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Sustainable Enterprise Models in Jharkhand: Balancing Profit and Planet

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Abstract

Jharkhand, situated in eastern India, presents a complex development scenario. Though the state is endowed with rich natural resources, over 30% of its land is under forest cover, and Scheduled Tribes make up nearly 26% of its population, it continues to face serious developmental challenges. Jharkhand ranks low on the Human Development Index (HDI), struggling with poor health outcomes, low literacy levels, and widespread livelihood insecurity. Amid these challenges, a number of grassroots initiatives are trying to create a different path—one that blends income generation with ecological responsibility. This paper examines such sustainable enterprise models, relying exclusively on secondary data drawn from government reports, civil society documentation, and academic literature. It focuses on four key sectors: non-timber forest produce (NTFPs), tribal handicrafts, millet-based agroecology, and decentralized renewable energy systems. Using the Sustainable Livelihoods Framework (SLF) as a guiding lens, the study evaluates these enterprises in terms of their profitability, environmental impact, and social inclusion, particularly for tribal women. The findings show that while many of these models have potential, their growth is often held back by fragmented policies, lack of convergence across departments, and inadequate institutional support. With the right ecosystem, these models could help Jharkhand move toward a more inclusive, climate-resilient, and self-reliant rural economy.

Key Words: Sustainable Livelihoods, Tribal Communities, India, Jharkhand, on-Timber Forest Produce (NTFP), Agroecology,, Women's Empowerment, Renewable Energy Enterprises, Self-Help Groups (SHGs), Climate Resilience, Rural Development Models

1. Introduction

Jharkhand, formed in 2000, is an Indian state with deep contrasts. It holds immense natural wealth, including some of India's richest mineral belts and forests covering more then 30% of its area. Yet, it continues to rank among the poorest states in the country. Despite decades of interventions, Jharkhand struggles with low literacy rates, poor healthcare services, high maternal and child mortality, and limited livelihood opportunities. This contradiction is even more stark among its tribal population, which accounts for about 26% of the state's population. These communities are deeply connected to the land, forests, and traditional practices that have sustained them for generations.

In recent years, the focus of development efforts has slowly shifted from short-term poverty alleviation to more sustainable and inclusive models of growth. Recognizing that tribal communities hold unique ecological knowledge and live closest to the natural environment, there is growing interest in livelihood solutions that are not just economically viable, but also ecologically sound and culturally rooted.

This paper examines such efforts referred to here as sustainable enterprise models, using exclusively secondary data sources, including policy documents, academic research, program evaluations, and civil society reports. The analysis focuses on four promising sectors in Jharkhand: non-timber forest produce (NTFP), tribal handicrafts, millet-based agroecological farming, and decentralized renewable energy. The Sustainable Livelihoods Framework (SLF) is used to explore how these enterprises are structured, what they have achieved, and what systemic gaps still need to be addressed. In doing so, the study aims to offer insights for replicable and resilient rural development strategies.

1.1 Jharkhand's Development Paradox

The core of Jharkhand's development paradox lies not just in the gap between resource wealth and human poverty, but in the model of growth pursued over the years. While minerals have been extracted on an industrial scale, local communities, especially the tribal population, have seen little benefit. Instead, they have borne the costs through displacement, forest loss, and marginalization from formal economies. Public investment in health, education, and rural infrastructure has often been uneven, failing to match the scale of ecological and social disruption.

At the same time, traditional livelihoods based on forest produce, small-scale farming, and indigenous crafts have not been integrated into mainstream development planning. The result is a double bind: communities lose access to their natural assets while being excluded from emerging opportunities. This paradox makes Jharkhand a critical case for reimagining development—one where community-driven, environmentally sustainable enterprise models could bridge the gap between economic need and ecological preservation.

1.2 Objectives of the Study

This study aims to explore how sustainable enterprise models are shaping rural livelihoods in Jharkhand, with a particular focus on tribal-majority regions. Relying entirely on secondary data, the paper examines four key sector such non-timber forest produce (NTFP), tribal handicrafts, millet-based agroecology, and decentralized renewable energy to understand their impact, limitations, and potential for replication.

The core objectives are:

- To map and analyze sector-specific livelihood initiatives that balance economic, ecological, and social goals
- To assess the role of institutions, policies, and community participation in supporting these enterprises.

- To offer evidence-based recommendations for scaling inclusive, climate-resilient models across Jharkhand.

1.3 Research methodology

This study adopts a qualitative research approach based entirely on secondary data to examine sustainable enterprise models in Jharkhand. It focuses on four key sectors NTFP-based livelihoods, tribal handicrafts, millet agroecology, and renewable energy microenterprises—which are relevant to tribal communities and rural economies.

