

Significance of Non-Timber Forest Products (NTFPs) to the Tribal Wealth of Ranchi District, Jharkhand

Arindam Dey¹, Hemant Kumar² and Sangjukta Das¹

Department of Forest Products and Utilization, College of Forestry, SHUATS, Prayagraj 211 007, India

(Received 3 April, 2022; Accepted 16 June, 2022)

ABSTRACT

The indicated study scrutinizes the contribution of Non-Timber Forest Products to the tribal wealth residing in the Angara and Namkum block of Ranchi district which was carried out in Jharkhand during 2021-22. By following multistage random sampling techniques 2 blocks were selected namely (Angara and Namkum) and among these blocks 4 villages were selected from each block with each village having 10 interviewees which lead to the collection of necessary data. The information was gathered through structured interviews, local market survey, and non-participant observation, and it was estimated using descriptive statistics such as frequency (f), percentage (%), mean, and range. This study also attempted to capture the Economics of average revenue generated during weekly markets via NTFPs. The crucial findings from the study were; Tribal people dependency on NTFPs for significant employment and income (50% >) via collection of NTFPs, Processing and value- addition. Men played a dominant role in marketing of NTFPs except in the collection of fuelwoods while women were dominant in processing and collection of NTFPs. The overall dependency of the tribals dwelling in the villages on NTFPs remains significantly larger. (60%) followed by daily wages (30%) and minimum in govt. sector work (10%). The marketing pattern of NTFPs in both the blocks was studied along with the sale price of various NTFPs in the local market. There are approximately 18-20 NTFPs which is widely found in the Namkum and Angara block of Ranchi which is marketed and contributes significantly in revenue generation and employment of the villagers.

Key words: NTFPs, Tribal, Marketing, Economy, Employment, Jharkhand

Introduction

The term “forest product” almost immediately conjures up images of timber and minor forest products. Other than timber, these include all botanical and other natural products extracted from the forest. Non-timber forest products (NTFPs) are an integral part of the forest system that are not cultivated. They are not made of wood but can be. Almost two billion people live in forests around the world, who rely on forests for alimentation, income, and liveli-

hood security (Ahenkan and Boon, 2011). NTFPs are thought to be critical for nourishing rural livelihoods, diminishing rural deficit, conserving species diversity, and boosting outlandwealth expansion (Maske *et al.*, 2011). According to the World Health Organization, approximately 80% of the developing world’s community relies on minor forest products to meet their well-being and nourishment (Olaniyi *et al.*, 2013). NTFPs are widely used in the tropics, frequently furnishing critical assets to public in areas where the state provides no other social security

(¹P.G Research Scholar, ²Assistant Professor)

(Bharathkumar *et al.*, 2011). The collection and trade of minor forest products is frequently regarded as a marginal activity, despite the fact that the purchase of these products generates considerable economic perks to a lot of sparsely populated households and residents (Chamberlain *et al.*, 2000). India has approximately 16000 species of plant. 3000 of which produce minor forest products, accounting for 40% of all countryside earnings and 55% of workforce in the forest (Shit and Pati, 2012). The World Resource Survey estimated that there are over 500 million Indians depending on NTFPs for livelihood earnings (Sarmah and Arunachalam, 2011). Not only do NTFPs provide millions of poor listed on it for subsistence, However, they also provide work opportunities to the rural poor, backup jobs and self-employment (Prasad and Siddiqui, 2006). NTFPs are considered to be crucial for sustainable economy, eradicating poverty, nature conservation, and rural productivity expansion. Non-Timber Forest Products (NTFPs) are being used to satisfy a few of the dietary and health necessities of an approximated 80% of the developing planet's population (FAO, 2008).

