



# Role Of Non Timber Forest Products In Sustainable Livelihood Security Among Tribal Communities In Nuapada District Of Odisha

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## Abstract

The Non-Timber Forest Product (NTFP) plays an important role in the livelihood of tribal communities in India. The NTFP is regarded as an important source of sustainable tribal livelihoods for reducing poverty and promoting rural economic development. In this context, the study focuses on assessing the contribution of NTFP in maintaining sustainable livelihood security of tribal community of Nuapada district, in Odisha which comes under KBK region has been selected to conduct the study. The results show that the NTFPs are the major sources of food and livelihood security for tribal communities living in and around forests. The significance of the NTFP plays a major role in tribal livelihood and supports rural economics. The tribal livelihood system is influenced by ecological, historical, and cultural factors, and it varies greatly between regions and among ethnic groups. Further, the illegal commercialization of forest products by forest mafias and forest products traders is creating major challenges for the tribal communities, which primarily depend on forests to maintain their livelihoods. Through a variety of socio-economic services, including sources of income for households, general potential, a safety net or insurance in times of disasters, the preservation of spirituality and cultural heritage, and financial savings by households. NTFPs significantly contribute to raising living standards.

Key Words: livelihood, rural economy, food security

## Introduction

Non-Timber Forest Products (NTFPs) play a pivotal role in sustaining the livelihoods of tribal communities across India. For millions of tribal households residing in and around forests, NTFPs serve as a crucial source of food, income, and livelihood security. These resources ranging from wild fruits, leaves, resins, and honey to medicinal plants and bamboo are harvested seasonally and contribute significantly to the rural economy. The collection and trade of NTFPs represent not only a primary means of subsistence but also an important income-generating activity, particularly in tribal-dominated and forest-fringe areas. NTFPs hold immense socio-economic value, especially in tribal regions where poverty levels are high and access to formal employment is limited. A majority of tribal families fall Below Poverty Line (BPL), and while agriculture remains a primary occupation, dependence on forests for daily survival is deeply entrenched. For many, NTFPs are second only to agriculture as a livelihood source. Tribal women, in

particular, play a central role in the collection, processing, and marketing of NTFPs, thus enhancing their own economic status and contributing to household food security. Beyond economic benefits, NTFPs have deep cultural and ecological significance. Forests are more than a resource base for tribals which are a way of life. Tribal communities are born, raised, and live in harmony with the forests that surround them. Their identity, customs, and traditional knowledge are intricately linked to forest ecosystems. Forests not only provide food, fuel, and shelter but also serve as spiritual and cultural anchors. This close relationship makes tribal communities natural custodians of forest biodiversity and sustainable harvesting practices.

However, despite the value NTFPs offer, tribal collectors face several challenges. Exploitation by local traders, lack of market access, improper pricing, and absence of institutional support often undermine the economic potential of these resources. Many tribals are compelled to sell their forest produce at meager prices, falling prey to unfair trade practices and middlemen. These barriers limit the transformative potential of NTFPs in reducing poverty and enhancing livelihoods. In addition to their social and economic dimensions, NTFPs contribute to environmental sustainability. Forests, as renewable natural resources, play a key role in climate regulation, biodiversity conservation, and ecosystem services. By encouraging sustainable collection and forest stewardship, NTFP-based livelihoods also align with broader environmental goals.

Traditionally, NTFPs were collected mainly for domestic use, but over time, their commercial value has increased. Today, tribal households depend on a wide array of forest products such as bamboo, lac, sal leaves, tendu leaves, medicinal herbs, gums, oils, and honey. They are not only for consumption but also for income generation. As such, NTFPs form both “value-in-use” and “value-in-exchange” components of rural tribal economies. In this context, the present study aims to examine the role of Non-Timber Forest Products in securing sustainable livelihoods among tribal communities, with particular focus on food security, economic empowerment, gender roles, and policy gaps. By exploring the socio-economic dependence on NTFPs, the study also seeks to offer insights into how these resources can be better integrated into development planning for tribal upliftment and forest conservation.

