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The Value Chain Analysis of Four Minor Forest Products (Tamarind, Sal Seed, Lac, Chiraunji) to boost the Commercial Activity of the Tribal population of Jharkhand

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Abstract

In recent decades, there has been a significant rise in interest about non-timber forest products (NTFPs) among scientists, conservationists, and development groups, as NTFPs play a crucial role in the livelihoods of a sizeable segment of the population, particularly among tribes in India. The contributions of NTFPs assist in meeting the financial needs of forest-dependent individuals by augmenting the value of forest resources in sustainable development. Thus, the commercialisation of NTFPs is typically regarded as a means to simultaneously achieve forest conservation and development goals. This has led to an increased interest in MFPs within the value chain and market development approach. A study was undertaken on the value chain analysis of four minor forest products (Tamarind, Sal Seed, Lac, and Chiraunji) to examine prospects within the value chain development framework. This study aims to elucidate the value chain of MFPs and evaluate the advantages obtained from government schemes in Jharkhand.

Keywords: Tribal, Minor forest products, Non-timber Forest products, Value chain, Focus Group Discussion.

Introduction

The state of Jharkhand encompasses an area of 7.97 million hectares. Jharkhand comprises 29.61% of its geographical area as total reported forest area. A significant proportion of the indigenous people resides in or adjacent to woods. The tribal economy is intricately linked to forests and partially relies on them for sustenance. Since the early 1990s, the significance of non-timber forest products (NTFPs) in sustainable forest management and poverty alleviation has garnered heightened focus. Forest products continue to be a primary source of income and survival for the majority of indigenous settlements. These tribal villages endure extreme poverty, with minimal access to capital assets, healthcare, and educational services, and scant protection against unpredictable natural phenomena. Nature constitutes their primary source of dependence and sustenance. Non-timber forest products (NTFPs), often referred to as minor forest products (MFPs), serve as a significant source of employment and income for the indigenous populations residing in those settlements. The extraction, processing, and selling of non-timber forest products serve as a sustainable source of living by generating employment and revenue year-round. Despite inhabiting woodlands, they have maintained a tight association with agriculture for millennia. Certain basic food grains were cultivated independently in the proximity of woods.

The scheduled tribe communities primarily cultivate food crops for domestic consumption. In many instances, agricultural production is inadequate to support the tribal household for the entire year. Nevertheless, a limited amount of agricultural produce enters the market, not due to a marketable excess, but rather to satisfy obligations from loans obtained from traders or to meet domestic consumption requirements. The produce is typically sold at the weekly markets. In addition to agriculture, the tribals are proficient in gathering many non-timber forest products (MFPs) including gallnut, tamarind, honey, canes, reeds, spices, oilseeds, lac, karanj, kusum, harra, sal seeds, mahua, chiraunji, bamboo, medicinal goods, and kendu leaves. It is predicted that the collecting, processing, and selling of minor forest products can create profitable job opportunities for about 10 million individuals annually

across the nation. The project aims to determine if the value chain of Tamarind, Sal seed, Lac, and Chiraunji can effectively enhance commercial activity for the tribal community of Jharkhand.

Rationale of the study

Numerous studies have emphasised the significance of MFPs for those living in rural regions. The study aimed to refine the extraction, value addition, and marketing of MFPs, hence creating the value chain processes specifically concerning four MFPs in Jharkhand. This will establish guidelines for governmental policies and fulfil the villagers' needs for effective planning aimed at their development through MFPs.

Objectives of the study

1) To study and analyse the existing system of collection, production and distribution of MFPs
2) 4) To document the seasonality of intense economic activities happening around these four commodities.
3) To study and analyse the existing value chain (production, post-harvest management, marketing channels, and competitive value-added products for the end users) of Tamarind, Sal seed, Lac, and Chiraunji
4) To analyse the benefits of the governmental schemes related to Rural Non-Farm sector MFPs,
5) To study the value chain and value addition and marketability of the products.

