

Market Challenges and Policy Perspectives in NTFP-Based Livelihoods in Odisha

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Abstract

Non-Timber Forest Products (NTFPs) constitute a vital component of livelihood security for tribal and forest-dependent communities in Odisha, providing income, food, and employment while reinforcing ecological and cultural sustainability. Despite their economic and social importance, the NTFP sector faces persistent market challenges that limit its potential to enhance tribal livelihoods. Key constraints include limited market access, dependence on intermediaries, price volatility, lack of storage and processing infrastructure, and inadequate value addition at the local level. The absence of transparent market mechanisms and information asymmetry further exacerbate the vulnerability of primary collectors. From a policy perspective, frameworks such as the Forest Rights Act (2006), the Panchayats (Extension to Scheduled Areas) Act (1996), and the National Forest Policy (1988) have recognized community rights and participatory management of forest resources. However, weak institutional implementation and fragmented coordination among agencies have constrained their effectiveness. Strengthening cooperatives, Self Help Groups, and community-based institutions can promote equitable market participation and sustainable forest management. It enhanced value chains, digital market linkages, and policy integration across sectors are essential to transform NTFP-based livelihoods into resilient and inclusive economic systems. This paper, based on secondary sources, critically examines these market challenges and policy perspectives within the context of Odisha's tribal regions.

Keyword: Non-Timber Forest Products (NTFPs), Sustainable Livelihoods, Market Access, Forest Policy, Scheduled Tribes, Odisha, India

Introduction:

Non-Timber Forest Products (NTFPs) form a vital component of rural and tribal economies across India, particularly in states like Odisha, where forests support both subsistence and income generation for millions of households. The NTFPs including products such as sal seeds, kendu leaves, mahua flowers, tamarind, and wild mushrooms contribute significantly to local food security, healthcare, and household economies (Panigrahi et al., 2019). Studies in the Mayurbhanj and Kandhamal districts of Odisha highlight that forest-based livelihoods are deeply intertwined with tribal culture and seasonal subsistence cycles, often serving as the primary or supplementary income for marginalized forest dwellers (Panda, 2024); (Kumar et al., 2022). For Scheduled Tribes (STs), NTFPs not only provide food and income but also shape cultural identity and traditional ecological knowledge systems (Tripathy, 2019). These products play a

crucial role in household resilience during lean agricultural seasons, while also forming part of social practices and rituals. In Odisha, women in tribal households are especially active in NTFP collection and marketing, making it a key driver of gender-inclusive economic participation (Jena, 2020). However, despite their socio-economic importance, NTFP markets remain characterized by limited access to fair pricing, exploitative middlemen, and inadequate policy implementation (Mishra, 2014). The Odisha NTFP Policy, 2000, and subsequent institutional measures like the Forest Rights Act (2006) and Panchayats (Extension to Scheduled Areas) Act (1996) were designed to strengthen forest-based livelihoods, but gaps persist in their effective operationalization (Tripathy, 2019). Strengthening market mechanisms, promoting value addition, and ensuring equitable benefit-sharing are essential for enhancing the sustainability of these livelihoods (Hazari et al., 2023).

Objectives:

This study aims to following objectives:

1. Identify and analyze the major market challenges faced by NTFP-dependent communities in Odisha, particularly among Scheduled Tribes.
2. Evaluate the effectiveness of existing policy interventions and institutional frameworks in promoting sustainable forest-based livelihoods.
3. Offer insights for designing inclusive and market-responsive policies that enhance income security while conserving ecological resources.

Review of Literature

The reviewed literature demonstrates that NTFPs hold immense potential for promoting sustainable, inclusive, and culturally embedded livelihoods in India's tribal regions. However, realizing this potential requires overcoming structural market challenges and enhancing policy coherence to ensure fair trade, ecological conservation, and social equity that have been presented thematically bellow.

