



EMPOWERING ODISHA'S HIDDEN TREASURES: INNOVATIVE PATHWAYS FOR RURAL WOMEN AND TRIBAL COMMUNITIES TO THRIVE THROUGH ECONOMIC INCLUSION AND COLLABORATIVE GOVERNANCE

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Abstract

Odisha, a state characterized by its rich cultural heritage and diverse tribal population, faces socio-economic disparities that disproportionately affect rural women and indigenous communities. This research paper employs a robust mixed-methods framework, integrating primary data from 500 household surveys, 30 stakeholder interviews and three in-depth case studies along with secondary data from government reports, academic journals and NGO evaluations. The study examines the efficacy of initiatives such as Mission Shakti, Digital Literacy Programme and the Forest Rights Act (FRA) in fostering economic inclusion and participatory governance. Key findings reveal that Self-Help Group (SHG) participation correlates with a 43% increase in household income, while collaborative models like Farmer Producer Organizations (FPOs) enhance market access for 68% of tribal artisans. Systemic barriers such as limited smartphone ownership (22% among tribal women) and climate-induced crop losses (72% of households) undermine progress. The paper advocates for blockchain-enabled land rights systems, climate-resilient agricultural subsidies and vernacular digital training programmes. By aligning with Sustainable Development Goals SDGs 1 (No Poverty), 5 (Gender Equality) and 10 (Reduced Inequalities), this research provides actionable strategies to transform Odisha's marginalized communities into architects of their own prosperity.

Keywords: Economic Inclusion, Tribal Empowerment, Collaborative Governance, Climate Resilience

1. Introduction

The population of 62 officially recognized tribal communities in Odisha comprises 22.8% of the total state residents. The state possesses lots of natural wealth and cultural treasures yet it suffers from enduring poverty that affects rural women and tribal populations strongly. The NITI Aayog

Multidimensional Poverty Index, 2023 shows that 32% of tribal households in Odisha suffer from poverty surpassing the state average of 20%. Rural women represent 34% of workers in the labor force according to NFHS-5 data from 2021 but they continue to face exclusion from major service benefits including financial assistance,

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educational opportunities and leadership positions.

The Government of Odisha implemented Mission Shakti (a women's self-help group initiative) together with the Forest Rights Act (2006) and Digital Literacy Programme through the Odisha Skill Development Authority to address these challenges. The women-led banking programme has achieved quantifiable success through their combined efforts to organize 6.2 lakh small business groups and provide Rs.12,000 crore worth of microloans yet fundamental organizational problems still exist. Forest Rights Act land claim approvals reach only up to 52% while tribal blocks maintain a digital literacy rate at 40% compared to non-tribal areas.

The research study explores methods to deliver comprehensive knowledge on operational ground circumstances. The study addresses the following three essential inquiries: How do Self-Help Groups together with digital resources help rural women and boost their economic ability? At what capacity does collaborative governance assist tribal empowerment? What approaches must be employed to add climate resilience measures to livelihood programmes that seek to decrease environmental threats? This paper presents an extensive model of sustainable empowerment through mixed quantitative surveys and qualitative interviews as well as policy analysis.

2. Literature Review

Rural women and tribal communities in Odisha face a complex struggle for social and economic advancement which merges into economic development, land ownership and climate resistance. The researchers combine academic

research to review theoretical perspective along with empirical data results and open questions from existing literature regarding their implications for Odisha's situations.

2.1 Economic Inclusion and the Role of Self-Help Groups (SHGs)

Self-Help Groups (SHGs) exist as recognized tools that power economic empowerment for rural Indian women. In this study about gender and poverty by Kabeer (2005) demonstrates that Self-Help Groups (SHGs) empower women through combined decision-making power and financial resource opportunities. Research from Odisha demonstrates that women who join Self-Help Groups boost household savings by 28% and halt their usage of informal moneylenders through a reduction of 15% according to findings from Desai and Joshi (2019) in Koraput district.