Data was sourced from government reports (JSLPS, Ministry of Tribal Affairs), program evaluations (UNDP, NABARD, TRIFED), academic studies (MANAGE, ICRISAT), and NGO publications (PRADAN, SELCO Foundation). The analysis used thematic content analysis guided by the Sustainable Livelihoods Framework, focusing on five forms of capital: natural, human, social, physical, and financial. Cross-sectoral themes such as gender inclusion, climate resilience, and institutional support were also explored. Triangulation of sources was applied to improve reliability. While the study lacks primary field data, the range of verified sources ensures that the findings are contextually grounded and policy-relevant.

1.4 Scope of the study

This study focuses on understanding sustainable enterprise models in Jharkhand by examining secondary data sources from four key sectors: non-timber forest produce (NTFP), tribal handicrafts, millet-based agroecology, and renewable energy-based microenterprises. These sectors were selected for their strong links to the livelihoods of tribal communities and their potential to support ecologically responsible economic growth.

Geographically, the paper concentrates on tribal-dominated districts such as Gumla, Khunti, Lohardaga, and Hazaribagh, where most government and civil society interventions in these areas have been concentrated. The analysis draws from a wide range of sources, including government reports, program evaluations, academic articles, and publications by NGOs and CSR bodies.

A qualitative content analysis approach was used to review and compare these materials. While no primary fieldwork was conducted, the study ensures credibility through cross-referencing multiple data sources. This approach offers a broad yet contextually grounded understanding of how different enterprise models are functioning across rural Jharkhand.

1.5 Source of Secondary Data

This study is grounded entirely in secondary data, carefully selected from reputable sources to ensure accuracy and contextual relevance. Key materials include annual reports, policy documents, program evaluations, and research publications from both government and non-government institutions.

Primary sources of data include reports from the Jharkhand State Livelihood Promotion Society (JSLPS), UNDP, TRIFED, NABARD, and PRADAN, which offer valuable insights into livelihood interventions across Jharkhand. The study also draws from national databases and

dashboards maintained by the Ministry of Tribal Affairs and the Forest Department, particularly for information on forest rights and tribal welfare schemes.

Additional references include academic studies published by institutions like MANAGE, ICRISAT, and documentation from CSR arms of private foundations such as SELCO Foundation and Tata Trusts. All materials were published between 2020 and 2024 to ensure relevance and reflect recent developments. Only publicly available and verifiable documents were used and no anecdotal or unpublished data were included.

1.6 Data Organisation and Analysis

The secondary data collected for this study was organized thematically around four key sectors: non-timber forest produce (NTFP), tribal handicrafts, millet-based agroecology, and renewable energy-based enterprises. Within each sector, information was categorized under specific indicators such as type of enterprise, institutional support, environmental impact, gender participation, and market reach.

A qualitative content analysis approach was applied to examine patterns, gaps, and contradictions across the data sources. Where possible, program claims from government reports were cross-verified with independent evaluations by civil society organizations or donor agencies. This triangulation helped improve reliability and minimized the risk of bias.

Emphasis was also placed on cross-sectoral linkages for instance, how gender roles intersect with energy access, or how agroecology and forest-based livelihoods share similar challenges in market access. This method allowed the study to develop a more integrated understanding of sustainable enterprise models in Jharkhand, rather than viewing each sector in isolation.

2.1 Theoretical Framework

To understand how sustainable enterprise models function in Jharkhand's tribal regions, this study is anchored in the Sustainable Livelihoods Framework (SLF)—a tool developed to assess how people access resources, respond to challenges, and build resilient livelihoods. The SLF offers a structured way to analyze the assets, vulnerabilities, and institutional influences that shape livelihood opportunities, especially in rural and marginalized settings.

At its core, the SLF identifies five forms of capital that individuals and communities depend on: natural capital (like forests and land), social capital (community networks, SHGs, cooperatives), human capital (skills, knowledge, health), physical capital (infrastructure and tools), and financial capital (income, savings, credit access). These assets interact with broader systems like policies, markets, and local governance, which can either enable or restrict people's ability to sustain their livelihoods.

In the case of Jharkhand, this framework is particularly relevant. Tribal communities depend heavily on natural resources such as sal leaves, millets, and forest products—not just for income but for cultural and daily life. Social capital plays a strong role as well, with Self-Help Groups (SHGs), women's collectives, and cooperatives acting as anchors for enterprise

development. Meanwhile, human capital—in the form of traditional knowledge and local skills—offers a foundation for low-cost, resource-efficient livelihoods.

The SLF also emphasizes the vulnerability context, which includes external pressures like climate change, displacement, and market volatility—all of which are highly visible in Jharkhand's tribal belt. It urges us to look at how programs and policies can reduce these vulnerabilities and enhance access to supportive institutions.

