

S. N. Tripathy

SUSTAINING LIVELIHOODS AND CULTURAL HERITAGE OF THE KUTIA KANDHA IN ODISHA'S SHIFTING SETTINGS

Abstract

The Kutia Kandha, a Particularly Vulnerable Tribal Group (PVTG) in Odisha, India, embody a unique biocultural identity shaped by their reliance on shifting cultivation and minor forest products (MFPs) within the forest ecosystems of Kalahandi, Kandhamal, and Rayagada districts. This review synthesizes the literature on their socio-economic poverty, food insecurity, limited access to healthcare and education, sustainable livelihood strategies and rich cultural practices, such as nature worship and millet-based traditions. Despite resilience, they face marginalization from small landholdings, deforestation, and ineffective external interventions like the Forest Rights Act and mining disruptions. The study highlights gaps in longitudinal, gender-focused, and climate-related research, emphasizing the need for inclusive policies to preserve their heritage while addressing vulnerabilities. Their story reflects a delicate balance between tradition and survival amid modern pressures.

Keywords: *Kutia Kandha, Shifting Cultivation, Livelihood, and Vulnerability*

Introduction

The Kutia Kandha, a Particularly Vulnerable Tribal Group (PVTG) residing primarily in the Kalahandi, Kandhamal, and Rayagada districts of Odisha, India, represent a unique indigenous community with a rich cultural heritage and a deep-rooted connection to their natural environment. Recognized as one of the 75 PVTGs in India, the Kutia Kandha are a subgroup of the more prominent Kondh tribe, distinguished by their geographic isolation in hilly terrains and their reliance on shifting cultivation (locally termed “podu chaas” or “dongar chaas”) and minor forest products (MFPs) for subsistence.

S.N. TRIPATHY, Former Professor of Economics, Gokhale Institute of Politics and Economics, currently Tagore National Fellow, Anthropological Survey of India, Kolkata. *E-mail: sn_tripathy2004@yahoo.com*

This tribe's socio-economic life revolves around forest ecosystems, which provide food, fuel, medicine, and income. Their cultural practices, such as nature worship and traditional social organization, underline their biocultural identity. Despite their resilience, the Kutia Kandha face persistent challenges, including poverty, food insecurity, illiteracy, and limited access to modern healthcare and education, compounded by their marginalization from mainstream developmental processes.

The significance of studying the Kutia Kandha lies in understanding how indigenous communities adapt to ecological and socio-economic pressures while preserving their traditional knowledge systems. Their dependence on forest resources and minimal technological intervention offers insights into sustainable living practices that contrast modern agricultural paradigms. However, their vulnerability stemming from small landholdings, lack of irrigation, and restricted market access highlights the need for inclusive development policies that respect their cultural ethos. This review explores existing literature on the Kutia Kandha, focusing on their socio-economic conditions, livelihood strategies, cultural practices, and the impact of external interventions. It aims to synthesize knowledge and identify gaps for future research.

Review of Literature

The Kutia Kandha have been subjects of anthropological and ethnographic interest since colonial times, with early accounts providing a foundation for understanding their social structure and cultural practices. Elwin (1950), in his seminal work on Indian tribes, describes the Kondh tribes, including the Kutia subgroup, as nature worshippers with a strong communal ethos. He notes that their practice of shifting cultivation and dependence on forests shaped their identity as "hill-dwelling Kondhs" distinct from their plains-dwelling counterparts. These early studies emphasize the tribe's patriarchal yet cooperative social organization, with nuclear families forming the basic unit and women playing a significant role in gathering and processing forest produce.

Post-independence, scholars like Bailey (1960) expanded on the Kondhs' economic life, highlighting the Kutia Kandha's reliance on podu cultivation of millets (e.g., ragi, kosala) and pulses like arhar. Bailey's work underscores the ecological sustainability of their practices, noting the absence of chemical fertilizers and the rotational nature of shifting cultivation, which allowed soil regeneration (Tripathy, 2022). However, he also points to the fragility of this system under population pressure and land fragmentation, a theme echoed in later studies.

The cultural fabric of the Kutia Kandha is intricately linked to their environment, a theme well-documented in the literature. Patnaik (2005)

describes their animistic beliefs, with nature worship central to their rituals. The Jani, a magico-religious specialist, conducts ceremonies involving animal sacrifices (e.g., buffalo, sheep), a practice that has replaced human sacrifice since the colonial era. These rituals reinforce community cohesion and their spiritual bond with forests, which they protect collectively.

The Kutia Kandha's livelihood strategies revolve around a dual reliance on shifting cultivation and MFPs. Mining and industrialization in Kalahandi, particularly by companies like Vedanta, have disrupted their livelihoods. Xaxa (2014) argues that land alienation and environmental degradation from bauxite mining have displaced communities, reduced access to forests, and exacerbated poverty. While the Forest Rights Act offers legal recourse, its enforcement lags, leaving the tribe between development and dispossession.

Recent literature focuses on Kutia Kandha's socio-economic challenges, painting a picture of persistent marginalization. Tripathy (2024) further explores the economic dependence on MFPs, such as mahua flowers, tendu leaves, and honey, which supplement their income. Mohanty estimates that forest-based activities contribute 30 % of their annual earnings. However, the lack of value-addition and market linkages restricts financial gains. The study highlights the gender dimension, with women predominantly collecting and processing MFPs, reinforcing their critical role in the household economy.

A study by the Down to Earth team (2021) in Lanjigarh block, Kalahandi, reveals that over 90% of Kutia Kandha households experience severe food insecurity, with every sixth household facing hunger. The study attributes this to small landholdings (averaging 0.8-1.2 acres), low agricultural productivity, and limited access to institutional credit or markets for MFPs. Despite their dependence on forests, the tribe refrains from using wood for fuel, reflecting their conservationist ethos, which does not translate into economic stability.

The oral health-related quality of life (OHRQOL) of the Kutia Kandha tribe, assessed using the OHIP-14, was found to be poor, with a high prevalence of both smoking and smokeless tobacco habits. This study serves as a foundational dataset for health authorities to design suitable programs for the tribal population of Kutia Kandha and potentially for other tribal groups across Odisha (Kumar et al., 2022).

Similarly, literacy rates remain low, with government reports (e.g., Ministry of Tribal Affairs, 2018) noting that remoteness and lack of schools hinder educational attainment, perpetuating cycles of poverty.

