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INTERNATIONAL
FORUM
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SUSTAINABILITY
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FACTSHEET

ECONOMIC AND ENVIRONMENTAL CONSIDERATIONS IN TENDU LEAF PLUCKING

An evidence-based analysis for Odisha

TENDU TRADE: ALL IN THE ORGANISATIONAL STRUCTURE?



Nationalisation of tendu (or kendu in Odia) trade in Odisha took place in 1973.

Odisha is the third largest collector of tendu leaves and generates around 0.4 million to 0.5 million quintals every year.

Procurement is done by the forest department and processing and sale of leaves is done by the Odisha Forest Development Corporation Ltd (OFDC).

There is a separate organisational structure for the sale of tendu headed by the Principal Chief Conservator of Forests (PCCF) Kendu Leaf (KL)

Tendu trade is deregulated, i.e. the collection and sale of tendu leaves is handed over to the Gram Sabhas only in Nawarangpur Division and partially in the Jeypore and Bhawanipatna Divisions.

Photo: Forest Department, Angul

WHAT IS THE DEPENDENCY ON TENDU LEAF COLLECTION?

Around
0.8 million
tendu collectors in Odisha

The top districts in terms of the number of tendu leaf collectors are **Nawarangpur, Padampur and Jeypore**

Provides a source of income for the rural poor for around 11 days per year in the lean summer months

Tendu collection generated around 9 million mandays in Odisha in 2021 (upto 31.01.2022)

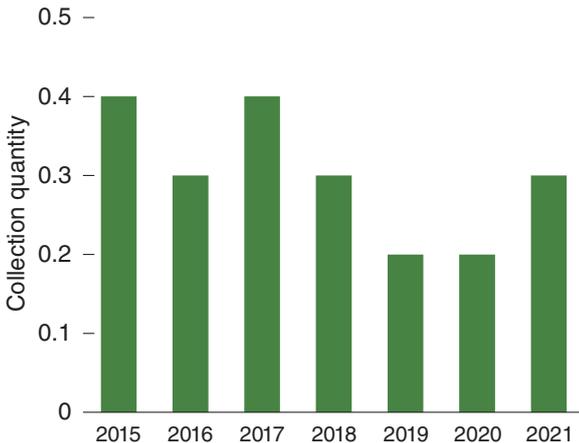


Photo: Forest Department, Angul

REVENUE GENERATED FROM TENDU LEAF

The collection of tendu has witnessed a decline between the years 2015 and 2021, decreasing from 0.4 million quintals to 0.2 million quintals. However, the year 2021 witnessed an increase in production of tendu leaves, at about 0.3 million quintals.

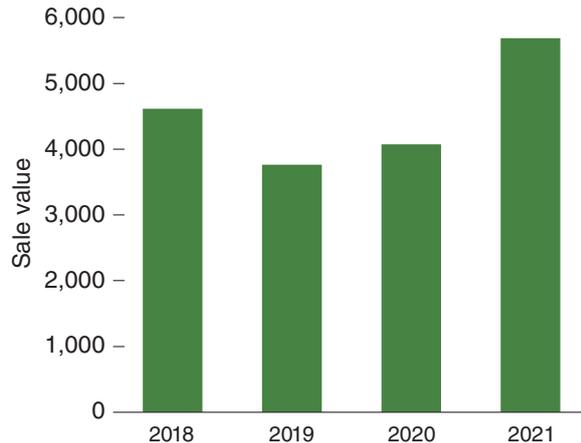
Trends in tendu leaf collection in Odisha (in million quintals)



Note: 1 quintal amounts to 0.1 tonne
Source: Forest Department, Government of Odisha

Revenue from sales has fluctuated between the years 2018 and 2021, with a noticeable dip in revenue in the year 2019 which is attributed to COVID-19. However, the revenue in 2021 reached a high which was around 39 per cent more than that of the previous year.

