International Journal on Science and Technology (IJSAT)
E-ISSN: 2229-7677 ● Website: www.ijsat.org ● Email: editor@ijsat.org

Non-Timber Forest Products and Their Role in Sustaining Rural and Tribal Livelihoods in Jharkhand

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Abstract

Non timber forest products (NTFPs) are defined as biological resources of plant and animal origin, harvested from natural forests, plantations, wooded land, and trees outside forests (FAO). This paper is an attempt to examines the role of Non-Timber Forest Products (NTFPs) in sustaining rural and tribal livelihoods in Jharkhand. The study employs a descriptive and analytical research design, using secondary data to explore the socio-economic significance, challenges, and opportunities associated with NTFPs. Key NTFPs identified in Jharkhand include Lac, Sal seeds, Sal leaves, Mahua flowers, Bamboo shoots, Karanj, Kusum, Amla, Tamarind, Palas (Tesuphool), Chironji, Harra, Kendu leaves, Honey, and Dori (Mahua seed oil). The study has been categorized the contributions of NTFPs into two dimensions: *first,* socio-economic significance for forest-dependent and tribal communities- consisting livelihood security, household income, poverty reduction, food security, cultural and traditional importance, and women's empowerment; and *second,* economic impact on the state, including contribution to state revenue, employment generation, rural entrepreneurship, trade and export, and sustainable development. Despite their importance, NTFPs face challenges such as market inefficiencies, inadequate value addition and processing facilities, limited business and marketing skills, and unsustainable harvesting practices. The findings highlight the need for policy support, capacity building, and sustainable management strategies to enhance the economic and social benefits of NTFPs in Jharkhand.

Keywords: Jharkhand, Livelihood, NTFPs, Rural economy, Tribal

1. Introduction

Forests are the heart of the human life cycle, playing a crucial role in maintaining ecological balance and supporting livelihoods. It not only provides vital air and attracts rainfall but also serves as valuable sources of minerals and a variety of forest products. These forest products are broadly categorized into timber and non-timber forest products (NTFPs). In this context, the present study focuses on non-timber forest products, with special reference to their significance in the state of Jharkhand.

Non-timber forest products (NTFPs) are defined as "biological resources of plant and animal origin, harvested from natural forests, plantations, wooded land, and trees outside forests" (Food and Agriculture Organisation). On the basis of economic, social, and cultural context, the role of NTFPs varies across

regions. In developed countries, NTFPs are primarily used for cultural and recreational purposes, biodiversity conservation, and the promotion of rural economic development (Suleiman et al. (2017)). While in developing countries NTFPs are mostly used as a vital resource for subsistence, household consumption, and income generation (Endamana et al. (2016)). Therefore, in developing nations like India, NTFPs are considered as a safety net that helps to fill the gap due to a shortfall in agricultural production or other forms of emergencies.

Several studies have highlighted that the value of NTFPs per hectare may be higher than that of timber products globally [Mugido and Shackleton (2019), Steele et al. (2015) and Angelsen et al. (2014)], but these findings have not received the attention they deserve for NTFP conservation and management [Suleiman et al. (2017)]. This gap is exactly why I took up this study. Therefore, this study is an attempt to draw the attention of the role of NTFPs in sustaining the livelihoods of rural and tribal people, and the challenges they face, with special reference to the state of Jharkhand.

Now there can be a pertinent question arises: why Jharkhand? Jharkhand has been chosen as the focus of this study for two fundamental reasons. *First*, the state is endowed with rich forest resources; and *second*, a high level of poverty exists in Jharkhand. As per the Multidimensional Poverty Index (2021), 42.16 percent of the population of Jharkhand lives below the poverty line. In this context, forests play an important role in shaping the economic, social and cultural lives of its inhabitants by supporting rural and tribal livelihoods, ensuring food security, and generating direct and indirect employment opportunities. Therefore, there exists a strong dependence of rural and tribal communities on forest-based livelihoods.

Jharkhand has been blessed with plentiful natural resources. It is one of the most forested states of India, about one-third of its geographical area (29.81%) is covered by forests, which provides a diverse range of NTFPs such as sal leaves and seeds, lac, mahua flowers, kendu leaves, honey, tasar, and various medicinal plants. The state is also characterized by a significant tribal and rural population (27% and 76% respectively), many of whom significantly depend on NTFPs for their food, income, and cultural practices. The district-wise forest cover and the proportion of Scheduled Tribe (ST) and rural populations in Jharkhand are presented in Table1. Furthermore, during the period of agricultural shortfall, seasonal unemployment, or broader economic uncertainty, NTFPs serve as an important safety net for the households. Therefore, examining the role of NTFPs in Jharkhand provides critical insights into their contribution to sustainable livelihoods, poverty alleviation, and the broader trajectory of rural economic development.

Table.1 District Wise Forest Cover and Share of ST and Rural Population of Jharkhand

District	Geographical Area	Total Forest Cover	% of GA	ST Population	% of ST Population	% of Rural Population
Bokaro	2883	572.41	19.85	255626	12.40	52.30
Chatra	3718	1799.39	48.40	45563	4.37	94.00
Deoghar	2477	205.66	8.30	180962	12.13	82.70
Dhanbad	2040	221.20	10.84	233119	8.68	41.90
Dumka	3761	588.84	15.66	571077	43.22	93.20
Garhwa	4093	1455.60	35.56	205874	15.56	94.70