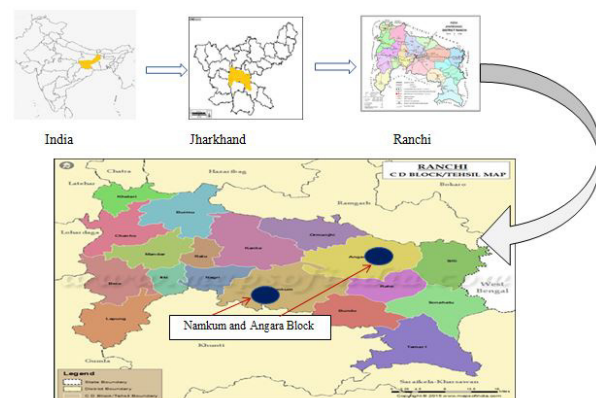
Indigenous societies in and around Ranchi's northern tropical dry deciduous woods of Angara and Namkum block fall back on NTFPs for earnings and wellbeing. The block's industrialization and unscrupulous progression have led to a significant reduction in NTFPs, endangering the livelihood opportunities of woods surrounding communities (Gharai and Chakrabarti, 2009). Acknowledging tribal societies' focus on NTFPs for subsistence could perhaps assist the government in developing integrated methodologies for eradicating poverty, livelihood advancement, preservation, and protracted NTFP use. With this thought in mind, the present study will ascertain and scrutinize the uniqueness of Minor Forest products and their involvement to tribal households in Ranchi district, Jharkhand, India.

Materials and Methods

Study Area

During 2021-22, the current study was executed in the Angara and Namkum blocks of Ranchi district in Jharkhand (Map 1). The altitude of site is about 651 m above mean sea level and its geographical coordinates are 23°20'0"North, 85°37'69"East. The total geographical area of Namkum and Angara block

constitutes around 813km². The study area included a number of villages, source forest areas, and a nearby market. Household interrogations, depth interview meetings, sparsely populated assessment through participation, forest polls, and market analysis were conducted in each block. Sales of various NTFPs were also surveyed for quantification of NTFPs producers' markets. Every township questionnaire used a simple random sampling technique with the residence as the unit of analysis. The Bundu Range of the Khunti Forest Division's forest resource is dominated by northern tropical dry deciduous forest (5B/C2) (Champion and Seth, 1968). There have been 3 different seasons in the tropical climate: rainy (mid-June–September), winter (October–February), and summer (March–mid June). The yearly normal precipitation mean is 1413.60 mm, with average minimum and maximum temperatures of 24°C and 37.2°C, respectively. Agricultural production and the collection of non-timber forest products (NTFPs) are the primary producers of sustenance revenue.



Sample Selection

Namkum and Angara blocks have been specifically chosen for this research since the vast bulk of tribal residents in the blocks depend heavily on NTFPs for employment generation. A multi-stage random sampling technique (Ray and Mondol, 2004) has been used to choose villages and family units. Namkum block included Churu, Dungri, Jorar, and Palandu, while Angara block included Banpur, Bisa, Chatra, and Haratu. The sample was made up of 80 randomly selected households, ten from each village, depicting all land holding categories. The questionnaire was done with household heads or the eldest representatives.

Data gathering and analysis

Personal interviews of interviewee using a well-structured, pre-tested interview protocol, along with non-participant observations, were being used to obtain information on NTFP wealth extraction by tribal households (Mukherjee, 1993). Among the factors are NTFP type, parts of plants, species name, utilization, collection annum, intake, sale rate, Economics of raw and value added NTFPs, Residential exploitation, sale/annum, and revenues generated. In addition, the gross estimated family income from all sources was registered. Simple descriptive statistics such as recurrence, percentage (%), mean (\bar{x}), and array were used to analyse the data, and the outcomes were showcased in tables and charts (Snedecor and Cochran, 1967).

Results and Discussion

Tribal people's household exploitation of NTFPs

In the surveyed population, the median revenue generated from NTFPs was Rs.73,175 per household per year. Among tribal households, fuelwood earned the most per year (Rs.20,000), followed by Karanj, Neem, and Sal datman (Rs.16,000), Kendu fruit (Rs.13,500), Sal dona (Rs.10,200), Rugra mushroom (Rs.7800), Lac (Rs.4500), Mahua flower (Rs.600), and Oil seeds (Rs.575) (Table 1). Two notable tribal households' family businesses that make a sizable proportion of income are sal leaf plate preparation and lac cultivation. Sal leaves are collected, processed, crude plates are stitched, and sold in local haats (weekly markets) for a decent living.