## Literature Review

Non-Timber Forest Products (NTFPs) form an essential pillar of livelihood, food security, culture, and economic resilience among tribal communities in India. A wide body of literature affirms their role in ensuring income security, food sufficiency, and ecological sustainability.

Saikia et al. (2017) documented 47 plant species used by tribal groups in Assam's Upper Brahmaputra Valley for daily needs and livelihood enhancement, underscoring deep-rooted ethnobotanical knowledge. NTFPs significantly contribute to rural and tribal livelihoods by supplementing income and acting as subsistence resources.

Dinda et al., (2020) revealed that while tribal communities depend heavily on NTFPs, most are forced to sell their products to intermediaries due to a lack of knowledge on value addition and formal markets, commercialization and market linkages remain key challenges.

Bhavani et al. (2024) emphasize that NTFPs contribute over 50% of household income for many tribal families in Andhra Pradesh, with marketing reforms urgently needed to improve earnings. Similarly, Mohan et al. (2017) highlighted that nearly 70% of forest-based export income originates from NTFPs, showing their untapped economic potential.

Ecological perspectives were examined by Rasul et al. (2008), who stressed the need for sustainable harvesting practices due to overexploitation driven by commercial demand. Their policy review suggests integrated forest management to balance livelihood needs and biodiversity conservation.

In West Bengal, field studies show that NTFPs act as critical livelihood buffers in areas with limited agricultural potential. Shit & Pati (2012) and Dolui et al. (2014) both observed high dependency on NTFPs for food, fodder, medicine, and firewood in lateritic soil zones

Gupta et al. (2017) provided quantitative evidence from Chhattisgarh, showing how tribal families collect and consume a wide variety of forest products, with income peaking during mahua and tendu collection seasons

In Odisha, Behera (2009) reported that NTFPs accounted for 23% of total tribal household income in Kandhamal, particularly during lean agricultural seasons. He emphasized the need for forest governance reforms to support tribal rights and forest access. Finally, social analyses such as the one by Abhishek & Parayil (2024) in Kerala's Wayanad highlight the generational gap in NTFP engagement. While older tribal generations continue to rely on forests, younger members are disengaging, raising concerns over cultural continuity and sustainable harvesting knowledge.

## Methodology

This study was conducted in Nuapada district of Odisha, which forms part of the KBK (Kalahandi-Balangir-Koraput) region, an area recognized for its persistent socio-economic challenges and a high concentration of Scheduled Tribe (ST) populations. The district's demographic and ecological diversity makes it a compelling case for examining the contribution of Non-Timber Forest Products (NTFPs) to tribal livelihood security. A descriptive and exploratory research design was employed to capture the socio-economic and cultural dimensions of NTFP dependence among tribal communities. The study utilized both primary and secondary data sources. Primary data were collected through field surveys using a semi-structured questionnaire administered to 150 randomly selected tribal households across three blocks: Komana, Sinapali, and Boden. These blocks were purposively chosen due to their high forest cover and significant tribal population. To enrich the data, key informant interviews (KIIs) were conducted with forest officials and local NTFP traders. Additionally, focus group discussions (FGDs) with community elders and women's groups were held to gather qualitative insights into seasonal collection patterns, gender roles, cultural significance, and challenges related to access and trade of NTFPs. Secondary data were gathered from official sources such as government reports, census data, district handbooks, and relevant scholarly publications on tribal livelihoods and forest-based economies. Quantitative data were analyzed using descriptive statistics, including frequency distributions and percentage analysis, to assess income levels, seasonal availability, and product dependency. Qualitative responses were interpreted through thematic content analysis, allowing for the identification of recurring patterns in cultural attachment, ecological knowledge, and livelihood strategies. Ethical protocols were strictly followed. Informed consent was obtained from all participants, and confidentiality was ensured throughout the study. The use of data triangulation through surveys, interviews, and secondary sources enhanced the validity and reliability of the findings.