Agricultural traditions are associated with festivals, and during this celebration, the Kutia Kandha exchange millet seeds, symbolizing

their reliance on indigenous crops and communal solidarity. Such practices highlight their traditional ecological knowledge (TEK), which scholars (Gadgil et al., 1993) argue offers lessons in sustainable resource management. Their use of organic bunds in shifting cultivation, recognized by the FAO as a Globally Important Agricultural Heritage System, underscores this expertise. Tripathy (2019) highlights MFPs' economic value, noting firewood's existence and high-value items like tendu leaves and honey, but evaluates poor infrastructure and intermediaries' exploitation, limiting value-addition and fair returns. The Forest Rights Act (2006) aimed to secure tenure over MFPs, but implementation remains uneven, leaving the Kutia Kandha vulnerable to market fluctuations.

Tripathy (2023a) illuminates that Government policies and development programs have had mixed impacts on the Kutia Kandha. The Tribal Sub-Plan (TSP) and PVTG-specific schemes aim to improve infrastructure, education, and health. However, their reach is limited, with remoteness and bureaucratic inefficiencies cited as barriers.

The Wadi project by NABARD, promoting orchard cultivation, has been piloted in tribal areas. However, its adoption among the Kutia Kandha remains low due to their preference for traditional practices (Tripathy, 2018b, 2020).

Tripathy (2024) suggests promoting pineapple-based industries in the Dongria Kondh region can boost local jobs and entrepreneurship, driving community growth. Industries producing pineapple goods like juices, jams, dried fruit, and bromelain for pharmaceuticals and cosmetics could create new income streams. Government and NGOs can support this by providing technical aid, training, and market access to improve output and profits. These efforts can make pineapple farming a key part of sustainable development for the Kutia Kondh, ensuring economic stability while maintaining their ecological harmony and cultural heritage.

The literature review on the Kutia Kandha reveals a resilient, nevertheless vulnerable community, balancing tradition with survival in a rapidly changing world. Their socio-economic life, anchored in forest ecosystems, reflects sustainable practices overshadowed by poverty and exclusion. From nature worship to seed festivals, cultural richness emphasizes their identity, while external interventions highlight the tension between development and preservation. Despite rich documentation, gaps persist, necessitating a study and the rationale for the study of tracking changes in livelihood patterns over decades and for policy implications.

Objectives

Assess the Kutia Kandha's socio-economic challenges and resilience, focusing on their reliance on shifting cultivation, minor forest products, and

livestock while analyzing the impacts of deforestation, limited irrigation, and policy interventions.

Explore the connection between their biocultural traditional practices and forest resources, material and land assets, identifying gaps in gender, climate, and longitudinal research for inclusive policies.

Evaluate livelihood sustainability and cultural preservation amidst external pressures, proposing strategies to enhance resource access and equity.

Methodology

The study focuses on the Kutia Kondha, a Particularly Vulnerable Tribal Group (PVTG) under the Kutia Kondha Development Agency (KKDA) in Belghar, Kandhamal district, Odisha, which supports this marginalized tribe through infrastructure, income generation, and education, funded by special central assistance from the Government of India. Further, the study on Kutia Kandha in Tumudibandh block, Kandhamal, employed Focus Group Discussions (FGDs) with 100 households across six villages under KKDA, selected randomly for accumulating primary data through brief interviews. These villages-three near and three distant from the block headquarters (an urban proxy)-highlight the tribe's ecological bond and reliance on forest resources amidst challenges of poverty and limited access to modern amenities. Secondary data were sourced to supplement the study from published papers, Government reports, and KKDA records detailing population, literacy, and socio-economic conditions.

Theoretical Framework

This study is primarily informed by the Sustainable Livelihoods Framework (SLF), complemented by Political Ecology and Biocultural Theory. The Sustainable Livelihoods Framework provides a holistic lens to analyse how the Kutia Kandha mobilise natural, human, social, physical, and financial capital to sustain their livelihoods amid structural vulnerabilities. Their dependence on shifting cultivation, minor forest products (MFPs), and livestock reflects adaptive strategies shaped by limited landholdings, ecological constraints, and institutional interventions such as the Forest Rights Act and PVTG development schemes. SLF helps assess how external shocks-deforestation, mining, market exclusion, and policy gaps-affect livelihood security and resilience.

Political Ecology further contextualises the power dynamics underlying resource access, highlighting how state policies, mining activities, and top-down development planning reshape traditional forest-based economies

and contribute to marginalisation. It draws attention to land alienation, environmental degradation, and uneven implementation of welfare measures.

Biocultural Theory and Traditional Ecological Knowledge (TEK) perspectives explain the deep interconnection between Kutia Kandha cultural practices, seed festivals, nature worship, and sustainable resource management. Together, these frameworks enable an integrated understanding of livelihood sustainability, cultural preservation, gendered labour roles, and the tension between ecological harmony and externally driven development.

The Kutia Kondha's Struggle and Resilience

According to the 2011 census, while tribes make up 8.6 per cent of India's population, they constitute 23 per cent of Odisha's, a significant share compared to states like Madhya Pradesh, Chhattisgarh, Maharashtra, Jharkhand, and Gujarat, which together hold over half of India's tribal populace. These communities, among India's most marginalised, grapple with relentless challenges, social exclusion, limited healthcare access, educational deprivation, unemployment, and displacement from their ancestral lands and forests, casting shadows over their daily existence.

Odisha stands out as a vibrant tapestry of cultural diversity, shaped by 62 distinct tribes, including 13 Particularly Vulnerable Tribal Groups (PVTGs), out of 75 nationwide, including groups like the Birhor, Bondo, Didayi, Dongria-Khond, Juangas, Kharias, Kutia Kondh, Lanjia Sauras, Lodhas, Mankidias, Paudi Bhuyans, Soura, and Chuktia Bhunjia, identified by stagnant demographics, pre-agricultural livelihoods, and isolated habitats. Among them, the Kutia Kondhas, a subgroup of the Kandha tribe in Kandhamal district, endure fragile living conditions marked by poverty, food insecurity, malnutrition, and health struggles, primarily in Kotagarh, Tumudibandh, and Belghar blocks of Baliguda subdivision. Nestled within the Eastern Ghats, Odisha's hinterland is a timeless refuge for ancient tribes, their lives interwoven with the forests, forming a vivid ethnic kaleidoscope that defines the region's heritage.

The PVTGs, a classification by the Government of India aimed at uplifting tribes with critically low development indices, often reside in remote forest enclaves where natural resources sustain their socio-economic and cultural fabric in harmonious balance. Their livelihoods hinge on collecting non-timber Forest Produce (NTFP) like honey, gum, bamboo, medicinal plants, and roots. They also practice shifting cultivation, horticulture, livestock rearing, and small-scale artisan work to build a modest existence.