NTFPs and Rural-Tribal Livelihood Dependence

Non-Timber Forest Products (NTFPs) constitute a vital livelihood source for rural and tribal communities in India, particularly in forested states like Odisha, Chhattisgarh, and Jharkhand. Research consistently highlights their role in supplementing household income, food security, and employment during lean agricultural seasons (Panigrahi et al., 2019). In Odisha's tribal districts such as Mayurbhanj and Kandhamal, over 60% of households engage in NTFP collection, making it an indispensable part of the subsistence economy (Panda, 2024). Studies further indicate that forest dependency strengthens social cohesion and the transmission of traditional ecological knowledge among tribal communities (Tripathy, 2019).

Gender Roles and Household Economics

Women play a central role in the NTFP economy particularly in collection, processing, and local marketing. In Odisha's Similipal region, women's cooperatives have enhanced bargaining power and improved household incomes through collective marketing and microenterprise models (Jena, 2020). Such gendered participation not only diversifies income sources but also strengthens food and nutritional security through the consumption of NTFPs like wild fruits and mushrooms (Kumar et al., 2022).

Market Structures and Value Chain Challenges

Despite their importance, NTFP markets remain largely informal and underdeveloped. Major constraints include price volatility, lack of value addition, poor storage facilities, and middlemen exploitation (Mishra,

2014). The absence of transparent pricing and weak institutional linkages between collectors and traders has led to low returns for primary producers. Studies show that the establishment of cooperatives and forest producer companies can improve access to formal markets, enhance product standardization, and promote equitable benefit-sharing (Hazari et al., 2023).

Policy and Institutional Frameworks

Policy frameworks governing NTFPs in India which include the Forest Rights Act (2006), the Panchayats (Extension to Scheduled Areas) Act (1996), and the Odisha NTFP Policy (2000) which aim to empower tribal communities with ownership rights and promote sustainable trade. However, their implementation often faces challenges due to bureaucratic inefficiencies, unclear tenure rights, and limited local participation in decision-making (Tripathy, 2019). Effective policy integration between forest management and livelihood programs remains limited, often resulting in resource degradation and income insecurity (Panigrahi et al., 2019).

Sustainable Livelihoods and Value Addition

Recent literature emphasizes the potential of sustainable NTFP management and value addition as pathways to rural development. Processing and branding of local NTFPs such as tamarind, honey, and sal leaf plates can significantly enhance income if supported by training, technology, and institutional support (Hazari et al., 2023). Integrating traditional knowledge with modern enterprise strategies can improve ecological sustainability and strengthen the resilience of tribal economies (Kumar et al., 2022).

Research Methods

The study adopts a qualitative and descriptive research design based exclusively on secondary data sources. The purpose is to analyze the prevailing market challenges and policy perspectives shaping Non-Timber Forest Product (NTFP)-based livelihoods in India, with a special focus on the state of Odisha. By synthesizing evidence from existing research, policy documents, and institutional reports, the study seeks to provide a comprehensive understanding of how current market structures and policy interventions affect forest-dependent tribal communities. The study relies on a broad range of secondary data collected from credible and peer-reviewed sources, including Academic literature, Government reports and policy documents, Institutional and NGO reports, Statistical data from the Forest Survey of India (FSI), Odisha Economic Survey, and National Sample Survey Office (NSSO) for contextual understanding of production trends, trade volumes, and market participation.

Market Challenges and in NTFPs based Livelihood

Non-Timber Forest Products (NTFPs) are a critical source of income and sustenance for forest-dependent tribal communities in Odisha. However, despite their potential for sustainable livelihood enhancement, several market-related challenges hinder the optimal benefits from NTFPs.

Exploitation by Middlemen and Informal Market Structures

The NTFP market in Odisha is predominantly informal and highly exploitative. Tribal collectors often sell their produce to middlemen at low prices due to lack of market access and information. The major benefits in the NTFP value chain are captured by traders rather than the primary producers (Mishra, 2014a), (Mishra, 2014b). This imbalance discourages equitable distribution of income and contributes to persistent poverty among forest-dependent communities.

Lack of Organized Market and Pricing Mechanism

The absence of organized market infrastructure and standardized pricing mechanisms results in fluctuating

market values for NTFPs. Many rural producers have limited bargaining power due to the perishable nature of products like mushrooms, honey, and medicinal plants (Kumar et al., 2022). This leads to inconsistent earnings and an unstable livelihood base.