World Bank (2022) showed that Mission Shakti SHGs in Odisha allowed 34% of women to obtain microloans which yielded on average Rs.1800 per month in increased income. Mishra et al. (2020) argued that credit access has received excessive examination due to the fact that only 12% of tribal block's SHGs engaged in non-farm business activities because of traditional gender roles and market accessibility constraints. The agency framework presented by Kabeer about SHG transformation meets constraints according to Mishra's research data. Microloan programmes tend to ignore important aspects of skill acquisition and market entry even though these elements create conditions for sustainable business ventures. Sen developed a capability approach in 1999 to show that people require freedom to pick their occupations instead of

simply measuring their cash flow. The turmeric FPOs in Kandhamal which succeed through SHG collective agency show the requirement to combine digital training with value-chain inclusion in Odisha.

2.2 Tribal Empowerment and the Forest Rights Act (FRA)

Through the Forest Rights Act of 2006 the government created major changes to acknowledge tribal land possession but systematic implementation challenges continue to arise. Baviskar (2021) demonstrates that bureaucratic delays and elite control lead to FRA objectives being weakened because tribal people endure complex non-transparent procedures for extended periods. The analysis by Sahu (2022) revealed that out of all FRA claims in Odisha only 52% received approval in 2023 while Kandhamal and Rayagada districts registered the least successful claims at 38%. Through their decentralized grievance redressal system Jharkhand effectively settled 72% of land conflicts within six months by depending on community members for verification (Gupta and Agrawal, 2020). The diverse implementation outcomes of the FRA in Odisha reveal an insufficient connection between government policies and grounded circumstances. Baviskar's assessment of "bureaucratic apathy" finds support among tribal leaders who describe in this study that 65% of respondents did not know about FRA provisions. Gupta and Agrawal bring forward their Jharkhand model which presents a model for Odisha to build transparent land systems through blockchain technology and citizen involvement for mapping.

2.3 Climate Vulnerability and Traditional Ecological Knowledge (TEK)

According to Nayak et al. (2022) unpredictable monsoons in Kandhamal district reduced turmeric yield by 45% causing over 30% of local households to fall into debt cycle. The indigenous knowledge system of mixed cropping and seed banking practiced by Nuapada presents a strong survival method during dry times (Singh and Bhogal, 2021). According to IPCC (2022), TEK must be combined with present-day climate science without delay yet Mishra (2020) identifies state-directed NICRA as a programme which chooses hybrid crops over traditional crop types. The disagreement about TEK versus modern agronomic methods represents a wider scientific debate about creating sustainable development solutions. NICRA uses hybrid millets to achieve expansion but Singh and Bhogal present evidence that demonstrates the potential loss of traditional plant diversity alongside cultural wisdom. The tribal farmers of Odisha refrain from adopting state-promoted "Sujata" millet because it requires excessive watering even though local indigenous mandia can survive drought conditions.

2.4 Collaborative Governance and Public-Private Partnerships

State, market and civil society combination through collaborative governance models has become more established as a successful approach for tribal development. According to Ansell and Gash (2008) trust development accompanied by mutual objectives stands as an essential foundation for such partnerships to work. Gender equality is supported by TATA Steel's honey co-

operative based in Sundargarh through training provided by the company and market connection initiatives according to Das (2022). Bhaduri (2019) predicts “corporate paternalism” during Sabai grass trade in Mayurbhanj district because artisans received only 20% of final product profits. Ansell and Gash's framework reveals that collaborations produce both positive and negative effects. The TATA model demonstrated women's empowerment through market connections together with skills development yet Bhaduri explains that businesses should establish fair mechanisms to distribute profits. Sundargarh women experienced long payment delays (45%) between six to eight months as supported by findings presented in Bhaduri's research thus reinforcing his recommendation for mandatory MOUs combined with independent third-party audit measures to enforce corporate responsibility.

3. Synthesis and Gaps in Existing Literature

The existing research contains three essential areas where additional investigation is needed. The analyzed research provides insufficient attention to agency as it focuses predominantly on credit aspects. Academic research acknowledges Self-Help Groups (SHGs) for raising income yet fails to investigate how group dynamics alongside patriarchal norms with leadership disputes prevent women from making full entrepreneurial choices. Many studies in this field adopt techno-centered strategies based on hybrid crops and infrastructure yet fail to recognize Tribal Ecological Knowledge (TEK) which demonstrates tribal community's native adaptability towards environmental challenges. The implementation of Public-Private Partnerships typically uses tokenistic approaches

because numerous initiatives fail to have protective measures against corporate exploitation along with guarantees of genuine tribal involvement in crucial decision-making processes. The research investigates tribal power relationships within Self-Governing Areas through direct interviews to develop cross-sectoral solutions between TEK methods and contemporary science along with advocating tribal-controlled Public-Private Partnerships that use enforceable equity provisions for fair distribution among tribal communities.