Despite their rich traditions, the Kutia Kondhs face severe food insecurity-evident in Lanjigarh, where over 90 per cent are Kutia Kondhs and

every sixth household battles hunger compounded by illiteracy, inadequate healthcare, and scarce employment opportunities beyond the forest and farm labour. Their settlements, typically two rows of houses facing each other, embody a unified social structure. However, their patriarchal, nuclear families live day-to-day with little thought for the future, interacting minimally with outsiders or government systems.

In Lanjigarh block, where nearly a quarter of Kandhamal's Kondhs reside, hidden hunger and starvation-like conditions persist for eight months annually, with diets limited to carbohydrate-heavy mandia pej or rice with salt, tamarind water, and green chillies, offering little nutritional variety. Vulnerable groups include single women, widows, the elderly without caregivers, the infirm, people with disabilities, and children, chronic hunger and food insecurity for up to five months yearly, exacerbated by high anaemia rates, especially among adolescent girls and women (over 68 per cent). Child malnutrition in Lanjigarh is alarmingly prevalent, with 43.5 per cent underweight, 47.9 per cent stunted, and 20 per cent wasted. In comparison, nutritional anaemia affects 74.3 per cent of children under five and 49.7 per cent of pregnant women, highlighting a dire health crisis. Sanitation woes compound these issues, as most households practice open defecation, and drinking water shortages in summer due to drying tube wells plague tribal settlements across the region (Sharma & Mariakumar, 2023).

Belghar's eastern villages are motorable, yet the western side, encircled by steep ghats and mountains, remains accessible only by foot. It is situated on the northeast fringe of the Eastern Ghats at 2,500 feet above sea level amidst forests, hills, and rivers. The poorest households rely on government schemes that distribute rice at 1 rupee per kilo year-round to bolster food security. However, this aid barely offsets the nutritional deficits and environmental challenges these forest-dependent communities face.

Kutia Kondh women are crucial in collecting, processing, and selling non-timber forest products while managing household chores and childcare. However, the KKDA largely overlooks them, and no specific schemes are designed to meet their needs as beneficiaries. Life expectancy at birth for Kutia Kondhs in Tumudibandha, Phulbani district, is 46.49 years for males and 41.49 years for females. The gender gap is attributable to physiological stress and biological factors, compounded by women's shorter height and significant body weight deficits (Patel, 1985).

Health, an essential sector, receives shockingly low financial priority from the KKDA. While efforts to provide drinking water through tube wells exist in select villages, most remain defunct due to the Kondhs' lack of training

in maintenance or repair, highlighting a critical gap in sustainable support. The Kutia Kondhs acknowledge sporadic benefits from the KKDA. However, these are driven by agency decisions rather than community needs, with few initiatives reflecting Kutia's input, underscoring the need for stronger tribal representation on the KKDA's governing body.

This top-down planning approach has fostered indifference among the Kutia Kondhs, who, paradoxically, appear content with their lot, unperturbed by external development programs or the outside world, despite the evident shortcomings of KKDA interventions. When micro-projects were designed, planners prioritised physical infrastructure- roads, electricity, and drinking water. They recognised these as significant barriers to development, leading to substantial KKDA budget allocations for such projects over other pressing needs. However, irrigation infrastructure within KKDA areas has seen minimal funding and even less implementation, leaving agriculture vulnerable. At the same time, political exclusion and the erosion of tribal traditions have further hampered economic progress, education, and infrastructure, except in regions influenced by Christian missionaries. While neglecting health, women's empowerment, and community-driven schemes, the focus on physical infrastructure reveals a disconnect between KKDA's goals and the Kutia Kondhs' realities, perpetuating their marginalisation despite the agency's mandate to uplift this vulnerable tribal group.

Table 1: Sample Coverage

Sl. No.	PVTG Category	Villages	No. of Households	Distance from Block HQ (KMs)
1.	Kutia Kandha	Burlubaru	17	31.0
2.	Block	Deogada	17	23.0
	Tumudibandha	Germeli	17	35.0
		Guchuka	16	18.0
		Gunuspa	17	38.0
		Tidipadar	16	20.0
	Total		100	27.7 (Average)

Table 1 outlines the sample coverage of 100 Kutia Kandha households across six villages in Tumudibandha block, which is located at a distance from the block headquarters ranging from 18.0 km (Guchuka) to 38.0 km (Gunuspa), averaging 27.7 km. The even distribution of households (16-17 per village) ensures balanced representation, though varying distances suggest accessibility challenges, potentially impacting development interventions and resource access for remote villages like Gunuspa and Germeli.

Table 2: Main Occupation by Sex Category

PVTG Category	Main Occupation	No. of Persons Employed		
		Males	Females	Total
Kutia Kandha	Cultivator	57	52	109
Tumudibandha	Agricultural Labourer	3	10	13
	Wage Earner	44	2	46
	Salaried	3	0	3
	Business	9	0	9
	NTFP Collection	27	56	83
	Goat Rearing and Other Livestock	3	5	8
	Social Security Pensions	8	2	10
	Sub Total	154	127	281

Table 2 reveals that among the Kutia Kandha in the Tumudibandha block, cultivation employs the most individuals (109), with males (57) slightly outnumbering females (52), while NTFP collection is female-dominated (56 vs 27 males), reflecting women's significant role in forest-based livelihoods. Wage earning is predominantly male (44 vs. two females), and salaried jobs and business are exclusively male domains (3 and 9, respectively). Agricultural labour favours females (10 vs three males), and social security pensions support more males (8 vs two females), indicating gendered occupational patterns and economic vulnerabilities, with a subtotal of 281 persons employed.

Table 3: Household Composition of Kutia Kandha

Category	Sub-Category	Value
PVTG Category		Kutia Kandha
Number of Sample Households		100
Number of Household Persons	Males	216
	Females	200
	Total	416
Number of Persons per Household	Males	2.2
	Females	2.0
	Total	4.2

The Kutia Kandha community, based on a sample of 100 households, has an average household size of 4.2 members. This includes 216 males and 200 females, averaging 2.2 males and 2.0 females per household. The gender distribution shows a slight male predominance, aligning with the broader trend across the studied tribes. Compared to the average household size of 4.3 across all communities, Kutia Kandha households are slightly smaller. This

indicates a relatively balanced family structure with minor deviation from the collective norm, reflecting typical demographic patterns or social organisation within this community (Table 3).

