

Study of the role of self-help groups (SHGs) in jute-based enterprise development and women empowerment in Rural Pakur

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Received : 16th January, 2026 ; Accepted : 16th February, 2026

DOI:- <https://doi.org/10.5281/zenodo.20192947>

ABSTRACT

This study examines the role of Self-Help Groups (SHGs) in promoting jute-based enterprise development and women's empowerment in rural Pakur, Jharkhand, India, over a two-year intervention period (2023-2025). A longitudinal survey was conducted with 320 SHG members at baseline (2023) and endline (2025). Data were analyzed using paired t-tests and chi-square tests. SHG participation significantly improved enterprise engagement. Members engaged in jute-based activities rose from 30.0% to 70.0% ($p < 0.001$), while training in product diversification increased from 10.0% to 65.0% ($p < 0.001$). Mean monthly income from jute activities increased from ₹850 ± 200 to ₹2,450 ± 400 ($t = 12.45$, $p < 0.001$), and value addition per kg of raw jute grew from ₹15 to ₹45. Empowerment indicators showed substantial gains: control over own income rose from 28.0% to 74.0% ($\chi^2 = 32.4$, $p < 0.001$), and self-confidence scores improved from 3.2 ± 1.1 to 7.4 ± 1.3 ($t = 14.8$, $p < 0.001$). Major persistent challenges included irregular electricity (90%) and lack of direct market access (85%). SHG-led jute enterprises in rural Pakur significantly enhanced economic outcomes and women's empowerment, though infrastructure and market linkages require further policy attention.

Key Words - Self-Help Groups, Jute-based enterprise, Women empowerment, Rural livelihood

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INTRODUCTION

Rural livelihood diversification through non-farm enterprises has emerged as a critical strategy for poverty alleviation and sustainable development in developing economies (Ellis, 2000; World Bank, 2019). Among various institutional interventions, Self-Help Groups (SHGs) have gained prominence as effective vehicles for mobilizing rural women, facilitating micro-credit, and fostering micro-enterprise development (NABARD, 2018; Swain & Wallentin, 2009). The jute sector, particularly in eastern India, offers substantial potential for value addition and employment generation, given its eco-friendly nature and growing global demand for

sustainable products (Jute Commissioners' Report, 2020).

However, despite policy emphasis on SHG-led enterprises, significant challenges persist in translating group formation into sustainable economic empowerment, especially in resource-constrained tribal-dominated regions like Pakur district, Jharkhand. Pakur, known for raw jute cultivation, remains characterized by high poverty rates, low female literacy (52.3% as per Census 2011), and poor market connectivity (Jharkhand Economic Survey, 2021). Existing literature has extensively documented SHG impacts on savings and credit behavior (Puhazhendhi & Satyasai, 2000;

Banerjee *et al.*, 2015), but empirical evidence on SHG-led jute-based enterprise development remains notably scarce. Furthermore, few longitudinal studies have quantitatively measured how SHG interventions affect women's empowerment across economic, social, political, and psychological dimensions simultaneously (Kabeer, 2005; Garikipati, 2017).

The present research addresses these gaps by investigating the role of SHGs in jute-based enterprise development and women empowerment in rural Pakur over a two-year period (2023–2025). Specifically, the study answers three questions: (1) To what extent does SHG participation improve engagement in jute-based enterprises and associated economic outcomes? (2) What changes occur in multi-dimensional women's empowerment indicators following SHG-led jute enterprise intervention? (3) What are the persistent challenges hindering enterprise sustainability?

Using a longitudinal design with 320 SHG members, the study collected baseline (2023) and endline (2025) data. Key findings reveal substantial improvements: engagement in jute-based enterprises increased from 30.0% to 70.0% ($p < 0.001$), mean monthly income from jute activities rose from ₹850 to ₹2,450 ($t = 12.45$, $p < 0.001$), and value addition per kg of raw jute grew from ₹15 to ₹45. Empowerment outcomes demonstrated significant gains, with control over own income increasing from 28.0% to 74.0% ($\chi^2 = 32.4$, $p < 0.001$) and self-confidence scores improving from 3.2 to 7.4 ($t = 14.8$, $p < 0.001$). However, persistent challenges including irregular electricity (90%) and lack of direct market access (85%) underscore structural barriers requiring policy attention.

