

Sonbhadra's Green Gold: Chironji, Commons, and Rural Enterprise

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Abstract

According to the Food and Agriculture Organisation, globally, a significant portion of the population relies on forests for their livelihoods, with the forest sector serving as a key driver in the global economy. In India, Buchanania lanzan (Chironji) is a highly valued seed that is traditionally used in both food and medicine, particularly within tribal communities. However, the increasing demand for Buchanania lanzan, coupled with the absence of standardized cultivation guidelines, has led to inconsistent pricing and overharvesting, making it a vulnerable species.

This article presents a case study focusing on the ethical wild harvesting of Buchanania lanzan in Nagwa village, Sonbhadra, Uttar Pradesh. Tribal communities, particularly women, depend heavily on forest resources for their livelihoods and supplemental income. The case study illustrates a promising approach for empowering these communities while promoting ecological conservation. It represents the current status of Buchanania lanzan among local tribal communities and forest dwellers, its economic impact, and the existing challenges in establishing it as a sustainable entrepreneurial model to support the rural economy. Furthermore, it explores the implementation, financial prospects, and potential of this model as a scalable solution for other forest-dependent regions.

Background

India is home to one of the world's second-largest tribal populations, comprising 8.9% of the country's population, with around 275 million residing in forested areas and relying on natural resources for their survival. According to the Ministry of Tribal Affairs, approximately **60% of tribal income** is derived from **Minor Forest Produce (MFP)**, including tendu leaves, **Chironji, Mahua, Sal seeds, and honey**.

These communities possess a rich tradition of Knowledge about local biodiversity. Among the various non-timber forest products (NTFPs) harvested by tribal groups, Buchanania lanzan holds a special place, with its seeds used in traditional medicine and Indian cuisine. It is primarily gathered from wild sources in arid and semi-arid regions.

Sonbhadra district, situated in Uttar Pradesh, presents a unique blend. Despite the district's rich mineral resources and industrial activity, a significant portion of its tribal population remains impoverished and economically disadvantaged. Scheduled Castes and Scheduled Tribes comprise a substantial portion of the district's population. Although development efforts have led to some improvements, many forest-dwelling communities continue to depend on natural resources—such as *Buchanania lanzan*—to sustain and supplement their livelihoods. In the Nagwa block, tribal women play a crucial role in the seasonal collection of the seeds. For many women, the wild harvest represents more than just a means of income; it is associated with their cultural heritage, traditional ecological Knowledge, and self-dignity. However, despite their vital role, they encounter numerous issues that hinder their economic progress. Poor infrastructure, unfair pricing systems, and limited market access prevent them from realizing the full value of their labour. Additionally, the absence of strong institutional support for plantation efforts, sustainable harvesting practices, and community-led conservation of *Buchanania lanzan* trees poses a threat to the long-term sustainability of this forest-based livelihood.

Introduction: Framing the Issue

For generations, these communities have relied on NTFPs, such as *Buchanania lanzan*, which holds deep cultural significance and represents a source of traditional wisdom, offering a source of hope for a better future.

In Sonbhadra district, situated in eastern Uttar Pradesh, this connection is vividly apparent. The district is characterized by persistent poverty and neglect in its rural and forested areas, despite being hailed as the 'Energy Capital of India' due to its mineral riches and industrial growth. The diverse tribal groups, including Bhars, Cheros, Kols, Searis, and Kherwars, continue to struggle for recognition and fair livelihoods.

Approximately **43% of the district's population** belongs to **Scheduled Castes and Scheduled Tribes**, yet these communities have been largely **excluded from the fruits of development**. Roads, healthcare, education, and market access are often lacking or absent in many forested areas. **Mining and industrial expansion** have led to **displacement, loss of access to forests, and environmental degradation**, directly threatening traditional livelihoods. At the same time, **bureaucratic hurdles** and a lack of recognition for customary rights have **complicated access to forest produce**, land titles, and government schemes.

Women, in particular, bear a heavy burden—walking long distances to collect minor forest produce, fetch water, or seek medical care. Seasonal distress migration is common, and opportunities for stable income are limited.

The *Buchanania lanzan* forest regions in Sonbhadra reflect key principles of collective management, including defined community boundaries and informal norms for sustainable harvesting. Tribal communities in Rampur village, for instance, practice informal governance to monitor harvesting and ensure equity.

