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OBSTRUCTIONS IN COLLECTION, PROCESSING AND MARKETING OF MAJOR FOREST PRODUCES IN BASTAR DISTRICT OF CHHATTISGARH, INDIA

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ABSTRACT

In this research paper, an attempt has been made to know the problems faced by NWFPs collectors in their collection, processing and marketing. To fulfill the objective of study 60 respondents of the Bastar district of Chhattisgarh state were randomly selected, who live in the forests area and collecting forest produce is an important option for their livelihood when the time of agriculture farming is over; they have no other work at that time. Such types of households were selected to fulfill the objective of present study. Result showed that 40 percent cited the collection of less forest produce as its main problem due to limited area and more people engaged. Furthermore, 40 percent of the households said, it was time-consuming and then 38.33 percent said price fluctuations and the un-developed market system were the reason for their trouble. Around 100 per cent of the people involved in collecting Mahua flower and Tendu leaves as non wood forest produces in the study area include *Schleichera oleosa, Syzygium cumini, Mangifera indica, Emblica officinalis, Phoenix dactylifera* and Rhizomes as well as various types of other forest flowers for medicinal and food & vegetable purposes.

In the study area, people were seen facing various problems in the marketing of forest produce. About the place of marketing of NWFPs, the data indicates that the majority of the respondents (100%) were selling their NWFPs in the weekly market, followed by 100% of the respondents who had sold only Tendu leaves in government society, 28.33% sold their NWFPs in the village market, whereas, only 10% of respondents were vending their NWFPs in the home/ village to village.

Key words : Obstructions, NWFPs, Price fluctuation, Collection, Processing, Marketing.

Introduction

Non-wood forest products (NWFPs) are any product or service other than timber produced in forests. They include fruits and nuts, vegetables, fish and gum, medicinal plants, resins, essences and a range of barks and fibers such as bamboo, rattan and a host of other palms and grasses. According to FAO (1990), Non-Timber Forest Products refer to all the resources/products (other than industrial round wood and derived sawn timber, wood chips, wood-based panels and pulp) that may be extracted from the forest ecosystem and are utilized within the household or are marketed or have social, cultural or religious significance. According to FAO (2005), NTFPs are defined as all biological materials, other than timber, which are extracted from forests for human use. NTFPs include fruits and berries, nuts, spices, medicinal plants, oils, gums, resins, honey, mushrooms, weaving and dying materials, aromatics, and recreation. Whatever is the definition, but the meaning is that all the things except wood, which come from the forest, are forest produce. If we observe all over India, forest produce is the only thing on which one can rely, the inhabitants of the forest, for their livelihood, when the time of cultivation is over.

As per the (Indian State of Forest Report, 2019), forest and tree cover is 8,07276 sq km that are 24.56 percent of the geographical area of the country. It includes total forest cover (21.67%) and tree cover (2.89%). Amongst all the Indian States, Madhya Pradesh has the maximum forest cover area, followed by Arunachal Pradesh, and Chhattisgarh stands at third position.

The state of Chhattisgarh is one of the youngest states of the country; formerly a part of Madhya Pradesh was formed on November 1 year, 2000 as the 26th state of the Indian Union. As per ISFR (2019), the total geographical area of the State covers 135, 192 sq. km, which cover 4.11% of the total geographical area of the country? The recorded forest cover and tree cover in Chhattisgarh is 55,772 sq. km., which is 44.21% of its geographical. The State is bordered by Madhya Pradesh in the northwest, Uttar Pradesh in the north, Jharkhand in the northeast, Maharashtra in the southwest, Telangana in the south, and Odisha in the southeast. The state lies between 17º47'N to 24º06' N latitude and 80º15'E to 84º24' E longitude. As per the 2011 census, Chhattisgarh has a population of 25.55 million accounting for 2.11% of India's population. The urban, rural and tribal populations comprise 23.24%, 76.76% and 30.62%, respectively.

Extraction pattern of NWFPs should be in sustainable way so that the availability of NWFPs can be more profitable to forest dwellers. In the last few years, national and international demand of non-wood forest products (NWFPs) has increased and forestry sector has developed a new sense of their importance. The growth of NWFPs industry, assessed from several aspects, was more rapid than that of wood industry (Chamberlain and Hammett, 1998).

