study area. Primary data were collected through household interviews. The information obtained was coded, tabulated and analyzed using simple statistical tools such as frequency and percentage. The results are presented in tabular form to describe demographic characteristics, livelihood patterns and cultural participation. Interpretation focused on identifying livelihood transition, changes in forest dependence and continuity of cultural practices.

RESULTS AND DISCUSSION

Demographic characteristics of the Halakki Vakkaliga community

The demographic profile (Table 1) indicates that the majority of respondents (29.20%) belonged to the 51–60 years age group, followed by 41–50 years (23.40%), 61–70 years (20.80%), 30–40 years (20.20%), while only 6.40 per cent were aged between 71 and 80 years. The predominance of middle-aged respondents suggests that economically active adults continue to play the principal role in agricultural production, household management and preservation of indigenous ecological knowledge. Older members of indigenous communities often possess extensive traditional ecological knowledge

accumulated through lifelong interaction with forests and agroecosystems. However, younger generations increasingly seek wage employment and urban opportunities, reducing their participation in traditional livelihood systems. Similar demographic trends have been documented among tribal communities of the Western Ghats, where middle-aged adults constitute the major custodians of indigenous knowledge while younger populations exhibit gradual occupational diversification.

Educational attainment revealed that 43.20 per cent of respondents were illiterate, 34.40 per cent had completed primary education, 9.20 per cent had higher primary education, 8.60 per cent had studied up to high school, while only 4.60 per cent had attained pre-university or higher education. The low educational attainment reflects historical socio-economic marginalization, limited access to educational infrastructure in forest-fringe villages, poverty and dependence on family labour. Poor educational attainment among tribal populations has consistently been linked with geographical isolation, inadequate educational facilities and opportunity costs associated with schooling.

The predominance of nuclear families (57.00%) over joint families (43.00%) indicates gradual transformation in household structure. Increasing nuclearization may be attributed to land fragmentation, changing occupational aspirations, migration of younger members and government housing programmes encouraging independent households. Similar shifts from joint to nuclear families have been reported among rural and tribal

communities across India due to modernization and socio-economic transition

Regarding marital status, 76.20 per cent of respondents were married, while 20.40 per cent were widowed and only 3.40 per cent were unmarried. The relatively high proportion of widowed respondents may be associated with the inclusion of elderly respondents in the sample and greater female life expectancy. Marriage remains the predominant social institution among tribal societies, facilitating family labour sharing, inheritance and transmission of traditional knowledge.

Housing conditions demonstrate moderate economic development, with 56.40 per cent residing in semi-pucca houses, 23.60 per cent in kutcha houses and 20.00 per cent in pucca houses. The predominance of semi-pucca houses suggests gradual improvement in living standards while indicating continued economic constraints. Expansion of rural housing schemes such as the Pradhan Mantri Awas Yojana and state-sponsored housing initiatives has contributed to the transition from traditional kutcha dwellings toward semi-pucca structures in rural India

Landholding distribution reveals that 75.40 per cent possessed only 0.10–0.60 acres, while 10.20 per cent were landless, 11.60 per cent owned between 0.61–1.32 acres and only 2.80 per cent possessed more than 1.35 acres. Such predominance of marginal holdings reflects historical land fragmentation, inheritance practices and ecological limitations characteristic of the Western Ghats. Small landholdings restrict agricultural productivity and compel households to diversify into wage labour and forest-based activities. Similar findings have been reported by Spoorthi K.N. (2023).

Agriculture constituted the principal family occupation for 81.60 per cent of respondents, followed by daily wage labour (17.40%) and service employment (1.00%). The dominance of agriculture reflects continued dependence on rainfed farming despite limited land resources. However, increasing participation in wage labour indicates livelihood diversification as an adaptive response to declining agricultural profitability and seasonal unemployment. Income distribution further supports this pattern, with 75.40 per cent belonging to the medium-income category, 12.80 per cent to the low-income category and only 11.80 per cent to the high-income group. The predominance of medium-income households suggests moderate economic stability despite limited productive assets. Agricultural income supplemented by wage employment likely contributes to maintaining household consumption while preventing extreme poverty.