Giridih	4962	900.20	18.14	238188	9.74	91.50
Godda	2266	430.48	19.00	279208	21.26	95.10
Gumla	5360	1455.41	27.15	706754	68.94	93.70
Hazaribagh	3555	1641.54	46.18	121768	7.02	84.10
Jamtara	1811	107.49	5.94	240489	30.40	90.40
Khunti	2535	951.71	37.54	389626	73.25	91.50
Koderma	2540	695.74	27.39	6903	0.96	80.30
Latehar	4291	2383.20	55.54	331096	45.54	92.90
Lohardaga	1502	503.17	33.50	262734	56.89	87.60
Pakur	1811	286.13	15.80	379054	42.10	92.50
Palamu	4393	1217.92	27.72	181208	9.34	88.30
Pashchimi Singhbhm	7224	3377.69	46.76	1011296	67.31	85.50
Purbi Singhbum	3562	1068.98	30.01	653923	28.51	44.40
Ramgarh	1341	341.56	25.47	201166	21.19	55.90
Ranchi	5097	1140.46	22.38	1042016	35.76	56.90
Sahebganj	2063	592.45	28.72	308343	26.80	86.10
Saraikela Kharsawan	2657	582.04	21.91	374642	35.18	75.70
Simdega	3774	1246.51	33.03	424407	70.78	92.80
Grand Total	79716	23765.78	29.81	8645042	26.21	75.95

Source: ISFR (2023) and Census 2011

2. Review of Literature

Several research works have examined the significance of NTFPs in the economy, highlighting their role in supporting livelihoods and reducing poverty by providing opportunities for income generation. In the context of South Africa Paumgarten & Shackleton's study (2011) highlights that NTFPs function as important coping mechanisms, particularly for poorer and remote households. It provides low-cost and accessible livelihood options. While wealthier households rely less on NTFPs, they still use them for cost-saving and substitution, underscoring the role of NTFPs as a safety net across socio-economic groups. In assessing the income from NTFPs in rural communities in Cameroon, Ghana and Nigeria Malleson et al. (2014) found that the poorest households living in remote forested regions tend to depend most heavily on NTFP-based income, as it is one of only a few opportunities for income generation in such locations. Moreover, NTFP-related activities are generally perceived as low-risk and easily accessible livelihood options, which require minimal capital investment or specialized skills and can be combined with smallholder farming and traditional domestic roles.

In Indian Context, Rasul et. al (2008), highlighted that collecting NTFPs creates employment that reduces poverty in many rural communities in India by providing 25 percent of the income of the rural population. Similarly, Ghosal's study (2011) on Purulia, Bankura and West Midnapur districts of West Bengal shows

that the systematic harvesting of NTFPs will not only increase employment opportunities among forest dwellers, but also reduce their overdependence on timber collection. Lepcha et al (2018) found that the indigenous communities of Jaldapara National Park rely on NTFPs for their daily, sociocultural, and cash requirements. Furthermore, NTFPs also provide a safety net during scarcity. Heubes et al. (2012) mentioned that NTFPs provide protection against the adverse effects of climate change.

In Jharkhand perspective, Prasad and Chauhan's (2020) study tries to explore the range of livelihood contributions of NTFPs. They found that earning a handsome amount of income from NTFPs ranges from 33 to 59 percent. Singh and Quli (2011) identified some major constraints in the NTFP sector of Jharkhand, including unorganized trade, lack of proper storage and value-added facilities and heavy dependence on middlemen for marketing. Further, they observed a gap between the practices and the knowledge levels of local communities, which often results in low economic returns from NTFPs.

Many scholars have also found that the commercial harvesting of NTFPs is not always sustainable due to overexploitation. Talukdar et al. (2021) work tried to understand the important NTFPs in the Patharia Hills Reserve Forest (Northeast, India); unexpectedly, they found that unsustainable harvesting of NTFPs from PHRF was the root cause of species decline. Hence, they recommend that the illegal and unsustainable way of harvesting NTFPs should be stopped and for reduce poverty among rural people, sustainable harvesting of NTFPs under government supervision is recommended.

3. Objective of the Study

The main objective of this paper is to examine the role of Non-Timber Forest Products in sustaining rural and tribal livelihoods in Jharkhand. To fulfil this broad objective, some other objectives have been framed.

1. To identify the major NTFPs of Jharkhand and their availability.
2. To examine the socio-economic significance of NTFPs in forest-dependent rural and tribal households of Jharkhand.
3. To examine the contribution of NTFPs to the rural economy of Jharkhand.
4. To highlight the challenges and opportunities in NTFP-based livelihood.
5. To suggest measures for income enhancement and sustainable use of NTFPs.

4. Research Design and Methodology

Research Design

The study is descriptive and analytical in nature. The study adopts a descriptive research design to explain the socio-economic significance of NTFPs, their contribution to Jharkhand's economy and the associated challenges and opportunities. While the analytical approach has been used to interpret data gathered from multiple secondary sources.

Data Source

The study is primarily based on secondary data, which has been collected from various sources such as government publications, state-level reports, institutional reports, research articles and some international reports.

Data Analysis

Data has been compiled and organized thematically under production, harvesting, livelihood dependence, marketing, challenges, and policy interventions. A comparative analysis has been undertaken to highlight the contribution of NTFPs to rural income, employment generation, and socio-economic development in Jharkhand.

Scope of the Study

The area of the study is the Indian State of Jharkhand, where the total Forest Cover of the state is 29.81% of the geographical area of the state (ISFR - 2023), and a large proportion of the rural and tribal population is highly dependent on forests for their subsistence and livelihood. The study considers major NTFPs of Jharkand, including lac, tasar silk, tendu leaves, mahua flowers, sal seeds and leaves, honey, bamboo, and medicinal plants.

Limitations of the Study

- The study is based on secondary data; hence there is a lack of primary evidence from households or communities engaged in NTFP collection and marketing.
- Field-level variations in practices, income dependency, and challenges across different districts of Jharkhand may not be fully captured.
- Availability of recent statistical data on NTFP income and livelihood contribution in Jharkhand is limited and scattered across different reports, making comprehensive analysis challenging.

5. Major NTFPs of Jharkhand

The forests of Jharkhand are endowed with a rich diversity of Non-Timber Forest Products, which play a crucial role in the life of rural and tribal communities. These products range from food items and medicinal plants to raw materials used in domestic and industrial activities. The diversity of NTFPs in the state is not only attributed to its tropical deciduous forests and favorable climatic conditions, but also to its close association with traditional knowledge systems. The major NTFPs in Jharkhand, alongside their annual production, value-added products, and focus area, and availability season, are shown in Table 2.

