



Problems Faced by Tribes in Collection and Marketing of Tendu (*Diospyros melanoxylon* Roxb.) Fruit in Jhalawar District of Rajasthan

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Abstract

The present study was conducted during September to December, 2022 to focus on the problems in collection and marketing of tendu fruit by tribes in Jhalawar district of Rajasthan. This district was selected purposively because the more than 15% tribal population is residing in this district. In this study 3 blocks namely: Jhalrapatan, Aklera and Khanpur blocks were selected purposively. From each selected block 50 respondents were selected randomly thus making total sample size to 150. The result of the study show that the marketing pattern of respondents shows that the weekly market was respondents' first choice. The majority of respondents, 86 (57.33%), were between the ages of 36 and 50, with only 44 (29.33%) between the ages of 18 and 30. Social involvement, occupation, and extent of sustainable livelihood were negative and significantly correlated at the 1% and 5% level of probability. Major source of income is non-farm activities, followed by agriculture related activities. Majority of respondents use bicycles as mode of transport, while motor bikes are used by only 26.00 % of respondents and majority of the collectors were literate. The major problem faced by respondents was lack of developed market infrastructure for Tendu fruit (94.66%) and least was lack of inexpensive storage facilities (24.66%). The majority respondents suggested that government develop the existing market infrastructure for marketing to deal with collection and marketing problem of Tendu fruit.

Keywords: Correlation coefficient, frequency, marketing, Tendu

1. Introduction

A tribe is a group of people that live in a certain region and are typically headed by a chief or leader. They have a common racial background, customs, language, and religious beliefs (Dkhar and Raghuprasad, 2024). Non-timber forest products (NTFPs) are any products derived from forests that are not made of wood. Examples include berries, nuts, fruits, medicinal plants, and mushrooms. Non-timber forest products (NTFPs) constitute an important source of livelihood for millions of people from forest fringe communities across the world. Plants that produce natural dyes have a major role in the socioeconomic and cultural lives of indigenous ethnic groups (Mandal and Das, 2022). It is estimated that 275 million poor rural people in India, depend on NTFPs for at least part of their subsistence and cash livelihoods (Pandey et al., 2016) with at least 150 noteworthy goods in terms of international trade, NTFPs serve as both essential export commodities and a source of raw materials for large-scale industrial processing conducted on a national level. Tendu plants grow naturally

in tropical and subtropical regions' groves and forests. It is mostly sold for the leaves that are used to make bidi. For the cultivation of fruit, no systematic plantations have been created to far. As a result, the estimated area is unavailable. The fruits are highly nutritive and rich source of phenols and fibre. The tribal of these regions are using this fruit to protect them from loo or hot wind during summer. (Kumar et al., 2017). The collection and trade of non-timber forest products (NTFPs) in Rajasthan is regulated by the Rajasthan Tribal Area Development Cooperative Federation (RAJAS Sangh) in the tribal sub plan (TSP) area, while tendu leaves are governed by the Government of Rajasthan under the Rajasthan Tendu Leaves (Regulation of Trade) Act 1974. This protects forest product collectors from being exploited by middlemen (Kumar and Meena, 2018). Compared to the global average of 0.64 ha, India has a per capita forest area of only 0.064 ha. The country's forest strategy also attempts to increase productivity to suit local and national demands (Sharma et al., 2022). Recorded Forest Area (RFA) in the State is 32,863 sq km of which 12,176 sq km is Reserved



Forest, 18,543 sq km is Protected Forest and 2,144 sq km is Unclassed Forests (Anonymous, 2021). Under Hadoti region, Baran (225342.86 ha) had highest forest area, followed by Bundi (156785.93 ha), Kota (136758.69 ha) and Jhalawar (128671.52 ha), respectively (Anonymous, 2021). Although the market for NTFPs is expanding, neither the institutions nor the collectors are taking advantage of its enormous potential. Although there have been ongoing efforts for some time, with the goal of fostering NTFPs and developing tribal communities, new organizations, programs, and schemes have been added every year. They continue to have numerous issues with NTFP collection and marketing (Vijaykumar and Ushadevi, 2022). We can employ a variety of industrial timber products from the forest to make paper, pulp, and poles. There is evidence that a growing number of people will stick with using fuel wood instead of gas, paraffin, electricity, coal, or solar energy since these resources, together with their associated cooking utensils, are too expensive for the average person (Roland and Oyelana, 2014). The local community lives adjacent to the forests benefited economically from the processing and selling of NTFP. Therefore, NTFP has the potential to lower poverty and improve people's quality of life provided it is properly managed. For the tribal people who live in or near forests in India, NTFP is their main source of income (Shukla et al., 2022; Balkrishna et al., 2022).

