



Collection and Marketing of Tendu Leaves in Rajasthan, India

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

Tendu (*Diospyros melanoxylon* Roxb.) belong to the Family Ebenaceae, which is endemic to the Indian subcontinent. Locally, it is known as temburini. The leaves obtained from *Diospyros melanoxylon*, vernacularly known as 'tendu', 'kendu', 'abnus' or 'bidi' are the most extensively collected both for local consumption and for export. Tribal people in the nation have the right to gather, protect, and promote forest resources under the Forest Rights Act. As tendu leaves are the main source of money for a sizable population that depends on collecting forest food, it is also known as "green gold" in tribal areas. The harvesting of tendu leaves provides work for 75 lakh (7.5 million) individuals nationwide for around three months, according to data from the Tribal Cooperative Marketing Development Federation of India. The State Government determines the

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collection fees per typical bag of 1000 bundles (50 leaves/bundle), or 50,000 leaves/ bag, which are to be given to tendu leaves collecting labour. Tendu Patta collection & trade is controlled by the Rajasthan Tendu Leaves (Regulation of Trade) Act, 1974 and rules made there under called Rajasthan Tendu Leaves (Regulation of Trade) Rules, 1974. In the districts of Pratapgarh, Banswara, Udaipur, Dungarpur, Pali, Baran, Bhilwara, Jhalawar, and Dholpur, among others, tendu leaves are mostly harvested. In the summer, both locals and tribal members gather these leaves. Aside from this, over 30 lakh (3 million) people rely on creating bidis from these leaves for their living. In the year 2021–2022, 317206 bags were sold, generating a total of ₹4069 lakhs in revenue. The analysis showed a stagnant but significant growth both in production and revenue generated from tendu leaves. Assured reserve prices and bonuses for labourers will help in increasing the revenue from tendu leaves as it will give impetus to labourers.

Keywords: NTFP; tendu leaves; green gold; revenue.

1. INTRODUCTION

“Non-timber forest products (NTFPs) have been in the spotlight of research and policy consideration for many decades from the perspectives of poverty mitigation, cultural rights as well and forest protection. The collection and sale of NTFPs form a significant part of the livelihood of forest-dependent peoples in many parts of the world, not just in terms of its total contribution to income but also because this activity is often carried out during the lean season” [1,2]. It provides a safety net [3], and can provide crucial cash income in an otherwise subsistence economy. “For certain forest-dwelling communities, NTFPs are an essential part of their diet, health-care and cultural practices. Conservationists have also argued in favour of NTFP extraction because it can have a lower impact on biodiversity than timber logging or firewood extraction” [4]. Enhancing NTFP-based incomes for forest-dwelling communities have therefore often been seen as a win-win proposition from these multiple perspectives [5-8].

Rajasthan is currently the largest state of India covering 34.22 million hectares (10.41 per cent) of the total geographical area. Its geographical location is 23.3°N to 30.12°N latitude and 69.30°E to 78.17° E longitude, with the Tropic of Cancer passing through its southernmost tip. The population of Rajasthan as per the 2011 Census

was 68.55 million out of which 17.05 million (24.87%) people live in urban areas and 51.50 million (75.13%) population reside in villages. The tribal population of the state is 9.24 million (13.48%) [9]. The following table gives information about the major non-timber forest species in Rajasthan.

The leaf of tendu (in Hindi, or kendu in Odia or tumri in Marathi) is used in wrapping tobacco to make the beedi or Indian cigarette. It is one of the most economically valuable NTFPs in India, in terms of livelihoods, the plucking of the tendu leaf generates six weeks of employment annually for approximately 7.5 million people, many of whom are Adivasis and comes from marginalized sections of society [10]. Tendu leaf is one of the prominent minor forest produce collected in the Rajasthan state. It is found mainly in Banswara, Dungarpur, Udaipur, Pratapgarh, Chittaurgarh, Jhalawar, Baran districts and partially in Kota, Bundi, Alwar, Dholpur, Bhilwara, Sirohi, and Pali district [11,12].

In Rajasthan, over 3 million people rely on creating bidis from these leaves for their livelihood. In the year 2021–2022, 317206 bags were sold in the state generating a total of ₹4069 lakhs in revenue [13-15]. Tendu leaves form an important source of income for tribal people. The present study aims to know the current status of the tendu economy in Rajasthan.