This paper contributes empirical evidence from a marginalized jute-growing region, offering actionable insights for SHG federations, development agencies, and policymakers aiming to scale sustainable jute-based livelihoods while advancing women's empowerment in rural India.

LITERATURE REVIEW

The intersection of Self Help Groups (SHGs), micro enterprise development, and women's empower-

ment has attracted substantial scholarly attention over the past three decades. However, sector specific evidence particularly for natural fibre based livelihoods remains fragmented.

SHGs and Economic Livelihoods

Early studies established SHGs as effective platforms for collective savings and credit disbursement, primarily in southern India (Puhazhendhi & Satyasai, 2000). Researchers demonstrated that regular SHG participation improved household consumption smoothing and reduced reliance on moneylenders (Banerjee *et al.*, 2015). However, critics noted that access to microcredit alone rarely translated into productive enterprise creation without accompanying skill development and market linkages (Karnani, 2009). The present study addresses this critique by documenting that training in jute product diversification increased from 10.0% to 65.0% ($p < 0.001$) over two years, which directly enabled engagement in jute based enterprises to rise from 30.0% to 70.0%. This finding empirically supports the argument that training coupled with credit is more effective than credit alone.

Jute Based Enterprises and Value Addition

Research specific to jute based livelihoods remains limited. Studies from West Bengal highlighted that raw jute producers capture only 15% to 20% of final product value due to middlemen dominated supply chains (Ghosh & Mukherjee, 2017). Agarwal (2018) noted that women's jute handicraft groups in Bihar faced persistent challenges including poor design innovation and irregular electricity. The Pakur data corroborate these findings: value addition per kg of raw jute increased from ₹15 to ₹45 post intervention, yet 90% of respondents still reported irregular electricity and 85% identified lack of direct market access as a major constraint. Thus, despite significant progress, structural barriers identified a decade ago remain unresolved in similar geographies.

Multi Dimensional Women Empowerment

Kabeer (2005) famously argued that empowerment must be measured across resources, agency, and achievements rather than income alone. Garikipati

(2017) found that Indian SHG members experienced greater social mobility but not necessarily political participation. The present study adopts this multi dimensional framework. Results show that economic empowerment improved substantially: control over own income rose from 28.0% to 74.0% ($\chi^2=32.4$, $p<0.001$) and bank account ownership from 35.0% to 92.0% ($\chi^2=45.1$, $p<0.001$). Social indicators such as participation in household decisions increased from 22.0% to 68.0% ($\chi^2=28.7$, $p<0.001$). However political empowerment remained weaker, with only 18.0% having ever contested local body elections, consistent with Garikipati's (2017) observation that political change lags behind economic gains.

Psychological Empowerment

Recent scholarship has emphasized psychological dimensions including self efficacy and internal locus of control (Carr & Hartl, 2010). Noponen (2016) reported that SHG participation in Tamil Nadu improved self confidence scores from 3.5 to 6.8 on a 10 point scale over three years. The Pakur study shows a comparable improvement from 3.2 to 7.4 ($t=14.8$, $p<0.001$) in just two years, suggesting that jute based enterprise creation may accelerate psychological empowerment through visible income generation and product creation.

In summary, while prior research established theoretical frameworks for SHG led empowerment, the present study provides sector specific longitudinal evidence from a tribal dominated jute growing region, confirming that integrated training, credit, and enterprise support can produce substantial multi dimensional gains, though infrastructure and market barriers persist.

MATERIALS & METHODS

Study Area

The research was conducted in Pakur district, Jharkhand, India (23°40'2" to 24°50'2" N latitude and 87°30'2" to 87°50'2" E longitude), during the period January 2023 to December 2025. Pakur was purposively selected because it accounts for approximately 65% of Jharkhand's raw jute production and has a predominantly tribal population (Santhal and Paharia communities), yet

lacks documented evidence on SHG led jute enterprise interventions.

Research Design

A longitudinal pre post intervention design without a control group was adopted, following standard practice for evaluating community driven development programs in resource constrained settings (Gertler *et al.*, 2016). Baseline data were collected in January February 2023 before any structured jute enterprise intervention. Endline data were collected in October December 2025 after 33 months of intervention exposure.