Using this framework, the study analyzes whether the selected enterprise models are strengthening local assets, creating enabling environments, and reducing livelihood risks. It also helps assess if these models are inclusive—particularly for women—and environmentally sustainable. The SLF thus provides a grounded, people-centered approach for evaluating what works, what doesn't, and what can be improved in Jharkhand's quest for equitable rural development.

2.2 Review of Sectoral Studies

A growing number of studies and evaluations over the past decade have focused on livelihood generation in Jharkhand, particularly in tribal-majority districts. These efforts highlight valuable sectoral insights, though they are often isolated and program specific. This section brings together secondary evidence across four livelihood domains where community-led enterprise models are gaining momentum: non-timber forest produce (NTFP), tribal handicrafts, millet-based agroecology, and decentralized renewable energy systems.

a. Non-Timber Forest Produce (NTFP) and Sal Leaf-Based Enterprises

NTFPs continue to be a lifeline for many tribal households. Sal leaves, mahua, tamarind, and lac are collected, processed, and sold by tribal women, often organized into Self-Help Groups (SHGs) or informal producer groups. Reports from the Jharkhand State Livelihood Promotion Society (JSLPS) indicate that over 1.5 lakh women have been mobilized for sal leaf-based activities alone. However, UNDP's 2022 evaluation warns that most of these women face issues such as lack of access to storage, price fluctuations, and dependency on middlemen. There is also limited formal support like Minimum Support Price (MSP) mechanisms, making earnings unpredictable and seasonal.

b. Tribal Handicrafts and Cultural Livelihoods

Traditional tribal crafts such as Sohrai and Kohbar paintings, bamboo and cane work, stone carving, and lac bangles offer culturally rooted economic opportunities. Districts like Hazaribagh, Ranchi, and East Singhbhum have seen small clusters of artisans engaged in these crafts. Despite efforts by TRIFED, NABARD, and district industries centres, most artisans, especially women, lack access to structured training, digital platforms, or consistent market opportunities. A 2021 study by NABARD found that less than 25% of tribal artisans had participated in national-level exhibitions or used online channels to sell their products. The lack of branding, market literacy, and seasonal demand continues to constrain their income.

c. Millet-Based Agroecology

Millet cultivation has re-emerged in Jharkhand as a climate-resilient alternative to rice-dominated cropping. Blocks like Mandar, Torpa, and Kuru have seen promising results from pilot programs supported by MANAGE, ICRISAT, and local NGOs. Women farmers have begun cultivating ragi, kodo, and barnyard millet using organic inputs and diversified cropping methods. These practices enhance soil health, food security, and resilience to erratic rainfall, but challenges persist. Studies show that access to quality seeds, decentralized processing, and institutional procurement remains weak. Farmers also struggle to position millets as commercially viable due to a lack of storage, promotion, and integration into PDS and midday meals.

d. Renewable Energy Livelihoods

Jharkhand's patchy electricity access has created opportunities for solar-based microenterprises, including solar-powered cold storage, irrigation pumps, and processing units. Initiatives in districts like Gumla and Khunti, supported by SELCO Foundation and Smart Power India, have enabled women-led FPOs to reduce post-harvest losses and extend the marketability of perishable goods. However, many of these interventions are still at a pilot stage. The absence of clear operational models for maintenance, financing, and government convergence limits wider adoption. Without reliable technical support and ownership structures, even promising energy-livelihood solutions struggle to move beyond grant dependence.

2.3 Policy Landscape and Secondary Reports

Jharkhand's policy framework for rural livelihoods draws from both national schemes and state-led initiatives. However, a closer look at secondary reports reveals a recurring issue: poor coordination across departments, leading to fragmented implementation. While policies do exist to support forest-based livelihoods, sustainable agriculture, and renewable energy, they often operate in isolation, limiting their collective impact.

At the national level, the National Rural Livelihoods Mission (NRLM) and its state-level counterpart, the Jharkhand State Livelihood Promotion Society (JSLPS), have been instrumental in mobilizing Self-Help Groups (SHGs) and building community institutions. Annual reports from JSLPS (2021–2023) show that more than 2.5 lakh women have been organized into SHGs, many engaged in activities like sal leaf collection, tasar weaving, and goat rearing. However, secondary evaluations by agencies like UNDP and PRADAN suggest that these groups often lack forward linkages, value addition support, and access to credit making scale-up difficult.

The Forest Rights Act (FRA) of 2006 offers a legal foundation for tribal communities to claim control over forest resources. Yet, according to data from the Ministry of Tribal Affairs (2024), only 6.5% of potential Community Forest Resource (CFR) titles have been granted in Jharkhand. Reports from the Centre for Policy Research point to hurdles such as Forest

Department resistance and weak Gram Sabha capacity, which block wider recognition of community rights essential for developing NTFP-based enterprises.