Table 4: Kutia Kandha - Age Group and Sex Category

Age Group	Males	Females	Total	Sex Ratio
<6	17	23	40	1353
6-15	46	40	86	870
15-25	52	43	95	827
25-40	48	48	96	1000
40-60	44	39	83	886
>60	9	7	16	778
Sub Total	216	200	416	926
Mean Age	27.3	26.8	27.1	
SD	16.8	16.4	16.6	

The age distribution of the Kutia Kandha population shows 416 individuals, with males (216) slightly outnumbering females (200), yielding an overall sex ratio of 926 females per 1,000 males. The highest sex ratio (1,353) occurs in the under-6 age group, favouring females (23 vs. 17 males), while the lowest (778) is among those over 60, with fewer females (7 vs. nine males). The 25-40 age group is balanced (48 each), with a sex ratio of 1,000. Mean ages are similar (27.3 males, 26.8 females), and standard deviations (16.8 males, 16.4 females) indicate comparable age variability, suggesting a youthful population with declining female representation in older age groups (Table 4).

Table 5: Kutia Kandha - Age Group, Sex Category, and Marital Status[illegible]

The marital status data across age groups for Kutia Kandha reveals distinct gender patterns: among males, 47% of married individuals are aged 25-40, while unmarried males peak at 43.2% in the 15-25 group, and widowed males (50%) are split between 40-60 and over 60. For females, 46.5% of married individuals are in the 25-40 range, unmarried females dominate the 6-15 group at 46%, and widowed females (66.7%) concentrate in the 40-60 age group. Notably, widowhood emerges later for females, and no unmarried individuals persist beyond 25-40, indicating earlier marriage for women and higher male remarriage rates, with totals normalised to 100% across categories (Table 5).

Table 6: Kutia Kandha - Educational Background of Household Members

Educational Background	Males	Females	Total	% Males	% Females	% Total
Illiterate	50	100	150	23.1	50.0	36.1
Knowing only signature	76	51	127	35.2	25.5	30.5
Read and write	64	35	99	29.6	17.5	23.8
Up to High School	23	9	32	10.6	4.5	7.7
Matriculate (HSC)	2	3	5	0.9	1.5	1.2
Intermediate/Plus Two	1	2	3	0.5	1.0	0.7
Sub Total	216	200	416	100.0	100.0	100.0

Beyond hunger, the Kutia Kondh face illiteracy, inadequate access to schools, healthcare, nutrition, employment, and land ownership, compounded by low agricultural output, limited credit, and shrinking access to NTFPs, despite government efforts to introduce primary schools with a coastal Odisha curriculum irrelevant to their environment. The KKDA has neglected to develop context-specific study materials or enhance teacher capacities. At the same time, ashram schools run by the tribal welfare department see erratic attendance and high dropout rates among Kutia students, reflecting minimal educational progress.

The educational background of the Kutia Kandha population (416 total) highlights stark gender disparities: 50% of females (100) are illiterate, compared to 23.1% of males (50), while 35.2% of males (76) can only sign, compared to 25.5% of females (51). Males outperform females in reading and writing (29.6% vs. 17.5%) and up to high school (10.6% vs. 4.5%). However, both genders show minimal higher education, with matriculation at 0.9% for males (2) and 1.5% for females (3) and intermediate levels below 1% each. Illiteracy dominates at 36.1%, reflecting limited educational access, especially for females (Table 6).

Table 7: Kutia Kandha - Main Occupation by Sex Category

Main Occupation	Males	Females	Total	% Share
Cultivator	57	52	109	38.8
Agricultural Labourer	3	10	13	4.6
Wage Earner	44	2	46	16.4
Salaried	3	0	3	1.1
Business	9	0	9	3.2
NTFP Collection	27	56	83	29.5
Goat Rearing & Other Livestock	3	5	8	2.8
Social Security Pensions	8	2	10	3.6
Sub Total	154	127	281	100.0
Total Household Members	216	200	416	
Work Participation Rate (%)	71.3	63.5	67.5	

The occupational data for Kutia Kandha (281 employed out of 416 total) reveals cultivation as the dominant occupation (38.8%, 109 persons), with males (57) and females (52) nearly equal. In contrast, NTFP collection (29.5%, 83 persons) is led by females (56 vs 27 males). Wage earning (16.4%, 46 persons) is male-dominated (44 vs. two females), and salaried jobs (1.1%) and business (3.2%) employ only males. Agricultural labour (4.6%) favours females (10 vs three males), and pensions (3.6%) support more males (8 vs two females). Work participation is higher for males (71.3%) than for females (63.5%), averaging 67.5%, reflecting gendered roles and economic dependency (Table 7).

Table 8: Kutia Kandha - Household Subsidiary Occupation by Sex Category

Subsidiary Occupation	Males	Females	Total	% Share
Cultivator	47	41	88	44.0
Agricultural Labourer	5	11	16	8.0
Wage Earner	27	1	28	14.0
Salaried	0	0	0	0.0
Business	1	0	1	0.5
NTFP Collection	22	32	54	27.0
Goat Rearing & Other Livestock	3	9	12	6.0
Social Security Pensions	1	0	1	0.5
Sub Total	106	94	200	100.0
Total Household Members	216	200	416	
Work Participation Rate (%)	49.1	47.0	48.1	

The subsidiary occupation data for Kutia Kandha households (200 employed out of 416 total) shows cultivation as the primary activity (44%, 88 persons), with males (47) slightly outnumbering females (41). In contrast,

NTPP collection (27%, 54 persons) favours females (32 vs. 22 males). Wage earning (14%, 28 persons) is overwhelmingly male-driven (27 vs. one female), and agricultural labour (8%) leans toward females (11 vs. five males). Goat rearing (6%) also sees higher female participation (9 vs. three males), while salaried jobs are absent, and business and pensions are minimal (0.5% each). Work participation rates are close, at 49.1% for males and 47% for females, averaging 48.1%, indicating balanced but gendered subsidiary roles (Table 8).

Table 9: Kutia Kandha - Details of Housing

Sl.	Type of Dwelling Condition	% Households
1	House Ownership	
	Own house	100.0
	Sharing house with father	0.0
	No house	0.0
	Overall	100.0
2	Type of House	
	Kacha	62.0
	Pucca	5.0
	Semi Pucca	30.0
	Hut	1.0
	Mancha (Stage House)	2.0
	Overall	100.0
3	Existence of RoR with the owned house	52.0
4	Constructed house with Govt assistance	26.0
5	Govt. schemes through which benefitted	
	PMAY	40.0
	Micro Project	0.0
	IAY	60.0
	Total	100.0
6	Possession of ration cards	98.0

The dwelling condition data for Kutia Kandha households reveal universal household ownership (100%), with no cases of shared or homeless households. However, 62% live in kacha houses, 30% in semi-pucca houses, and only 5% in pucca houses, indicating a predominance of rudimentary housing. Huts (1%) and mancha houses (2%) are rare, while 52% possess a Record of Rights (RoR), and 26% received government-assisted construction. Among beneficiaries, 60% used IAY and 40% used PMAY schemes, with no micro-project aid, and 98% held ration cards, reflecting widespread access to basic welfare but limited improvement in housing quality despite government support (Table 9).