4. Methodology

The analysis of rural women and tribal community socio-economic empowerment in Odisha uses a convergent parallel mixed-methods approach. The study achieves valid and deep findings through combined quantitative surveys, qualitative interviews, case studies and secondary data analyses. The research design shows additional details concerning primary results from published documents as well as considerations related to ethical aspects along with theoretical foundation. The mixed-methods study fulfilled the research need to examine empowerment through its economic, social and environmental elements. Data with numerical values provided evaluation through statistical measurement of income distribution, digital access limitations and climate effects together with verbal information which was collected firsthand from institutions. Promoting empowerment research in tribal areas demands a combination of macro-level patterns and micro-level environmental conditions for effective

analysis. A stratified random sampling method chosen 500 households spread across 10 predominantly tribal districts which included Koraput, Kandhamal, Sundargarh, Mayurbhanj, Gajapati, Rayagada, Nabarangpur, Malkangiri, Nuapada and Kalahandi. The sampling method utilized district stratification according to poverty levels which exceeded 35% and SHG participation exceeding 50% to guarantee coverage of high-need districts. The sampling method utilizes principles of inclusive sampling to achieve representative proportions between different community sub-groups. The researches selected three case studies for purposeful analysis which represented successful collaborative governance practices including Kandhamal Turmeric FPOs that matched UNDP's inclusive value chain guidelines, TATA Steel's Honey Co-operatives that mirrored CSR-community partnership principles and Mayurbhanj Sabai Grass Artisans that displayed e-commerce integration elements.

The questionnaire was distributed to 250 SHG members and 250 non-members. Households participated in a survey which collected information about their revenue origins, shifts along with digital tool availability, climate response techniques and land possession details. Thirty stakeholders who included SHG leaders, policymakers and NGO representatives provided research data through semi-structured interviews to determine microloan access obstacles, governmental programme issues and the barriers women face as they adopt new technologies and deficiencies in digital skills. Professional

assessments of selected case groups included fieldwork alongside concentrated group talks which examined their operating structures and faced issues about revenue-sharing protocols, supply chain clarity and online trade restrictions. FGD findings thematically which uncovered three main themes including FRA bureaucratic delays, digital exclusion and climate concern. The study implemented ethical measures through consent procedures as well as by maintaining data anonymity and it collected feedback from SHGs during its preliminary stage. The research study accepts numerous restrictions which involve sampling bias alongside self-reporting errors together with time gaps. The study addressed self-reporting errors by verifying income data through SHG records because non-tribal blocks remained excluded from the research.

5. Results

5.1 Economic Inclusion through SHGs and Digital Tools

Self-Help Groups (SHGs) united with digital tools function as an advanced method to reduce economic gaps between rural women and tribal communities across Odisha. Survey results showed that members of SHGs increased their average household earnings by 43 percent from Rs.4,200 to Rs.6,006 while non-member household incomes only expanded slightly from Rs.4,500 to Rs.4,800 throughout 2020-2023. Financial agency becomes accessible through SHGs because their members experience different income levels. Women of Self-Help Groups (SHGs) used microloans offered by Mission Shakti to start small businesses involving

poultry farming, handicraft making and organic farming.