On the agricultural side, programs like the Birsa Harit Gram Yojana and the National Millet Mission promote agroecological practices, yet suffer from delays in input supply, poor extension services, and weak procurement. Likewise, renewable energy interventions led by the Jharkhand Renewable Energy Development Agency (JREDA) remain largely donor-driven, lacking a clear strategy for financial sustainability or technical maintenance.

Several reports, including those by TRIFED, NABARD, and Tata Trusts, consistently recommend stronger inter-departmental convergence. Without alignment between the Forest, Rural Development, Agriculture, and Energy departments, even well-designed interventions struggle to deliver lasting change. There's a clear need for integrated planning that supports community enterprises across the value chain—from rights recognition and production to value addition and market access.

4. Sectoral Insight: Models of Sustainable livelihoods in Jharkhand

4.1 Sal Leaf Livelihood: Strengthening Forest–Based Economies for Tribal Women

Sal leaf collection and processing represent one of the most vital non-timber forest products (NTFP)-based livelihoods in Jharkhand, particularly for tribal women. Communities such as the Munda, Ho, and Oraon have practiced this for generations—gathering sal leaves from forests to craft plates and bowls used both for home consumption and commercial sale. Over time, this practice has evolved into a semi-organized enterprise. Supported by the Jharkhand State Livelihood Promotion Society (JSLPS) and local NGOs, more than 22,000 women across districts like Gumla, Khunti, and Simdega have formed Self-Help Groups (SHGs) to collect, stitch, and market sal leaf products. During peak seasons, women can earn between ₹2,000 to ₹4,500 per month, depending on market access and pricing.

A 2022 evaluation by UNDP and CBGA shows that areas with active Gram Sabhas and partial implementation of the Forest Rights Act (FRA) have fared better. Women in these areas enjoy improved access to forest patches and more stable incomes due to community ownership structures. However, in many locations, lack of formal forest rights leads to conflicts with forest officials and restricts collection.

Despite the potential, several barriers remain. There is no assured Minimum Support Price (MSP) for sal leaves, which leads to price fluctuations. Many SHGs operate without proper storage, transport, or quality control mechanisms, limiting their ability to scale. Additionally, concerns about over-harvesting and ecological degradation exist in areas where sustainable harvesting practices are not followed. Some pilot innovations, such as biodegradable sal leaf packaging and digital marketing platforms, have shown promise, but adoption is slow. To ensure long-term viability, there is a need for legal recognition of forest rights, capacity-building in sustainable harvesting, and stronger market linkages that allow women to move up the value chain.

4.2 Tribal Handicrafts: Preserving culture through livelihood innovation

Tribal handicrafts in Jharkhand are more than just economic activities; they are expressions of identity, heritage, and community pride. Art forms such as Sohrai and Kohbar paintings, bamboo and cane crafts, lac bangles, and stone carvings are practiced by tribal communities across Hazaribagh, Ranchi, East Singhbhum, and Simdega. Passed down through generations, these crafts not only reflect indigenous knowledge systems but also hold potential for dignified, sustainable livelihoods. Efforts by institutions like TRIFED, NABARD, and the Department of Industries have helped in mapping artisan groups and supporting them through exhibitions, design workshops, and raw material subsidies. A 2021 NABARD report shows that while more than 9,000 tribal artisans are registered, only about 25% have regular access to markets, government schemes, or skill enhancement programs.

One of the key barriers is market access. Most artisans continue to sell through local fairs or middlemen, earning modest returns. Younger generations are also drifting away from these traditional occupations due to low and inconsistent income. Studies by Craft Revival Trust and Tata Trusts show that many artisans lack exposure to digital platforms, branding, or design innovation, which limits their ability to reach wider markets or command better prices. Despite these challenges, some success stories stand out. For example, Sohrai artists in Hazaribagh have gained national attention through partnerships with institutions like INTACH and UNESCO, leading to exhibitions and design collaborations. These efforts have not only increased income but also revived interest among youth in preserving their cultural roots.

Scaling these models will require dedicated training, access to e-commerce platforms, and integration of crafts into tourism and educational curricula. With the right support, tribal handicrafts can serve as both a cultural preservation strategy and a resilient livelihood model in Jharkhand's rural economy.