However, there is a high demand in urban areas for machine-pressed sal leaf plates, which have the capability to boost extra income by making improvements through mechanized moulding. Accumulation and selling of toothbrushes made from Sal (*Shorea robusta*), Karanj (*Millettia pinnata*), Neem (*Azadirachta indica*), and Mahua (*Madhuca latifolia*) in local and urban markets is a popular and profitable business for tribal children and women. Country liquor is made from dried mahua (*Madhuca latifolia*) flowers and sold by tribal women in improvised retail consumers purchase it at almost all functions, commemorations, and cultural events, as well as at local weekly haats.

Average sale prices of various NTFPs in the local market

Available markets and marketing strategies play a critical role in the high sale value and higher return of locally collected forest products. To begin, the prices of NTFPs were examined in the local markets and haats of each village, then compared, and the average value was recorded. The tribals residing in the local area generally participate in the marketing and selling of various forest products in the local market; they provided the price basis among the various NTFPs in the market. Table 2 depicts the seasonal average sale prices of NTFPs. The prices of various forest products can be analysed, with Sal dona being the most expensive product in the area (Rs 800/kg), followed by lac (Rs 670/kg), and Sakua plates and bowls being the least expensive (Rs 5-10/ piece), followed by Van Tulsi seeds (Rs 16/kg).

Table 1. Tribal people's household exploitation of NTFPs

NTFPs	Collection (kg/annum)	Consumption (kg/annum)	Marketing (kg/annum)	Rate (Rs/kg)	Income (Rs/annum)
Fuelwood	4000 bundles	3000 bundles	1000 bundles	Rs 20/ bundle	Rs 20,000
Sal dona	35 bundles 1 bundle = 1000 leaves	1 bundle	34 bundle	Rs 300/ bundle	Rs 10,200
Mahua flower	45	5	40	Rs 15/ kg	Rs 600
Rugra mushroom	70	5	65	Rs 120/ kg	Rs 7800
Lac	30	0	30	Rs 150/ kg	Rs 4500
Oil seeds	25	2	23	Rs 25/ kg	Rs 575
Kendu fruit	80	5	75	Rs 180/ kg	Rs 13,500
Karanj, Neem and Sal Daatun	1000 bundles	200	800	Rs 20/ bundle	Rs 16,000
Total					Rs 73,175

Table 2. Average sale price of various NTFPs in the local market

S. No.	NTFPs	Average sale price in 2 blocks
1	Sal Seeds	Rs 20/kg
2	Tamarind (with seeds)	Rs 36/kg
3	Tamarind (De-seeded)	Rs 63/kg
4	Sal leaves	Rs 35/kg
5	Mahua seed	Rs 29/kg
6	Rangeeni Lac	Rs 200/kg
7	Kusum seeds	Rs 23/kg
8	Wild Honey	Rs 225/kg
9	Chironji pods with seeds	Rs 126/kg
10	Neem seeds	Rs 27/kg
11	Bahera	Rs 17/kg
12	Bael pulp	Rs 30/kg
13	Karanj seed	Rs 22/kg
14	Karanj daatun	Rs 20/bundle
15	Bael branches	Rs 70/ bundle
16	Kalmegh	Rs 35/kg
17	Dried Mahua flowers	Rs 30/kg
18	Tejpatta	Rs 40/kg
19	Jamun dried seeds	Rs 40/kg
20	Chirata	Rs 34/kg
21	Arjuna bark	Rs 21/kg
22	Van tulsi leaves	Rs 22/kg
23	Van tulsi seeds	Rs 16/kg
24	Dry Aonla	Rs 60/kg
25	Sakua plates and bowls	Rs 10 and Rs 5
26	Sal Dona	Rs 800/kg
27	Kusum seeds	Rs 70/kg
28	Fuelwood	Rs. 80/ bundle or Rs. 4/kg
29	Rangeeni Lac	Rs 200/kg
30	Kusumi Lac	Rs 275/kg
31	Seed Lac	Rs 670/kg
32	Jamun dried seeds	Rs 42/kg
33	Dried amla pulp	Rs 52/kg