Table:2 Major Non-timber Forest Products in Jharkhand

NTFPs	Annual Production (approx. in MT)	Value Added Product	Focus Area	Availability Season
Sal Seeds	More than 100000M.T	Oil / Feed	Gumla, Simdega, Chaibasa, Lohardaga, Khunti	April-June
Sal Leaves	NA	plates	Gumla, Simdega, Chaibasa, Lohardaga, Khunti	All season except summer
Mahua Flower	More than 100000 M.T	Wine /Medicine	Gumla, Simdega, Chaibasa, Lohardaga, Latehar, Palamu, Garhwa, Khunti (most area of Jharkhand)	March–May

Imli (Tamarind)	50000	Seedless bricks, Paste	Simdega, Chaibasa, Lohardaga, Khunti	February-May
Dori	50000	Oil / Soap	Gumla, Simdega, Chaibasa, Khunti, Lohardaga, Palamu, Garhwa,	June–August
Chakvar	50000	Medicine	Palamu, Garhwa, Latehar, Ranchi	January–March
Bamboo Shoots	20000	Food	Ranchi, Dhanbad, Deoghar, Sahebganj, Kodrma	June-September
Karanj	10000	Antibiotics oil, Ointment, Spray etc	Gumla, Simdega, Chaibasa, Lohardaga	May–June
Lac	10847	Medicine, cosmetics, wood polishing, food sector, natural dyeing, insulator, coating, film former and in chemical industries.	Ranchi, Simdega, Gumla, West Singhbhum, Palamau, Garhwa, Latehar	Jan-Feb, June-July, Oct-Nov
Kusum	5000	Oil / Feed	Gumla, Simdega	June–October
Amla	2000	Oil, Amlapowder, Triphalachurna & Morabba		October-December
Palas (Tesuphool)	1000	Medicine	Palamu, Khunti, Simdega, Giridih	March–May
Chironji guthli	1000	Dry fruit, Used confectionary	Palamu, Garhwa, Khunti, Simdega, Giridih, Bokaro	March–May
Niger Seed	1000	Medicine	Gumla, Simdega, Chaibasa.Hazaribhag, Palamu, Latehar	December–January
Mrobalan (Harra)	500	Harra powder & Triphala churna	Gumla, Simdega, Chaibasa, Lohardaga, Latehar, Ranchi	January–February
Mango Pulp (Amsi)	500	Food	Hazaribhag, Gumla, Simdega, Bokaro, Khunti	May–June

Gijan Gond	500	Medicine & Food	Palamu, Garhwa	June–August
Neem Seed	500	Oil, Soap, Medicine		July-August
Madhu/Honey	100	Food	Palamu, Gumla, Simdega, Chaibasa	-
Bael giri	100	Food / Medicine	Palamu	April-May
Kendu Leaf	NA	Biri	Garhwa, Chatra, Daltonganj, Latehar, Hazaribagh, Giridih, West Singhbhum,	April-May
Kalmegh (Chiraita)	50	Medicine	Palamu, Latehar	November–January

Source: JHAMFCOFED, 2025

Apart from the above NTFPs, there are some other NTFPs which have an importance in making medicine such as Satawari, Sarpagandha, Aswagandha, Bantulsi, Kaunch beej, Dhawai phool, etc.

Agriculture is a seasonal activity, where NTFPs support rural and tribal people during the non-agricultural period. NTFPs are mature in different seasons of the year, therefore at least one NTFP is harvested every month, ensuring a year-round availability for harvest. The following table.3 represents the year-round availability of NTFPs.

Table:3 Availability of Non-Timber Forest Products in Jharkhand

NTFPs	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
Sal Leaves	■	■			■	■	■	■	■	■	■	■
Sal Seeds				■	■	■						
Mahua Flower			■	■	■							
Imli (Tamarind)		■	■	■	■							
Dori						■	■	■				
Chakvar	■	■	■									
Bamboo Shoots						■	■	■	■			
Karanj					■	■						
Lac	■	■				■	■			■	■	
Kusum						■	■	■	■			
Amla										■	■	■
Palas (Tesuphool)			■	■	■							
Chironji guthli			■	■	■							
Niger Seed	■											■
Mrobalan (Harra)	■	■										
Mango Pulp (Amsi)					■	■						
Gijan Gond						■	■	■				

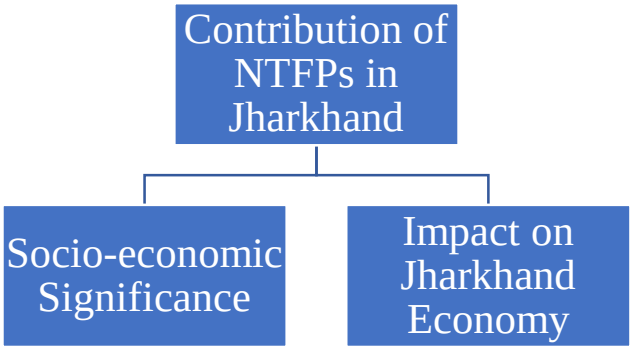
Neem Seed												
Madhu/Honey												
Bael giri												
Kendu Leaf												
Kalmegh (Chiraita)												
Dhawai phool												
Satawari												
Sarpagandha												
Aswagandha												
Bantulsi												

Source: Author's Compliance

6. Contribution of NTFPs in Jharkhand

The above section highlights the major NTFPs found in Jharkhand. These products are an integral part of the forest-based economy of the state and play a crucial role in sustaining rural and tribal livelihoods. The collection, processing, and trade of the above NTFPs not only provide employment and income opportunities but also contribute significantly to the socio-economic development of rural areas and the economic growth of the state as whole. Building upon this understanding, the following section focuses on the contribution of NTFPs in Jharkhand, analyzing their socio-economic significance at the individual (micro) level and their impact on the state's economy at the macro level.