Table 1. Major NTFP species in Rajasthan

No.	Species	Plant Type	Relative Abundance (%)
1.	<i>Butea monosperma</i>	Tree	48.33
2.	<i>Boswellia serroto</i>	Tree	23.15
3.	<i>Diospyros melanoxylon</i>	Tree	10.48
4.	<i>Wrightia arboreo/ Wrightia tomentos</i>	Tree	7.30
5.	<i>Aeglo Marmelos</i>	Tree	6.36

(Source: Forest Department, Govt. of Rajasthan)

1.1 Objective of Study

- ❖ To study the current status of the tendu economy in Rajasthan.

2. METHODOLOGY

The present study is based on a secondary source of data. The secondary data was collected from the Forest Survey of India, Tribal Area Development Department, Government of Rajasthan and Forest Department, Government of Rajasthan. The growth rate in production and revenue for 10 years was calculated using the Compound annual growth rate.

The compound growth rate was calculated by fitting the exponential function of the following form:

$$Y_t = AB^t$$

Where,

Y_t = Production / Revenue in period t.

A = Constant

$B = 1 + r$

r = Compound growth rate

t = Time variable in years (1, 2,.....n)

Then, the compound growth rate (per cent per year)

$r = [(Antilog B) - 1] \times 100$

3. RESULTS AND DISCUSSION

- ❖ **Current Status of Tendu Economy in Rajasthan**

Tendu leaf is used for Bidi manufacturing as a wrapper on tobacco. Tendu leaf is a nationalized commodity. Tendu patta collection and trade are controlled by the Rajasthan Tendu Leaves (Regulation of Trade) Act, 1974 and Rules made there called Rajasthan Tendu Leaves (Regulation of Trade) Rules, 1974. (Forest Department, Govt. of Rajasthan). Earlier from the year 1974 to 1983, tendu leaves of different units were auctioned at the rate of per standard bag (1000 bundles with 50 leaves in one bundle i.e., 50,000 leaves) and collection of leaves was done by departmental agents. Collection charges were paid to Labourers (Collectors) by the Forest Department through the agents. On reviewing the system, some drawbacks were observed the Rules were amended and the new system was implemented in 1984.

The tendu leaf unit is now auctioned as a whole on a lump-sum basis and the purchasers directly collect tendu leaf at rates notified by the department. Units of tendu leaves are constituted and notified by giving details of collection centres (Phad) and the villages to be covered for collection of tendu leaves under the collection centre. The tendu leaves are collected in these centres only. Every person dealing in the purchase and export of tendu patta or manufacturing of bidis in the state has to be registered annually as per the rules. The State government finally approves the reserve price for each unit. On approval of the reserve price by the state, the units can be sold to the highest bidder on or above the reserve price. Tender / Auction of tendu patta units on a lump sum basis is usually done in the month of January-February every year. The Regional Chief Conservators of Forests, as per rules, invite sealed tenders. The sealed tenders are opened in the presence of bidders. After examining the tenders in all aspects, the name of the highest bidder is recommended by the sale and disposal committee if it is above the reserve prices. To facilitate and promote the cooperative system and tribal development, the state government has decided to give preference to such institutions and 10% more price to such institutions. Under this order, the registered tendu patta collecting labour societies, bidi manufacturing labourers' cooperative societies and Rajasthan Tribal Area Development Cooperative Federation & its societies are provided a 10% price preference against the highest bid in an open auction. The production and revenue from tendu leaf collection are presented in Table 2.

The perusal of the table shows that the growth rate in terms of production of tendu leaves was 1.004 which is significant at 5 per cent L.O.S. The meagre growth rate is an indication that tendu leaf collection is dependent largely on forests and also on the distribution of rainfall which has been uneven during the last few years. The highest collection was recorded in the year 2017-18, 485766 bags of tendu leaves were collected. In terms of revenue, the growth rate was 1.089 which was significant at 5 per cent L.O.S. The revenue is completely dependent upon the production. The highest revenue generated was ₹8282.41 Lakhs in the year 2017-18. Graph 1 and graph 2 show the annual production of tendu bags and revenue from tendu leaves collection.