Gatherers harvest NWFPs as a commercial, subsistence or recreational activity (Love and Jones, 1995). Trade, barter or sale of NWFPs in the local or international market can bring capital to people isolated in rural forested areas (Schlosser and Blanner, 1995). These financial resources are essential in areas where seasonal employment and high unemployment rates are prevalent (Emery, 1998). Subsistence gathering supplies households with natural products for personal use. Edible and medicinal products are essential to the gatherers' subsistence living. The recreational gathering is an essential part of the tradition of gathering as many people gather with friends and family (Love and Jones 1995).

The fruits of *Buchanania lanzan* are known as Char whereas, the seeds are known as Chironji. Char is one of the major non-wood forest products of whole Chhattisgarh. Every year the collectors collect this nature's gift from April to June. The fallen fruits are collected or dropped with a long bamboo stick. Sharma (2012) suggested after a study about *Buchanania lanzan* that seed collection should be done from the second to the third week of May as during this period only, fruits have maximum values of oil (61.6% to 62%), protein (50.2 to 48%), sugar (3.90 to 3.82), seed weight (182.55 to 182.85gm) and germination potential (37.33 to 38.5). Another potential NWFPs is *Madhuca indica* belong to family *Sapotaceae* is one of those multipurpose forest tree species that provide an answer for the three major *i.e.*, food, fodder and fuel (Patel *et al*., 2011). There are many products namely; flower, seed, oil cake, leaf, timber etc. are obtained from Mahua tree. The fermentation waste can also be used as bio fertilizer which is eco-friendly and cheap in comparison to the expensive fertilizers (Jha *et al*., 2013).

Semecarpus anacardium Linn. belong to the *family Anacardiaceae*, commonly known Bhilwa, is a plant well-known for its medicinal value (Jain and Sharma, 2013) their fruits are available during the month of April to May which have fallen from the tree are collected, sometimes they are also plucked from the tree. Mature *Semecarpus* nuts should be collected when they turn black in colour. The perfect harvesting season of *Semecarpus anacardium* is December-March. Their fruits are available during the month of April to May (Prasad *et al.*, 1999), which have fallen from the tree are collected, sometimes they are also plucked from the tree.

Diospyros melanoxylon belong to the family *Ebanaceae* commonly known as Tendu leaves. In Chhattisgarh, the collection season is from the third week of April to the second week of June (CGMFPFED) in each year. Pruning of Tendu bushes is carried out in February–March, roughly 45–60 days prior to the harvest season, so as to encourage the growth of tender leaves. Funds for this activity are supposed to come from a Forest Development Fund created out of the profits from Tendu sales (Lele *et al*., 2015).

As a NWFP, we can understand the importance of above tree species which contribute significantly to local and regional economies. If the current trends continue the trade and use of NWFP will grow substantially over the near future. In Bastar, generally there is an important commercial potential related to wild collection NWFPs of these species. Hence, looking to the importance of NWFPs in socio economic development of rural and tribal people of Bastar the present work was under taken.

Materials and Methods

The study was conducted in Bastar district of Chhattisgarh state during 2017-18. Bastar district was selected purposively because the maximum tribal populations are residing in Bastar plateau, comes under this district and Jagdalpur city is the administrative headquarters of Bastar district located at 19.07°N 82.03°E on the south bank of the Indrawati River. It is well connected by National and State Highway from each