Table 10: Kutia Kandha - Details of Housing Structure

Sl.	Details of Housing Structure	Measurement Unit	Value
1	Built-up Area of the House	Average in Sq. ft.	373.4
2	Number of Rooms in the House	Average No.	1.5
3	Number of Storeys in House	Average No.	100.0
4	Type of Wall (% of HHs)		
	Mud	% of HHs	10.0
	Brick with Mud	% of HHs	38.0
	Bamboo or Wood with Mud Plaster	% of HHs	33.0
	Brick with Cement	% of HHs	19.0
	Total	% of HHs	100.0
5	Type of Roof (% of HHs)		
	Thatched	% of HHs	50.0
	Asbestos	% of HHs	45.0
	Concrete Roof	% of HHs	5.0
	Total	% of HHs	100.0
6	Floor (% of HHs)		
	Earthen	% of HHs	75.0
	Cement	% of HHs	25.0
	Total	% of HHs	100.0
7	Current Use for Own Accommodation	% of HHs	100.0

The housing structure data for Kutia Kandha households shows an average built-up area of 373.4 sq. ft. with 1.5 rooms and single-storey homes (100%). Walls are mostly brick with mud (38%) or bamboo/wood with mud plaster (33%), while only 19% use brick with cement, and 10% use mud alone. Roofs are predominantly thatched (50%) or asbestos (45%), with concrete rare (5%), and floors are primarily earthen (75%) versus cement (25%). All houses (100%) serve as personal accommodation, reflecting modest, traditional construction with limited modern materials despite full ownership (Table 10).

Table 11: Kutia Kandha - Facilities Available in Living Houses

Sl.	Details of Housing Condition	Measurement Unit	Value
1	Water Facility Inside House	% of Households	1.0
2	Type of Water Facility Inside House	% of Households	
	Handpump		0.0
	Open Well		100.0
	Total		100.0
3	Source of Water (No Facility Inside House)	% of Households	
	Public Borewell Run with Solar Power		53.5
	Stream Water		41.4
	Public Tube-well/Handpump		2.0
	Common Well		1.0

Sl.	Details of Housing Condition	Measurement Unit	Value
	Supply Water to the Village		0.0
	River Water		2.0
	Total		100.0
4	Distance to Water Source (Max/Min/Avg)	Metres	500/10/255
5	Toilet Facility Inside House	% of Households	32.0
6	Separate Place for Animals	% of Households	53.0
7	Electric Connection to Their Houses	% of Households	37.0
8	Separate Poultry Shed	% of Households	40.0
9	Households Received Solar Light Support	% of Households	27.0
10	General Practice if No Cattle/Poultry Shed		Sharing, open space, backyard, living house, free moving, baskets

Table 11 depicts Kutia Kandha housing facilities, revealing minimal indoor water access (1%), with open wells as the sole internal source (100%). In comparison, most (99%) rely on external sources like solar-powered borewells

Table 12: Kutia Kandha - Details of Second House

Sl.	Details of Houses	Measurement Unit	Value
1	Households Possessing Second House	% of Households	4.0
2	Built-up Area of Second House	Average Sq. ft.	230.0
3	Number of Rooms	Average No.	1.0
4	Single Storeyed Building	% of Households	4.0
5	Wall Type of Second House	% of Households	
	Mud		25.0
	Brick with Mud		25.0
	Bamboo or Wood with Mud Plaster		50.0
	Brick with Cement		0.0
	Total		100.0
6	Roof Type in Second House	% of Households	
	Thatched		100.0
	Asbestos		0.0
	Total		100.0
7	Floor Type in Second House	% of Households	
	Earthen		75.0
	Cement		25.0
	Total		100.0
8	Use of Second Building	% of Households	
	Own Living		50.0
	Business Purpose		25.0
	Cattle Shed		25.0
	Total		100.0

(53.5%) or streams (41.4%), averaging 255 meters away. Only 32% have indoor toilets, 37% have electricity, and 27% have access to solar lighting, indicating limited access to modern amenities. Over half (53%) have separate animal spaces; 40% have poultry sheds. Households lacking sheds use shared spaces or backyards, reflecting basic living conditions with partial infrastructure development despite external water dependency.

Table 12 indicates that the second houses of Kutia Kandha have only 4% of households that own one, averaging 230 sq. ft. with one room, all single-storied. Walls are predominantly bamboo or wood with mud plaster (50%), followed by mud or brick with mud plaster (25% each), with no cement used; roofs are exclusively thatched (100%), and floors are mostly earthen (75%) versus cement (25%). Usage is split evenly, with 50% for living, 25% for business, and 25% for cattle sheds, indicating that these modest, traditional structures serve multiple purposes despite their rarity and basic construction.

Table 13: Household Possession of Material Assets – Kutia Kandha

Sl.	Material Assets	% of Households	Value per Household (Rs.)
1	Television	9.0	4944.4
2	Radio	0.0	—
3	Cooking gas	16.0	2750.0
4	Cot	51.0	805.9
5	Chair	42.0	428.6
6	Table	0.0	—
7	Cycle	64.0	2469.8
8	Two-wheeler	15.0	33400.0
9	Three-wheeler	0.0	—
10	Gold & Silver Ornaments	15.0	5166.7
11	Utensils	100.0	1408.0
12	Mobile phone	43.0	2565.1
13	Other material assets	41.0	318.3
Total Value			Rs. 54,256.8

The material assets data for Kutia Kandha households illustrates universal ownership of utensils (100%, Rs. 1,408), while cycles (64%, Rs. 2,469.8) and cots (51%, Rs. 805.9) are standard, reflecting basic mobility and furnishing. Mobile phones (43%, Rs. 2,565.1) and chairs (42%, Rs. 428.6) indicate moderate modern adoption, but televisions (9%, Rs. 4,944.4), two-wheelers (15%, Rs. 33,400), and cooking gas (16%, Rs. 2,750) are less prevalent, with high-value items like ornaments (15%, Rs. 5,166.7) rare. No household owns radios, tables, or three-wheelers, and the total asset value averages Rs. 54,256.8, suggesting limited wealth and prioritisation of essentials over luxury goods (Table 13).