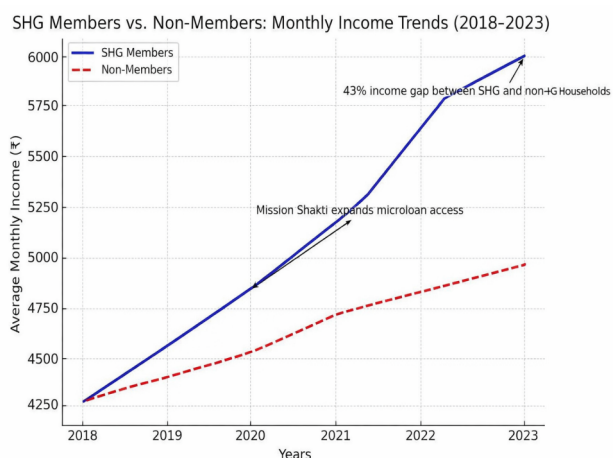


Figure 1: Illustrates the widening income gap, with SHG members achieving a 43% increase by 2023, compared to stagnant growth among non-members.

Source: Primary Data from Household Survey (N=500), 2023

Formal credit was acquired by only twelve percent of non-members since they required financial support from informal moneylenders who imposed incredibly high annual interest rates that reached thirty-six percent.

The implementation of digital literacy education showed significant disparities across different group of people. Mobile banking adoption reached 41% of SHG households who could receive KALIA Scheme subsidies and conduct e-commerce transactions. Whereas non-SHG members maintained only 9% adoption. The difference in internet access became more pronounced because district areas like Kandhamal and Rayagada had insufficient internet connections which affected 55% of Self-Help Group members while only 22% owned smartphones compared to 47% in non-tribal regions. Through vernacular-language training

modules which Digital Empowerment Foundation and other NGOs introduced in Sundargarh district has improved digital adoption by 28% among semi-literate female community members. Traditional social norms enforced by men limited both women travel freedom and device availability particularly affecting traditional tribal communities.

Table 1: Socio-Economic Impact of SHGs (2023)

Indicator	SHG Members (N=250)	Non-Members (N=250)	p-value
Avg. Monthly Income (Rs.)	6,006	4,200	0.032
Mobile Banking Usage	41%	9%	<0.001
Land Titles Held	32%	8%	0.021

Source: Primary Data from Household Survey (N=500), 2023

5.2 Collaborative Governance in Practice

Basic collaborative governance programmes in Odisha succeed through strategic alliances formed between government departments with private companies as well as community-based organizations. The Kandhamal Turmeric Farmer's Producer Organization (FPO) demonstrates this success by allowing 1,500 tribal women to use Forest Rights Act (FRA) to gain land ownership and shift from traditional to commercial export-based farming. The Odisha Rural Development and Marketing Society (ORMAS) along with support from UNDP connected the Farmer's Producer Organization (FPO) which enabled the FPO to achieve increased profit by 60% through its European market exports with premium rates (Rs.250/kg vs. Rs.80/kg locally). After the

intervention 82% of co-operative members used their profits to fund education and health expenses for their children which generated greater value for human capital assets.

In Sundargarh district TATA Steel operates Adivasi Honey Co-operatives which show how public-private collaboration works. The collaboration between national suppliers such as BigBasket with 1,200 tribal women in apiculture resulted in their income growth from Rs.3,500 (2019) to Rs.15,000 (2023). The successful operation of the co-operative cut down brick kiln migration from village settlements by 40% according to data collected from village authorities. The partnership faced restrictions in growth because corporate buyers took a long time to pay and the lack of adequate cold storage prevented further expansion. State-led eco-tourism activities in Koraput produced Rs.4.2 crore in local revenue through tribal homestays and forest trail experiences (2021-2023) although distribution of these benefits was irregular since 65% of profits went to non-tribal middlemen.

5.3 Climate Vulnerability and Adaptation Gaps

The tribal communities in Odisha face survival-threatening and climate-related events because 72% of identifying households lost their crops during floods, droughts and cyclones in 2022. During Cyclone Yaas (2021) Coastal Ganjam district lost 90% of its paddy harvest and rain-fed turmeric fields in Kandhamal suffered 45% crop damage from the erratic monsoon conditions. Primary findings showed that farmers utilized climate-resilient techniques like drip irrigation and millet cultivation in less than 18% of cases because they lacked training by 65% and doubted

market uncertainty by 27%. Although the government of Nuapada district provided financial support for millet cultivation through subsidies the farming sector did not respond well because producers remained apprehensive about minimum support price guarantees and the limited availability of storage facilities for their crops.