Year-wise sales value in Odisha (million ₹)

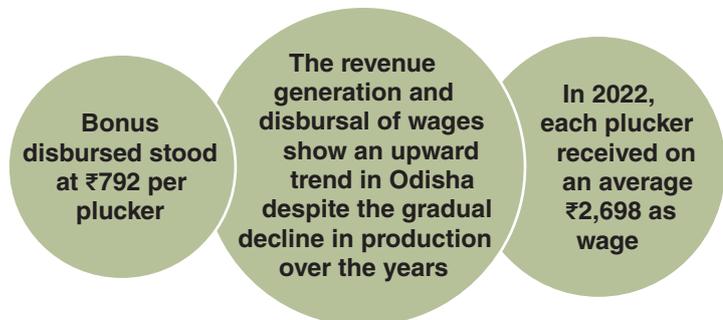


*Sale value for 2021 is up to 31.01.2022
Source: Forest Department, Government of Odisha

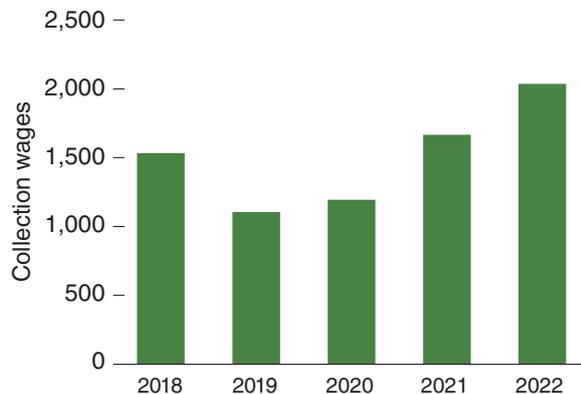
INCOME FROM TENDU TO PLUCKERS' HOUSEHOLDS

Trade surplus is deposited in the Kendu Leaf Development Fund (KLDF) from which various welfare activities take place:

- 1. Wages:** As per the government determined collection rates. However, the rates have only increased marginally.
- 2. Bonus:** 50% bonus paid to the pluckers. However, pluckers are unaware if they receive it.
- 3. Allowances:** For the purchase of items like caps, slippers, blankets, mosquito nets, chappals, cloth for carrying the leaves, etc. by the Forest Department.
- 4. Compassionate payments for deaths and disabilities** extended to pluckers under the Welfare Trust Fund. The grant amounts to ₹0.2 million.
- 5. Life insurance through LIC:** Pluckers get ₹30,000 for natural deaths and ₹75,000 for accidental deaths.



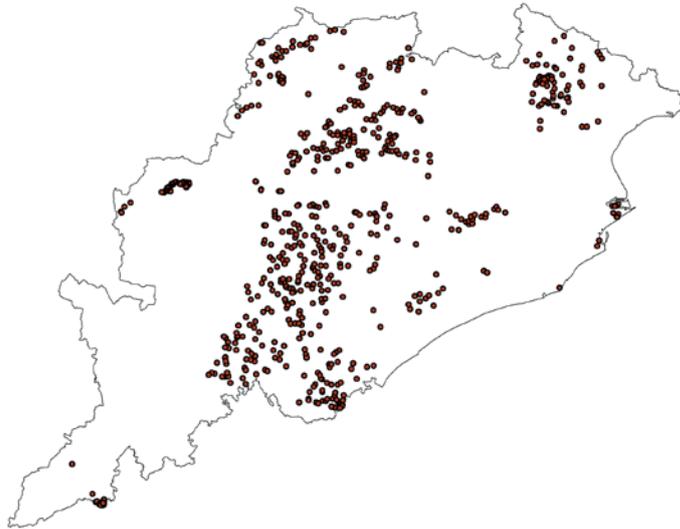
Collection wages in Odisha (million ₹)



Source: Forest Department, Government of Odisha

HAS BUSH-CUTTING BEEN AN EFFECTIVE ALTERNATIVE TO THE USE OF FIRE?