Review of Literature

P. Kumari et al. (2018) state that the existence and economic activities of forest inhabitants are centred on forests and forestry operations. Forest-based activities involve the collection, processing, and sale of non-timber forest products (NTFPs) on the local market. The Jharkhand forest is crucial for sustainability and economic advancement, particularly for the tribal communities. K. C. Malhotra and P. Bhattacharya (2010) seek to delineate the scope, dependence, and economic importance of non-timber forest products (NTFPs) for forest-dependent populations, while proposing measures for their sustainable development and utilisation. A. K. Mahapatra et al. (2005). This study presents and analyses data regarding the contribution of non-timber forest products (NTFPs) to cash income in the dry deciduous forests of Orissa and Jharkhand, India. D. Churpal et al. (2021) examined the significance of non-timber forest products for the livelihoods of tribal communities in the Bastar region of Chhattisgarh, emphasising the nature and degree of tribal reliance on forests. N. C. Saxena (2003) and A. K. Pandey et al. (2011) underscore the sustainable management of non-timber forest products via cooperative forest management. S. P. Saini et al. (2016) conducted a value chain development via a series of evaluations and analyses of non-timber forest products (NTFPs). N. Rajeshwari et al. (2017) conducted a study on the value chain management of selected non-timber forest products in the Uttara Kannada district of Karnataka, recommending the initiation of the value chain with local collectors to benefit local villagers and meet the high demand for NTFPs. A study by K. Meinhold & D. Darr (2019) identified the drivers and constraints impacting NTFP processing enterprises, thoroughly delineating the factors that enable or restrict the potential of processed non-timber forest products (NTFPs) to foster rural development.

It necessitated a comprehensive approach to the value chain context. S. K. Verma and S. K. Paul (2016) highlighted methods for evaluating the demand for financial services inside the value chain. The article emphasises the formulation of strategies to secure the value chain of non-timber forest products (NTFPs), concentrating on financial support for people reliant on NTFPs for their livelihoods. A study was similarly undertaken on the importance of non-timber forest products (NTFPs) in the tribal economy of Jharkhand by M. A. Islam and S. M. S. Quli (2017). The study contributed to the longstanding extraction, utilisation, and promotion of NTFPs, as well as to socio-economic development, poverty alleviation, and the security of tribal livelihoods in the region. Bansal, A. K. (2020) provides a rigorous analysis of six selected NTFPs throughout 36 forest divisions, detailing their resources and production to formulate comprehensive management policies for the benefit of the state. V. Singh, V. et al. (2014) examines the viability of Sal seed as an economic venture for tribal advancement in central India. A study on the Chironji as a significant resource of Central India was conducted by S. Prasad (2020), similar to the Sal Tree. This

study evaluates the nutritional and economic benefits of the Chironji seed and highlights regenerative methods for its conservation and enhancement. The research demonstrated that these plant seeds yield a fatty oil that substitutes olive and almond oil and is extensively utilised in confectionary and Indigenous Medicine systems (IMS). Extensive research has emphasised the significance of MFPs. However, the majority of research have neglected the connections between minor forest products and the social and cultural aspects of indigenous groups. The globe is currently facing social, economic, and cultural issues as a result of climate change. Climate change is also impacting the MFP. In these conditions, it is essential to safeguard forest products, as they provide sustenance for individuals residing in isolated areas. Examining tribal connections with environment and indigenous knowledge will enhance sustainable development and improve ecological usage. The tribal mindset and the significant advantages of their viewpoint need exploration. The project will focus on the extraction, value addition, and commercialisation of MFPs, hence developing the value chain processes specifically concerning Mahua, Tamarind, Sal seed, Lac, and Chironji. It will educate the villagers about various government projects and advocate for their needs before the authorities to facilitate efficient planning for their development through MFPs. Consequently, this study aims to identify proactive measures for the agencies engaged in the value chain analysis of Mahua, Tamarind, Sal seed, Lac, and Chironji. The research will propose an action model that integrates commerce, marketing, socioeconomic development of tribes, and the necessity for accreditation of entities engaged in the collection and distribution of MFPs. To date, the certification of marketing and trading experts under MFPs has not been examined. Consequently, the research will facilitate the implementation of national policies and state action plans for the advancement of local communities.

Methodology

The research is exploratory and was done in four selected districts of Jharkhand. The research project utilises primary and secondary data, together with a pilot survey. The research will focus on the four districts of Jharkhand: Hazaribagh, Latehar, West Singbhum, and Ranchi. The research was carried out in villages where Tamarind, Sal Seed, Lac, and Chiraunji trees are present, with residents engaged in the collection of forest products, enhancing their value, and generating profit from them. Secondary data was gathered from diverse literature, including official reports and regulations, such as those from TRIFED. Additional sources such as newspapers, journals, and books were also consulted. Initial data was gathered using structured questionnaires and interview protocols. Personal interviews and focus group discussions aligned with the study's aims were employed as early investigations.

Sample Size for the Research Study

The village collectors at the forest level were interviewed in the eight designated districts of Jharkhand to gather primary data for the research study. A total of 99 samples were obtained from various districts throughout the state. In this context, individual interviews and group discussions were conducted. A conference was convened with the people, the resident permanent intermediary, and the intermediary from the local Haat-Bazar. The investigation was conducted with the districts and administrative officials directly associated with these forest products. The data was gathered via a qualitative methodology.