Low Value Addition and Poor Processing Facilities

Most NTFPs in Odisha are sold in raw or semi-processed form, preventing local collectors from capturing higher market value. The lack of training, modern technology, and processing units limits the ability to undertake value addition, packaging, or branding, thereby restricting market competitiveness (Bandopadhyay & Palit, 2024).

Inadequate Institutional and Policy Support

Although the Forest Rights Act (2006) and Panchayats (Extension to Scheduled Areas) Act (1996) aim to empower tribal collectors, implementation remains weak and inconsistent. Institutional inefficiencies and lack of coordination among forest departments, cooperatives, and local governance bodies hinder effective market linkages (Tripathy, 2019).

Gender and Social Disparities

Women play a significant role in NTFP collection and sale in Odisha, but their contributions are undervalued and often unpaid. Despite being major actors in the NTFP value chain, they lack decision-making power and access to financial resources (Panigrahi et al., 2019). Addressing gender disparities is essential to improving household-level welfare and equitable participation.

Limited Market Intelligence and Infrastructure

The absence of reliable information on demand, supply, and pricing weakens the bargaining position of producers. Poor transportation networks and storage facilities further aggravate the problem by restricting access to distant, high-value markets (Kumar & Shaktiprasad, 2018).

Market challenges in Odisha's NTFP sector are primarily rooted in exploitative trade practices, lack of infrastructure, weak institutional mechanisms, and insufficient value addition. Strengthening cooperative models, ensuring fair pricing, promoting value chain integration, and empowering local communities—especially women—are critical to improving NTFP-based livelihoods in the state.

Policies Perspective and Institutional Frameworks

Non-timber forest products (NTFPs) play a critical role in rural livelihoods, yet policy and institutional frameworks often fail to fully support their sustainable management and commercialization. A comprehensive policy perspective on NTFPs must address tenure security, market access, value addition, and community participation to ensure both livelihood security and conservation outcomes.

Policies Perspectives

Current policy approaches to NTFPs have evolved from subsistence-oriented management to recognizing their potential for income generation and rural development. However, most national forest policies still emphasize timber production, leading to regulatory barriers for NTFP harvesting and trade (Mukherjee et al., 2020). Decentralized governance frameworks that empower local communities have been shown to improve NTFP management and equitable benefit-sharing (Mukherjee et al., 2020); however, their success depends on clear policy mandates and capacity-building at the local level.

Inclusive policy frameworks that integrate NTFPs into national forest strategies can enhance livelihood diversification while promoting sustainable forest use (Goel et al., 2016). Evidence suggests that aligning NTFP policies with poverty alleviation programs and rural enterprise promotion can generate significant

socio-economic benefits (Cavendish, 2021). Furthermore, establishing fair trade and certification systems enhances market transparency and increases producer incomes (Goel et al., 2016).

Institutional Frameworks

Institutional mechanisms governing NTFPs are often fragmented, involving multiple agencies with overlapping mandates. Strengthening institutional coordination among forestry departments, cooperatives, and rural development institutions is essential for coherent policy implementation (Laird et al., 2011). Community-based forest management (CBFM) and joint forest management (JFM) institutions have demonstrated positive outcomes in fostering participatory governance and equitable access to NTFPs (Mukherjee et al., 2020).

Integrating NTFP-based enterprises within local institutional frameworks—such as self-help groups, cooperatives, and producer companies—can improve market access and bargaining power for forest-dependent communities (Cavendish, 2021). Moreover, institutions that link traditional knowledge with scientific innovation support sustainable harvesting practices and product standardization, enabling access to niche markets (Laird et al., 2011)

Effective policy and institutional frameworks for NTFP-based livelihoods must balance livelihood enhancement with ecological sustainability. This requires coherent national policies, empowered local institutions, and supportive market mechanisms that ensure equitable participation and benefit-sharing among forest-dependent communities.