Tendu-linked forest fires in Odisha during 2011-21



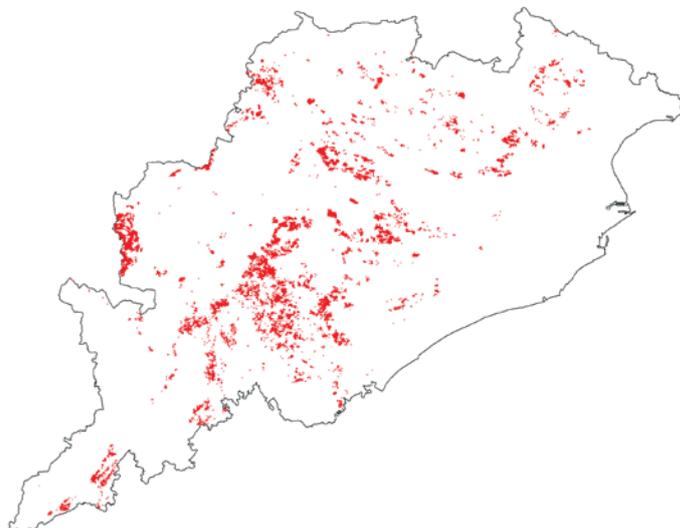
Source: iFOREST analysis of MODIS data

Bush-cutting is touted as an alternative to the traditional use of fire for tendu leaf collection in tendu-producing areas. As is believed to be the case in the use of fire for tendu leaf collection, bush-cutting enhances the quality of leaf production and facilitates collection. Bush-cutting is undertaken by the forest department which hires semi-skilled workers (including tendu collectors) to get the job done. While bush-cutting is promoted as an alternative to the traditional use of fire, the high incidence of forest fires in tendu-producing areas in Odisha calls into question its effectiveness in the reduction of forest fires.

788 Forest Fire Points in and around tendu sample points during 2011-21

Strong positive correlation between tendu and forest fires. Correlation coefficient of over 0.8 for most years (2011-21)

Burnt area with respect to potential tendu distribution for 2011-21



Source: iFOREST analysis

- Total burnt area due to forest fires during 2011-21 is estimated to be 9,085 sq km, which is larger than the size of Andaman and Nicobar Islands.
- Total burnt area due to tendu-induced fires is about 3,018 sq km (roughly the size of Goa state) for the period 2011-21.

Cause for concern:

- Tendu is prevalent across 22,904 sq km or approximately 37% of the state's forest land.
- 51,968 forest fires were recorded in Odisha during the last forest fire season (Nov 2020-June 2021), highest amongst all states.

Estimated CO₂ emissions attributed to tendu-linked forest fires in 2021

Month	Estimated CO ₂ Emissions (mt)
February	473,769
March	3,130,672
April	204,316

3.8 million mt of CO₂ was emitted due to tendu-related fires in Odisha in 2021. This is equivalent to the annual emissions by 1.5 million cars. These emissions took place only in the months of February-April which are also the months when fires are used to facilitate tendu collection.

STUDY OBJECTIVES & APPROACH

To assess the scale of dependence upon tendu collection and its contribution towards the socio-economic well-being of the dependents

To outline the possible alternatives to tendu to enhance livelihood options for the tendu collecting communities

Focus on Odisha:

Contributes to around 20% of the total collection in India. Also, the largest contributor towards forest fires in 2021 (SNPP-VIIRS data) as per the Forest Survey of India

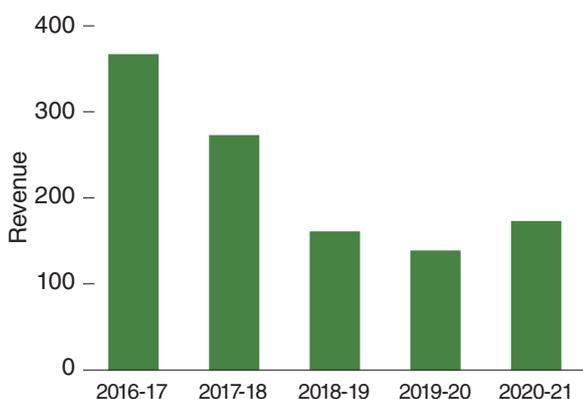
Use of secondary and primary research. Three stage primary research: Socio-economic household surveys at village level, Focus Group Discussions and stakeholder interviews