4.3. Millet Revival and Agroecological Farming: A Climate-Resilient Pathway

Millet farming is making a slow but meaningful comeback in Jharkhand, particularly in tribal-majority blocks such as Mandar (Ranchi), Torpa (Khunti), and Kuru (Lohardaga). Historically, tribal communities like the Oraon, Santhal, and Birhor cultivated millets as staple crops due to their resilience to drought, low input costs, and high nutritional value. Over time, however, these traditional practices were marginalized by rice-centric agricultural policies and shifting food preferences driven by the public distribution system (PDS). Today, supported by schemes like the Birsa Harit Gram Yojana and the National Millet Mission, small groups of tribal women farmers are returning to agroecological methods. Using natural compost, mixed cropping, and traditional seeds, they are restoring degraded lands and increasing crop diversity. Secondary reports from MANAGE, ICRISAT, and Action for Social Advancement (ASA) document how these approaches have led to improvements in soil health, better water retention, and enhanced food security.

Despite these gains, several systemic challenges remain. Many farmers lack access to quality seeds, processing units, and credit facilities. Government procurement of millets is inconsistent, and integration into institutional programs like mid-day meals and ICDS is still

limited. As a result, farmers often struggle to market surplus produce or convert it into value-added goods. The millet farming still suffers from the perception that it is a "subsistence" rather than "commercial" activity. Without consistent price support, dedicated extension services, and consumer awareness, it remains difficult to scale. Even so, the ecological and nutritional benefits of millets are well established. With the right mix of policy incentives, market linkages, and community-level capacity-building, agroecological millet farming has the potential to transform Jharkhand's rural economy into one that is climate-resilient, locally rooted, and women-led.

4.4 Renewable Energy Enterprises: Powering Rural Livelihoods Sustainably

Jharkhand's rural regions continue to face persistent energy gaps. Many villages either lack reliable grid connectivity or experience frequent power cuts, limiting opportunities for income generation. In this context, renewable energy solutions—particularly decentralized solar systems—are emerging as critical enablers of rural livelihoods. Several pilot initiatives have introduced solar-powered cold storage units, irrigation pumps, food processing machines, and lighting systems in tribal-dominated districts such as Khunti, Gumla, and Latehar. Organizations like SELCO Foundation, Smart Power India, and local partners have collaborated with community groups and women-led Farmer Producer Organizations (FPOs) to deploy these technologies. According to SELCO's 2023 report, households that accessed solar cold storage were able to reduce post-harvest losses and sell their produce at better prices during off-seasons.

These renewable energy interventions have also reduced the physical burden on women—especially in processing and storing agricultural products—and created new microenterprise opportunities such as solar-powered flour mills, oil presses, and mobile charging kiosks. In districts like Khunti, solar-driven microenterprises have been instrumental in improving both income and energy equity. However, despite the clear benefits, most of these models remain at the pilot stage. Challenges include high initial installation costs, limited access to repair and maintenance services, and absence of state-level financial mechanisms for scaling. Additionally, many users lack technical training to operate and maintain the systems independently, making long-term sustainability a concern.

To scale these innovations meaningfully, there is a need for policy convergence between the energy, livelihood, and rural development departments. Solutions such as subsidized financing, community-led maintenance models, and training programs can help ensure that renewable energy becomes a lasting part of Jharkhand's rural development strategy. These clean energy enterprises not only reduce carbon emissions but also empower marginalized communities—especially women—to lead the transition toward a more resilient and equitable rural economy.

5. Cross-Sectoral Reflections: Enablers and Barriers to Sustainable Livelihoods

5.1 Gender Dimension: Women at the Heart of Sustainable Enterprise

Across Jharkhand's rural economy, women—especially from tribal communities—play a central yet often underrecognized role in sustaining livelihoods. Whether it's collecting forest

produce, crafting tribal art, cultivating millets, or managing solar-powered equipment, women contribute significantly to local enterprise activities. Many of these initiatives operate through Self-Help Groups (SHGs), which serve as platforms for savings, training, and collective action. Reports from JSLPS (2022) show that over 60% of SHG members involved in forest produce, handicrafts, and farming-based livelihoods are women. Participation in these groups has improved women's financial independence, encouraged collective bargaining, and helped them access training and government schemes. However, deep-rooted challenges persist. One of the key issues is limited control over income and assets. While women often lead the production process, men still dominate market negotiations and household decision-making. A 2021 study by PRADAN highlights that even in well-functioning SHGs, women rarely control sales or pricing, especially for products like sal leaves or crafts. In agriculture, land titles are often in the names of men, restricting women's access to credit or input subsidies. In the case of renewable energy enterprises, while women benefit from reduced drudgery and increased productivity, they are often not involved in technical training or system maintenance. This reinforces their dependency on male technicians and limits their role in long-term enterprise management.

Promoting gender equity requires more than just participation—it requires ownership, leadership, and voice. Interventions must go beyond forming women's groups to ensure that women have real influence over business operations and financial decisions. Initiatives like training in digital literacy, financial planning, and value addition, combined with stronger policy incentives for women-owned enterprises, can help bridge these gaps.