Recognizing Indigenous Knowledge Systems (IKS) is central, as tribal women possess intergenerational Knowledge of phenology, seed quality, and sustainable harvest practices. However, this expertise remains marginalized in formal policy and market narratives. Globally, there's a growing recognition that Indigenous Peoples and local communities are among the most effective stewards of biodiversity. Their knowledge systems and collective governance frameworks have inspired community-conserved areas and forest commons movements worldwide, echoing the principles of Elinor Ostrom.

In the Nagwa block, the hopes and livelihoods of many tribal families depend on the seasonal collection of the seeds. However, without proper systems or support, they are compelled to sell their precious harvest to intermediaries at low prices. Although government schemes like the Forest Rights Act, which aims to recognize forest rights and occupation in forest land in forest-dwelling communities, and Van Dhan Yojana, a scheme for value addition and marketing of NTFPs, exist to empower them, the reality is that most remain unaware of these initiatives, or they are poorly implemented.

This situation brings a mix of frustration and hope: frustration because the system often ignores these communities, but hope because change is possible. A sustainable, community-led approach could improve their lives and help protect the forests for the future. With the proper support and effort, these communities can grow stronger and better care for their natural resources.

The Ecological Context: Declining Tree Cover

Buchanania lanzan trees grow both in the forest and on private land. Local village committees typically manage access to these trees. However, the number of these trees is decreasing rapidly. A 2024 survey found only 4,880 Buchanania lanzan trees across the Vindhyan region, with just 4,305 in Sonbhadra. Now, only a few of these trees are found outside protected forest areas, and very few young ones are growing. This indicates that the forests are not regrowing as they should. The decline in tree numbers is a warning that urgent action is needed to protect and restore them.

The primary reasons for this decline are illegal tree cutting, insufficient replanting, forest fires, and land clearance for mining and industrial purposes. Furthermore, forest rights, land use, and the sale of forest products are often controlled by powerful groups, including forest departments, traders, and private companies. This creates an unfair system where local communities have little control. As a result, resources are taken from the area, but little is given back, keeping people in poverty and harming the environment.

Harvesting and Yield

The fruit typically ripens between April and June. Traditionally, people gather the raw pods from the forest; approximately 3-4 kilograms of raw pods are required to produce 1 kilogram of seeds (kernels). Harvesting seeds too early or carelessly can result in lower quality and lower prices. Most harvesting is done by hand, and a lack of proper processing facilities results in post-harvest losses. The declining number of properly grown and nurtured trees poses a threat to the future of this species in tribal areas.

The Market Trap: Exploitation in the Value Chain

Most local communities are disconnected from the broader market system. Approximately 75% of harvesters sell their seeds directly at the village level due to a lack of transportation and access to bigger markets. This forces them to sell to mediators at very low prices, resulting in a loss of the actual value of their hard work. India can produce a substantial amount of Buchanania lanzan, ranging from 7,000 to 10,000 metric tonnes annually. However, this potential is not fully used because there are no standard ways to grow, collect, or sell. Even in Chhattisgarh, the top-producing state, the lack of proper rules, support, and infrastructure makes it challenging to capitalize on this opportunity.

Government Schemes: Opportunities and Challenges

The government has launched multiple schemes and programs to support Buchanania lanzan cultivation and other minor forest-based products, allowing communities to take charge. These schemes are being launched to support tribal communities and strengthen the sustainable use of forest resources. However, in areas like Sonbhadra, the people who need help the most often miss out. This typically occurs due to low awareness, inadequate infrastructure, and ineffective implementation on the ground. Even well-known schemes like the Van Dhan Yojana and MGNREGA face challenges due to poor planning, limited funding, and inadequate implementation.

Case Study: Nagwa Block—Where Opportunity Meets Challenge

Location: Rampur village, Nagwa block, Sonbhadra district, Uttar Pradesh

Primary Stakeholders: Tribal harvesters, especially women and youth; village committees; local traders

Key Product: Buchanania lanzan seeds

Governance and Access Rights

In Rampur village, Buchanania lanzan is more than just a tree—it's a lifeline. For generations, local families have depended on collecting these seeds from the wild.