Sample size and method of selection:

The suggested study utilises a non-probability sampling strategy. The sampling was employed to find and pick resources abundant in information. The research study is founded on primary data, focus group discussions, secondary data, and pilot trials. The primary data was collected via structured interviews with a deliberate sample selection. Observations and trips to local markets and lac factories were conducted to closely analyse the activities related to value addition and marketing of MFPs in the State.

No	Activities Involved	Data Collection	Places visited	
1.	Personal interviews	Structured Interview	eight districts of Jharkhand	Number of people interviewed= 99
2.	Focused Group Discussion	Interaction with participants	Khunti, Gumla, Sahibganj, Chaibasa, Simdega	Number of FGDs = 5
3.	Local market visit	Observation / Visit	Dumka, Pakur, Khunti, Sahibganj, Chaibasa	Number of local markets visited = 5
4.	Visit to DFO	Interview	Sahibganj, Chaibasa	Area where visited the DFOs = 2
5.	Lac factory visit	Observation / Visit	Khunti, Ranchi (Namkom)	Number of factories visited = 2

Table 1: The method of data collection

The primary data was collected through structured interviews with a purposive selection of the samples. Ninety-nine structured interviews were conducted from eight districts of Jharkhand. See the table:

Districts	Location/Village	Interviewed		Total number of respondents
		Men	Women	
KHUNTI	Binda	1	2	10
	Gulu	4	-	
	Bandgaon	2	1	
CHAIBASA	Bara Jhikpani	1	1	13
	Bistumpur	3	1	
	Epilsinga	-	2	
	Dokart	3	2	
SIMDEGA	Shrikondekar	1	1	15
	Bano	1	2	
	Kebartang	-	1	

	Paboda	-	1	
	Jerekal	2	-	
	Lacragarh	1	-	
	Idega	1	-	
	Jaldega	-	2	
	Jitya-Toli	-	1	
	Amber-Toli	-	1	
GUMLA	Sarubera	2	-	10
	Chirodar	1	3	
	Loki	1	1	
	Samra	-	1	
	Bandatoli	-	1	
RANCHI	Chamranga	1	2	8
	Parsatari	1	1	
	Bijupara	1	1	
	Chanho	-	1	
PAKUR	Littipada Local Market	4	-	9
	Amrapara Local Market	5	-	
SAHIBGANJ	Udhwa	2	3	16
	Mandro	1	2	
	Borrio Bazar	3	2	
	Barhait bazar	1	1	
	DFO Sahibganj	1	-	
DUMKA	Karharbir	3	2	18
	Gopikander	6	4	
	Durgapur Market	2	-	
	DFO Dumka	1	-	
Total Respondents				99

Table 2: Interview Structure

Findings and Analysis

Findings of Tamarind

Minor Forest Produce	Collection Season	Collection Days	MSP declared by the GOI (Rs. per Kg)	Selling Rate	Field Study
Tamarind	Feb-March, April-May	31 Days	With seeds - Rs.36 Without seed-Rs.63	With seeds Rs.20-25	Simdega, Chaibasa, Khunti, Gumla, Ranchi, Pakur, Sahebganj, Dumka.

Table 3: Field Observation of Tamarind

Both women and men participated equally in the collecting of tamarind, predominantly within the age range of 36 to 59 years; however, in certain regions, young men and women aged 18 to 35 were also engaged. In certain villages, the predominant collectors were smallholder farmers and students attending school and college. The small haat bazaar served as the primary market venue for the residents to sell tamarind. Conversely, for contractors and intermediaries, the market venues were the haat bazaar and the town market.