Socioeconomic characteristics of NTFP collectors

Socioeconomic characteristics are important in tribal areas because they address both social and economic issues. When we look at the table below, we can clearly see a picture of the various socioeconomic characteristics. When compared to other age groups in the village, the majority of NTFP collectors here are between the ages of 21 and 30. Female contribution to NTFP collection was found to be dominant. A large proportion of the people involved in NTFP collection have completed primary school. Hindus (72.50%) were the most numerous collectors, followed by Christians (27.50%). The majority of average household income (87.5%) is between Rs 5000-10000, followed by Rs 10000-15000 (12.50%). When we look at the age groups of NTFPs collectors, we can conclude that the population in the age bracket of (21-30 years) accounts for approximately (53.75 percent), while the least contribution in the collection was of the people belonging to the age bracket of (Above 50 years). The majority of NTFPs was seen to be collected during the winter season (62.5%) followed by summer season (25%) (Table 3).

Involvement of members of households in Collection of NTFPs

Collection of NTFPs by the tribal household members is one of the crucial aspects for their daily livelihood. Here we can draw a line that largely the women household members (42%) were involved in the NTFP collection which was followed by both men and female (29%) whereas the least contribution (<1%) in NTFP collection was of girls of less than 15 years age group.

Acknowledgement

The authors express heartfelt gratitude to the Gram Pradhans, Family Heads, Tribal Welfare Research

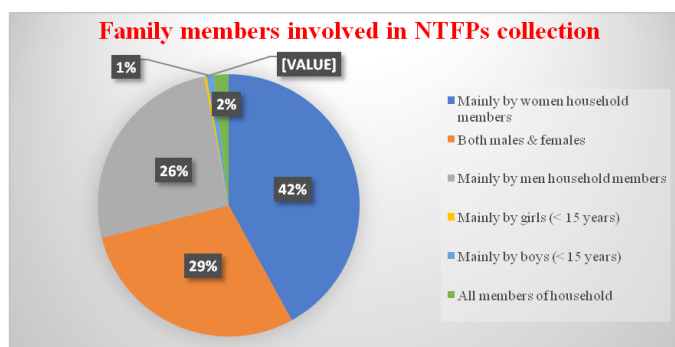


Fig. 1. Family members involved in NTFPs collection

Table 3. Socio-economic profile of NTFPs collectors

S. No	Variable	Category	Frequency	Percentage %
1.	Age	21-30	43	53.75
		31-50	27	33.75
		Above 50	10	12.50
2.	Sex	Male	30	37.50
		Female	50	62.50
3.	Marital status	Married	60	75
		Unmarried	12	15
		Widow	8	10
4.	Educational status	Illiterate	28	35
		Primary	38	47.50
		High School	14	17.50
5.	Family size (Average)		5.8	
		Men	1.5	
		Women	1.3	
		Children	3.0	
6.	Religion	Hindu	58	72.50
		Christian	22	27.50
7.	Monthly income	In Rupees (Rs)		
		5000-10000	70	87.50
		10000-15000	10	12.50
8.	Years of experience in collection of NTFPs	15000 and above	Nil	
		Years		
		<10 years	14	17.50
		10-20 years	35	43.75
		21-30 years	22	27.50
9.	Season of collection	30 years and above	9	11.25
		Winter	50	62.50
		Summer	20	25.00
		Rainy	10	12.50
10.	Monthly Expenditure (Family wise)	<1500	12	15
		1500-5000	48	60
		5001-10000	20	25
		10000 and above	Nil	

Institute, JSFDC, Van Bhawan, and all Government officials for their invaluable assistance in completion of this research. The interviewees deserve applause for their candid information and enlightenment, which served as the foundation for this work, and a special thanks to the SHUATS faculty for their timely guidance and suggestions throughout the course of this research.

Conclusion

The above findings concludes that Tribal people mainly depends upon NTFPs for employment and income generation (50% >) through collection of NTFPs, Processing and value- addition. Men played a dominant role in marketing of NTFPs while women were dominant in processing and collection.

The average household income in study areas were Rs.73000 per annum. There needs proper management and attention for utilize the NTFPs in the study areas.