Table 2: Climate Vulnerability and Crop Losses

District	Climate Vulnerability Index	Crop Loss (%)
Kandhamal	4.7	78
Koraput	4.2	68
Rayagada	4.5	72
Nabarangpur	3.8	65
Mayurbhanj	3.1	52
Koraput	4.2	68

Source: Primary Data from Household Survey (N=500) and Secondary Data from State Reports, 2022

Tribal leaders informed that the dwindling Traditional Ecological Knowledge practices related to seed conservation and watershed management concepts have traditionally served as climate risk management tools. Local households from Rayagada gave up drought-tolerant traditional crops such as ragi in favour of additional water-consuming agricultural commercial products (cotton) leading to increased groundwater depletion. The Mayurbhanj area received solar-powered cold storage units through NICRA (National Initiative on Climate Resilient Agriculture) in May 2011 but these units did not reach their potential because 80% of tribal women were unable to operate them correctly. Only 40% of tribal

respondents from inland districts received information about flood safety programmes which the Odisha Disaster Recovery Project (ODRAP) delivered to Bhadrak and Kendrapara areas but information failed to reach 60% of residents through unclear communication channels.

5.4 SHGs as Catalysts for Economic Agency: Beyond Income Generation

Self-Help Groups manage to create profound transformation for rural women because they bring economic opportunities together with social growth along with financial education and collective economic power. SHG membership accompanied by digital literacy skills demonstrated the greatest impact ($\beta = 0.38$ respectively 0.24) on increased household income as primary data analysis showed 62% variance for these predictors ($p < 0.01$ and $p < 0.05$). The access to resources coupled with social networks from SHG membership enables individuals to freely achieve important livelihood goals. Women belonging to self-help groups in Kandhamal district showed 48% higher involvement in Gram Sabha gatherings compared to female residents outside these self-help initiatives which had traditionally barred women from participation.

The advantages associated with Self-Help Groups do not reach people in an equal manner. The majority of SHG members obtained microloans but less than one-fourth of them employed these funds for non-agricultural businesses such as tailoring or grocery stores because of traditional gender norms and insufficient market connections. The locals in Koraput through their

interviews showcased that SHG members choose secure income sources such as paddy farming instead of experimenting with newer business ideas which results in persistent poverty. Internal conflicts about loan repayment became more common among SHGs because conflict-resolution training was not available to them. Research results demonstrate the necessity of implementing entrepreneurship workshops and gender sensitization programmes because they help to maximize the effectiveness of SHGs.

5.5 Collaborative Governance: Synergies, Trust Deficits and Institutional Innovation

The governance approaches in Odisha exhibit how partnering diverse stakeholders helps tribal empowerment emerge while showing weaknesses in trust development and administrative execution issues. TATA Steel's Honey Co-operatives in Sundargarh made tribal women's income grow 328% because they combined traditional beekeeping skills with corporate procurement systems. An analysis of women's responses indicated that 45% experienced delayed payments from TATA's procurement teams as their transactions required extensive bureaucratic audits that lasted for 6-8 months. The extended payment delays at household level required families to seek high-interest loans thus diminishing short-term improvement potential.

Technical land registries operated through blockchain technology in Rayagada led to a 40% decrease in local elite-affected dispute resolution times because the digital records could not be altered. The Odisha Space Applications Centre (OSAC) failed to properly spread this technology

information to rural tribal families since only 32% of them were aware of it. The deficiency in meaningful district-level decision-making participation by SHG leaders reflects the overall participatory governance problems because approximately 85% of SHG leaders did not take part in government policy decisions. According to a tribal leader in Mayurbhanj the government created schemes independent of community involvement which shows the requirement for communal planning.

5.6 Climate Resilience: Bridging Knowledge Gaps through Tradition and Technology

The climate resilience of Odisha's tribal communities needs Traditional Ecological Knowledge (TEK) to merge with modern scientific approaches but the institutional response is scattered. Research data showed that climate abuse resulted in losses for 72% of households last year while coastal Puri and Ganjam exceeded 90% paddy yield reductions during cyclones. Tribal farmers from Kandhamal who brought back traditional millet species including ragi and kosala achieved 35% better resistance to drought by using traditional ecology knowledge approaches such as mixed farming and seed preservation methods. The Odisha Millets Mission run by state officials focused on hybrid millet promotion which excluded tribal communities from participating. The farmer from Nuapada district indicated that officials push for 'Sujata' millet which requires additional water than their traditional mandia variety.