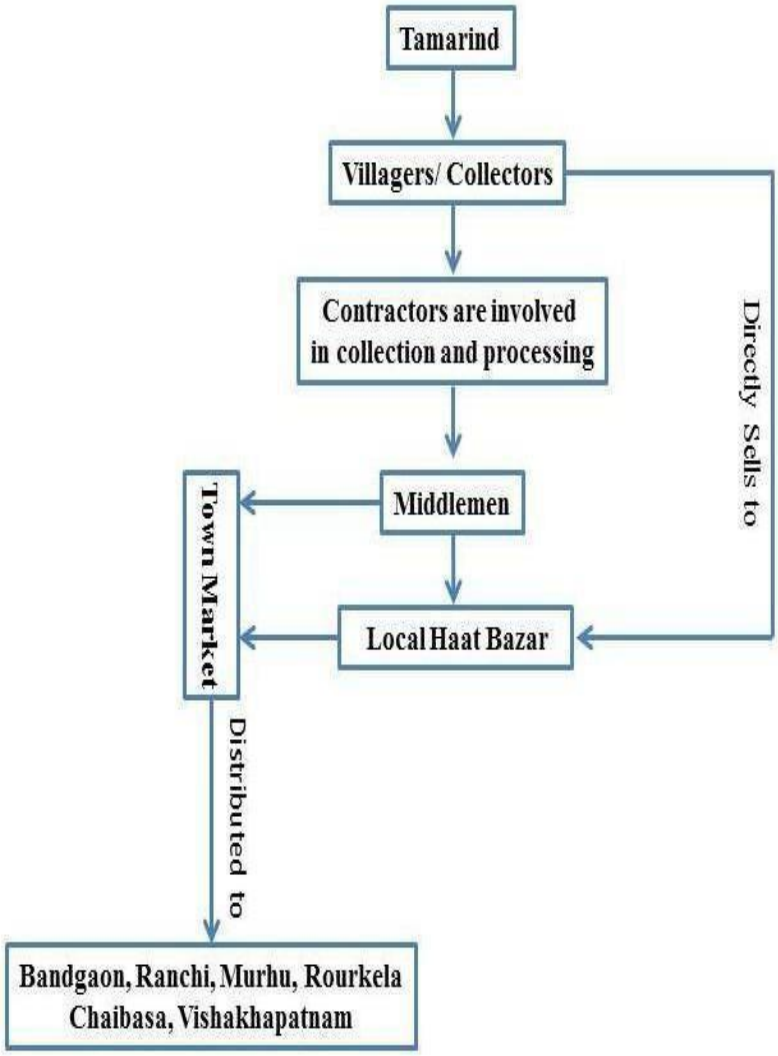

Fig 1: Value chain of Tamarind

The prices of tamarind are variable and significantly affected by agricultural yield and market dynamics. Major traders typically make those decisions. The prices of tamarind also vary in accordance with the production of vegetables such as tomatoes. Residents of adjacent regions and West Bengal frequently utilise tamarind as a replacement for tomatoes.

In Pandra, local village farmers sell tamarind in the haat bazaar without any value addition. The sole advantage that producers and collectors derive from the Tamarind is through the Abussal Group. Producers associated with the Abussal Group in Pandra receive updates on the market price of Tamarind, facilitating their sales in the local haat bazaar.

The value addition of tamarind was observed exclusively in Khunti. A couple residing in Khunti is engaged in the production of a completed Tamarind product called Siladon VDVK. The seed is extracted from the tamarind, and pulp is produced using a machine. The cakes are produced and sent to several states in India. In some districts, the de-shelling procedure is conducted manually by individuals using sticks and is thereafter sold through village traders or local marketplaces. No apparatus for extracting tamarind seeds is available in the other districts. Nearly all the agricultural products from the areas are exported without any value addition, resulting in lower compensation for the producers than they could have received through value enhancement. No organised processing of Tamarind exists in the districts. Tamarind relocates to other states for processing and value addition.

Fig 2: Collection and Distribution of Tamarind

Although Jharkhand is one of the largest tamarind-producing states, its producers receive a minimal portion in the value chain. The intermediaries and wholesalers mostly generate revenue by processing the fruit and subsequently exporting it to other states.

Findings of Sal Seed

Minor Forest Produce	Availability season of Sal seed	MSP declared by the GOI (Rs. per Kg)	Selling Rate	Field Study
Sal Seed	June-July	Rs.8-12 Per Kg	Rs.8-12 Per Kg	Simdega, Chaibasa, Khunti, Gumla, Ranchi, Pakur, Sahebganj, Dumka

Table 4: Field observation of Sal Seed

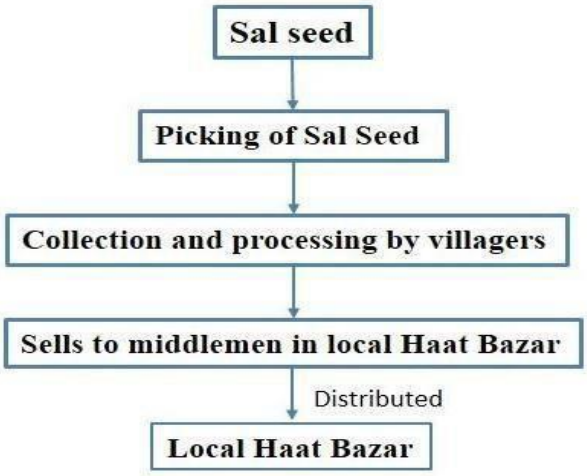

Fig 3: Collection & Distribution of Sal Seed

The aforementioned figure illustrates the participation of producers in Sal Seed. The people gather sal seeds following the fall of mature fruits. The seed collection persists until the arrival of the monsoon. Following the onset of rain, the collecting ceases as numerous regions become unreachable and the dispersed seeds commence germination. The predominant technique for seed collection is manual plucking from trees in forested areas. Certain villagers employ the method of incinerating ground litter to facilitate the harvesting of seeds. Following harvesting, the seeds are desiccated under sunlight. Subsequent to sun drying, they incinerate it to facilitate visibility of the fruit's outer covering. The seed coverings are manually detached to get the seeds. Subsequent to separation, it is sold to intermediaries at the local haat bazaar. Men aged between 30 and 59 were predominantly engaged in the collection and de-seeding of sal seeds. The study indicated that there is no value addition of Sal Seed occurring in any of the districts of Jharkhand. The people market sal seeds in the districts of Gumla, Chaibasa, and Simdega. Despite the prevalence of Sal trees in many districts of Jharkhand, the local populace is not engaged in the value chain process.