Chart:1 Contribution of Non-Timber Forest Products in Jharkhand



A. Socio-economic Significance of NTFPs in Rural and Tribal Households of Jharkhand

Non-Timber Forest Products play a crucial role in improving the socio-economic conditions of forest-dependent rural and tribal communities of Jharkhand. They serve as a major source of livelihood, providing food, income, and employment, especially during the agricultural off-season. NTFPs help sustain the rural economy, reduce poverty, and promote social well-being by supporting traditional practices, empowering women, and encouraging sustainable use of forest resources. The following points highlight the key socio-economic contributions of NTFPs in Jharkhand's rural and tribal households:

- **Livelihood Security for Forest-Dependent Households**

NTFPs provide an important source of livelihood for a large section of Jharkhand's rural and tribal population. Several tribal households depend on the collection, processing, and sale of NTFPs to meet their daily needs. These activities provide a crucial source of income, especially during non-agricultural seasons or times of crop failure or economic hardship. The seasonal availability of NTFPs ensures year-round livelihood security, reduces dependence on agriculture, mitigates the risks associated with crop failure and ensures livelihood sustainability. NTFPs provide a safety net; several tribal groups rely heavily on NTFPs for both subsistence and household well-being.

- **Employment Generation**

The NTFP sector plays a crucial role in generating employment for Jharkhand's rural and tribal communities. Majority of the tribal and marginalized groups, who have limited access to formal employment opportunities, significantly rely on NTFP trade as their sustainable livelihood option. They engage in the activities like collection, processing, storage, and local marketing of NTFPs. These activities provide both full-time and seasonal employment, which help to reduce rural unemployment and migration to urban areas. Moreover, participation of local residents in small forest enterprises and cooperatives increases community participation, promotes self-employment, and strengthens the rural economy.

Many empirical research works [Islam et al (2016), Ganguly et al. (2024), Prasad & Chauhan (2020)] conducted on Jharkhand support the above fact. For instance, Islam et al (2016) conducted a study in Bundu block of Ranchi district (Jharkhand) found that the average forest-based employment to the tribal household is about 108 man-days per year and among forest-based employment sources fodder (34.04%) was the major forest-based employment source followed by fuel wood (24.38%), paid employment (18.31%), cottage industry (16.49%), tooth brush (3.00%), fruit (1.63%), mahua (Madhuca latifolia) flower (0.75%), vegetables (0.57%), oilseeds (0.47%), ethno-medicines (0.20%) and timber (0.17%).

- **Role in Increasing the Income and Poverty Reduction**

NTFPs significantly contribute to enhancing the income levels of rural and tribal households in Jharkhand, thereby playing a crucial role in poverty reduction. NTFP Products have high market demand; the sale of these products provides direct monetary returns that complement agricultural earnings. This additional income enables households to meet basic needs such as food, education, healthcare, and other essential expenses. For many tribal households, NTFPs constitute a significant portion of their total annual income (ranging between 30% to 59%), thereby increasing their economic resilience [TERI (2021), Prasad & Chauhan (2020)].

Moreover, by supplementing seasonal agricultural income and providing year-round economic opportunities, NTFPs help to reduce rural poverty and enhance financial stability. In this way, NTFPs not only contribute to income generation but also promote inclusive and sustainable development in Jharkhand's tribal and forest-dependent regions.

- **Food Security and Nutrition**

Several Non-Timber Forest Products such as wild fruits, mushrooms, leafy vegetables (Chakorr Saag, Kanda Saag, Katai Saag, Putkal), tubers, bamboo shoot, Imli and honey form an essential part of the local diet. These products are rich in essential nutrients, vitamins, and minerals that help in maintaining food diversity and improving health conditions among forest-dependent households. During the period of drought, crop failure or economic hardship, NTFPs provide supplementary food sources and act as a safety

net for food security for vulnerable households. Several studies support this fact. The Food Security Atlas of Rural Jharkhand (2022) noted that forest produce continues to be a crucial supplement to the diets of tribal households, contributing to household food availability and resilience. Similarly, Ghosh-Jerat et al. (2022) in their research work on the Munda tribal women of Jharkhand highlighted that indigenous forest foods contribute significantly to daily nutrient intake, particularly of iron, calcium, and vitamin-A, thereby supporting better nutritional outcomes among women.

Moreover, the easy availability of edible NTFPs reduces dependence on purchased food, which supports self-sufficiency in remote forest areas. In a nutshell, NTFPs not only serve as an economic resource but also ensure food security and enhance the overall nutritional well-being of rural and tribal populations in Jharkhand.

- **Women Empowerment**

Women play a central role in the NTFP related activities, from collecting to selling. Their participation not only supplements household income but also strengthens their social and economic position within the household and society. Magry et al. (2022) in their study on the NTFP value chain in Khunti District, Jharkhand, found that over 70% of the upstream actors (collectors) are women, and their involvement significantly contributes to household livelihoods. The report noted that while women were primarily involved in collection, their participation helps in meeting daily household expenses and contributes to family income.

A report by the Jharkhand State Livelihood Promotion Society (JSLPS) indicates that more than 12,500 rural tribal women were trained in collection and sale of forest produce and began earning over Rs 4,000 every month in Simdega district. This initiative not only increased household income but also built women's managerial and entrepreneurial capabilities in rural markets.

Moreover, a qualitative study done by Khurshid (2020) in the Hazaribagh district of Jharkhand highlighted how female tribal members' participation in forest-based livelihood activities strengthens their social identity, promotes sustainability, and enhances their decision-making power within household and community.

Involvement in self-help groups (SHGs), cooperative societies and micro-enterprises related to NTFPs enhanced women's access to credit, markets, and decision-making processes. This, in turn, has improved women's status, autonomy and community leadership. Thus, NTFPs serve not only as economic resources but also are a powerful instrument of gender equality and empowerment.