Traditional ecological knowledge of forest communities is crucial for regeneration but undervalued. Community-managed committees, elected annually, oversee the fair harvesting of Buchanania lanzan from the forests. The community reaches a consensus on when and how harvesting should happen. However, most villagers are unaware of formal government mechanisms or their rights under the Forest Rights Act (FRA).

The **FRA 2006** was enacted to correct the historical injustices faced by forest-dwelling Scheduled Tribes and other traditional forest dwellers. It legally recognizes their rights to access, manage, and govern forest land and resources, both for individual and community use. These rights often remain unrealised, leaving communities vulnerable to exclusion from the decision-making process and forest-based livelihoods due to limited awareness and implementation gaps.

Decline of the Resource and Conservation Concerns

Elders and traders in the community express concern about the dwindling number of trees and fear it might become a thing of the past.

"Earlier, our forests were full of Chironji trees. Today, only about 40% remain," Gopinath, a tribal farmer from Rampur.

If no action is taken, they fear that Chironji (*Buchanania lanzan*) might become a thing of the past, no longer available for their children or for maintaining ecological balance.

Economic Challenges and Infrastructure Gaps

The economic reality is that traders from nearby states buy raw seeds at INR 200 per kilogram and sell processed seeds at up to INR 3,000 in larger markets. The lack of local processing facilities exacerbates the problem, causing the seeds in storage to spoil.

The villagers see only a tiny fraction of this profit.

Power, Access, and Control over Forest Resources

Political and economic systems have a historic influence on how a community gathers and shares forest products. Research in 'commons' theory and political ecology reveals that control over forests typically rests with governments or private companies, which determine who may use the resources, when they can do so, and under what rules and terms.

Although policies such as Joint Forest Management (JFM) and **FRA** aim to give more control to local communities, in reality, people still face numerous barriers. Complicated rules and unequal sharing of benefits make it hard for communities to manage their forests fully. Access to forest resources is not just about laws—it's also influenced by social issues such as caste, gender, and class, which affect who can collect and earn from forest products.

In many cases, outside groups still hold the real power, while local people are excluded from decision-making in terms of how forests are used or protected. Indigenous knowledge systems, which are based on seasonal and sustainable use, are often ignored in formal governance, despite their long-standing ecological wisdom and expertise. Thus, forest harvest and community share are not just environmental or technical matters but fundamentally **political** and **structural**.

Grounding the Potential of *Buchanania lanzan*

Recent field studies across Chhattisgarh and Madhya Pradesh indicate that **collectors typically earn INR 80–INR 120 per kilogram** of unshelled seeds of *Buchanania lanzan*, while **processed kernels fetch up to INR 1,500–INR 1,800 per kilogram** in national markets. This apparent gap highlights the significant value lost at the village level due to the absence of local processing units and inadequate market access. If communities could run their processing units, they could earn three to four times more and keep that income within the village.

People in the community typically collect between 25 and 60 kg of seeds per household per season, depending on the health of the forest and local regulations in place. However, in forests that are not adequately managed, the amount collected is decreasing due to overharvesting and insufficient efforts to help the trees regenerate.

Comparatively, in areas where **Community Forest Resource (CFR) rights** have been secured and forest governance is community-led, sustainable harvesting protocols (like rotation cycles and seed dispersal practices) have helped maintain or even improve yields over time.

Case Reference: Field-Proven Success in Mendha Lekha

In Mendha Lekha, Maharashtra, Community Forest Resource (CFR)-based governance has enabled villagers to earn over INR 1 crore annually from bamboo and tendu leaves, with transparent profit-sharing and community reinvestment in health and education. This demonstrates that forest income can create a sustainable means for the locals.

Field Insight and Potential to Scale

A comparative analysis of NTFPs also reveals that *Buchanania lanzan* holds a higher per-unit value compared to Tendu or mahua. With the proper institutional and financial support, it can drive local economic transformation.