Sampling Framework

Multistage stratified random sampling was employed. In the first stage, four rural blocks (Litipara, Amrapara, Hiranpur, and Pakur Sadar) were selected based on jute cultivation intensity and SHG federation activity. In the second stage, five villages per block were randomly selected, yielding 20 villages. In the third stage, from each village, one SHG was randomly selected from the list of active SHGs (minimum two years of existence). From each SHG, 16 members were randomly selected, giving a total sample of 320 women (20 SHGs \times 16 members). Inclusion criteria were: female SHG member aged 18 to 60 years, resident in the village for at least one year, and consent to participate.

Intervention Components

Between baseline and endline, SHG members received a multi component intervention delivered by local NGO partners (PRADAN and Jharkhand State Livelihood Promotion Society). The intervention included: (a) monthly training modules on jute processing, natural dyeing, and product diversification (six product types: bags, folders, lampshades, coasters, ropes, mats), (b) linkage with bank credit under the National Rural Livelihood Mission, (c) establishment of common service centres for looms and tools, and (d) collective marketing linkages with Jharcraft and local emporia. Participation was voluntary, and no financial incentives were provided for survey responses.

Data Collection Instruments

A structured, pre tested questionnaire was administered face to face in the local language (Santali and Hindi). The questionnaire comprised five sections: (1) demographic and socio economic profile, (2) SHG participation indicators, (3) jute enterprise engagement and economic performance, (4) women empowerment indicators across economic, social, political, and psychological dimensions, and (5) perceived challenges. The psychological self confidence scale was adapted from the General Self Efficacy Scale (Schwarzer & Jerusalem, 1995) and converted to a 10 point Likert type scale (1 = very low confidence, 10 = very high confidence). The questionnaire was pilot tested on 40 non sample SHG members and modified for clarity.

Data Collection Procedure

Six trained field investigators (bilingual in Hindi and Santali, with prior experience in rural livelihood surveys) conducted the interviews. Each interview lasted 45 to 60 minutes. Baseline data were collected from January 15 to February 28, 2023. Endline data were collected from October 10 to December 15, 2025, using the same questionnaire and enumerators to ensure consistency. Attrition was zero because the study tracked the same 320 respondents through SHG meeting registers and community mobilizers.

Data Analysis

Data were entered in Microsoft Excel and analyzed using SPSS version 26.0. Descriptive statistics (frequencies, percentages, means, standard deviations) were computed for all variables. Paired sample t tests were used to compare continuous variables (monthly income, value addition, self confidence scores) between baseline and endline. Chi square tests were used for categorical variables (SHG participation, empowerment indicators). Statistical significance was set at $p < 0.05$. Multiple responses for challenges were analyzed as proportions of respondents citing each challenge.

Limitations

The absence of a control group limits causal inference, and findings are specific to a tribal dominated jute growing region. Self reported data may introduce social desirability bias, though anonymity was strictly maintained.

RESULTS & DISCUSSION

Demographic and Socio-Economic Profile of SHG Members

The socio-demographic characteristics of the 320 surveyed SHG members (Table 1) provide the essential context for understanding the subsequent impact of the intervention. The majority of respondents were aged 25–45 years (85.0%), indicating a relatively young and economically

Table 1: Demographic and Socio-Economic Profile of Surveyed SHG Members in Rural Pakur (2023–2024)

Parameter	Category	Number of Respondents (n=320)	Percentage (%)
Age Group	25–35 years	144	45.0
	36–45 years	128	40.0
	46–60 years	48	15.0
Educational Status	Illiterate	96	30.0
	Primary (Up to Class 5)	128	40.0
	Middle (Class 6–8)	64	20.0
	High School & above	32	10.0
Marital Status	Married	288	90.0
	Widowed/Divorced	32	10.0
Caste Category	Scheduled Tribe (ST)	176	55.0
	Scheduled Caste (SC)	80	25.0
	Other Backward Class (OBC)	48	15.0
	General	16	5.0
Annual Household Income (₹)	< ₹50,000	128	40.0
	₹50,000–₹1,00,000	144	45.0
	> ₹1,00,000	48	15.0

active cohort. This age structure is favorable for enterprise development, as younger women tend to exhibit higher risk-taking capacity and adaptability to skill training (Kabeer, 2021).

Educational attainment was low, with 70.0% of women either illiterate (30.0%) or having only primary education (40.0%). This finding aligns with the rural literacy profile of Pakur district, a notified Scheduled Area in Jharkhand. The high proportion of ST (55.0%) and SC (25.0%) members reflects the targeted reach of SHG programs into historically marginalized communities. However, low education posed an initial barrier to financial literacy and record-keeping a challenge that was subsequently addressed through SHG training modules.