In Gumla, comprehensive research has been conducted on the awareness and value chain process of Sal seeds; nonetheless, the collection and processing of Sal seeds is a laborious task. The market value of Sal seeds and the government rate are somewhat low, resulting in a lack of interest among individuals. Third, in numerous districts, residents are unaware of the value enhancement associated with Sal seeds.

Findings of Lac

Minor Forest Production	Collection Season	MSP declared by the GOI (Rs. per Kg)	Collection Rate	Support Body	Collection District
Lac (Kusumi)	6 Months Cycle	275 Rs/Kg	450-550 Rs/Kg	JASCOLAMPF	Simdega, Chaibasa, Khunti, Gumla, Ranchi, Pakur, Sahebganj, Dumka
Lac (Rangeeni)	4 Month Cycle 8 Month Cycle	200 Rs/Kg	350-450 Rs/Kg	Siladon VDVK	

Table 5: Field observation of Lac

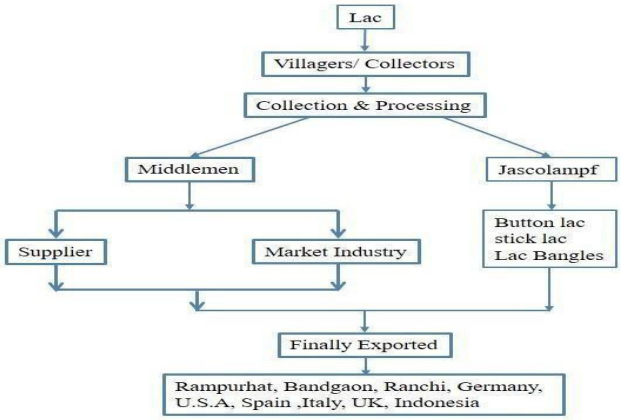

Fig 5: Collection & Distribution of Lac

Fig 6: Value Addition of Lac

Lac cultivation occurs in the districts of Khunti, Chaibasa, Simdega, Ranchi, and Gumla. The Lac cycle commences with the trimming of host trees, succeeded by the inoculation of Lac in host plants. The inoculation of Lac is often performed using stick lac, which is removed after 20 to 25 days. The extracted Lac is referred to as Puki Lac, which guarantees the greatest price. The application of insecticides occurs 40-50 days post-inoculation and is contingent upon the host plant and environmental conditions. The state government and the business sector are implementing measures to advance Lac as an enterprise, particularly in the Khunti district. Producer-level rates range from Rs. 350 to 450 per kilogramme for Rangeeni and from Rs. 450 to 550 per kilogramme for Kusmi. Individuals typically cultivate

Rangeeni Lac owing to the availability of brood lac and the abundance of host plants. Premature harvesting is a prevalent technique for immediate financial needs.

The survey revealed that the villagers are cognisant of the Lac's value; but, due to insufficient governmental support, they are unable to enhance its value and consequently sell Fuki lac in the local haat bazar for Rs. 800 to 1000 per kg. The youth in Gullu and Binda villages cooperatively collect Lac from cultivators, and with the assistance of JASCOLAMPF, they have established a preliminary manufacturing unit for Fuki lac, refining it to Chawri Lac after impurity removal, which may subsequently be sold to traders for Rs. 1600 to 1700. In this method, they eliminate the intermediary, so ensuring that the funds are directly allocated to the residents and the young of the community.

Field investigations reveal that the Kasumi lac cultivation technology, developed by the Indian Institute of Natural Resins and Gums (IINRG) in Ranchi, has been implemented in several regions of Jharkhand, particularly within the Kasumi belts. It encompasses a substantial quantity of Kusum trees, as the brood lac obtained from ber trees is of superior grade. The winter crop yield is not included in the growth rate as it was primarily used for brood lac, and the commercialisation of scraped brood lac commenced at least 2-3 months post-winter harvest.