- **Healthcare by Traditional Remedies**

Non-Timber Forest Products consist of a variety of medical plants, which are considered as a backbone of primary healthcare for many tribal and rural households where formal medical facilities are limited and costly. Use of local availability of remedies reduces household expenditure on health care and provides culturally appropriate treatment options.

- **Cultural and Traditional Importance**

Non-Timber Forest Products hold deep cultural and traditional significance among the tribal and rural communities of Jharkhand. Forest products are not only sources of livelihood but are also an integral part of their customs, rituals, festivals, and traditional knowledge systems. Products such as mahua flowers, sal leaves, kusum seeds, and lac are not only economically valuable but are also embedded in cultural

practices such as festivals, marriages, and religious ceremonies. For instance, in tribal marriages, mahua and sal trees are considered sacred and are worshipped as symbols of fertility and prosperity (the specific plant may vary depending on the tribe). Mahua flowers are used in the preparation of traditional beverages, which play a significant role in community gatherings and religious ceremonies, while sal leaves are widely used for making plates (pattal) and bowls (dona) during cultural feasts and rituals. Similarly, lac-based products such as bangles (*bala*) are worn during rituals and are regarded as auspicious.

In essence, NTFPs are not merely material resources but also embody the cultural heritage, traditional wisdom, and ecological values of Jharkhand's tribal communities. They represent the communities' spiritual connection with nature, reflecting a sustainable and respectful relationship between humans and forests.

B. Impact of NTFPs on Jharkhand Economy

Non-Timber Forest Products are an important component of Jharkhand's forest-based economy, contributing significantly to the state's revenue, employment, and rural development. With approximately 29.81% of its total geographical area under forest cover (FSI, 2021), Jharkhand is one of the most resource-rich states in India, where forest-based economic activities remain a key driver of both local as well as state-level development. The major NTFPs not only sustain local livelihoods but also contribute to the state's economy through trade, processing, and value-added industries. The following points highlight the key contributions of NTFPs in Jharkhand's Economy as a whole:

- **Contribution to State Revenue and Income**

Non-Timber Forest Products such as tendu leaves, sal seeds, lac, tasar, mahua flowers, imli, and bamboo contribute directly to Jharkhand's state revenue through trade, auctions, and forest-based industries. For instance, the Jharkhand State Forest Development Corporation (JSFDC) reports that in the collection season of 2025, approximately 2.23 lakh standard bags of tendu leaves were collected and sold, generating an income of ₹ 31 crore. In the collection season of 2024, it was ₹ 28 crore and, in the collection season of 2023, it was ₹ 22 crore. ISDG research foundation (2024) conducted a value-chain study of Lac, which shows that Jharkhand contributes over 55% of India's lac production, which plays a crucial part in lac exports. Similarly, NABARD's State Focus Paper (2021–22) mentioned sal seed as a key non-timber forest product contributing significantly to the state's earnings.

Revenues generated from NTFPs not only make a direct financial contribution to state treasury but also provide indirect support to rural economies, as these funds enable reinvestment in sustainable forest management, payment of collection wages to forest-dependent families, and support for value-addition infrastructure that strengthens local supply chains. Beyond monetary gains, NTFPs also contribute intangible value by enhancing Jharkhand's recognition at the national level as a leading producer of resources such as tendu leaves, lac, and tasar. This reputation reinforces the state's identity as a forest-resource hub and supports long-term socio-economic development linked to its ecological strengths.

- **Employment Generation**

In the earlier part of the study, it was seen that many tribal and rural families are dependent on NTFPs for their livelihood. Here it is also proved that at state level a huge number of people are getting employment from NTFP activities either by government, SHGs, MSMEs or training-cum-production centers.

According to a value-chain study conducted by ISDG Research Foundation (Ranchi), reported that approximately 400,000 tribal families in Jharkhand are engaged in lac production, primarily as a supplemental economic activity. Similarly, Jharkhand is the leading producer of Tasar silk in the country and about 3.5 lakh people in the country are engaged in tasar-based activities, in which about 2.2 lakh of them are from Jharkhand. 2,000 families are engaged in several SHGs and training-cum-production centers (mainly in Giridih, Goda, Dumka, Pakur, Sahibganj, and Jamtara) for making bamboo-based products like Tapa (Poultry basket), Daliya, Tokri, Khasli, Nachu (Types of Bamboo Baskets), Soop, Chengra (Types of Bamboo trays), Satta (Bamboo sunshade), hand-fans, etc. In Kolhan (particularly from Dhalbhum and Seraikela divisions), the forest department train villagers- especially women, to make sal and mahua leaf plates through self-help groups (SHGs).
Overall, the NTFP sector in Jharkhand functions as an important employment engine, offering seasonal and year-round work, particularly to tribal communities that might otherwise face limited formal job opportunities.

- **Rural Entrepreneurship**

Non-Timber Forest Products play a catalytic role in promoting rural entrepreneurship in Jharkhand by enabling tribal and forest-dependent communities to develop micro-enterprises in locally available forest produce. Under the Van Dhan Yojana, tribal members are organized into Van Dhan Vikas Kendras (VDVKs), where they receive training in value addition, processing, grading, and packaging of 13 forest produce such as lac, tamarind, sal leaves, mahua, amla, honey, neem seed, date, tendu leaves, karanj seed, bamboo, mango and palash flower. In Jharkhand, 38 VDVKs have been established, involving more than 11,700 women SHG entrepreneurs who process NTFPs and develop forest-based enterprises.
Empirical research further supports the role of NTFPs as drivers of rural entrepreneurship. A study by Mahato and Gaurav (2023) conducted in six villages of West Singhbhum district found that tribal entrepreneurs significantly depend on NTFP-based business activities - the collection, processing, and sale of sal leaf, mahua flower, tamarind, lac, siali leaf, and chironji seeds were among their primary economic activities, contributing significantly to household income. This form of entrepreneurship not only creates non-farm employment but also converts traditional knowledge into sustainable business opportunities. According to Gupta (2023), such NTFP-based enterprises in remote areas represent “natural solutions” rooted in local culture and ecology, which promote circular economy principles, community work, and self-reliance.