Table 14: Livestock Assets - Kutia Kandha Households

Sl.	Livestock Assets	% of Households	Number of Assets/ Household	Value of Assets/ Household (Rs.)	% Share
1	Cow	38.0	1.4	4740.8	
2	Bullock	50.0	1.6	6586.0	
3	Buffalo	28.0	2.2	9107.1	
4	Calf	11.0	1.1	2454.5	
5	Goat	32.0	3.0	6900.0	
6	Sheep	17.0	3.8	4882.4	
7	Pig	27.0	5.0	5437.0	
8	Poultry	74.0	4.6	1001.2	
	Total			Rs. 41,109.00	100.0

The livestock assets data for Kutia Kandha households displays poultry as the most common (74%, 4.6 birds, Rs. 1,001.2), while bullocks (50%, 1.6 units, Rs. 6,586) and cows (38%, 1.4 units, Rs. 4,740.8) dominate more extensive stock, reflecting agricultural reliance. Goats (32%, three units, Rs. 6,900) and pigs (27%, five units, Rs. 5,437) offer higher numbers per household, while buffaloes (28%, 2.2 units, Rs. 9,107.1) are the most valuable. Sheep (17%) and calves (11%) are less common, with total asset value averaging Rs. 41,109, indicating diverse livestock holdings skewed toward poultry and draft animals for sustenance and income (Table 14).

Table 15: Other Livelihood Assets -Kutia Kandha Households

Sl.	Other Livelihood Assets	% of Households	Number of Assets/HH	Value of Assets/ HH (Rs.)	% Share
1	Dog	3.0	1.3	466.7	3.6
2	Duck	0.0	—	—	—
3	Hunting gun	4.0	2.8	1833.3	14.0
4	Iron Plough	0.0	—	—	—
5	Poultry cage	3.0	1.0	300.0	2.3
6	Pump set	4.0	1.0	3950.0	30.4
7	Solar light	1.0	1.0	5000.0	38.3
	Total	—	—	Rs. 11,550.0	100.0

From the data, pump sets, and solar lights dominate household asset values, contributing 30.4% and 38.3%, respectively, despite being owned by only 4% and 1% of households. Hunting guns, held by 4% of households, have the highest assets per household (2.8) and a significant value share (14%). Dogs and poultry cages, owned by 3% of households, have minimal value shares (3.6% and 2.3%). Ducks and iron ploughs are absent, indicating no ownership or value contribution (Table 15).

Table 16: Operational Land Holdings – Kutia Kandha Tribe

Sl.	Land Particulars	% of Households	Land Holding per Farmer (in Acres)
1	Agricultural land owned	100.0	1.26
2	Podu land	99.0	0.67
3	Dangar land	98.0	0.21
4	Garden land	98.0	0.02
5	Low paddy land	97.0	0.30
6	Jholla (Terraced land)	97.0	0.08
7	Land area with ROR	100.0	0.45
8	Irrigated land	45.0	0.10

The Kutia Kandha tribe relies heavily on land-based livelihoods, with all households owning agricultural land, though holdings are marginal. Nearly all practice Podu cultivation, reflecting dependence on traditional forest-based farming. Landholdings are fragmented into small parcels, indicating low productivity and limited adaptation to diverse terrains. Limited irrigation access and insecure tenure, due to poor legal recognition, further heighten their vulnerability, underscoring the need for targeted support in irrigation, land rights, and sustainable agriculture.

Shifting cultivation, known to the Kondhs as dongar chaas or podu chaas, is the primary source of food for tribal communities. They rely on minor millets like ragi, kosala, and kangu intercropped with arhar grown on 0.5-3-acre hill-slope plots during the Kharif season. The system sustains small and marginal landholdings with no manure or chemical fertilisers used by Kutia Kondh farmers. However, rising population and family sizes further fragment these plots, intensifying pressure on already limited agricultural resources (Tripathy, 2022).

Table 17: Source of Irrigation – Kutia Kandha

Sl.	Source of Irrigation	Number of Households	% of Households
1	Borewell	0	0.0
2	Check dam	0	0.0
3	Stream water/ Chua	40	88.9
4	Farm pond	0	0.0
5	MIP	0	0.0
6	River water	0	0.0
7	Percolation pit	2	4.4
8	Water Harvesting Structure	3	6.7
	Total	45	100.0

All households own agricultural land (1.26 acres avg.), with nearly all possessing Podu (0.67 acres), Dangar (0.21 acres), Garden (0.02 acres), Low paddy (0.30 acres), and Jholla land (0.08 acres). Land with a Record of Rights (ROR) averages 0.45 acres per farmer. Only 45% have irrigated land (0.10 acres), indicating limited irrigation access (Table 16).

Among 45 households with irrigated land, 88.9% (40) rely on stream water (Chua) as their primary irrigation source, underscoring its dominance. No households use borewells, check dams, farm ponds, MIPs, or river water, suggesting limited infrastructure or access. Percolation pits serve 4.4% (2 households), and water harvesting structures support 6.7% (3 households), indicating minimal adoption of alternative irrigation methods. This dependency on streams may reflect local geography or resource constraints, with negligible diversification in irrigation sources (Table 17).

Table 18: Economics of Agricultural Production – Kutia Kandha

Sl.	Cropping Pattern	Production (Kg)	Self-Consumption (%)	Marketable Surplus (%)	Consumption (Kg)	Avg. Price/Kg (Rs.)	Sales Proceeds (Rs.)
1	Paddy	1120.0	32.8	67.2	367.4	15	11289.6
2	Niser (Alasi)	20.0	8.9	91.1	1.8	34	619.5
3	Blackgram	172.0	7.8	92.2	13.4	45	7136.3
4	Banana	200.0	18.6	81.4	37.2	20	3256.0
5	Beans	90.0	10.6	89.4	9.5	35	2816.1
6	Caster	29.3	10.7	89.3	3.1	20	523.3
7	Ragi	150.0	86.5	13.5	129.8	20	405.0
8	Mustard	60.0	18.9	81.1	11.3	48	2335.7
9	Cashew	0.0	6.4	93.6	0.0	50	0.0
10	Maize	370.0	46.7	53.3	172.8	18	3549.8
11	Dongar Rani	0.0	43.9	56.1	0.0	15	0.0
12	Ginger	625.0	4.9	95.1	30.6	60	35662.5
13	Groundnut	58.0	11.7	88.3	6.8	30	1536.4
14	Arhar (Kandula)	36.0	12.7	87.3	4.6	40	1257.1
15	Mix of Vegetables	248.0	27.4	72.6	68.0	20	3601.0
	Total Income						Rs. 73,988.20

The Kutia Kondh and Dongria Kondh, inhabiting the hill slopes, are renowned for their horticultural expertise, as evidenced by their cultivation of various crops, including pineapples, bananas, and jackfruit. Their pineapple plantations stand out as a significant aspect of their agricultural practices,

highlighting their deep understanding of and ability to adapt to the region's ecological conditions to achieve productive outcomes (Tripathy, 2024).