The village youth articulated that Lac represents the most lucrative enterprise because to its prevalent cultivation in the Khunti district and its six-month harvesting period, in contrast to other crops. The subsequent six years yield no outcomes throughout the year. The kusumi lac output in the Khunti, Chaibasa, and Gumla areas was noted to be satisfactory. The output of rangeeni crops in the same district was subpar and exhibited negative growth, with a greater magnitude during the wet season compared to the summer season crops. In Kusumi, the summer crop had favourable growth in both districts, but the Kusumi winter crop demonstrated a higher growth rate in Khunti compared to Gumla. The Kusumi summer crop thrived in the Ranchi district.

The youngsters are engaged year-round in the collecting and processing of Lac produce. Up to the Chowri lac level, cultivators receive minimal assistance from the government, although this limited support enables them to generate income, earning between Rs. 800 and Rs. 1000 per kilogramme. The method is somewhat laborious; however, with infrastructure expansion, they can also enhance it. The digital connection is effectively enhancing the value of Lac in the Siladon VDVK Cluster, located in Khunti district. Under the guidance of Smt. Lalita Devi, the VDVK cluster has rapidly sold a substantial quantity of lac bangles. The peasants gather raw Lac, which is then processed by the Siladon VDVK to manufacture bangles.

Focus group discussions regarding Lac indicate that women predominated in the processing and marketing sectors. The successful examination of VDVK in the Siladon and Tajna Lac Factory within the Khunti district regarding the production, processing, and marketing of Lac has identified three factors contributing to the significant participation of women in this sector: labour intensiveness, cooperative support, and the opportunity to perform work close to home, thereby circumventing conflicts with domestic responsibilities. The value chain of Lac in Siladon is significant since it supports the livelihoods of the rural impoverished, especially women who predominantly market non-timber forest goods.

Findings of Chiraunji

Minor Forest Produce	Collection Season	Collection days	MSP declared by the GOI (Rs. per Kg)	Selling rate	Collection District
Chiraunji	March-April-May	25 - 30 Days	Rs.100-110 per Kg	Rs. 110-130 Per Kg of Chiraunji Guthli	Simdega, Chaibasa, Khunti, Gumla, Ranchi, Pakur, Sahebganj, Dumka

Table 6: Field observation of Chiraunji

Chiraunji trees are located in agricultural areas and are dispersed throughout the woods of Jharkhand. Villagers gather and process Chiraunji. The peasants venture into the forest to gather the ripe fruit. The people believe that the gathering of Chiraunji fruits is a laborious endeavour. The manual harvesting of mature fruits is accomplished by ascending the tree. Upon harvesting ripened fruits, the seeds are extracted by agitating them in water and subsequently drying them in sunlight. The kernels are extracted manually by fracturing the rigid seed coat. Subsequently, it is encased in polyethylene bags. The potential for producing beverages from ripe fruits is substantial; hence, the villagers do not participate in this process. The principal district of Chiraunji is located in the local haat bazar of Simdega, Chaibasa, Khunti, Gumla, and Ranchi.

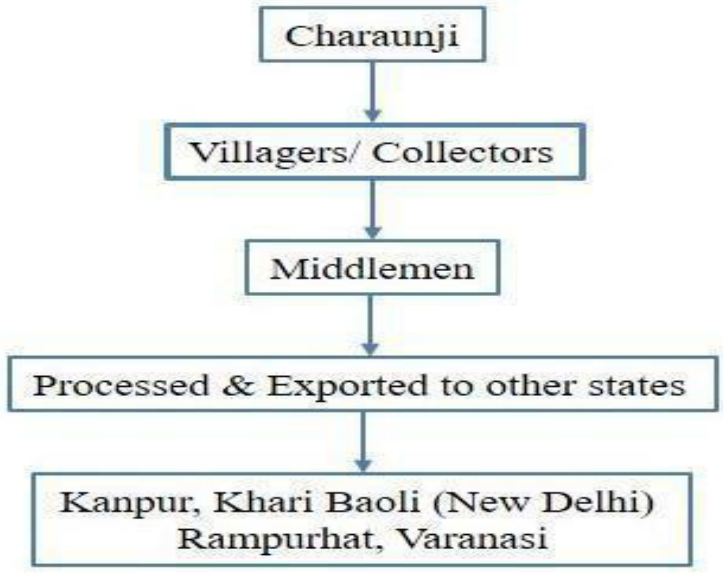

Fig 7: Collection and Distribution of Chiraunji

During the interview in the local haat bazaar in Bara Jhikpani Chibasa district, it was noted that local villagers were selling Chiraunji fruit. The fruit was sold at Rs.10 per dona Additionally, during the focus group discussion at Epilsinga hamlet in the Chiabasa district, it was noted that the residents lack awareness of the value addition of Chiraunji. The villagers were solely cognisant of the harvesting, sun-drying, and commercialisation of Chiraunji fruits. In the local haat bazar in Epilsinga village, fruits were priced at Rs 80 to 90 per kilogramme. In the Gumla

and Simdega districts of Jharkhand, Chironji seeds were harvested over an average of 26 days during the summer season, constituting 16 to 26 percent of the annual income for these regions. Currently, the price of Chiraunji in the national market ranges from Rs. 700 to Rs. 1200 per kilogramme.