2. Materials and Methods

2.1. Location of the study area

The study was conducted in Hadoti region of Rajasthan state during the year 2022–23. Jhalawar district was selected purposively because the more than 15% tribal population is residing in this district. Out of total 8 blocks in the Jhalawar district three blocks namely, Jhalrapatan, Aklera and Khanpur were selected purposively because maximum numbers of tribes and maximum area under the forest comes under these blocks. Thus from three selected blocks total 150 respondents were selected randomly. Primary data was gathered using a pre-tested schedule and a personal interviewing strategy with the respondents in order to achieve the research aim and objectives.

2.2. Analytical tool

According to the goals of the study and the type of data gathered, the statistical and econometric instruments of analysis were selected. For the purpose of achieving the stated objective, the acquired data were examined using correlation analysis. The precise metric used in a correlation analysis to quantify the strength of the linear relationship between two variables is the correlation coefficient. Simple correlation coefficient was worked out using the following formula:

$$r = \frac{\sum (X_i - \bar{X})(Y_i - \bar{Y})}{\sqrt{\sum (X_i - \bar{X})^2 \sum (Y_i - \bar{Y})^2}}$$

Where,

r=Correlation coefficient

X_i =Factor affecting marketing pattern of ith individual

\bar{X} =Mean of factor affecting marketing pattern

Y_i =Marketing pattern of ith individual

\bar{Y} =Mean of marketing pattern used by respondents

N=Number of observation

3. Results and Discussion

3.1. Involvement of households in collection of Tendu fruit

Table 1 depicts general characteristics of sample households such as age, cast composition, educational attainment, and land assets. The majority of respondents, 86 (57.33%), were between the ages of 36 and 50, with only 44 (29.33%) between the ages of 18 and 35. The fewest respondents were among those over the age of 65. Average family size of respondents was found 7.

The education status shown in table 1 shows that 65.34% of the respondents were literate, while the rest (34.66%) were illiterate. The majority of literate respondents held primary and secondary school qualification. Under caste composition, most of the respondents were in the tribe category (85.33%), followed by scheduled caste, which was 8.66% of total respondents. The general category had the fewest respondents (6.00%).

According to the findings, respondents owned 1.33 ha on average and leased 1.72 ha on average. The average number of farm equipment and livestock possess by them were 0.78 and 4, respectively. The income pattern of respondents shows that the major source of income was non-farm activities (Rs. 162920), followed by agriculture related activities (Rs. 87254). The income from salaried jobs and pension was Rs. 75141.

3.1. Marketing pattern of Tendu fruit

Marketing patterns refer to the strategies and methods used by farmers to sell their products or services. Table 2 illustrates the marketing pattern of respondents, which shows that under place of marketing respondent's first choice was the weekly market (82.00%) compared to the village market (74.00%) that was their second choice. Only 18.00% of respondents sell produce from their homes. It was found that the majority of respondents use bicycles (52.00%) as a mode of transport, while motor bikes were used by only 26.00% of respondents.

3.2. Factors associated with marketing pattern

The degree of relationship between affecting factors and marketing pattern of Tendu fruit was studied by using correlation analysis. Finding of study, which were presented in Table 3, shows that correlation coefficient of social involvement, occupation, and extent of sustainable livelihood were negative. However, these were significantly correlated at the 1% and 5% level of probability. Number of livestock, expenditure pattern, literacy rate, level of aspiration, number of family members, and income had non-significant at both level. Economic motivation and source of information had



Table 1: General characteristics of sample households: summary statistics	
Particulars	
Number of observations	150
<u>Human assets</u>	
Up to 35 Years	44 (29.33)
36 to 50 Years	86 (57.33)
51 to 65 Years	18 (12.00)
Above 65 years	2 (1.33)
Average family size	7
<u>Caste Composition</u>	
General	9 (6.00)
Tribes	128 (85.33)
Scheduled caste	13 (8.66)
<u>Education</u>	
Illiterate	52 (34.66)
Primary	64 (42.66)
Secondary	27 (18.00)
Graduate and above	7 (4.66)
<u>Land Assets</u>	
Average Owned Land (ha)	1.33
Average Leased-in (ha)	1.72
Average Permanent fallow (ha)	0.28
Average number of farm equipment	0.78
Average number of live-stock	4
Income from agriculture related activity	87254
Non-farm income	162920
Income from salaried jobs/pension	75141
Total expenditure on Agricultural land	58475

Source: Field Survey, 2022–23

correlation values of -0.211 and 0.184, respectively, indicating that the former was negatively significant and the latter was positively significant at the 5% level of probability.