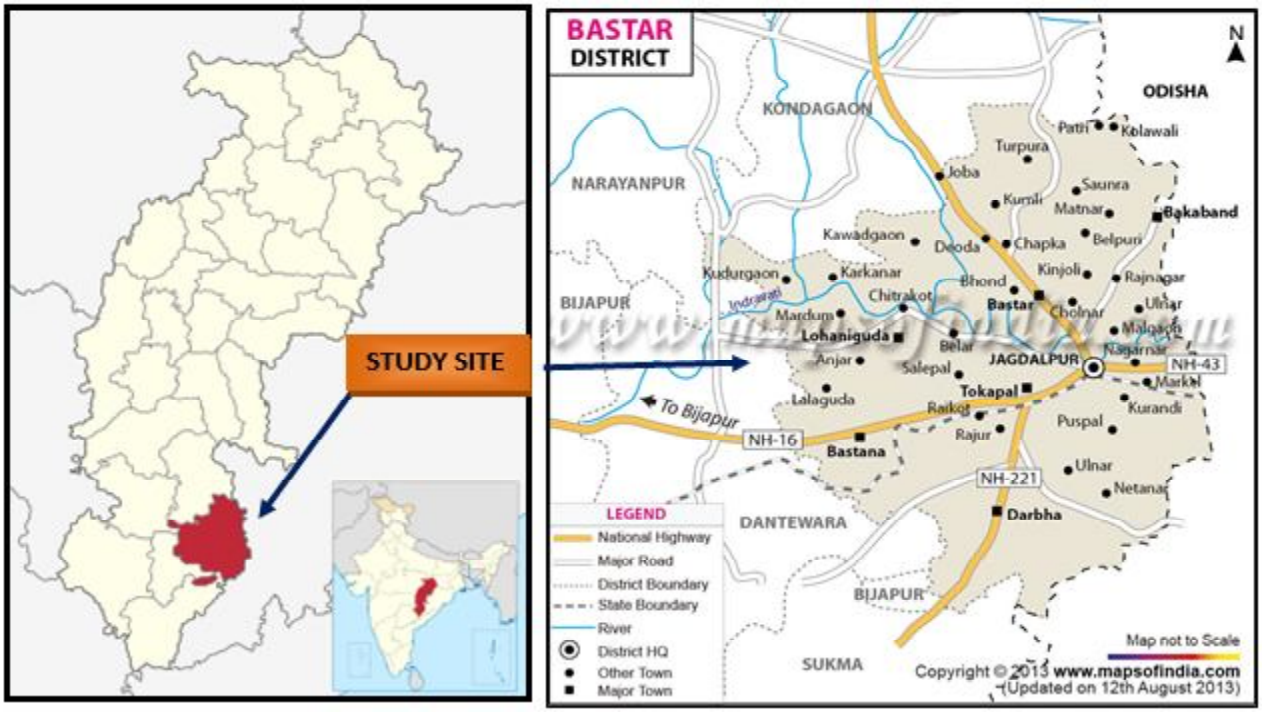


Fig. 1 : Study sites in Bastar district of Chhattisgarh.

district of Chhattisgarh. The district is dominated by a large Tribal population. The main tribes of Bastar are Gond, Maria, Muria, Bhattra, Halba and Dhurwa etc. Bastar district has an area of 6597 km^2 and population of 1,413,199 of which males and females were 698,487 and 714,712 respectively as per census 2011. Scheduled Castes and Scheduled Tribes make up 1.67% and 63.05% of the population respectively. Out of the total population of the district, 13.69 % and 86.31% of the total population constitute the urban population and rural population, respectively.

Present research work has been done in the Bastar district of Chhattisgarh state. Two blocks of the district were selected followed by three villages of each block were selected randomly, namely Bastar (Nayaguda, Chapka and Kesharpal village) and Bakawand (Karpawand, Tarapur and Sitlawand vilaage) etc. for the purpose of data collections during the study period. Data collection was done through a household survey. Ten respondents from each village identified to achieve the study objectives, collecting forest produce interrogated by a pre-determined questionnaire. These villages are forest-fringed and villager's livelihood partially depends upon the collection of NWFPs and by sale in local weekly markets or Haat/ bazaar; and each farmer in these villages was interviewed personally and information on the different items was collected. This questionnaire is based on the collection, processing and marketing of forest produce. In which the collector would have to face any trouble, it was discussed based on which the study was concluded.

Results and Discussion

Involvement of households in collection of NWFPs in Bastar district of Chhattisgarh

Table 1 showed that the respondents participation, in particular the NWFPs collection. The findings revealed that out of 60 selected households, cents percent respondents were going for Mahua flower collection, followed by Mahua seed 46.66%, Char seed 18.33%, and for Tendu leaves 100 percent whereas, only 18.33% respondents were involved in the collection of Bhelwa seed (*Semecarpus Anacardium*) and fruit. As per Gupta *et al*. (2015), the findings revealed that these products were easily accessible and available to them and act as an important source of food, nutrition, employment, and income. Concerning, the remaining NWFPs, namely Sal, Behda, Imli, Jamun, Aawla, Dhawai flowers, Karanji seeds, Kusum, Chhind and Mahul patta etc. These products are also essential for their income, food, medicine, nutrition, and employment for the population of Bastar. Kumar (2015), studied for twelve important NWFPs of Gujarat which revealed that 21,519.141 quintals of NWFPs were collected having an economic worth of Rs. 386.852 lakhs. It was also observed that Timru leaves (Tendu leaves) production was maximum but economically Mahua flowers alone contributed to getting higher returns confirmed by the study.