Table 2. Production and Revenue from Tendu Patta

+	Production (NO. OF BAGS)	Revenue (In Lakh ₹)
2012-13	457350	1919.13
2013-14	263608	968.13
2014-15	177671	598
2015-16	259542	698.5
2016-17	314927	2406
2017-18	485766	8282.41
2018-19	357603	3349.42
2019-20	269905	1087.16
2020-21	278740	751.53
2021-22	317206	4069.54
CAGR	1.004*	1.089*

(Source: Forest Department, Govt. of Rajasthan)
(CAGR: Significant at 5% L.O.S.)



Graph 1. Annual Production (No. of Bags) of Tendu Leaves in Rajasthan (2012-2022)



Graph 2. Annual Revenue from Tendu Leaves in Rajasthan (2012-2022)

4. CONCLUSION

The collection and sale of NTFP's form a significant part of the livelihood of forest-dependent peoples in many parts of the world. The leaves obtained from *Diospyros melanoxylon*, vernacularly known as 'tendu', 'kendu', 'abnus' or 'bidi' are the most extensively collected both for local consumption and for export. Due to its significant role in income generation, tendu patta is also known as "green gold" in tribal areas. Tendu tree is found mainly in Banswara, Dungarpur, Udaipur, Pratapgarh, Chittaurgarh, Jhalawar, Baran districts and partially in Kota, Bundi, Alwar, Dholpur, Bhilwara, Sirohi and Pali districts of the state of Rajasthan. The collection of tendu leaves is done during the summer season in May and June., The auctioning is done during January and February. In Rajasthan, over 3 million rely on bidis made from these leaves as a source of income. The growth rate in production and revenue was meagre but significant at 5 percent L.O.S. Collection of tendu leaves is a highly seasonal activity and depends upon rainfall. The revenue generation through tendu patta depends mainly on the collection. Assured reserve prices and bonuses for labourers will help in increasing the revenue from tendu patta as it will give impetus to labourers.

CONFERENCE DISCLAIMER

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Kusters K, Belcher B. Forest products, livelihoods and conservation: Case studies of non-timber forest product systems: Vol. I - Asia. Bogor, Indonesia: Centre for International Forest Research (CIFOR); 2004.
2. Laird SA, McLain RJ, Wynberg RP. Wild product governance: Finding policies that work for non-timber forest products; 2010.
3. Shackleton CM, SE Shackleton. The importance of non-timber forest products in rural livelihood security and as safety nets: A review of evidence from South Africa. South African Journal of Science. 2004; 100(11-12):658-664.
4. Panayotou T, P Ashton. Not by timber alone: Sustaining tropical forests through multiple use management. 1992;1-283.
5. Gupta AK, Sharma ML, Khan MA, Narbaria S, Pandey A. Problem faced by tribes in collection and marketing of non-timber forest products (NTFP's) in Chhattisgarh, India. Plant Archives. 2015; 15(2):789-793.
6. Kumar S, Meena GL. Procurement and marketing of non-timber forest products. Indian Forester. 2018;144(3): 252-259.
7. Kumar S, Lal N, Nath V. Tendu (*Diospyros melanoxylon* (roxb.)) in underutilized fruit crops: Importance and cultivation. 2016; 1327-1338.
8. Lele M, Ramanujan RV, Rai J. Co-operative procurement and marketing of tendu leaves in Madhya Pradesh: Image and reality. Environment and Development Discussion Paper No. 3. Ashoka Trust for Research in Ecology and the Environment. 2015;1-56.
9. Annual Report. Statistics Department, Directorate of Economics and Statistics, Government of Rajasthan; 2022.
10. Lal P. Estimating the size of tendu leaf and bidi trade using a simple back of the envelop method. AMBIO. 2012;41(3): 315-318.
11. Meena GL, Meena PC, Bhimawat BS, Verma VK. Role of RAJAS Sangh and forest department in procurement and marketing of non-timber forest products with special emphasis on tendu leaves in Rajasthan. International Journal of Agricultural Sciences. 2016;8(52): 2548-2552.
12. Rajas Sangh. Rajasthan tribal area development cooperative federation, annual reports of various years, Janjati Vikas Bhawan, Pratap Nagar, Udaipur, Rajasthan; 2021-22.

13. Annual Report. Rajasthan State Forest Department, Government of Rajasthan; 2022.
Available:<https://forest.rajasthan.gov.in/management-of-tendu-patta-produce/production-income-of-tendu-patta>.
14. Annual Report. Indian State of Forest Report, Ministry of Environment & Forest, Government of India; 2021.
15. Annual Report. Ministry of Environment & Forest, Government of India; 2021.

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