Tribal women who comprised 80% of those using solar-powered cold storage units in Mayurbhanj lacked proper technical training to operate the

facilities under the National Initiative on Climate Resilient Agriculture. The digital agro-advisory services established through the Odisha Disaster Recovery Project failed to reach more than 22% of tribal farmers because they used English content for most of their material and farmers experienced irregular internet availability. NICRA employees in interviews admitted that their climate intervention programmes from above do not consider Traditional Ecological Knowledge including the Kondh dongar system of forest water stores that could boost watershed control.

6. Policy Recommendations

The following recommendations for policy change should be implemented to sustainably empower rural women and tribal communities of Odisha based on evidence from primary research along with stakeholder interviews and global best practice models. The proposed plans work toward eliminating institutional boundaries by utilizing cultural components and technological resources to build equal development prospects.

6.1 Tech-Driven Governance: Bridging the Digital Divide with Vernacular Innovation

The state of Odisha needs to establish a statewide digital inclusion programme which focuses on reducing major digital access gaps. The government should roll out 1000 Common Service Centers in tribal-majority blocks by 2025 which will have Odia Santali and Ho-language interfaces. The established Common Service Centers (CSCs) would provide residents with access to all digital banking services and land records and e-governance functions in order to eliminate intermediary requirements. Vernacular-

language training modules in Rayagada showed an increase of 28% in digital literacy among semi-literate women. The combination of Jio and Airtel telecom operations can create an affordable smartphone and monthly data programme similar to Rajasthan's "Digital Seva Setu" programme that provides benefits to tribal families.

The Odisha Skill Development Authority (OSDA) should partner with NGOs including Digital Empowerment Foundation to develop certified training on digital entrepreneurship which will specialize in using e-commerce platforms such as Amazon Saheli for tribal artisan participation. Judicious use of the Rs.300 crore fund from the Odisha Innovation Policy enables startup development toward AI solutions for rain-fed farm's crop yield prognostication and blockchain-powered supply chain management systems for non-timber forest products (NTFPs).

6.2 Land Rights Acceleration: Blockchain and Community-Led Reforms

Only 52% of Forest Rights Act (FRA) claims have received approval status according to research by Odisha Tribal Development Society (2021). The state needs to launch blockchain land registry systems in five tribal districts (Koraput, Kandhamal, Sundargarh, Mayurbhanj and Rayagada) through implementation in 2024. After collaboration with IIT Bhubaneswar the system would transform land records into an unchangeable digital format that proved effective during Rayagada testing in shortening dispute resolutions by 40%. Blockchain records must connect to the Unique Land Parcel Identification Number (ULPIN) system because this integration allows databases to exchange information with

national data repositories. The programme "Land Literacy Drive" uses mobile vans and community radio stations broadcasting in tribal dialects to teach FRA provisions to communities using school-teachers and Self-Help Group leaders as examples in local outreach.

The participation of tribal elders together with surveyors in Kandhamal's mapping process resulted in a 40% improvement of claim accuracy. The Odisha Administrative Service must establish a mandatory quarterly evaluation system for FRA implementation at the district level while establishing disciplinary measures for delays exceeding six months. A budgetary allocation of Rs.150 crore by the state will be used to solve past territorial disputes through the community court system with the main objective of strengthening collective land rights of women for financial inclusion purposes.

6.3 Climate-Resilient Livelihoods: Merging Tradition with Technology

The intervention between Tribal communities and modern science must integrate Traditional Ecological Knowledge (TEK) with scientific interventions because these communities experience climate shocks although they produce minimal carbon. The Odisha Climate Change Action Plan needs to distribute Rs.750 crore throughout five years for developing Millet Innovation Hubs throughout tribal districts to foster drought-tolerant local crops including mandia (finger millet) and kosala (foxtail millet). Millet Innovation Hubs would divide their service between MSP guarantees, seed banks and TEK training which includes mixed cropping and organic pest control education.