Annual household income data revealed that 85.0% of families earned less than ₹1,00,000 per year, confirming pervasive economic vulnerability. The

presence of 15.0% widowed/divorced women further underscores the importance of SHGs as a social safety net and livelihood platform. These baseline characteristics are consistent with reports on SHG effectiveness in eastern India (NIRD & PR, 2022).

SHG Participation and Engagement in Jute-Based Enterprises

Table 2 presents a before-after comparison (2023 vs. 2025) that demonstrates statistically significant improvements across all indicators of SHG functionality and enterprise engagement. The proportion of members with SHG membership duration exceeding two years increased from 60.0% to 90.0% ($p < 0.01$), reflecting improved retention a known precondition for accumulation of social capital and trust (De, 2020).

Table 2: SHG Participation and Jute-Based Enterprise Engagement (2023–2025)

Indicator	Baseline (2023) n=320	Endline (2025) n=320	Change (%)	p-value (χ^2 test)
SHG membership duration >2 years	192 (60.0%)	288 (90.0%)	+30.0	<0.01
Regular attendance in SHG meetings (>75%)	160 (50.0%)	272 (85.0%)	+35.0	<0.01
Engaged in jute-based enterprise (processing/product making)	96 (30.0%)	224 (70.0%)	+40.0	<0.001
Own savings in SHG (₹ per month per member)	₹120 ± 45	₹350 ± 60	+191.7%	<0.001
Access to bank linkage/credit for jute enterprise	48 (15.0%)	192 (60.0%)	+45.0	<0.01
Training received in jute product diversification	32 (10.0%)	208 (65.0%)	+55.0	<0.001

Regular meeting attendance (>75%) rose sharply from 50.0% to 85.0% ($p < 0.01$). This increase is attributable to the introduction of jute-based economic activities, which transformed meetings from social forums into platforms for tangible income generation. The most striking gain was in enterprise engagement: the percentage of members actively involved in jute processing or product making tripled from 30.0% to 70.0% ($p < 0.001$). This 40-percentage-point increase confirms that SHG institutional mechanisms peer support, rotating savings, and collective decision-making effectively lowered entry barriers for women into non-farm micro-enterprises.

Monthly own savings per member increased by nearly 200% from ₹120 ± 45 to ₹350 ± 60 ($p < 0.001$). This aligns with the well-documented “savings first” philosophy of SHGs, where regular thrift

habits precede credit access. Access to bank linkage for jute enterprise rose from 15.0% to 60.0% ($p < 0.01$), facilitated by SHG-bank coordination programs under the National Rural Livelihood Mission (NRLM). Critically, training coverage in jute product diversification expanded from only 10.0% to 65.0% ($p < 0.001$), indicating successful deployment of need-based capacity building. This training intensity is a key differentiator from previous SHG studies that reported poor skill upgradation (Datta & Sahu, 2019).

Economic Performance of SHG-Led Jute Enterprises

Table 3 summarizes the economic transformation over the two-year intervention period. Mean monthly income from jute activities per SHG member rose from ₹850 ± 200 to ₹2,450 ± 400 a 188.2% increase ($t = 12.45$, $p < 0.001$). This income

effect is substantial compared to typical SHG micro-enterprise studies, which report 60–100% gains (Banerjee *et al.*, 2019). The higher magnitude here is explained by the shift from raw jute vending to value-added product diversification.

Annual jute product sales per SHG increased by 225% (from ₹24,000 ± 5,000 to ₹78,000 ± 12,000; $t = 10.98$, $p < 0.001$). Concurrently, value addition per kg of raw jute increased from ₹15 ± 3 to ₹45 ± 6 ($t = 9.87$, $p < 0.001$), driven by the production of six distinct product types (bags, folders, lampshades, coasters, ropes, mats) compared to only two at baseline. This diversification is a direct outcome of the training program referenced in

Table 2. The number of SHGs with collective marketing linkages expanded from 4 to 17 out of 20 (a 325% increase), reducing dependency on exploitative local middlemen who traditionally capture 40–50% of jute product margins in Pakur.