References

- Ahmad, M., Khan, M.J., Manzoor, S., Zafer, M. and Sultana, S. 2006. Check list of Medicinal flora of Tehsil Isakhel, District Mianwali Pakistan. *Ethnodirected Approach in Identification of Medicinal Plant*. 1-10.
- Angelsen, A. and Wunder, S. 2003. Exploring the forest-poverty link. *CIFOR Occasional Paper*. 40: 1-20. Available online: <https://www.cifor.cgiar.org> [Accessed on 22 February 2021].
- Bahuguna V.K. 2000. Forests in the economy of the rural poor: an estimation of the dependency level. *Ambio*

- 29(3): 126–129. Doi:10.1579/0044-7447-29.3.126
- Banajata. (n.d.). *Jharkhand- Policies of NTFPs, acts and rules, notifications*. Regional Centre for Development Co-operation (RCDC).
- Barham, B.L., Coomes, O.T. and Takaski, Y. 1995. Rain forest livelihoods Income generation, household wealth and forest use. *Journal of Development Economics* 4685-107.
- Bauri, T., Palit, D. and Mukherjee, A. 2015. Livelihood dependency of rural people utilizing non-timber forest product (NTFP) in a moist deciduous forest zone, West Bengal, India. *International Journal of Advanced Research*.
- Bedia, S. 2014. *Study on the forest-based livelihood for the selected tribal population of Ranchi district of Jharkhand*. B.Sc. Dissertation, Unpublished. Faculty Centre for Integrated Rural and Tribal Development and Management, School of Agriculture and Rural Development. Ranchi, India.
- Behera, M.C. and Nath, M.R. 2012. Financial Valuation of Non-Timber Forest Products Flow from Tropical Dry Deciduous Forests in Boudh District, Orissa. *International Journal of Farm Science*. 2 (2): 83-94.
- Belcher, B. and Schreckenber, K. 2007. Commercialization of Non-timber forest products: A reality check. *Development Policy Review*. 25 (03) : 355-377.
- Census of India. 2011. A - 5 State Primary Census Abstract – 2011, Government of India.
- Chakraborty, N.R. and Paul, A. 2014. Traditional Knowledge on Medicinal Plants used by the Tribal People of Birbhum District of West Bengal in India. *International Journal of 398 Agriculture, Environment and Biotechnology*. 7(3) : 547-554. Doi:10.5958/2230-732X.2014.01359.X
- Champion, H.G. and Seth, S.K. 1968. *Revised Survey of Forest Types in India*. Manager of Publication, FRI Press, Dehra Dun, India.
- Chopra, K. 1993. The value of Non-Timber Forest Products: estimation for tropical deciduous forests in India. *Economic Botany*. 47 (2) : 251-257.
- Choudhary, S. N. 2009. Tribal development since independence. New Delhi: Concept Publishing Company.
- De, H.K. and Babu, A.R. 2003. Socio-economic impact of JFM in Bankura. *Manage Extension Research Review* January-June 58-66.
- FAO 1999. Non-wood Forest Products and Income Generation. Unasylva, working paper, 198.
- FAO 2005. The State of Food Insecurity in the World: Eradicating World Hunger Key to Achieving the Millennium Development Goals. Rome: FAO.
- FAO. 2008. *Non wood forest products*. Rome, Italy.
- Gauraha, A.K. 1992. Micro-economic analysis of a tribal village. *Indian Journal of Agricultural Economics*. 47(3): 446-447.
- Gharai, A. K. and Chakrabarti, S. 2009. *A Study on NTFP-related livelihood dependency and people's perception of the commercialization potential of selected NTFPs in selected locations of Gumla, Hazaribagh and Simdega districts of Jharkhand*. Secunderabad: Centre for People's Forestry.
- Ghosal, S. 2011. Importance of non-timber forest products in native household economy. *Journal of Geography and Regional Planning*, 4(3): 159-168
- Giri, T.K., Mazumdar, Santra, S.C. 2005. Major NTFP items and their marketing potentials at Hazaribagh forest area in Jharkhand-A case study. *Indian Forester*.
- GOI. 2006. *The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006*. The Gazette of India, Legislative Department, Ministry of Law and Justice, New Delhi.
- Government of Jharkhand. 2009. *State of Jharkhand—Overview*. Retrieved from <http://jharenvis.nic.in>
- Islam, M.A., Banyal, R., Masoodi N.A, Masoodi T.H, Gangoo S.A. and Sharma L.K. 2011. *Status of Fuelwood Extraction and Consumption Pattern in Rural North Kashmir A Case Study*. *The Indian Forester* 137 (8) 1265-1268.
- Islam, M. A., Quli, S. M. S., Rai, R. and Sofi, P. A. 2013. Livelihood contributions of forest resources to the tribal communities of Jharkhand. *Indian Journal of Fundamental and Applied Life Sciences*. 3(2): 131-144.
- Islam, M. A., Quli, S. M. S., Rai, R. and Ali, A. 2014. Exploration of variables predicting livelihood assets status of tribal communities subsisting in forests of Jharkhand, India. *Journal of Human Ecology*. 47(3): 241-249.
- Islam, M. A. and Quli, S. M. S. 2015. Forest resources use for building livelihood resilience in ethnic communities of Jharkhand. *Trends in Biosciences*. 8(5): 1256-1264.
- Islam, M. A., Quli, S. M. S., Sofi, P. A., Bhat, G. M. and Malik, A. R. 2015. Livelihood dependency of indigenous people on forest in Jharkhand, India. *Vegetos*. 28(3): 106-118.
- Islam, M.A., Quli, S.M.S. and Baba, M.Y. 2016. Household drivers of forest dependence for employment support among tribes of Jharkhand, India. *Economic Affairs*. 61(2): 339-347.
- Jana, S. K. 2008. *A Study on dynamic relationship between forest cover and socio-economic condition of Paschim Medinipur-Using remote sensing and GIS platform*. (Unpublished doctoral dissertation). Vidyasagar University, West Bengal, India.
- Johnson, T.S., Agarwal, R.K. and Agarwal, A. 2013. Nontimber forest products as a source of livelihood option for forest dwellers: Role of society, Herbal industries and Government agencies. *Current Science*. 104(4): 440-443.
- Krishnamoorthy, L., Varadharaj, S., Mani, G. and Adeline Vinila, T.E. 2003. Collecting and marketing of non-timber forest products in Tamil Nadu. *Journal of NTFPs*. 10(2): 74-82.