A Vision for Social Enterprise

Buchanania lanzan holds significant potential, which can strengthen the rural economy by reducing distress migration when forest-based livelihoods are secured. Its forests are shared resources that can lead to both ecological sustainability and economic resilience when governed collectively and equitably. Community support and ownership will promote tribal growth, as the communities are the traditional custodians of these resources and **hold generations of indigenous Knowledge about sustainable harvesting, Knowledge that is often undervalued in formal governance structures.** With institutional support such as training based on local ecological calendars, community-owned processing units, and promotion of value-added products, the trade can evolve into a sustainable, community-led enterprise.

Ensuring fair pricing, access to finance, and digital platforms co-managed by the community can reinforce equitable benefit-sharing. Making fair and shared decisions—based on local traditions and group responsibility—is significant for managing common forest resources. As one young collector put it, "If we get the chance to collect and sell in a bigger way, it could improve our lives. It would give us regular income and help us take care of the forests we rely on." This vision reflects how empowering local institutions and valuing traditional Knowledge can align conservation with community well-being.

Recommendations: Solutions for the Rural Enterprise of *Buchanania lanzan*

1. Community-Owned Enterprise Anchored in Forest Rights (CFR)

- Secure Community Forest Resource (CFR) titles for Gram Sabhas to establish collective ownership of the forest resources. The **Gram Sabha** is the assembly of all adult residents (18 years and older) of a village registered in the electoral rolls. It

functions as the most grassroots-level democratic body in India, playing a vital role in decentralized governance under the **Panchayati Raj system**. In tribal and forested areas, especially those covered under the **Fifth Schedule** of the Indian Constitution and the **Provisions of the Panchayats (Extension to the Scheduled Areas) Act, 1996 (PESA)**, the Gram Sabha holds expanded powers, including **decision-making on local governance, custodianship of forest resources, recognition of Individual and community forest rights, cultural and customary protection, and Consent for land acquisition and development projects**.

- Register a federation of SHGs and Gram Sabhas as the primary vehicle for the enterprise, ensuring transparency and accountability.
- Implement an equity model with profit redistribution to ensure fair distribution of wealth.

2. Decentralized, Ethical Wild-Harvesting Protocols

- Introduce village-level training in sustainable harvesting cycles, including tree marking and seed collection intervals, to promote responsible harvesting practices.
- Integrate Indigenous Knowledge with ecological guidelines.
- Implement a monitoring mechanism through tracking tree health and regenerative harvests.

3. Value Addition at Source: Women-led Micro-Enterprises

- Install solar-powered shelling and oil-extraction machines, operated by women SHGs.
- Develop a local product portfolio, packaged under a **community brand** that emphasizes forest-based, sustainable, and ethical sourcing.
- Provide skill-building modules.

4. Digital Traceability + Ethical Certification

- Implement QR code-linked traceability to link products with their harvest origin, SHG information, and sustainability practices.
- Obtain certifications such as PGS Organic, Forest Stewardship Council (FSC), or FairWild to gain premium market access and increase your competitive advantage.
- Build direct-to-consumer channels through e-commerce integration with marketplaces, forest federations, or brand partnerships.

To support the solutions above, a cross-sectoral approach is necessary that includes:

This approach should integrate ecological sustainability with socio-economic justice and the inclusion of forest communities. It involves the following three interconnected approaches:

Inclusive & Participatory Governance

The strength of forest management lies in the **active participation of village-level institutions, communities, and users**, such as Gram Sabhas and forest users. These institutions must be empowered with both legal authority and practical support to lead decision-making related to forest resources.

- **Transparency & Accountability:** When the community owns governance processes, decisions about harvesting, conservation, and benefit-sharing become more transparent and inclusive.
- **Cultural Legitimacy:** Recognizing and integrating traditional practices, such as those used by tribal communities in Sonbhadra and other tribal regions, reinforces legitimacy and ensures that governance aligns with local socio-cultural values.
- **Policy Support:** Strengthening institutional linkages between village institutions and government departments (forestry, tribal affairs, rural development) is critical to scaling participatory models.

Climate-Aligned & Regenerative Action

Community forest governance offers a natural pathway to **climate resilience**, especially in the face of increasing deforestation, biodiversity loss, and erratic climate patterns.

- **Commons-Based Regeneration:** Empowered communities can lead the regeneration of **degraded forest lands** through practices such as rotational harvesting, seed dispersal, and protection from overgrazing.
- **Biodiversity Conservation:** Local ecological Knowledge, especially of women and elders, plays a vital role in sustaining forest diversity and health.
- **Climate Co-Benefits:** Healthy forest ecosystems contribute to **carbon sequestration**, water regulation, and soil stability, making them critical allies in India's climate adaptation strategies.