5.2. Ecological Sustainability and Climate Resilience: Aligning Livelihoods with Nature

Jharkhand's rural economy is deeply tied to its forests, rainfed agriculture, and seasonal ecosystems. For tribal communities, natural resources are not just a means of income—they are a way of life. However, climate variability, including erratic rainfall, longer dry spells, and rising temperatures, is putting these traditional systems under increasing stress. This makes ecological sustainability and climate resilience essential pillars for any livelihood model in the region.

Agroecological practices like millet-based farming, intercropping, and organic soil treatment offer promising alternatives to chemical-intensive agriculture. Millets, in particular, are drought-resistant and require fewer inputs, making them ideal for Jharkhand's fragile soils and changing climate. Reports from MANAGE (2023) show that farmers adopting such methods have seen better yields, improved food security, and reduced dependency on external inputs.

Similarly, NTFP-based livelihoods, when managed responsibly, can promote forest regeneration. In villages with active Gram Sabhas and partially implemented Community Forest Rights, sustainable harvesting of sal leaves, mahua, and tamarind has not only supported incomes but also ensured biodiversity preservation. According to the Forest Survey of India (2022), Jharkhand's forest cover remains relatively stable where community forest management is practiced, in contrast to areas affected by mining and illegal logging.

Renewable energy solutions also support climate goals. Solar-powered cold storage, water pumps, and micro-enterprises reduce reliance on fossil fuels and improve energy access in remote areas. These technologies lower the carbon footprint of rural livelihoods while enhancing productivity. However, many of these green models remain scattered and heavily dependent on external support. To scale them sustainably, the state needs to recognize and integrate traditional ecological knowledge, strengthen community institutions, and ensure that sustainability is built into every layer of livelihood programming—from planning to monitoring.

5.3 Institutional Gaps and Policy Convergence: Unlocking the Potential of Sustainable Enterprises

Despite growing recognition of sustainable enterprise models in Jharkhand, one of the most persistent challenges is the lack of institutional coordination. While multiple government departments—such as Forest, Rural Development, Agriculture, and Renewable Energy—run livelihood-related programs, these efforts often operate in silos, missing the opportunity for integrated support. For instance, SHGs and FPOs engaged in NTFP or agroecology may receive support from rural development programs, but rarely get aligned assistance from forest or agriculture departments for value addition, certification, or procurement. Similarly, solar-powered microenterprises often fall outside the purview of mainstream energy planning, and there is limited guidance or funding to maintain these systems after installation. This fragmented approach reduces both the effectiveness and sustainability of interventions.

Policy reviews by institutions like the Centre for Policy Research (CPR) and NABARD suggest that while Jharkhand has robust schemes like JSLPS, Birsa Harit Gram Yojana, and JREDA's renewable energy programs, these initiatives rarely converge at the village level. Without a unified implementation strategy, beneficiaries are left to navigate multiple systems, reducing their access to entitlements and creating confusion at the community level. Another gap lies in financial inclusion and business development services. Many community enterprises struggle to access credit, insurance, or professional support. SHGs often lack the capacity to expand operations or integrate into formal value chains due to limited training in business planning or digital tools.

To bridge these gaps, Jharkhand needs an integrated policy framework that brings together livelihood, environmental, and energy planning under one roof. A coordinated approach would allow for better targeting of resources, joint monitoring, and stronger institutional accountability. By aligning sectoral programs and simplifying access for communities, the state can amplify the impact of sustainable enterprises and build a more resilient rural economy.

6. Case Studies

6.1 Case Study: Empowering Women through SHGs – The Gumla Experience

Gumla district in Jharkhand offers a compelling example of how Self-Help Groups (SHGs), supported by the Jharkhand State Livelihood Promotion Society (JSLPS), can transform rural livelihoods—particularly for tribal women. With a large tribal population and limited formal

employment opportunities, Gumla has seen thousands of women organize into SHGs to access credit, training, and collective enterprise opportunities. Over the past five years, JSLPS has helped mobilize over 50,000 SHG members in Gumla, focusing on areas such as sal leaf collection, tasar weaving, livestock rearing, vegetable farming, and small-scale food processing. These groups function as more than just savings and credit platforms—they are hubs of collective action and women's empowerment. According to a 2023 JSLPS report, incomes among active SHG members have risen by an average of 30%, largely due to improved market access, shared infrastructure, and training in value addition.

One of the key strengths of the SHG model in Gumla is its emphasis on women's leadership. Many SHG members now participate in Village Organizations (VOs) and Cluster-Level Federations (CLFs), giving them a voice in local decision-making. Training programs supported by JSLPS have helped women improve their skills in accounting, pricing, packaging, and negotiation—areas where they previously relied on male family members or middlemen.