- Kumar, V. 2014. Impact of non-timber forest produces (NTFPs) on rural tribes' economy in Peechi Vazhani Wildlife Sanctuary, Western Ghats, Kerala. *International Journal of Usufructs Management*. 15 (2): 80-100.
- Mahapatra, A. K. and Tewari, D. D. 2005. Importance of non-timber forest products in the economic valuation of dry deciduous forests of India. *Forest Policy and Economics*. 7(3): 455-467.
- Maithani, G.P. 1994. Management perspectives of Minor Forest Produce. MFP News, October-December, 1994. Dehradun.
- Malhotra, K.C. 1993. Role of Non-Timber Forest Produce in Village Economies in South West Bengal, India. *RDFN*. 15(1) : 125-127.
- Pant, M.M. 1984. Forest Economics and Valuation. Madhavi Publishers, Dehradun.
- Prasad, N. and Siddiqui, M. H. 2006. Promotion and protection of Jharkhand forests to mitigate problem of livelihood. *My Forest*. 42(4): 405-409.
- Rao, T.V.N. 1987. Sustainability of J.F.M. in West Bengal. (Ed.) *National Workshop on "Recent Trends in J.F.M."* Divisional Forest Office, Bankura.
- Shit, P.K. and Pati, C.K. 2012. Non-timber forest products for livelihood security of tribal communities: A Case Study in Paschim Medinipur District, West Bengal. *Journal of Human Ecology*. 40(2) : 149-156.
- Singh, P.K. and Quli, S.M.S. 2011. Economic valuation of Non-Timber Forest Product's contribution in tribal livelihood in West Singhbhum district of Jharkhand. *The Indian Forester*. 137(11) : 1258-1264.
- Tejaswi, Pillenahalli, Basavarajappa, 2008. *Non-Timber Forest Products (NTFPs) for Food and Livelihood Security: An Economic Study of Tribal Economy in Western Ghats of Karnataka, India*, In: Ph. D thesis. Ghent University (Belgium).
-