These results affirm that SHG-led enterprise development, when combined with product diversification and collective marketing, can generate significant income multipliers even in resource-constrained rural settings. The findings are consistent with the “women’s collective enterprise” model validated by recent systematic reviews (Brody *et al.*, 2022).

Table 3: Economic Performance of SHG-Led Jute Enterprises (Annual Averages)

Parameter	2023 (Pre-intervention)	2025 (Post-intervention)	% Increase	t-value	Significance
Mean monthly income from jute activities (₹/SHG member)	₹850 ± 200	₹2,450 ± 400	+188.2	12.45	$p < 0.001$
Mean annual jute product sales per SHG (₹)	₹24,000 ± 5,000	₹78,000 ± 12,000	+225.0	10.98	$p < 0.001$
Value addition per kg of raw jute (₹)	₹15 ± 3	₹45 ± 6	+200.0	9.87	$p < 0.001$
Number of jute product types produced (diversification)	2 (ropes, mats)	6 (bags, folders, lampshades, coasters, ropes, mats)	+200%	-	-
SHGs with collective marketing linkage	4 out of 20 SHGs	17 out of 20 SHGs	+325%	-	-

Women Empowerment Outcomes

Table 4 presents empowerment indicators across economic, social, political, and psychological dimensions. Economic empowerment showed the largest absolute gains: control over own income increased from 28.0% to 74.0% ($\chi^2 = 32.4$, $p < 0.001$),

and bank account ownership rose from 35.0% to 92.0% ($\chi^2 = 45.1$, $p < 0.001$). The near-universal bank coverage is notable because financial inclusion in Pakur’s tribal belts has historically been low (RBI, 2021). SHG-mediated bank linkage served as the primary enabler.

Table 4: Women Empowerment Indicators – Before and After SHG Intervention (2023 vs. 2025)

Empowerment Dimension	Indicator	2023 (n=320)	2025 (n=320)	Change	Statistical test
Economic	Control over own income (% members)	28.0% (90)	74.0% (237)	+46.0%	$\chi^2=32.4$, $p < 0.001$
	Ownership of bank account (% members)	35.0% (112)	92.0% (294)	+57.0%	$\chi^2=45.1$, $p < 0.001$
Social	Participation in household decisions (% often)	22.0% (70)	68.0% (218)	+46.0%	$\chi^2=28.7$, $p < 0.001$
	Freedom to visit market/health center (% yes)	18.0% (58)	64.0% (205)	+46.0%	$\chi^2=30.2$, $p < 0.001$
Political	Awareness of government schemes (% fully aware)	12.0% (38)	58.0% (186)	+46.0%	$\chi^2=35.6$, $p < 0.001$
	Contested local body election (% ever)	4.0% (13)	18.0% (58)	+14.0%	$\chi^2=11.2$, $p < 0.01$
Psychological	Self-confidence scale (1–10, mean ± SD)	3.2 ± 1.1	7.4 ± 1.3	+4.2	$t=14.8$, $p < 0.001$

Socially, participation in household decisions improved from 22.0% to 68.0% ($\chi^2 = 28.7, p < 0.001$), and freedom to visit market or health centers increased from 18.0% to 64.0% ($\chi^2 = 30.2, p < 0.001$). These changes suggest that economic contribution reconfigures intra-household bargaining power a mechanism well theorized in feminist economics (Agarwal, 2018). Politically, awareness of government schemes rose from 12.0% to 58.0% ($\chi^2 = 35.6, p < 0.001$), and the proportion of women who had ever contested a local body election increased from 4.0% to 18.0% ($\chi^2 = 11.2, p < 0.01$). While still modest, the latter represents a fourfold increase, indicating emergent political agency.

The most holistic improvement was in psychological empowerment: mean self-confidence score (on a 1–10 scale) increased from 3.2 ± 1.1 to 7.4 ± 1.3 ($t = 14.8, p < 0.001$). This 4.2-point gain is among the highest reported in SHG intervention studies from South Asia (see Garikipati, 2020). The result suggests that regular participation in production, marketing decisions, and peer learning creates a positive feedback loop for self-efficacy.

Notably, across all four dimensions, the magnitude of change was consistently around 46% for binary indicators, a striking convergence that points to a synergistic rather than siloed empowerment process. This supports the argument that SHGs function as “spaces of transformation” rather than mere poverty-alleviation vehicles (Kumar & Nandini, 2023).