The youngsters asserted that with the provision of instruction and a de-shelling equipment, they could process their kernels, market them, and achieve a superior price. The people are cognisant of Chiraunji marketing; yet, they receive no technical assistance. The survey revealed that cooperative societies such as Abbusal and NGOs are engaging with tribal communities to promote Chiraunji collection; however, the process is laborious, and due to insufficient knowledge and technical assistance, the villagers exhibit limited interest in this activity. During the field trips and focus group discussions, the villagers elucidated its applications in confectionery preparation, Ayurvedic medicine, cosmetics production, and its nutritional benefits. They were astonished and had a strong interest in the MFP and its selection for the upcoming season.

A focus group discussion was conducted with individuals aged 15 and older to collect insights into villagers' and producers' attitudes on MFPs across various districts of Jharkhand. Participants in the focus group were posed questions in an interactive environment and were prompted to express their opinions openly. The predominant participants were female. The research indicated that males participated in agriculture as their primary means of subsistence. Simultaneously, in non-agricultural activities, women's participation became the principal source of income. This disparity in engagement suggests that districts with MFPs regard farming as a primary occupation, whereas MFP collection is perceived as a secondary endeavour. The absence of technical assistance and reduced Managed Service Provider (MSP) involvement for Multi-Function Printers (MFPs) contribute to men's diminished participation in MFP activities.

Additionally, we conducted interviews with other forest officials for further study. They recounted their experience in the collection and extraction of MFPs and emphasised the necessity for appropriate equipment for their collection and processing. They also suggested incorporating additional self-help groups in this domain and effectively marketing the product.

The value chain and market development strategies have garnered significant attention. This method is especially effective in offering business prospects to rural populations, isolated areas, and those engaged in specific sectors or sub-sectors where market awareness is underdeveloped. The entire value chain is examined for the region to establish an effective strategy. The value chain refers to the operations undertaken to provide a certain product to its final consumer from its inception. Producers, processors, and merchants constitute a crucial segment of the value chain.

The current study, titled Value Chain Analysis of Four Minor Forest Products, examines the advantages obtained from government initiatives. The Minimum Support Price (MSP) for Minor Forest Produce (MFP) and the establishment of a value chain for MFP were initiated in 2013. The initiatives promote the sustainability of the resource base by tackling issues such as the perishability of produce, insufficient storage capacity, inadequate marketing infrastructure, and exploitation by intermediaries. Consequently, entrepreneurial skills for forest produce gatherers were imparted under the Pradhan Mantri Van Dhan Yojana (PMVDY) in 2018. The Van Dhan Vikas Yojana is a program initiated by the Ministry of Tribal Affairs and TRIFED. It was initiated to enhance tribal incomes by adding value to tribal items. The TRIFOOD Scheme was initiated by the Ministry of Food Processing Industry, the Ministry of Tribal Affairs, and TRIFED to enhance the value addition of Minor Forest Produce (MFP). To ascertain that current programs and efforts have been implemented. On this occasion, the agricultural minister declared that additional mandis should be linked online. Two crops, Mahua and Tamarind from Jharkhand, have been included in the e-mandi among 25 crops.

Concluding Remark of Four MFPs of Jharkhand:

Tamarind

Jharkhand is a major exporter of tamarind. Van Dhan Vikas Kendras focused on Tamarind are present in nearly all districts of Jharkhand, including Pakur, Dumka, Chiabasa, Khunti, Ranchi, Simdega, Sahibganj, and Gumla. The people are aware of the diverse applications of tamarind, including the preparation of pickles, candies, and medicinal products. When enquired about the impediments to the growth of the tamarind industry and value addition across various districts, the three predominant factors identified were insufficient market information, unawareness among pertinent government institutions regarding the potential of tamarind, and the absence of recommended silvicultural practices. All interviewees Tamarind collectors engaged solely in rudimentary processing and had not received any training, extension, or guidance from any agency, public or private, with the exception of Siladon in Khunti district. The most significant issue confronting the industry was identified as inadequate processing skills to fulfil the requisite standards. To enhance the equitable share of producers and collectors in Jharkhand, it is essential to initiate the processing of Tamarind within the state via community institutions.