Paddy dominates production (1120 kg) but has moderate self-consumption (32.8%), with 67.2% sold, yielding Rs. 11,289.6. Ginger, with 625 kg, has the highest marketable Surplus (95.1%) and sales proceeds (Rs. 35,662.5) despite low self-use (4.9%). Ragi shows high self-consumption (86.5%), leaving little for sale (13.5%, Rs. 405). Crops like black gram (92.2%) and ginger (95.1%) prioritise markets, while cashew and Dongar Rani produce nothing, and cashew has a high marketable surplus percentage. Total income reaches Rs. 73,988.20, driven by high-value crops like ginger (Table 18).

Table 19: Agricultural Practices of Kutia Kandha Farmers

Sl.	Equipment / Input Type	No. of Farmers Using	% of Farmers Using
1	Tractor	3	3.0%
2	Diesel Pumpset	7	7.0%
3	Electricity Run Motor	0	0.0%
4	Iron Plough	36	36.0%
5	Sprinkler	0	0.0%
6	Power Tiller	1	1.0%
7	Compost	62	62.0%
8	Fertilizer	4	4.0%
9	Both (Compost and Fertilizer)	20	20.0%
10	Use of Pesticide (Yes)	20	20.0%
11	Use of Pesticide (No)	67	67.0%
	Total	100	100.0%

Among 100 farmers, 62% use compost, making it the most common input, while only 4% use fertiliser alone, and 20% combine both. Pesticide use is limited: 67% abstain, and 20% apply it. Iron ploughs are used by 36%, far outpacing mechanised tools like tractors (3%), diesel pump sets (7%), and power tillers (1%). No farmers use electric motors or sprinklers, suggesting reliance on traditional, low-cost methods and limited access to advanced irrigation or machinery, possibly due to cost, infrastructure constraints, or small landholdings (Table 19).

Average Annual Sales Proceeds: ₹2073.5

The Kutia Kondh depend heavily on forests, water, and land, collecting edible leaves, wild tubers, mushrooms, bamboo shoots, and berries. At the same time, landless households sell Siali and sal leaves to buy food, thereby supplementing their diet and income for 2 to 3 months annually. Rapid deforestation over the past two decades has diminished NTFPs like mahua, tamarind, mangoes, kendu, jackfruit, and amla, yet barada saag, char, ber,

Table 20: Kutia Kandha – Collection and Sale of MFPs

Sl.	Type of MFPs	No. of HHs	% of HHs	Marketable Surplus	Sales Proceeds (₹)
1	Hill Broom	56	56.0	28.9 headloads	5776.0
2	Caster Seeds	5	5.0	9.4 kg	561.0
3	Berries	4	4.0	1.8 kg	175.2
4	Firewood	100	100.0	401.4 headloads	16056.0
5	Timber	20	20.0	11.8 bicycle loads	11760.0
6	Mango	32	32.0	5.1 kg	102.0
7	Jackfruit	1	1.0	5 pieces	200.0
8	Honey	21	21.0	10.2 kg	2033.0
9	Jhuna	32	32.0	11.2 kg	1121.0
10	Lakha	13	13.0	14.8	2220.0
11	Siali Leaves	88	88.0	22.0 headloads	3517.4
12	Mushroom	1	1.0	5.4 kg	432.0

kardi, tubers, berries, resins, and gums remain vital for sustenance amid declining yields due to worsening soil quality.

Reduced access to NTFPs and wild food plants lowers dietary diversity and incomes, though tribal women and men gather medicinal herbs to meet health needs. Collection and sale of NTFPs, casual labour, and migrant remittances strengthen earnings beyond agriculture. The FGD further revealed problems related to malnutrition and infectious diseases prevalent among forest-dwelling communities such as the Kutia Kondhs (Sharma & Mariakumar, 2023; Tripathy, 2015, 2023b).

Furthermore, insights from the Focus Group Discussion (FGD) in Table 19 revealed that animal husbandry serves as both a crucial livelihood source and a means of protein intake for the Kutia Kondh community. They rear cows and poultry primarily for household consumption, while goats and sheep are raised for market sales. However, distressed livestock sales are common. The poorest households, including widows and persons with disabilities, often rely on MGNREGS wages and pensions for support.

All 100 households collect firewood, generating the highest sales proceeds (₹16,056) from 401.4 headloads, indicating its universal demand. Siali leaves (88% of households) and hill brooms (56%) are also widely collected, yielding ₹3,517.4 and ₹5,776, respectively. Timber, gathered at 20%, fetches ₹11,760 from 11.8 bicycle loads, indicating a high value per unit. Niche products like jackfruit (1 household, ₹200) and mushrooms (1 household, ₹432) contribute minimally. Honey (21%) and Jhuna (32%) add moderate-income (₹2,033 and ₹1,121).

Table 21: Market Participation and Income Generation from Minor Forest Produce (MFPs) among Rural Households

Sl.	Type of MFPs	No. of HHs	% of HHs	Marketable Surplus	Sales Proceeds (₹)
1	Mahua Flower	45	45.0	8.5 kg	255.0
2	Bamboo	15	15.0	20.0 pieces	1000.0
3	Sal Seeds	10	10.0	12.3 kg	615.0
4	Tendu Leaves	60	60.0	15.0 bundles	2250.0
5	Char Seeds	8	8.0	6.2 kg	310.0
6	Kusum Seeds	5	5.0	4.8 kg	240.0

Average Annual Sales Proceeds: ₹945.0

The FGD reveals that women play a vital role in managing NTFP collection and domestic chores. At the same time, adolescent girls once resided in youth dormitories- a fading tradition- as government efforts slowly brought schools and social transformation to these remote villages.

Further, the FGD revealed that agriculture, particularly shifting cultivation of millets like ragi and Kosala, remains their sustenance backbone, practised on small hill-slope plots averaging 0.5-3 acres, supplemented by livestock rearing and NTFP sales. However, the rising population further fragments their already meagre landholdings. The tribal communities, deeply reliant on natural resources like forests, water, and land, sustain their livelihoods by collecting edible leaves, wild tubers, mushrooms, bamboo shoots, and wild fruits and berries for consumption and trade. For two to three months each year, most tribal households depend heavily on forests, gathering Non-Timber Forest Produce (NTFPs) such as Siali and sal leaves, which landless families sell to purchase food, thereby forming a critical economic and nutritional lifeline. The FGD revealed that rapid deforestation over the past two decades has drastically reduced the availability of NTFPs such as mahua, tamarind, mangoes, kendu, jackfruit, and amla, while barada saag, char, ber, kardi, tubers, berries, resins, and gums remain essential for survival.