Operational Challenges in Jute Enterprise Development

While outcomes were overwhelmingly positive, Table 5 identifies persistent challenges reported by members in 2025 (multiple responses). Infrastructure constraints dominated: irregular electricity for stitching motors affected 90.0% of respondents, and poor road connectivity to jute collection centers was cited by 55.0%. These are structural issues beyond SHG control, requiring district-level infrastructure investment.

Market-related challenges were nearly as acute: 85.0% reported lack of direct market access due to middlemen control, and 75.0% experienced low

price realization in local haats. Despite marketing linkage improvements (Table 3), the persistence of these barriers indicates that SHG collectives still face oligopsonistic local markets. Input-related challenges irregular supply of quality raw jute (70.0%) and high cost of natural dyes (60.0%) suggest supply chain vulnerabilities. Production constraints included lack of modern looms/tools (80.0%) and inadequate workspace at home (65.0%). Skill gaps remained: 70.0% identified limited design innovation training, and 60.0% reported poor digital/financial literacy, even after the training uptick (Table 2).

These findings point to the need for a second-generation SHG enterprise support package: (a) common facility centers with solar backup and powered looms, (b) digital marketplace platforms to bypass middlemen, (c) raw jute buffer stock through SHG federations, and (d) advanced training in e-commerce and design thinking. Without addressing these challenges, the impressive gains in income and empowerment may plateau or erode over time.

Synthesis and Implications

Taken together, the results demonstrate that SHGs in rural Pakur successfully leveraged jute-based enterprise development as a vehicle for women’s economic and social empowerment. The statistically significant improvements across all 14 quantitative indicators (Tables 2–4) provide robust evidence that the SHG platform can overcome initial disadvantages of low literacy, poverty, and social marginalization. However, the challenge profile (Table 5) cautions against simplistic scaling without concurrent investments in infrastructure, market linkage, and advanced skill building.

Table 5: Challenges Faced by SHG Members in Jute Enterprise Development (2023–2025, Multiple Responses)

The study’s contribution to the literature is twofold. First, it provides granular, longitudinal data on a non-farm, resource-based enterprise (jute) in an understudied tribal region of eastern India. Second, it empirically demonstrates the interdependence of economic, social, political, and psychological

empowerment showing that focusing exclusively on income may underestimate the transformative potential of SHGs. For policy, the results support continued NRLM investment in enterprise

diversification and suggest the need for a “SHG-plus” approach that explicitly addresses the infrastructure and market failures identified.

Table 5: Challenges Faced by SHG Members in Jute Enterprise Development (2023–2025)

Challenge Category	Specific Challenge	Number of respondents (n=320)	Percentage of respondents (%)
Input-related	Irregular supply of quality raw jute	224	70.0
	High cost of natural dyes/finishing agents	192	60.0
Production-related	Lack of modern looms/tools	256	80.0
	Inadequate workspace at home	208	65.0
Market-related	Lack of direct market access (middlemen control)	272	85.0
	Low price realisation in local haats	240	75.0
Skill & knowledge	Limited design innovation training	224	70.0
	Poor digital/financial literacy	192	60.0
Infrastructure	Irregular electricity for stitching/motors	288	90.0
	Poor road connectivity to jute collection centers	176	55.0

AUTHORS’ CONTRIBUTION

Bharti Kumari conceptualized the study, designed the research methodology, conducted the entire field survey and data collection from self-help group members in rural Pakur, performed statistical analysis and interpretation of results, and drafted the original manuscript. Dr. Amar Das supervised the research process, provided critical guidance on study design and jute-based enterprise assessment, and assisted in manuscript compilation, reviewing, and final editing. Both authors approved the final version of the manuscript and agree to be accountable for all aspects of the work.

ACKNOWLEDGEMENTS

The authors sincerely thank the Department of Botany, K. K. M. College, Pakur (Jharkhand) for providing institutional support and necessary facilities to carry out this research. We express our gratitude to the college authorities and departmental head for their encouragement and administrative cooperation throughout the study. Our sincere thanks are extended to the faculty members of the Department of Botany for their valuable suggestions and scholarly inputs during various stages of this work. We also gratefully acknowledge the technical supportive staff of the department for their assistance in fieldwork coordination and data compilation. Finally, we thank

all the Self-Help Group members and local community leaders in rural Pakur for their voluntary participation, trust, and cooperation, without which this study would not have been possible.

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