Livelihood pattern of the Halakki Vakkaliga community

Table 2 demonstrates that livelihood diversification is a defining characteristic of the Halakki Vakkaliga economy. Nearly 44.60 per cent combined agriculture with wage earning, while 34.80 per cent

depended exclusively on agriculture and 16.20 per cent relied primarily on wage labour. Very small proportions combined agriculture with government service (2.40%), animal husbandry (0.60%), agriculture-animal husbandry-wage earning (0.80%), or agriculture-animal husbandry-horticultural marketing (0.60%).

The predominance of agriculture combined with wage labour reflects adaptive livelihood diversification among marginal farmers. Limited landholdings, seasonal fluctuations in agricultural employment, uncertain rainfall and declining profitability encourage households to supplement farm income through wage employment under public works, plantation labour, construction activities and other rural occupations. The Food and Agriculture Organization has emphasized that diversification improves resilience among smallholder farmers facing climate variability and market uncertainties (FAO, 2018).

The limited engagement in animal husbandry and horticultural enterprises suggests inadequate access to capital, veterinary services, markets and extension support. Studies conducted in the Western Ghats indicate that tribal households frequently face institutional constraints limiting diversification into higher-value enterprises despite possessing suitable ecological conditions.

Overall, the livelihood profile illustrates that agriculture remains the economic foundation of the community, while wage employment functions as an essential supplementary income source for maintaining household resilience.

Cultural participation among the Halakki Vakkaliga community

Table 3 demonstrates exceptionally high participation in ceremonial and religious activities. Marriage ceremonies were attended regularly by 56.80 per cent of respondents, while the remaining 43.20 per cent participated occasionally, indicating universal community involvement in kinship-based ceremonies.

Participation in traditional festivals such as Deepavali, Tulasi Habba, Ashada Habba, Suggi Habba, Sankranthi and Amavasya exceeded 95 per cent regular participation, while Regular Poojas recorded 88.60 per cent regular observance. Only Bandi Habba exhibited relatively lower participation, with 59.40 per cent participating regularly and 35.80 per cent reporting non-participation.

The consistently high participation in religious festivals reflects the central role of cultural traditions in maintaining collective identity, social cohesion and indigenous ecological knowledge. Many tribal festivals coincide with agricultural seasons, monsoon cycles, harvest periods and forest resource management practices. Berkes (2012) argued that traditional rituals and cultural ceremonies often function as mechanisms for conserving ecological knowledge across generations. In contrast,

recreational activities demonstrated considerably lower participation. Only 3.80 per cent regularly attended village fairs (Jatras), while 68.80 per cent participated occasionally and 27.40 per cent never attended. Participation in drama performances was even lower, with only 1.60 per cent regular attendance. The limited participation may reflect increasing occupational demands, changing entertainment preferences, migration, or declining availability of traditional folk performances.

The contrast between high participation in religious ceremonies and lower engagement in recreational events indicates that cultural practices closely linked to social identity and religious beliefs remain resilient despite ongoing socio-economic transformation. This pattern has been widely documented among indigenous communities where ritual traditions exhibit greater continuity than recreational folk arts.

Forest resource used by the Halakki Vakkaliga community

Table 4 indicates that forest dependence is highly selective rather than comprehensive. Fuelwood emerged as the only universally utilized forest product, with 100 per cent of respondents reporting its use. Fuelwood continues to constitute the primary domestic energy source because of easy accessibility, affordability and limited access to cleaner cooking fuels in remote rural settlements. Similar findings have been consistently reported across forest-dependent communities in India (FAO, 2020).