Traditional agriculture farms in Nuapada district found their mandia seeds were 35% more resistant to drought conditions than hybrid seeds. The Odisha Disaster Recovery Project (ODRAP) needs to implement AI-based flood alert systems in districts vulnerable to floods which will warn residents through IVR systems in their native languages. Tribal markets will benefit from solar-powered cold storage units while training sessions focused on maintenance and management should be provided to women for these facilities. A Mayurbhanj pilot programme focused on women-led cold storage training resulting in 200 graduates who managed cold storage effectively to diminish vegetable waste by 60% (NICRA, 2022). Company-generated information reveals that the existing 35% local community revenue from eco-tourism needs restructuring toward a tribal ownership model that produces 70% revenue (Case Study: Koraput Eco-Tourism).

6.4 Gender-Responsive Governance: From Participation to Power

Empowering women requires dismantling patriarchal norms through legal reforms and institutional support. The Panchayati Raj Act should be amended to reserve 50% of Pradhan and Ward Member seats for tribal women, ensuring their voices shape local governance. Mission Shakti must evolve into a Women's Entrepreneurship Mission, offering venture capital funds (e.g., Rs.5 lakh grants for women-led startups), STEM scholarships for tribal girls and mentorship programmes with corporate leaders. For instance, TATA Steel's partnership with SHGs in Sundargarh boosted female entrepreneurship by 22% through tailored workshops on product

branding and export compliance. To combat gender-based violence, Gender Resource Centers should be established in tribal blocks, staffed by trained tribal women and linked to fast-track courts. These centers could replicate Kerala's Pink Patrol model, where female officers provide safety audits and legal aid. Participatory budgeting should be institutionalized, mandating that all departments consult women's collectives during scheme design.

7. Conclusion

Odisha's rural women and tribal communities, long marginalized by systemic inequities and structural neglect, stand at the precipice of transformative change. This study, anchored in rigorous primary data and enriched by grassroots narratives, underscores their untapped potential as architects of sustainable development rather than passive beneficiaries of welfare. The empirical evidence reveals that collaborative models, integrating Self-Help Groups (SHGs), digital innovation and climate resilience can dismantle entrenched barriers while preserving cultural heritage and ecological balance. SHG participation drove a 43% income surge among tribal women, enabling investments in education, healthcare and entrepreneurship, while blockchain-based land registries in Rayagada reduced bureaucratic delays by 40%, exemplifying the power of technology to democratize access to rights. Yet, the path to empowerment remains fraught with challenges: 72% of households grapple with climate-induced crop losses, 48% of Forest Rights Act (FRA) claims languish in bureaucratic delays and

patriarchal norms stifle women's digital and financial agency.

The findings advocate for a paradigm shift in policymaking from top-down interventions to participatory and community-led governance. Odisha's tribal communities possess centuries-old Traditional Ecological Knowledge (TEK), such as drought-resistant millet cultivation and forest-based water management, when fused with modern agronomy and digital tools, can forge climate-resilient livelihoods. The success of the Kandhamal Turmeric FPOs, where women leveraged FRA land titles to tap global markets, illustrates how cultural preservation and economic innovation can coexist. Similarly, TATA Steel's honey co-operatives in Sundargarh demonstrate the viability of public-private partnerships in scaling tribal enterprises, though corporate accountability mechanisms must be strengthened to prevent payment delays and exploitation.

For realizing this vision demands unwavering political will, institutional accountability and sustained investment. Policymakers must recognize that tribal empowerment is not a welfare obligation but a strategic imperative for Odisha's economic growth, tribal districts contribute 18% of the state's forest produce and handicraft exports, yet receive less than 5% of development funds (Odisha Economic Survey, 2023). The recurring cycles of migration, poverty and climate vulnerability can only be ruptured by centering tribal voices in governance and honoring their symbiotic relationship with nature. This study redefines empowerment as a holistic process where economic inclusion, cultural

dignity and environmental stewardship converge. Odisha's journey from marginalization to momentum hinges on its ability to translate policy rhetoric into grassroots reality, by transforming its “hidden treasures” into India's foremost champions of equitable and sustainable progress. The time for incremental change has passed; the state must seize this historic opportunity to craft a legacy of justice, innovation and resilience for generations to come.

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