Table 1 : Involvement of households in collection of NWFPs in Bastar district.

S. no.	Name of particular NTFPs	Botanical name of particular NTFPs	No. of households involved in collection	
			Frequency	Percentages
1	Mahua flower	*Madhuca indica* (Flower)	60	100%
2	Mahua seed	*Madhuca indica* (Seed)	28	46.66%
3	Char seed	*Buchanania lanzan* (Seed)	11	18.33%
4	Tendu leaves	*Diospyros melanoxylon* (Leaves)	60	100%
5	Bhelwa	*Semecarpus anacardium* (Seed)	11	18.33%

Marketing pattern of NWFPs in Bastar district of Chhattisgarh

The data concerning the existing marketing practice of NWFPs are presented in Table 2. About the place of marketing of NWFPs, the data revealed that the majority of the respondents (100%) were selling their NWFPs in the weekly market, followed by 100% of the respondents who had sold only Tendu leaves in government society, 28.33% sold their NWFPs in the village market, whereas, only 10% of respondents were vending their NWFPs in the home/ village to village. Regarding mean of transport most of the respondents had used bicycles to transport their NWFPs, for marketing and some of them who had used vehicles on a paid basis (Auto or Taxi) and few people had used motorbike in the study area. In comparison, none of the respondents had any means to transport NWFPs. Gupta *et al.* (2015) reported lack of transport facilities for marketing of NWFPs (48.89%), lack of availability of timely market information about NWFPs (33.33%), lack of good road connectivity of villages with the market (26.67%) and lack of low-cost storage facilities (25.93%) were also reported as other problems faced by the respondents.

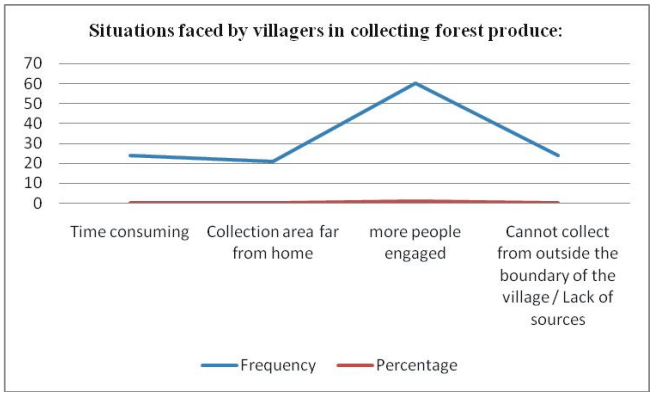
The problems faced by villagers varied from area to area, but the common perception of these villagers about obstruction of the collection was listed in Table 3. Table showed that more people engaged in the collection was the major obstruction reported by 100 percent of respondents, followed by time-consuming said by 24 percent respondents. Besides these, obstruction like cannot collect from outside the boundary of the village / lack of sources, and collection area far from home 24 percent and 21 percent respondents, respectively. Shrey and Dhurwey (2018) analysis revealed that competition amongst collectors was the major constraint reported by 76.25 percent of respondents in the collection of NWFPs whereas; Gupta *et al.* (2015) reported that the majority of the respondent's deforestation (82.96%), over-collection of NWFPs by outsiders (74.07%) and obstruction in the collection of NWFPs caused by forest rule and regulations in the collection of NWFPs from restricted forest areas (57.78%). Satapathy (2018) also confirmed their study that the problems faced by the tribal's are lack of access to forest product, inadequate market linkage of the product and exploitation by the

Table 2 : Distribution of the respondents according to marketing pattern of NTFPs.

S. no.	Particulars	Frequency	Percentages
1	From village to village	6	10%
2	From village market	17	28.33%
3	From weekly main market in the area	60	100%
4	From government society/ SHGs	60	100%

Table 3 : Problems faced by villagers in collecting forest produce.

Situations faced by villagers in collecting forest produce:			
S. no.	Constraints	Frequency	Percentage
1	Time consuming	24	40%
2	Collection area far from home	21	35%
3	More people engaged	60	100%
4	Cannot collect from outside the boundary of the village /Lack of sources	24	40%



Middleman. As consequences it has affected the pattern of livelihood among them and forced them to migrate in search of livelihood.