Furthermore, institutional mechanisms also play a crucial role in strengthening rural entrepreneurship. Cooperative structures such as JHAMFCOFED (Jharkhand State Minor Forest Produce Co-operative Development & Marketing Federation) play an important role in facilitating entrepreneurship by linking forest collectors to markets. It not only provides market access but also ensures fair pricing, reduces exploitation by middlemen, and promotes value-chain development for tribal producers. Through these entrepreneurial and institutional pathways, NTFPs promote inclusive rural development, empower tribal entrepreneurs, generate sustainable income sources, and provide economic value within traditional forest-based livelihoods.

- **Trade and Export**

Non-Timber Forest Products from Jharkhand are not only vital for local rural and tribal livelihoods but also play a significant role in strengthening both intra-state and inter-state trade networks. High-value

products such as lac, tasar silk, honey, chironji seeds, sal leaves and seeds, tamerind, beans seeds, etc. have strong market demand across India and in many cases internationally. To streamline procurement and marketing, the Jharkhand State Minor Forest Produce Co-operative Development & Marketing Federation (JHAMFCOFED) was established in 2007, which acts as the apex agency for MFP trade. It undertakes procurement directly from forest collectors and through affiliated cooperative structures such as Primary Agriculture Credit Societies (PACS), Vyapar Mandal Sahyog Samitis (VMSS), Primary Minor Forest Produce Cooperative Societies (PMFPCS), Women SHGs, and reputed NGOs.
Empirical studies indicate that NTFPs of Jharkhand are circulated through multi-level market channels. Pandey and Sinha (2019) observed in their study that local traders frequently sell NTFPs either to district-level buyers or to large mandis in the districts like Chaibasa, Jamshedpur, Ranchi, Dumka, Koderma, and Palamu, reflecting an extensive internal trade network.

Jharkhand is also the hub of India's NTFP export ecosystem. India is the world's leading lac producer and Jharkhand contributes about 55% of the country's total lac production, making it the largest lac producing state. This significant production base supports steady lac exports to international markets. Tamarind is exported by traders from Ranchi district to various Indian states, while some quantity of tamarind is also exported to foreign markets like UAE and Singapore. Similarly, bean seeds cultivated in wild areas by the Paharia community under the traditional *Kuraon* practice in Pakur and Sahebganj are exported to Gulf countries through Maharashtra-based exporters. Chironji seeds are sold directly to buyers in Kanpur, while Rampurhat (West Bengal) serves as a major market hub for sal leaves and sal seeds from Dumka.

Thus, the evidence clearly demonstrates that Jharkhand's NTFPs extend far beyond local consumption, contributing significantly to regional, national, and international trade circuits. This multidimensional trade flow highlights the economic importance of NTFP-based value chains in integrating forest-dependent communities into broader commercial markets.

7. Challenges Faced by NTFPs

Despite the immense potential of NTFPs in supporting the socio-economic condition of forest-dependent and tribal households and contributing to the rural economy of Jharkhand, the sector faces several systemic challenges that limit their full potential for livelihood enhancement and sustainable development. The TRIFED report highlighted that the NTFP economy across tribal-dominated states in India suffers from market fluctuations, weak value chains, and inadequate primary processing facilities, which reduce the income of forest collectors. The following points highlight the key challenges faced by NTFPs in Jharkhand.

- **Market Inefficiencies**

Market inefficiencies constitute one of the most significant challenges affecting the NTFP sector in Jharkhand. Most of the NTFP collectors in Jharkhand are compelled to sell their produce through local traders or middlemen due to a lack of organized market structures. These middlemen often exploit tribal collectors by offering low prices and manipulating weights and measures in their favour. The lack of standardized pricing mechanisms, grading systems, and real-time market information further weakens the bargaining power of primary collectors.
Additionally, limited access to storage facilities, transportation networks, and basic processing facilities also restricts producers from accessing larger or more competitive markets. The situation is further

aggravated by the absence of Minimum Support Prices (MSP) for many key NTFPs, which increases income fluctuations and economic insecurity for forest-dependent households.

- **Inadequate Value Addition and Processing Facilities**

Most NTFPs in Jharkhand are sold in raw form, which significantly reduces their market value and prevents collectors from generating higher-income opportunities. The absence of primary processing units, drying facilities, grading centers, and packaging systems at the village or block level prevents collectors from improving the quality, shelf life, and market readiness of their produce. This increases the dependency of NTFP collectors on outside traders and industries. Consequently, traders capture a significant portion of the value chain by undertaking processing and value addition activities either outside Jharkhand or in privately owned facilities.

Even where processing infrastructure has been established, it often suffers from poor maintenance, shortage of trained & skilled manpower, and limited use of modern technologies. Such gaps hinder efficient value addition and restrict the ability of SHGs, cooperatives, and producer groups to enter high-value market segments. Overall, the inadequate value addition ecosystem severely limits income enhancement opportunities and reinforces dependence on low-value raw material sales.

- **Limited Business and Marketing Skills**

A majority of NTFP collectors of Jharkhand rely primarily on traditional knowledge of forest harvesting but lack formal training in essential areas such as market assessment, price negotiation, quality management, bookkeeping, value chain management, and enterprise planning. As a result, they often struggle to engage effectively with the market or identify profitable opportunities. With limited knowledge about prevailing prices, consumer preferences, demand patterns, and value-added product segments, this further restricts their ability to make informed decisions and adapt to changing market conditions.