3.3. Problems faced by the respondents in the collection and

Table 2: Distribution of the respondents according to marketing pattern of Tendu fruit

Sl. No.	Particulars	Frequency*	Percentage
1	Place of marketing		
A	From home	27	18
B	From village market	111	74
C	From weekly market	123	82
2	Means of transport		
A	No means	0	0
B	Bicycle	78	52
C	Motor Bike	39	26
D	Vehicles on paid basis (Auto, Bus etc.)	27	18

Source: Field Survey, 2022–23

Table 3: Correlation analysis of factors associated with marketing pattern (n=150)

Sl. No.	Independent variables	Coefficient of correlation "r" value
1.	Literacy rate	-0.15206 ^{NS}
2.	Number of Family member	0.0326 ^{NS}
3.	Social involvement	-0.321 ^{**}
4.	Experience in collection of forest products	0.067 ^{NS}
5.	Occupation	-0.267 ^{**}
6.	Size of land holding	-0.315 ^{**}
7.	Number of Livestock	-0.133 ^{NS}
8.	Expenditure pattern	-0.123 ^{NS}
9.	Sources of information	0.184 [*]
10.	Level of aspiration	-0.134 ^{NS}
11.	Economic motivation	-0.211 [*]
12.	Income of household	0.0264 ^{NS}
13.	Employment generation	0.642 ^{**}
14.	Extent of sustainable livelihood	-0.279 ^{**}

Source: Field Survey, 2022–23; *: ($p=0.05$) level of probability; **: ($p=0.01$) level of probability; NS: Non-significant

marketing of Tendu fruit

Distribution of respondents according to problem faced by them in the collection and marketing of Tendu fruit is presented in table 4. It illustrates that majority of respondents (94.66%) had a problem of lack of developed market infrastructure for Tendu fruit, followed by low and fluctuated market price of produce (86.66%), lack of transport facilities



Table 4: Problem faced by the respondents in the collection and marketing of Tendu fruit

Sl. No.	Particular	Frequency*	Percentages
1.	Existence of bad weather	120	80.00
2.	Injury caused by attack of wild animals	122	81.33
3.	Obstruction caused by forest rule and regulations in collection of Tendu fruit from restricted forest area	117	78.00
4.	Over collection of Tendu fruit by outsiders	75	50.00
5.	Low and fluctuated market price Tendu fruit	130	86.66
6.	Lack of developed market infrastructure for Tendu fruit	142	94.66
7.	Lack of transport facilities for marketing of Tendu fruit	124	82.66
8.	Lack of low cost storage facilities	37	24.66
9.	Lack of skill oriented training programme related to collection, processing and marketing of Tendu fruit	98	65.33
10.	Lack of availability of timely market information about Tendu fruit	77	51.33
11.	Lack of good road connectivity of villages/ forest with market	80	53.33
12.	Deforestation	121	80.66

Source: Field Survey, 2022–23

for marketing of Tendu fruit (82.66%), injury caused by attack of wild animals (81.33%), deforestation (80.66%) and existence of bad weather (80.00). Lack of inexpensive storage facilities (24.66%) was the respondents' least common issue, which was followed by strangers' excessive gathering of Tendu fruit (50.00%) and a lack of timely market information regarding Tendu fruit (51.33%).

Sharma and Pandey (2017) concluded that the major problem is production of NTFPs fluctuated between years sometimes very less quantity is available in some areas, collection is time consuming activity, price fluctuation, less transport and other

institutional structure facility etc.

The suggestion offered by respondents to solve their issue in the collection and marketing of Tendu fruit are shown in Table 5. The majority of respondents (92.00%) suggested that the government develop the existing market infrastructure for marketing of Tendu fruit, which was followed by good road connectivity of villages with markets (82.66%), 81.33% recommended that selling prices of Tendu fruit should be fixed by the government and 78.66% respondents gave suggestion for deforestation should be checked. Only 18.00% and 34.66% of respondents made suggestions on the availability of current

Table 5: Suggestions given by the respondents to overcome the problems faced by them in the collection and marketing of Tendu fruit.

Sl. No.	Particular	Frequency*	Percentages
1.	Flexibility in forest rule and regulations for Tendu fruit collection	101	67.33
2.	Checking of over collection of Tendu fruit by outsiders	84	56.00
3.	Selling prices of Tendu fruit should be fixed by the government	122	81.33
4.	Purchasing of Tendu fruit by government should be assured	27	18.00
5.	Low cost storage facility should be provided	58	38.66
6.	Regular training programme should be organized for skill development in collection, processing and marketing of Tendu fruit	105	70.00
7.	Development of existing market infrastructure by the government for marketing of Tendu fruit	138	92.00
8.	Availability of transport facilities for marketing of Tendu fruit	98	65.33
9.	Good road connectivity of villages with market	124	82.66
10.	Availability of timely market information about Tendu fruit	52	34.66
11.	Deforestation should be checked	118	78.66

Source: Field Survey, 2022–23



market information about Tendu fruit and the government's assurance of purchasing Tendu fruit, respectively.

Karthick and Kumar (2018) suggested that establishment of market for Non-Timber Forest Product and fixation of minimum support price could support the tribals to improve their living standard.

4. Conclusion

The Income from non-farm was important source of livelihood. For selling of produce, weekly market and bicycle as a mode of transport were first choice of respondents in the study area. The undeveloped infrastructure, fluctuation in market price and transportation were major problem of the Tendu fruit collectors, to overcome that they suggested development of existing market infrastructure, good road connectivity and assured price by the government.

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