It was ascertained from the FGD that limited access to NTFPs and wild food plants, coupled with deteriorating soil quality, has diminished yields of tubers, medicinal herbs, and other forest produce, severely impacting dietary diversity and household incomes of these tribal groups. Tendu leaves are collected by 60% of 100 households, yielding ₹2,250 from 15 bundles, making it the most lucrative minor forest product (MFP). Mahua flowers, gathered at 45%, yield ₹255 from 8.5 kg, indicating moderate income. Bamboo, collected at 15%, fetches ₹1,000 per 20 pieces, indicating a high value per unit. Sal seeds (10%, ₹615), char seeds (8%, ₹310), and kusum seeds (5%, ₹240) contribute less, reflecting lower participation and Surplus. Tendu and bamboo drive significant earnings despite fewer collectors (Table 21).

Table 22: Kutia Kandha – Value-Added MFPs

Sl.	Type of MFPs	No. of HHs	% of HHs	Marketable Surplus	Sales Proceeds (₹)
1	Siali Rope	40	40.0	10.5 kg	1575.0
2	Bamboo Mats	12	12.0	8.0 pieces	800.0
3	Honey (Processed)	15	15.0	7.5 kg	1875.0

Average Annual Sales Proceeds: ₹1416.7

Among Kutia Kandha households, 40% produce siali rope, generating the highest sales proceeds of ₹1,575 from 10.5 kg. Processed honey, made by 15%, yields ₹1,875 from 7.5 kg, showing a higher value per unit. Bamboo mats, crafted by 12%, contribute ₹800 from 8 pieces, indicating moderate income. Siali rope has the broadest participation, while honey offers the best return per kilogram, suggesting value-added processing enhances earnings despite fewer households involved (Table 22).

Conclusion and Suggestions

The Kutia Kondh tribe's sustainable lifestyle, rooted in their profound connection to the Belghar in the Tumudibandha block of Odisha, showcases a harmonious balance between human needs and ecological preservation. As a Particularly Vulnerable Tribal Group (PVTG), they practice traditional practices such as podu chasa (shifting cultivation) and small-scale horticulture, reflecting an adaptive ingenuity that ensures sustenance and environmental regeneration. Their expertise in cultivating crops like pineapples, bananas, and jackfruit underscores a deep understanding of their ecosystem, with pineapple farming emerging as a standout feature of their agricultural prowess. They maintain a self-reliant economy deeply tied to their cultural identity through the sale of produce, hunting, and gathering forest resources.

Though government and welfare interventions have sparked gradual changes in social life and infrastructure, the transformation remains invisible, leaving the Kutia Kondh trapped in a cycle of poverty, environmental dependence, and developmental neglect.

The FGD reveal a remarkable continuity of cultural practices embedded in the everyday life of the Kutia Kondhs, seasonal festivals, clan-based rituals, and marriage ceremonies, all of which reinforce collective identity and ancestral memory.

Despite increasing exposure to formal education, state institutions, and market forces, the community consciously transmits oral traditions, ritual knowledge, and customary norms to younger members through participatory involvement in ceremonies and village deliberations. Their flexible marriage

practices, while accommodating change, continue to prioritise kinship solidarity, clan exogamy, and ritual obligations, thereby preserving the moral foundations of social organisation. Elders play a pivotal role in mediating generational transitions, ensuring that adaptation does not erode core cultural values, and emphasising that the preservation of ritual bonds, ecological ethics, and community harmony remains central to Kutia Kondh identity and social cohesion.

The Kutia Kandha study reveals a community of 100 households across six villages, averaging 4.2 members, with a youthful population (mean age 27.1) and a sex ratio of 926. Cultivation (38.8%) and NTFP collection (29.5%) dominate livelihoods, with gendered roles: males in wage-earning and females in NTFP. Education lags, with 36.1% illiterate, especially females (50%). Housing is basic (62% kacha), with full ownership but limited modern amenities (1% indoor water, 37% electricity). Land holdings are small (1.26 acres) and reliant on streams (88.9%) for irrigation. Assets like poultry (74%) and cycles (64%) reflect modest wealth (Rs. 54,256.8). Firewood and ginger drive income, highlighting forest and agricultural dependency amid accessibility and development challenges.

Based on our study, we can suggest three key suggestions to enhance the development of the Kutia Kandha community. First, educational access can be improved by establishing local schools and adult literacy programs to address the 36.1% illiteracy rate, particularly among females (50%), boosting employability and empowerment.

Second, enhance infrastructure by providing reliable electricity (currently only 37%) and indoor water facilities (1% availability), alongside upgrading kacha housing (62%) through expanded PMAY/IAY schemes to improve living standards. Third, strengthen livelihoods by promoting irrigation infrastructure beyond streams (88.9% dependency) and supporting value-added NTFP processing (e.g., honey, siali rope), ensuring sustainable income and reducing forest reliance amid small landholdings (1.26 acres).

Food security and the increasing demand for wood products pose pressing challenges for the Kutia Kondha community over the coming decades, especially as climate change and environmental degradation threaten the forests of Odisha's Kandhamal district, their traditional lifeline. Equally vital is the transmission of ecological wisdom rooted in their sustainable practices, such as shifting cultivation and modern management knowledge, to the Kutia Kondha and local governments, despite limited financial resources. The ecosystem functions and services of their hilly landscapes, such as water regulation through the Eastern Ghats' streams, erosion control on sloping terrains, preservation of sacred groves, conservation of forest-grassland ecotones, and protection of wildlife habitats like those of the elephant and

tiger, are of paramount significance for climate adaptation and sustaining their way of life (Deshmukh et al., 1998)

We suggest adopting the Wadi model, supported by NABARD, to integrate soil conservation, water resource development, agriculture, women's empowerment, health, and income generation for landless communities in tribal areas. This holistic approach addresses production, processing, and marketing while meeting diverse needs. Persistent runoff eroded agricultural land along stream courses, negatively impacting groundwater conditions. Expanding Wadi interventions could mitigate these challenges, enhancing sustainability and economic potential for tribal communities in the region (Tripathy 2018a, 2018b, 2018c, 2020, 2024). It was revealed by the FGD that between July-August and November-December, food-scarce months before harvest, distress migration drives Kutia Kondh to Andhra Pradesh and Telangana for brick kiln work or to Kerala for stone-crushing, rubber, and tea plantation jobs, seeking elusive economic relief (Tripathy, 2013, 2015, 2021, 2023b).

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