Scalable & Replicable Models

To ensure a broader impact, the interventions must be **designed with replication in mind by local governance bodies in partnership with support organizations** and be adaptable to diverse contexts across India's forested landscapes.

- **Phased Rollout:** A structured framework allows pilots, such as those in Sonbhadra focusing on Buchanania Lanza, to be tested, refined, and scaled to include other **NTFPs**, including **Mahua, Tamarind, and Sal seeds**.
- **Ecosystem of Support:** Replication must be supported by an enabling ecosystem, including civil society, government schemes (such as the FRA, MGNREGA, and Van Dhan Yojana), financial institutions, and market access platforms.

- **Learning & Feedback Loops:** Continuous monitoring, community learning exchanges, and participatory evaluations ensure that models stay relevant and responsive to community needs.

Scope for Convergence of Programmes

The Buchanania lanzan enterprise has a unique opportunity to integrate multiple government schemes. By leveraging and integrating various government programmes, we can create a more effective and sustainable impact by supporting:

- **Van Dhan Yojana (VDY):** to establish Van Dhan Vikas Kendras (VDVKs) that promote value addition and marketing of the Buchanania lanzan seeds
- **Pradhan Mantri Van Dhan Yojana (PMVDY):** to organize tribal self-help groups (SHGs) into producer groups, providing skill training and market access.
- **Forest Rights Act (FRA):** to officially recognize community rights over forest resources, enabling collective harvesting rights.
- **MSP for Minor Forest Produce (MFP):** to ensure fair returns for collectors through regulated pricing.
- **National Rural Livelihoods Mission (NRLM):** to strengthen SHGs and Farmer Producers Organizations (FPOs) and facilitate financial services for enterprise development.
- **MGNREGA (Mahatma Gandhi National Rural Employment Guarantee Act):** to support agroforestry efforts, nursery development, and Chironji (Buchanania lanzan) plantation under natural resource management.
- **Start-up India Seed Fund Scheme (SISFS):** to provide financial backing for forest-based enterprises driven by youth or community groups.
- **Ministry of MSME Schemes:** to develop infrastructure, skills, and entrepreneurship capacity within local communities.

India's Community-Led Forest Enterprises

In states like Chhattisgarh and Madhya Pradesh, minor forest produce (MFP), including tendu leaves, mahua, sal seeds, and chironji, is procured through community-managed cooperatives, with pricing regulated through Minimum Support Price (MSP) schemes. To support and enable tribal forest entrepreneurship, this model involves Gram Sabha and SHGs as primary procurement agents, local processing units (e.g., oil pressing, drying, grading), federation cooperatives managing marketing and storage, and profit sharing with collectors, especially tribal families.

A tribal family earns between INR 20,000 and 50,000 a season from MFP (minor forest produce) collection, and thousands of women are employed in processing and grading units.

Some Relevant Models

The success of any model is based on a **community-centric approach**—they empower tribal and rural populations through collective ownership, fair compensation, capacity building, and sustainable resource use. Their achievements demonstrate how decentralised, inclusive models grounded in local ecosystems and knowledge systems can lead to lasting socio-economic transformation, particularly among marginalised forest-dependent communities. The **Chhattisgarh State Minor Forest Produce Cooperative Federation** and the **Van Dhan Yojana Clusters under TRIFED** are some examples where the idea lies in their ability to combine economic empowerment with traditional Knowledge and ecological sustainability.

- By using a three-tier cooperative model, the **Chhattisgarh Minor Forest Produce Federation** has emerged as one of India's largest MFP procurement systems, benefiting over **13.76 lakh minor forest produce collectors**. It provides MSP for over 60 forest produce items and distributes bonuses, ensuring income stability. The federation has also developed value-added centres, packaging units, and its retail brand, *Chhattisgarh Herbals*, which helps tribal produce reach national and international markets. Currently, there are approximately 10,300 collection centres (called Phads) of Tendu leaves spread across the state.
- **Van Dhan Yojana**, launched under **TRIFED**, has led to the creation of over **3000+ Van Dhan Vikas Kendras (VDVKs)** across the country, engaging more than **9 lakh tribal gatherers**. These clusters focus on value addition, skill-building, and enterprise development. Many tribal SHGs have begun producing packaged goods, including tamarind, wild honey, and herbal teas, which are now sold through e-commerce platforms and exhibitions.