Cooperatives, SHGs and forest protection committees, despite their active involvement in NTFP collection, often face difficulties in record-keeping, financial management, branding, packaging, certification, and marketing strategies. This skills gap hinders their ability to connect directly with wholesale markets, participate in e-commerce platforms, or negotiate better prices with bulk buyers; on the other hand, it also allows traders and private buyers to dominate the marketing process and capture a larger share of the profits. Therefore, lack of business literacy and marketing skills among NTFP-dependent communities in Jharkhand poses a major barrier to entrepreneurship development and meaningful participation in the value chain.

- **Unsustainable Harvesting Practices**

Unsustainable harvesting practices in Jharkhand pose a serious threat to the ecological sustainability and long-term economic benefits of the NTFP sector. Most of the NTFP collectors follow traditional methods of extraction that prioritize immediate income needs but overlook ecological sustainability. Practices such as premature harvesting, overharvesting driven by high market demand, stripping bark, destructive practices (removing entire plants or large amounts of a single resource) and lack of rotational harvesting reduce the regeneration capacity of key NTFP species like mahua, sal, chironji, amla, and medicinal plants. Poverty, limited livelihood alternatives and seasonal income insecurity further intensify pressure on NTFPs, resulting in excessive extraction and decline in natural yields. At the same time, growing market demand for commercially valuable species contributes to shrinking forest resources and gradual degradation of forest biodiversity.

The problem is exacerbated by the absence of systematic training in sustainable harvesting techniques. Most of the collectors have limited awareness of scientific harvesting norms, species-specific regeneration cycles, and conservation guidelines issued by forest departments. Weak monitoring mechanisms and limited involvement of local institutions in sustainable forest management also result in poor enforcement of conservation practices. Over time, these unsustainable practices threaten both ecological balance and the long-term livelihood security of tribal communities who depend on NTFPs for income generation.

- **Climate and Environmental Challenges**

Climate and environmental challenges pose an increasingly serious risk to the productivity and long-term availability of NTFP resources in Jharkhand. Irregular rainfall patterns, rising temperatures, prolonged dry spells, and delayed monsoons are indicators of climate change which directly affect the flowering, fruiting, and regeneration cycles of important NTFP such as mahua, sal, tendu, lac host trees, and various medicinal plants. These climate changes not only reduce the overall availability of NTFPs but also affect their quality, thereby reducing market value.

Extreme weather events, like droughts and cyclones also disrupt natural growth patterns and reduce annual yields. Furthermore, forest fires which often occur during the dry season, destroy significant quantities of leaf-based and flower-based NTFPs and damage newly emerging plants. Changes in microclimatic conditions also make certain species more susceptible to pests, diseases, and productivity decline.

In addition to climate stress, human-induced pressures such as deforestation, mining activities, and land-use changes increase environmental pressure and disrupt the natural ecosystems on which NTFPs depend. The combined impact of climate instability and environmental degradation increases the income fluctuations of tribal households who are heavily dependent on forest produce, thereby increasing their livelihood vulnerability. Without climate-resilient forest management, ecological restoration measures, and adaptive harvesting strategies, the long-term sustainability of NTFPs in Jharkhand remains at significant risk.

8. Discussion and Way Forward

The analysis shows that while Non-Timber Forest Products play a crucial role in sustaining the livelihoods of rural and tribal communities in Jharkhand, however the sector continues to suffer from persistent structural gaps. Market inefficiencies, dependence on middlemen, lack of primary processing facilities, and limited business skills restrict collectors to low-income returns despite the high economic potential of NTFPs. Ecological pressures, including unsustainable harvesting practices and climate pressures, further challenge the long-term availability and stability of these resources. Strengthening the NTFP economy therefore requires an integrated approach—linking sustainable forest management, improved value-chain efficiencies, stronger market systems, and institutional support for community-based enterprises.

Additionally, Jharkhand needs a more coordinated strategy involving government agencies, forest-based cooperatives, SHGs and private players to develop a competitive and transparent NTFP market. Establishing decentralized processing units, ensuring effective MSP enforcement, expanding digital marketing platforms, and promoting producer cooperatives can significantly enhance local value addition and stabilise incomes. Simultaneously, capacity-building in sustainable harvesting, quality grading,

financial literacy, and enterprise management is essential for empowering collectors. Greater investment in climate-resilient forest practices, research on high-value NTFPs, and integration of NTFP-based livelihood into state missions can help unlock the full socio-economic potential of the region. With such targeted interventions, the NTFP sector can develop into a sustainable, community-led growth driver for Jharkhand's rural and tribal economy.

References

1. Angelsen, A., Jagger, P., Babigumira, R., Belcher, B., Hogarth, N. J., Bauch, S., ... & Wunder, S. (2014). Environmental income and rural livelihoods: a global-comparative analysis. World development, 64, S12-S28.
2. Endamana, D., Angu, K. A., Akwah, G. N., Shepherd, G., & Ntumwel, B. C. (2016). Contribution of non-timber forest products to cash and non-cash income of remote forest communities in Central Africa. International Forestry Review, 18(3), 280-295.
3. Ganguly, S., Chatterjee, M., & Dutta, S. (2024). Some Prominent NTFPs of Jharkhand, India for Socio-Economic Development: An Extensive Review. Indian Forester, 150(12), 1209–1219.
4. Ghosal, S. (2011). Importance of non-timber forest products in native household economy. Journal of Geography and Regional planning, 4(3), 159.
5. Ghosh-Jerath, S., Kapoor, R., Bandhu, A., Singh, A., Downs, S., & Fanzo, J. (2022). Indigenous foods to address malnutrition: an inquiry into the diets and nutritional status of women in the indigenous community of Munda tribes of Jharkhand, India. Current Developments in Nutrition, 6(9), nzac102.
6. Gupta, H. S. (2023), TRIBAL ENTREPRENEURSHIP, IN FORESTED HINTERLAND OF JHARKHAND. A Solution FOR LWE REGION. International Journal of Managing Value and Supply Chains (IJMVSC) Vol.14, No.2, pp.9-20
7. India State of Forest Report 2023, Volume-II, Forest Survey of India Ministry of Environment, Forest & Climate Change Government of India, Published by Forest Survey of India (Ministry of Environment Forest and Climate Change), Dehradun, Uttarakhand. India
8. Institute for Human Development (2022), The Food Security Atlas of Rural Jharkhand-2022, ISBN: 978-81-88315-77-2,
9. Islam, M. A., & Quli, S. M. S. (2016). Household drivers of forest dependence for employment support among tribes of Jharkhand, India. Economic Affairs, 61(2), 339-347.
10. **J**harkhand forests at a glance, Department of Forest, Environment & Climate Change, Government of Jharkhand, https://forest.jharkhand.gov.in/aboutus_jharkhand-forests-at-a-glance.aspx
11. JHAMFCOFED, 2025, https://www.jhamfcofed.com/abut/index.htm
12. Jharkhand State Forest Development Corporation (JSFDC), Government of Jharkhand, https://jsfdc.in/admin/pages/data/highlights/2025-07-17.06_11_56-jsfdc_news1.pdf
13. Keshav, A. (2025), Study on the Value Chain of Lac in the State of Jharkhand, Prepared for ISDG research Foundation, https://www.researchgate.net/publication/394857411_Lac_Value_Chain_in_Jharkhand
14. Khurshid, I. (2020), FEMALE TRIBAL FOLK AND FOREST, A MEANS OF LIVELIHOOD AND SUSTAINABLE DEVELOPMENT: A CASE STUDY OF SELECTED TRIBES OF HAZARIBAGH DISTRICT IN JHARKHAND. International Education and Research Journal (IERJ), Vol.6, No.7.