The data on commonly arising obstruction in the processing of NWFPs in the study area of Bastar district of Chhattisgarh were collected and analyzed, and the results are presented in Table 4. It indicated that the main obstruction faced by villagers were domestic animals like cows and buffalo as a problem faced by 28 percent respondents, followed by the problem of climate change said by 14 percent respondents. In comparison, other constraints like lack of sufficient space were faced by 10 percent of respondents, respectively, in the study area.

According to Shrey and Dhurwey (2018), it revealed that main constraints faced by tribal forest dwellers were less quantity available or collected said by 42.50 percent respondents followed by insufficient labour said by 32.50 percent respondents. Whereas other constraints like storage problem, Lack of knowledge about processing, and no primary processing units were faced by 28.75 percent, 16.25 percent, and 12.50 percent respondents, respectively in the study area.

Many situations are faced by villagers in the marketing of forest produce in the study area in their day-to-day life. It was observed from Table 5 that in the case of marketing of NWFPs majority of respondents *i.e.*, 54 percent was faced the problem of quick returns in the case of Tendu leaves. Results also showed the Phad

Table 4 : Situations faced by villagers in processing of forest produce.

S. no.	Situations	Frequency	Percentage
1	Use of other sources in processing	0	0%
2	The problem of climate change	14	23.33%
3	Animals as a constraint	28	46.66%
4	Lack of sufficient space	10	16.66%

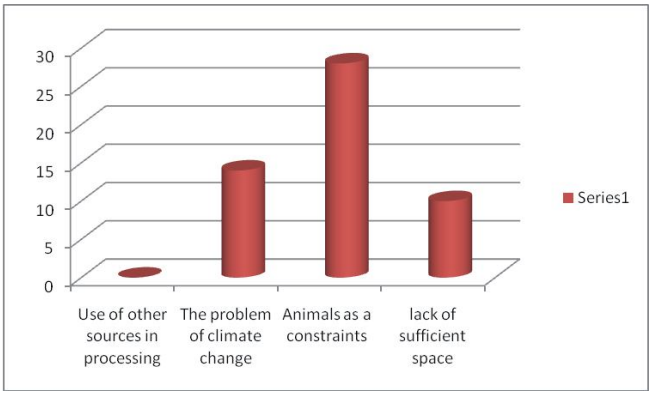


Table 5 : Situations faced by villagers in marketing of forest produce in Bastar district.

S. no.	Constraints	Frequency	Percentage
1	Market far away from home	0	0 %
2	Improper pricing of raw material	23	38.33%
3	Money is not received immediately	54	90%
4	The money of some Tendu leaves bundle is deducted.	25	41.66%

Munshis do not give the money of 5 to 10 bundles of leaves, said 41.66 percent of villagers. Whereas 38.33 percent of respondents stated improper pricing of raw material/ unorganized market was another constraint. Moreover, the market is not too far from home, so no problem in this case. Ahenkan and Boon (2010) reported that the NWFPs marketing in rural areas of Ghana is unorganized, dispersed and farmers also lack the necessary marketing skills and information required for optimal performance. Gupta *et al.* (2015) reported that the problems faced by the respondents in collection and marketing of NWFPs, majority of the respondents (95.56%) pointed out that they were facing the problem of low and fluctuated market price primarily, while; 95.56 respondents suggested for the development of existing market infrastructure primarily, to overcome the problems faced by them in the collection and marketing of NWFPs. Whereas, Shrey and Dhurwey (2018) reveled that in the case of marketing of NWFPs majority of respondents *i.e.* 85.00 percent was facing the constraints of improper pricing of raw produce as the main constraint.

Conclusion

As a result of the study, based on the collection of forest produce, 40 percent of the households said to face the problem of limited area, according to which forest committee has been formed by the forest department in the village, which is the responsibility to protect the forest of their area and the forest produces obtained from them. Due to this, collecting forest produce becomes limited, and the number of people is more. Due to which the collection of forest produce gets reduced, the processing is not taken care of; after collection, it is sold in weekly market, self-help groups, or near Kochia or grocery shop. Similarly, 38.33 percent of the households said they do not get a good price for the forest produce, which has become the cause of their problems. Due to day-to-day

price fluctuations, they do not know the correct market price, due to which they get low prices.

If the quality of produce would not good as demanded in the market therefore, the produce dose not fetch good price in the market. Many households said that while waiting for a good price, there is a fear of spoilage of forest produce as there is no proper storage system. Also, on the other hand, they have to sell the forest produce according to their daily living needs, whether the market value is less or more. There were also such percentage people facing problems in collection due to decrease in forest area day by day.

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