Among edible forest products, Jamun (38.40%), Karonda (31.40%) and Amla (29.80%) were the most commonly collected fruits. These wild fruits provide important seasonal nutritional supplements rich in vitamins, antioxidants and micronutrients. Only 10.00 per cent collected fodder from forests, while bamboo (1.00%), grass for broom making (1.00%), Ayurvedic medicinal materials (0.80%), gum (0.40%), leaf litter (1.20%) and leaves for meal plates (0.40%) were used by very few households. Honey collection was reported by only 3.60 per cent of respondents, whereas Pongamia seed collection was completely absent.

The universal use of fuelwood is a central result because it shows that forests still remain essential for everyday domestic energy. In the Halakki case, fuelwood appears to be the most stable remaining

forest resource, while other resources have become secondary or marginal. This is a clear sign of transition rather than complete disengagement from forests.

The moderate use of jamun, karonda and amla indicates that the community still retains some edible forest knowledge. This finding is consistent with the plant-diversity work of Bhat and Rajanna (2017), which documented the Halakki community's role in maintaining useful species in home gardens and agro forestry systems. It also resonates with the ethnomedicinal study by Shanbhag and Venkatesh (2012), which showed that Uttara Kannada communities retain knowledge of selected plants for health and household use. However, the very low use of bamboo, honey, medicinal plants, gum and leaf-based products suggests that the broader NTFP system is weakening, likely because of reduced knowledge transmission, market constraints and changing livelihood priorities, as emphasized in by National Institute of Rural Development and Panchayati Raj, (2026).

The cultural data add another important dimension. High participation in major festivals and poojas shows that cultural identity remains strong. The continuity of events such as Deepavali, Tulasi Habba and Suggi Habba suggests that livelihood change has not erased ritual life. However, the low participation in Jatras and drama indicates that some forms of collective recreation and public performance are declining.

The limited extraction of most non-timber forest products (NTFPs) suggests substantial transformation in forest-based livelihoods. Increased market availability of substitute products, declining access to forests due to conservation regulations, changing occupational preferences and improved availability of commercial goods have reduced dependence on traditional forest products. Similar declines in NTFP dependence have been observed across many tribal regions following livelihood diversification and improved rural infrastructure. Nevertheless, continued reliance on fuelwood and wild edible fruits demonstrates that forests remain important for household subsistence and nutritional security. Forest ecosystems therefore continue to provide critical ecosystem services despite declining commercial extraction.

Table 1: Demographic characteristics of the Halakki Vakkaliga tribes in Uttara Kannada district of Karnataka (n=500)

Sl. No.	Variables	Category	Frequency	Percentage
1	Age	30-40	101	20.20
		41-50	117	23.40
		51-60	146	29.20
		61-70	104	20.80
		71-80	32	6.40

2	Education	Illiterate	216	43.20
		Primary (1 st –4 th Std)	172	34.40
		Higher Primary (5 th –7 th Std)	46	9.20
		High School (8 th –10 th Std)	43	8.60
		Pre-University College	14	2.80
		Graduate and above	9	1.80
3	Family Type	Nuclear	285	57.00
		Joint	215	43.00
4	Marital Status	Unmarried	17	03.40
		Married	381	76.20
		Widowed	102	20.40
5	House Type	Kutcha	118	23.60
		Pucca	100	20.00
		Semi-pucca	282	56.40
6	Land Holding	Landless	51	10.20
		0.10–0.60 acres	377	75.40
		0.61–1.32 acres	58	11.60
		1.35–2.00 acres	14	2.80
7	Family Occupation	Agriculture	408	81.60
		Daily Wage Labour	87	17.40
		Service	05	1.00
8	Annual Income	Low (Less than 10755)	64	12.80
		Medium (10755 to 34922)	377	75.40
		High (more than 34922)	59	11.80

Table 2: Livelihood pattern of Halakki Vakkaliga tribes in Uttara Kannada district of Karnataka (n=500)