The study focused on major NTFPs including mahua flowers, tendu leaves, sal seeds, bamboo, and medicinal plants, which are essential for both economic sustenance and cultural practices. The tribal communities involved in the study Chukotia Bhunjia, Banjara, Binjal, Dal, Gond, Kandha, Mirdha, Soura, and Sabar are deeply rooted in the forest ecosystem and rely on its resources for survival and identity. By exploring their dependence on forest resources and the associated challenges, this study offers valuable insights into the intersection of natural resource utilization, tribal well-being, and policy frameworks in Nuapada.

## Significant of the Study

In India, agriculture is widely recognized as a major source of livelihood across all sections of society. However, for Scheduled Tribes (STs), forests serve as a more integral component of their socio-economic and cultural existence. Tribal communities are deeply connected to forests not only for subsistence and consumption but also for income generation and financial independence, particularly through the collection and trade of Non-Timber Forest Products (NTFPs). Forests and tribal life are interdependent in ways that go beyond economics. The socio-cultural identity, traditions, and survival strategies of tribal

communities are intricately tied to forest ecosystems. Most tribal populations inhabit regions characterized by unique ecological and geo-climatic conditions, and their livelihood systems are shaped by historical, ecological, and cultural factors. These systems differ significantly across regions and ethnic groups. Traditionally, tribals have maintained a peaceful and symbiotic relationship with the forest, collecting NTFPs primarily to meet their daily and seasonal subsistence needs.

Over time, forest governance policies have imposed significant restrictions on tribal access to forest resources. Under the pretext of environmental conservation and economic development, vast areas of forest land have been diverted for non-forest purposes, often disregarding the negative consequences for the indigenous communities who rely on them. Such displacement and resource alienation have jeopardized the livelihood security of tribals, who find their access to customary resources increasingly limited. Further complicating this situation is the rise of illegal commercialization and exploitation of NTFPs by intermediaries and forest mafias. These actors profit from forest produce while marginalizing the primary collectors—the tribal households. Although NTFP trading is often underestimated or viewed as peripheral economic activity, it plays a central role in the rural economy of tribal regions. NTFPs contribute to livelihoods by offering income, employment, and resilience in times of stress such as drought or crop failure. They also preserve traditional knowledge systems, cultural practices, and spiritual values unique to tribal communities.

Despite their immense potential, NTFPs are under threat due to overexploitation, policy mismanagement, and environmental degradation. As a result, many forest-based tribal communities are experiencing a rapid decline in both the availability of NTFPs and their traditional sources of livelihood. In this context, the present study aims to assess the role and contribution of Non-Timber Forest Products in sustaining the livelihoods of tribal communities, with a focus on evaluating the ecological, economic, and socio-cultural dimensions of NTFP-based subsistence and income strategies.

### Objectives of the Study

The primary aim of this study is to examine the contribution of Non-Timber Forest Products (NTFPs) to the sustainable livelihood security of tribal communities, with a specific focus on their socio-economic, ecological, and cultural dimensions. The key objectives are:

1. To identify the major types of NTFPs collected and utilized by tribal communities.
2. To analyze the role of NTFPs in supporting income generation and livelihood resilience among Scheduled Tribes.
3. To assess the challenges faced by tribal communities in accessing, managing, and marketing NTFPs.
4. To examine the socio-cultural significance of NTFPs in the everyday lives of tribal households.
5. To suggest policy interventions for enhancing NTFP-based sustainable livelihood strategies.

### Results

The study revealed that Non-Timber Forest Products (NTFPs) play a central role in sustaining the livelihoods of Scheduled Tribes in Nuapada district. Among the 150 tribal households surveyed, 82% reported NTFPs as their second most important income source after subsistence agriculture. Commonly collected products included mahua flowers, tendu leaves, sal seeds, bamboo, and various medicinal herbs, primarily gathered during lean agricultural seasons. These resources were found to supplement food consumption and generate income during economically vulnerable periods. The average annual income from NTFPs ranged between ₹7,000 and ₹12,000 per household, varying based on household labor availability and seasonal resource yield. A gender-based pattern emerged: women—particularly from the Bhunjia and Kandha communities were primarily responsible for collecting and processing NTFPs such as sal leaves and mahua flowers. Their participation contributed significantly to household food security and facilitated limited but meaningful financial autonomy.