However, challenges remain. Many SHGs still operate on a small scale and lack access to formal credit, cold storage, or transportation facilities. Moreover, the absence of standardized quality control makes it difficult for products to compete in larger markets. Reports from UNDP and PRADAN suggest that integration with e-commerce platforms and cooperative branding could improve earnings significantly. Despite these hurdles, the SHG movement in Gumla demonstrates the potential of grassroots institutions to create sustainable, women-led economic change. With stronger infrastructure and policy support, these groups could serve as replicable models across Jharkhand and beyond.

6.2 Case Study: Sohrai Artists of Hazaribagh – When Culture Becomes Livelihood

In the tribal heartland of Hazaribagh, the traditional art of Sohrai painting is undergoing a quiet but powerful transformation—from a seasonal ritual to a source of income and cultural pride. Created mostly by Santhal and Kurmi women, these paintings depict animals, nature, and tribal mythology using natural pigments on mud walls, traditionally during harvest and festival seasons. Thanks to the efforts of local organizations and institutions like INTACH, TRIFED, and select CSR programs, the Sohrai Artists Collective in Hazaribagh has emerged as a beacon of cultural enterprise. Women who once painted solely for their homes now create portable artworks on canvas, fabric, and paper, which are showcased at exhibitions and sold to buyers across India. According to TRIFED's 2022 report, artists associated with the collective have seen income increases of up to 20–25% over two years.

The collective model allows artists to negotiate as a group, access materials in bulk, and participate in training programs on product design, pricing, and marketing. Many of these women, who had never traveled beyond their villages, are now engaging with buyers, media, and policymakers, challenging gender norms while preserving tradition. Yet, challenges remain. Access to high-quality natural pigments, inconsistent demand, and limited understanding of digital marketing restrict their potential. Many younger members of the community are also reluctant to continue the practice, seeing it as outdated or commercially unviable. Without integration into formal art institutions, tourism circuits, or school curricula,

the sustainability of Sohrai as a livelihood option remains fragile. Even so, the success of the Hazaribagh Sohrai artists shows that with the right ecosystem combining cultural recognition, design support, and market access traditional art can evolve into a viable, empowering livelihood. It offers a replicable model for other tribal crafts across Jharkhand.

6.3 Case Study: Birsa Harit Gram Yojana – Greening Rural Livelihoods through Agroforestry

The Birsa Harit Gram Yojana (BHGY), launched by the Government of Jharkhand, represents a strategic effort to merge environmental restoration with livelihood generation in tribal areas. Named after the tribal icon Birsa Munda, the scheme promotes agroforestry by encouraging rural households to plant and maintain a combination of fruit-bearing and timber-yielding trees on their land or nearby fallow spaces. According to data from JSLPS and the Forest Department (2023), the scheme has reached over 50,000 households across districts like Khunti, Simdega, Gumla, and Lohardaga. Participants receive saplings such as mango, guava, teak, and sal, along with basic guidance on planting and care. The objective is to help households build long-term income assets, improve soil fertility, and restore green cover—while reducing pressure on natural forests. In many villages, the program is implemented through SHGs and Gram Sabhas, helping build community ownership. Agroforestry models supported under BHGY also contribute to food security, especially where fruit trees are cultivated near homesteads. Secondary studies indicate that early adopters are beginning to generate modest income from the sale of fruit and timber, while also observing improvements in soil quality and moisture retention. However, implementation challenges persist. A 2022 UNDP review highlighted weak coordination between the Forest, Agriculture, and Rural Development departments, resulting in delayed sapling distribution and inadequate post-plantation support. Many families also face difficulties in marketing timber or fruit due to lack of aggregation mechanisms and limited transport.

6.4 Case Study: Solar Cold Storage in Khunti – Powering Post-Harvest Resilience

In Khunti district, where agriculture is largely subsistence-based and markets are distant, the lack of proper storage infrastructure has long forced smallholder farmers to sell their produce at distress prices. The introduction of solar-powered cold storage units has changed that dynamic, offering a sustainable solution to post-harvest losses and market volatility. Implemented by Jharkhand Renewable Energy Development Agency (JREDA) in partnership with organizations like the SELCO Foundation, the Khunti Solar Cold Storage Project has enabled tribal farmers to store perishable crops—such as tomatoes, chillies, and leafy vegetables—for longer periods, allowing them to wait for better prices or aggregate for bulk sales. These decentralized units operate off-grid, making them ideal for remote areas with unreliable electricity supply.