Recommendation

Based on the analysis of market challenges and policy dynamics facing non-timber forest product (NTFP) dependent communities in Odisha, we propose the following recommendations to strengthen livelihoods, improve equity, and ensure sustainability:

- 1. Strengthen Market Linkages and Infrastructure:** Develop and support local aggregation centers (e.g., collection hubs, co-operative storage) in tribal areas to reduce transaction costs, minimize dependence on exploitative intermediaries, and improve market access. Invest in transportation infrastructure (roads, cold storage, drying facilities) to reduce post-harvest losses and allow producers to access better-paying markets. Encourage value-addition at the local level (e.g., processing, packaging) to increase income, improve product quality, and provide resilience against volatile raw NTFP prices.
- 2. Promote Collective Organization for Producers:** Facilitate the formation and empowerment of producer cooperatives, Self Help Groups, and forest-based community organizations to enhance collective bargaining power. Support capacity building (training, extension) on business management, quality control, certification, and market intelligence, so that forest-dependent communities can better negotiate with traders and buyers.
- 3. Policy Reforms and Institutional Strengthening:** Reform procurement and payment mechanisms to ensure timely and fair payments to primary gatherers; reduce delays that force distress sales. Evidence from Odisha's commercialisation history shows that inefficient state agencies and exploitative intermediaries undermine sustainable livelihoods. Decentralize NTFP resource governance more deeply to Gram Sabhas (village assemblies), ensuring that benefits flow directly to communities. Studies indicate that despite devolved procurement rights, intermediaries often profit more than tribal collectors. Integrate sustainable-harvesting norms into policy design. Encourage community-based

forest management that combines traditional ecological knowledge and scientifically informed practices to maintain resource health and long-term income.

4. **Market Information Systems:** Develop robust price-discovery mechanisms (e.g., digital platforms, mobile-based apps) that allow NTFP gatherers to access real-time market prices, demand signals, and quality standards. This transparency can reduce information asymmetries and exploitation by middlemen. Commission market research to identify viable value chains for NTFPs from Odisha particularly those with high growth potential (e.g., medicinal plants, edible forest produce) and communicate these opportunities to local communities.
5. **Sustainable Harvesting and Conservation Incentives:** Provide incentives (subsidies, grants) for sustainable harvesting, non-destructive collection techniques, and regeneration efforts to ensure ecological sustainability of key NTFP resources. Unsustainable practices, driven by rising demand, threaten resource base. Promote community-based monitoring and participatory resource management to ensure accountability and long-term stewardship of NTFP species.
6. **Financial and Technical Support:** Facilitate access to credit and affordable finance for forest-dependent communities to invest in enterprise development (e.g., microenterprises for NTFP processing). Provide training in relevant technologies, such as post-harvest drying, storage, or preservation. For example, adoption of modern drying technologies can significantly reduce losses and improve marketable quality. Encourage partnerships between government agencies, NGOs, and private sector to support value chain development, technical training, and market facilitation.
7. **Policy-Level Monitoring and Evaluation:** Establish mechanisms to monitor the impact of NTFP policies on forest livelihoods, including gender-disaggregated income data, to ensure that interventions are equitable and effective. Design adaptive policy frameworks that can respond to climate variability, market shocks (e.g., price volatility), and ecological change, ensuring that forest-based livelihoods remain resilient.

Conclusion

This study underscores that although NTFPs are a critical component of forest-based livelihoods in Odisha — especially for tribal and forest-dependent communities — they are beset by significant market and institutional challenges. These include weak market infrastructure, exploitative intermediaries, information asymmetries, unsustainable harvesting practices, and policy gaps. Without targeted interventions, the full livelihood potential of NTFPs will remain unrealized, and benefits will continue to be disproportionately captured by intermediaries rather than local gatherers.

However, the policy landscape also presents promising avenues. Through stronger community organization, improved infrastructure, sustainable resource governance, and better-integrated market systems, NTFP-based value chains can be made more equitable, efficient, and resilient. By aligning state support (in terms of infrastructure, finance, and regulatory frameworks) with community-based institutions, it is possible to foster sustainable livelihoods while simultaneously conserving Odisha's rich forest ecosystems.

In sum, bridging the gap between policy intent and on-ground reality will require harmonized efforts: enabling markets, empowering communities, and embedding ecological sustainability at every step. If carefully implemented, such strategies can transform NTFP-based livelihoods in Odisha into a model of inclusive, green economic development.

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