Despite their importance, NTFP commercialization was found to be disorganized and informal. Over 70% of the respondents sold their produce through local middlemen or traders, often at unregulated and unfair prices. The absence of structured markets, value addition infrastructure, and institutional support limited income potential. Additionally, restricted forest access due to policy constraints and lack of forest tenure rights were cited as significant challenges. Respondents also reported concerns over declining forest cover and increased climate variability, which have further jeopardized their forest-dependent livelihoods.

## Discussion

These findings reinforce existing literature suggesting that NTFPs contribute between 30% to 50% of tribal household income, acting as vital safety nets during periods of crop failure, drought, or seasonal unemployment (e.g., Behera, 2009; Gupta et al., 2017). The pattern observed in Nuapada district mirrors trends in other tribal-dominated regions such as Kandhamal (Odisha) and Bastar (Chhattisgarh), where forest products serve as both subsistence resources and income generators. A key insight from the study is the central role of tribal women in NTFP-based economies. Their active involvement in collection, processing, and occasional marketing strengthens household food security, supports gender empowerment, and connects traditional knowledge to sustainable practices. However, their contributions remain underrecognized in policy and forest governance. The lack of formal market access and the dominance of intermediaries reflect structural inefficiencies. This informal trade system leads to exploitation and income suppression, even though the tribal producers perform the most labor-intensive roles. Additionally, restrictive forest policies although framed around conservation—often alienate the tribal communities from their customary rights, thus contradicting the goals of sustainable and inclusive development.

Cultural dimensions also emerged strongly in the study. NTFPs like mahua and honey are not just economic commodities; they are integral to seasonal rituals, local diets, and social customs, emphasizing the multifaceted value of forest resources.

To enhance the sustainable development potential of NTFPs, it is essential to:

- Strengthen community forest rights through legal enforcement.
- Promote capacity-building and training in value addition and sustainable harvesting.
- Facilitate cooperative marketing systems to bypass exploitative intermediaries.
- Recognize and integrate traditional ecological knowledge into forest management and policy planning.

By addressing these structural gaps, NTFPs can shift from being marginal livelihood activities to powerful tools for poverty reduction, cultural preservation, gender empowerment, and environmental sustainability in tribal regions.

## Conclusion

The present study highlights the vital role that Non-Timber Forest Products (NTFPs) play in sustaining the livelihoods of tribal communities in Nuapada district, Odisha. With nearly 50% of the district under forest cover and over one-third of its population comprising Scheduled Tribes, the dependency on forest resources is both deep-rooted and indispensable. NTFPs serve not only as sources of food, fuel, medicine, and household materials but also as critical components of income generation, cultural identity, and social resilience. Despite their significance, the livelihoods of tribal communities are increasingly under threat due to multiple factors: restricted access to forests, commercial exploitation by intermediaries, environmental degradation, and inadequate institutional support. Government policies, though aimed at forest conservation, often overlook the socio-economic realities and traditional rights of indigenous communities. Moreover, seasonal and market vulnerabilities continue to limit the economic potential of NTFPs. To ensure long-term sustainability, a multidimensional approach is required one that integrates

tribal rights, ecological conservation, fair market mechanisms, and value-addition strategies. Strengthening community-based forest governance, expanding awareness, enhancing women's participation, and establishing transparent procurement and marketing systems are key steps toward making NTFPs a viable and sustainable livelihood option. In conclusion, NTFPs are not just forest produce; they are lifelines for tribal communities. Recognizing, protecting, and empowering these traditional systems is essential for inclusive development, environmental sustainability, and the cultural survival of India's tribal heritage.

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