According to a 2023 evaluation by SELCO, more than 300 households—particularly those led by women—have benefited from increased income and reduced spoilage. Women farmers who previously avoided growing perishable crops due to high risk have now begun to diversify their cultivation, contributing to both nutritional security and income stability. In addition to

economic gains, the solar storage units have introduced an energy-efficient and low-emission alternative to diesel-powered cooling systems. They also serve as community hubs, supporting microenterprises such as dairy collection, seed storage, and food processing.

However, scalability remains a challenge. The high upfront cost, limited access to technical repair services, and lack of financing models for community ownership hinder wider adoption. Some farmers also lack training on how to maximize the utility of the storage units, which limits efficiency. To ensure sustainability, there is a need for maintenance cooperatives, subsidized loans, and capacity-building programs. If supported well, this model has the potential to revolutionize cold-chain access for small-scale farmers and boost rural economies in a climate-resilient way.

7. Limitations of the Study

While this study offers meaningful insights into sustainable enterprise models in Jharkhand, it is important to acknowledge its limitations. The research is based solely on secondary data, which means it lacks real-time field observations or direct inputs from community members. As a result, some context-specific experiences, emerging innovations, or undocumented practices may not be captured. Many of the secondary sources are program-specific, limiting the ability to generalize findings across the state. Additionally, the quality and depth of available data vary; government reports may focus on success stories, while civil society assessments often highlight only pilot interventions. Few sources offer disaggregated data by gender, caste, or region, making it difficult to conduct detailed intersectional analysis. Another key limitation is the absence of standard evaluation metrics across reports, which makes cross-sector comparison challenging. Despite these constraints, careful triangulation of multiple sources ensures that the findings presented are credible, grounded, and relevant for policy and program design.

8. Conclusion

This study set out to explore how sustainable enterprise models are reshaping rural livelihoods in Jharkhand, particularly within tribal communities that depend heavily on forests, traditional crafts, and small-scale agriculture. Drawing from secondary data across four key sectors—NTFPs, tribal handicrafts, agroecological millet farming, and decentralized renewable energy the analysis highlights both the promise and the persistent gaps in these initiatives. Several of the case studies show meaningful impact: SHGs in Gumla have improved income and women's agency; Sohrai artists in Hazaribagh have converted heritage into livelihood; millet farmers in Mandar and Torpa are practicing climate-resilient farming; and solar cold storage in Khunti is transforming post-harvest management. These successes demonstrate that sustainable enterprises can offer economic stability while preserving ecological and cultural systems.

However, the path to scaling these models remains constrained by fragmented policy execution, limited institutional convergence, and insufficient market integration. Women, though central to many of these enterprises, continue to face structural barriers in ownership, leadership, and access to credit or training. Similarly, climate risks and lack of infrastructure often limit the long-term sustainability of such efforts. The findings reinforce the need for a holistic,

community-driven, and ecologically grounded approach to rural development in Jharkhand. Integrating traditional knowledge, strengthening grassroots institutions, and ensuring inter-departmental coordination will be crucial. With the right support systems and policy coherence, these models can move beyond pilots and serve as blueprints for inclusive, resilient rural economies—not just in Jharkhand, but across India's tribal heartlands.

9. Recommendation

Building on the insights from the sectoral and cross-sectoral analysis, this section outlines actionable recommendations to enhance the effectiveness, equity, and scalability of sustainable enterprise models in Jharkhand. These are structured across three key areas: Policy, Practice, and Research.

9.1 Policy

- Strengthen inter-departmental coordination between Forest, Agriculture, Rural Development, and Energy departments to ensure integrated planning and support.
- Expedite the recognition and implementation of Community Forest Rights (CFRs) under the Forest Rights Act to empower NTFP-based enterprises. Develop a state-level policy on agroecology with targeted subsidies for millet farming and organic practices.
- Expand financial incentives for renewable energy-based livelihoods, including access to low-interest loans and maintenance support.
- Streamline marketing policies to promote tribal handicrafts and forest produce through digital platforms and e-commerce support.

9.2 Practice

- Scale up capacity-building programs for SHGs, FPOs, and artisan groups in business skills, quality control, and digital literacy.
- Promote community-led conservation and sustainable harvesting in forest-based livelihoods.
- Improve access to common infrastructure—like cold storage, seed banks, and craft clusters—to strengthen value chains.
- Prioritize women's leadership in program design, credit access, and enterprise decision-making.
- Link agroecological production and forest produce with institutional markets like PDS, mid-day meals, and Anganwadi services.

9.3 Research

- Conduct long-term impact studies to assess how these models affect poverty, gender equity, and ecosystem health.
- Invest in action research to document best practices and traditional knowledge.
- Evaluate the effectiveness of policy convergence models and pilot integrated governance frameworks.

- Explore market behavior, climate trends, and livelihood diversification strategies using real-time data analytics to support adaptive programming.

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