15. Lepcha, L. D., Shukla, G., Pala, N. A., Vineeta, Pal, P. K., & Chakravarty, S. (2019). Contribution of NTFPs on livelihood of forest-fringe communities in Jaldapara National Park, India. Journal of Sustainable Forestry, 38(3), 213-229
16. Magry, M. A., Cahill, D., Rookes, J., & Narula, S. A. (2022). An integrated value chain analysis of non-timber forest products: a case of Jharkhand State of India. Small-scale Forestry, 21(4), 621-645.
17. Mahato, J., & Gaurav, K. (2023). Economic Analysis of Non-Timber Forest Products with Reference to the Tribal Entrepreneurs in Jharkhand. Arthshastra Indian Journal of Economics & Research, 12(1), 43–52. https://doi.org/10.17010/aijer/2023/v12i1/172842
18. Malleson, R., Asaha, S., Egot, M., Kshatriya, M., Marshall, E., Obeng-Okrah, K., & Sunderland, T. (2014). Non-timber forest products income from forest landscapes of Cameroon, Ghana and Nigeria–an incidental or integral contribution to sustaining rural livelihoods?. International Forestry Review, 16(3), 261-277.
19. Mugido, W., & Shackleton, C. M. (2019). The contribution of NTFPs to rural livelihoods in different agro-ecological zones of South Africa. Forest Policy and Economics, 109, 101983.
20. NABARD, Credit Potential for Export Credit in Jharkhand, https://www.nabard.org/auth/writereaddata/careernotices/0312194628Credit%20Potential%20for%20Export%20Credit%20in%20Jharkhand.pdf
21. Paumgarten, F., & Shackleton, C. M. (2011). The role of non-timber forest products in household coping strategies in South Africa: the influence of household wealth and gender. Population and Environment, 33(1), 108-131.
22. Pandey, K. and Sinha, A (2019), Jharkhand: A Potential Producer of Non Timber Forest Products, https://ifgtbenvis.in/build/bibilography/Jharkhand%20A%20potential%20producer%20of%20NTFP.pdf
23. Prasad, S., & Chauhan, D. S. (2020). Appraising forest-based livelihoods through assessment of major ntfps: A case study from Jharkhand, India. International Journal of Economic Plants, 7(2), 053-059.
24. Ranjan, M. (2021), Jharkhand women take green route to create livelihood opportunities, TheNewIndianExpress,https://www.newindianexpress.com/thesundaystandard/2021/Jun/27/jharkhand-women-takegreen-route-to-create-livelihood-opportunities-2321969.html
25. Rasul, G., Karki, M., & Sah, R. P. (2008). The role of non-timber forest products in poverty reduction in India: Prospects and problems. Development in practice, 18(6), 779-788.
26. Singh, P. K., & Quli, S. M. S. (2011). Economic valuation of non timber forest products' contribution in tribal livelihood in West Singhbhum district of Jharkhand.
27. Singh, R. (2022), EXPANDING TREES AND FOREST-BASED LIVELIHOOD OPPORTUNITIES THROUGH MAHATMA GANDHI NREGA: An Exploration, published by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH. http://giz.de/de/downloads/giz2022-en-expanding-trees-and-forest-based-livelihood-opportunities.pdf?utm_source=chatgpt.com
28. Steele, M. Z., Shackleton, C. M., Shaanker, R. U., Ganeshaiah, K. N., & Radloff, S. (2015). The influence of livelihood dependency, local ecological knowledge and market proximity on the ecological impacts of harvesting non-timber forest products. Forest Policy and Economics, 50, 285-291.

29. Suleiman, M. S., Wasonga, V. O., Mbau, J. S., Suleiman, A., & Elhadi, Y. A. (2017). Non-timber forest products and their contribution to households income around Falgore Game Reserve in Kano, Nigeria. Ecological Processes, 6(1), 23.
30. Talukdar, N. R., Choudhury, P., Barbhuiya, R. A., & Singh, B. (2021). Importance of non-timber forest products (NTFPs) in rural livelihood: A study in Patharia Hills Reserve Forest, northeast India. Trees, Forests and People, 3, 100042.
31. The Telegraph Online (12.04.23), Livelihood on a plate - Plantation drive, training in Kolhan villages, https://www.telegraphindia.com/jharkhand/livelihood-on-a-plate-plantation-drive-training-in-kolhan-villages/cid/431493?utm