Why This Model Works

When people feel invested in the outcomes and participate in decision-making, they take ownership of the process. They are more motivated to support and sustain initiatives in the long term. This approach is inherently inclusive and rooted in community participation. This model is gender-inclusive, as women take the lead in governance and operations. The model utilizes digital tools to enhance tracking and establish a strong brand while also being environmentally friendly. It supports seasonal harvesting and monitors forest regrowth. It also makes good financial sense, as it helps people earn more by adding value to the products. Most importantly, it is owned by the community and shaped with their full involvement from start to finish.

Policy and Scaling Implications

To replicate and scale the success of community-centric and forest enterprise models, targeted policy interventions and systemic support are essential. The following strategies can help mainstream these approaches across regions:

- Strengthen enforcement of the FRA and Panchayats (Extension to Scheduled Areas) Act (PESA) to protect and operationalize tribal forest rights.
- Integrate NTFP-based enterprises into local and district development plans to align them with state priorities and ensure convergence with welfare schemes.
- Expand MGNREGA allocations to support activities like plantation, nursery development, and sustainable forest management, generating both ecological and livelihood benefits.
- Empower women as entrepreneurs by promoting their leadership in SHGs and cooperatives involved in NTFP collection, processing, and marketing.
- Facilitate integration between SHGs and Farmer Producer Organisations (FPOs) to enhance financial inclusion, access to credit, and collective bargaining power.
- Incorporate tribal knowledge systems and biodiversity practices into conservation and climate resilience strategies to ensure culturally rooted and ecologically effective interventions.

Scaling the Local: Global Success Stories in Community Forest Economies

Across the world, forest-based economies have demonstrated that when local communities and Indigenous peoples are granted the rights, tools, and autonomy to manage their forests, they can establish enterprises that are both ecologically regenerative and economically transformative. In the Amazon, cooperatives like *COINACAPA* and *Candela Peru* are improving income while conserving forests, leveraging traditional Brazil nut cooperatives built on traditional harvesting knowledge to tap into organic and fair-trade markets. In West Africa, women-led shea butter enterprises, supported by firms like Savanna Fruits Company, have leveraged centuries-old processing methods to supply global cosmetic brands. Nepal's community forest user groups, represented by FECOFUN, not only reduced deforestation but also established enterprises, such as Himalayan Bio Trade Ltd, to market NTFPs. These examples show that when local communities have secure rights, the proper training, and access to fair markets, they develop lasting solutions, which is often the case. The Chironji-based model follows this approach, built on community forest rights, traditional Knowledge, and shared decision-making. It's a proven, eco-friendly way to earn a living that other communities can learn from and apply.

More investors and green finance groups are looking to support nature-based projects that are fair and inclusive. To help Chironji grow into an impactful, community-run business, it needs focused support through resources, training, and improved market connections. Seed capital is a game-changer to help pilot decentralised procurement and primary processing units at the village level. At the same time, technical assistance in organic certification, digital traceability, and enterprise training can strengthen both credibility and capacity. Establishing ethical market linkages can ensure fairer returns for forest dwellers.

Conclusion: From Extraction to Regeneration

The Chironji (*Buchanania lanzan*) value chain is more than just an income source—it's a reflection of indigenous knowledge, acknowledges gender roles and inclusion, and has strong community control. It shows that the future of forest economies isn't about extraction, but about

fair and collaborative ways of living with the forest, built on local governance, traditional wisdom, and collective decision-making.

It must be nurtured through responsive institutional support, public investment, and policies that recognize the role of Gram Sabhas, self-help groups, and community forest rights as key vehicles for empowerment and sustainability. With such systems in place, we can build a better and more sustainable world, empowering decision-makers and entrepreneurs to drive lasting change. By investing in their frontline innovations, we're investing in our collective future. These are not beneficiaries—they are decision-makers, entrepreneurs, and custodians of the commons.

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