Sl. No.	Occupational Category	Frequency	Percentage
1	Agriculture	174	34.80
2	Wage Earning	81	16.20
3	Agriculture + Wage Earning	223	44.60
4	Agriculture + Govt./Private Service	12	2.40
5	Agriculture + Animal Husbandry	03	0.60
6	Agriculture + Animal Husbandry + Wage Earning	04	0.80
7	Agriculture + Animal Husbandry + Vegetable/Flower/Fruit Selling	03	0.60

Table 3: Cultural participation of Halakki Vakkaliga tribes in Uttara Kannada district of Karnataka (n=500)

Sl. No.	Activities	Regular F (%)	Occasional F (%)	Never F (%)
I. Ceremonial Activities				
1.	Marriage	284 (56.80)	216 (43.20)	0 (0.00)
II. Festivals				
2.	Deepavali	476 (95.20)	24 (4.80)	0 (0.00)
3.	Tulasi Habba	476 (95.20)	24 (4.80)	0 (0.00)
4.	Ashada Habba	476 (95.20)	24 (4.80)	0 (0.00)

5.	Ugadi	475 (95.00)	24 (4.80)	1 (0.20)
6.	Bandi Habba	297 (59.40)	24 (4.80)	179 (35.80)
7.	Suggi Habba	476 (95.20)	24 (4.80)	0 (0.00)
8.	Sankranthi	476 (95.20)	24 (4.80)	0 (0.00)
9.	Amavasya	476 (95.20)	24 (4.80)	0 (0.00)
10.	Regular Pooja	443 (88.60)	57 (11.40)	0 (0.00)
2. Recreational Activities				
1	Fairs (Jatras)	19 (3.80)	344 (68.80)	137 (27.40)
2	Drama	8 (1.60)	352 (70.40)	140 (28.00)

Table 4: Non-Timber Forest Products (NTFPs) used by the Halakki Vakkaliga tribes in Uttara Kannada district (n=500)

Sl. No.	Products	Yes	No
		F (%)	F (%)
1.	Leaves for meal plate	2 (0.40)	498 (99.60)
2.	Pongamia seeds	0 (0.00)	500 (100.00)
3.	Fruits:		
	i. Karonda	157 (31.40)	343 (68.60)
	i. Jamun	192 (38.40)	308 (61.60)
	i. Amla	149 (29.80)	351 (70.20)
	v. Any other	18 (3.60)	482 (96.40)
4.	Fuelwood	500 (100.00)	0 (0.00)
5.	Bamboo	5 (1.00)	495 (99.00)
6.	Honey collection	18 (3.60)	482 (96.40)
7.	Grass for brooms	5 (1.00)	495 (99.00)
8.	Gum collection	2 (0.40)	498 (99.60)
9.	Ayurvedic (bark, leaf, roots, flowers, seeds, etc.,)	4 (0.80)	496 (99.20)
10.	Fodder	50 (10.00)	450 (90.00)
11.	Leaf litter	6 (1.20)	494 (98.80)

CONCLUSION

Overall, the findings indicate that the Halakki Vakkaliga community is transitioning from a predominantly forest-dependent livelihood system towards a diversified rural economy without completely abandoning its traditional knowledge systems and cultural values. This coexistence of socio-economic transformation and cultural continuity underscores the adaptive capacity of the community in responding to environmental, economic and institutional changes.

The study highlights the need for policy interventions that simultaneously promote sustainable livelihood enhancement and cultural conservation. Strengthening agricultural productivity through climate-resilient farming practices, improving access to education and skill development, promoting value addition and marketing of locally available forest and agricultural products, supporting women's livelihood enterprises and documenting indigenous knowledge systems can significantly enhance community resilience. Furthermore, participatory forest management and biodiversity conservation programmes should actively incorporate the traditional ecological knowledge of the Halakki

Vakkaliga community, recognizing indigenous people as key stakeholders in achieving sustainable development and conserving the unique biodiversity of the Western Ghats.

ACKNOWLEDGEMENT

Authors gratefully acknowledge the financial support and academic encouragement provided by the **Indian Council of Social Science Research (ICSSR), New Delhi**, for this study. This support has been instrumental in the successful completion of the research project.

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