Sal seed

Experts indicate that the extinction of Sal trees in India is attributed to commercial logging for construction, furniture, railway sleepers, and pulp production for other products. The government has implemented measures to rejuvenate the forests by planting seedlings in diverse regions. Van Dhan Vikas Kendras focused on Sal seed are only located in the districts of Chiabasa, Khunti, and Gumla. Nevertheless, the use of sal seeds into goods is not advocated. Consequently, there is no documentation regarding the value enhancement of Sal seed in the villages of eight districts. The collecting and processing of Sal seed is a laborious and time-intensive task.

Lac

The regions of Jharkhand are abundant in ber and kusum trees. The favourable expansion of the Kasumi summer crop and Kasumi Lac cultivation regions in the Khunti and Ranchi districts is attributable to the region's climatic suitability, the backing of cooperative organisations, resource availability, and product awareness. A paradigm shift in lac farming from the Kasumi tree to the ber tree also yielded positive growth. The ample supply of broodlac in February prompted cultivators to inoculate additional plants.

Field observations suggest that the cultivation technology for Kasumi lac in Ber trees is of high quality. Simultaneously, the winter crop yield does not indicate the growth rate, as it was predominantly employed as brood-lac and scraped brood-lac. In the eight districts, the Lac cultivation districts of Khunti and Gumla exhibited a larger negative growth rate during the wet season compared to summer. Van Dhan Vikas Kendra operates for Lac and is exclusively located in the districts of Chiabasa, Simdega, Ranchi, Pakur, Khunti, and Gumla. The value addition of Lac occurs in the districts of Khunti and Ranchi.

Chiraunji

Chiraunji is a significant minor forest product utilised in the production of confections and oil. The demand for chiraunji kernels is exceptionally high in both national and international markets. The districts of Gumla, Chaibasa, Khunti, and Sahibganj possess dense populations of Chiraungi trees. However, the villages are not engaged in the extraction, collection, and marketing processes. Collecting and processing a substantial quantity of Chironji fruit requires much effort and patience. When the Chiraunji fruit ripens, it is harvested off the tree and sold for Rs.10 in the local haat bazaar of Barajhinkpani (Chaibasa) and Gumla. The kernels of dried Chiraunji seeds are removed using various methods: initially by hammer, subsequently by stone, and finally by sophisticated machinery. Individuals of all ages, regardless of gender, participate in the gathering of Charaunji. The Van Dhan Vikas Kendra

for Chiraunji operates solely in the districts of Khunti, Gumla, and West Singhbhum (Chaibasa). The field survey revealed that the VDVK is nonfunctional, resulting in a lack of awareness on the value addition of Chiraunji among the populace. Chiraunji is recognised by various names among the inhabitants. The peasants residing in Sahibganj cite their ignorance of government policies concerning MFPs as a reason. The acreage and output of Chiraunji in India are unavailable because to its absence in plantation-scale cultivation. Its growth is observed in forested regions; thus, training is crucial for the development of Chiraunji plant frameworks and value enhancement.

Conclusion

The research revealed that the villages and producers predominantly initiate the value chains of non-timber forest products; nevertheless, their lack of awareness leads to diminished income from their endeavours. Due to insufficient money, the village collectors or producers continue to supply low-value primary materials, thereby forgoing industrialisation and value addition, which are often essential steps towards a modern, diverse, and affluent economy. Furthermore, even when producers successfully integrate into government initiatives such as co-operative societies, they continue to encounter the risk of occupying low value-added roles within the supply chain, with restricted chances for learning and advancement. The study indicates that a cooperative society does not inherently facilitate structural transformation. The value chain operates well when its players collaborate to produce superior items and generate increased salaries for those involved in the chain. A value chain encompasses the movement of products, knowledge, information, finance, payments, and social capital to coordinate producers and communities.

RECOMMENDATIONS

The study concludes that MFP is essential to rural living in traditional, economic, and social contexts. It is essential to recognise that MFP, in contrast to horticulture, is a pre-existing offering from nature. In horticulture, fruits and vegetables require hand cultivation and care, whereas MFP grows autonomously. We merely need to enhance its worth through processing to capitalise commercially. To facilitate this, grassroots entities, such as JFM committees, must be empowered, and legislation should be adjusted to be more favourable to tribal interests. This research study presents recommendations categorised as follows:

1) The panchayat should assume responsibility for MFPs and assist villages by facilitating their registration with cooperative groups.

2) Financial resources should be allocated to the local panchayats for the production of minor forest products to assist the villagers.

3) Value addition must be recognised as a significant economic concern for the state.

4) Training must be administered to both panchayats and the villages engaged in this process to ensure their awareness of the products.

5) The government ought to create markets in rural areas and procure minor forest products at the recommended minimum support price, ensuring that villagers or collectors receive a fair compensation for their products.

6) Government banks should be developed in rural areas, and adequate guidance on utilising banking services must be offered to the local populace. Villagers must be afforded a public transit system to facilitate the efficient conveyance of their products.

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