381 tendu-collecting households in 8 villages and 20 households in 2 non-tendu producing villages surveyed in Angul district. 1 FGD each carried out in 7 tendu and 2 non-tendu producing villages in which a total of 58 people participated

WHAT IS THE DEPENDENCE UPON TENDU COLLECTION AND WHAT ARE THE COLLECTORS EARNING OUT OF IT?

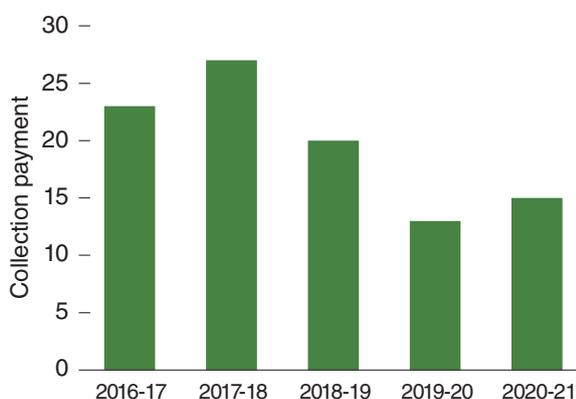
Tendu trade and dependence in Angul (Kendu Leaf) Division

Revenue generated through sale of tendu (million ₹)



Source: Forest Department, Angul

Payment to collectors for collection of tendu (million ₹)



Source: Forest Department, Angul

While 2016-17 was an exceptional year in terms of the revenue generated through the sale of tendu, the revenue has witnessed a steady decline from 2016 to 2021. There was a slight increase in revenue in 2020-21 which can be due to a pick-up after COVID.

44,350
tendu pluckers
in Angul division

In view of the bumper crop in 2017, the payment to the collectors was at a high of ₹27 million. However, consistent with the decline in revenue, the payment to collectors has also witnessed a decreasing trend.

GROUND REALITY: SURVEY FINDINGS FROM ANGUL DISTRICT

Has tendu collection paid off as a source of income for the collectors?

Tendu collectors from marginalised sections of society

- Low annual income
- Fare poorly on the socio-economic front as per the Udai Pareekh socio-economic scale status (SES)

Dependence on tendu due to lack of other sources of income

- Largely dependent upon agricultural labour
- Landlessness high while the rest have marginal landholdings
- Dependence upon non-timber forest products (NTFPs) and MNREGA for supplementary income

Provides a decent income but not commensurate with the investment and revenue generation

- Earn ₹2,195 on an average with 9 days of engagement with a small additional bonus
- 92% of respondents feel that the collection rate is inadequate

Non-tendu NTFPs hold more potential

- Huge dependence upon mahua collection, and the earnings more than tendu despite state support to tendu
- Collectors show interest in the promotion of mahua, mahua seeds, mushroom, siali leaf and bamboo

HOW DO THE SURVEYED TENDU COLLECTORS IN ANGUL DISTRICT FARE SOCIO-ECONOMICALLY?

Tendu collectors

Income < ₹5,000 per month

'Lower Middle Scale Class' as per the Udai Pareekh SES scale

36% landless

Average landholding of 0.46 acres

High dependence (65%) upon agricultural labour

High dependence upon NTFPs for supplementary income

Non-tendu collectors

Income ₹5,000-10,000 per month

'Middle Scale Class' as per the Udai Pareekh SES scale

20% landless

Average landholding of 0.87 acres

Dependence upon agricultural sector and casual labour

No dependence upon NTFPs for supplementary income

WHICH ARE THE NON-TENDU NTFPS THAT ARE PERCEIVED AS HAVING POTENTIAL BY THE SURVEYED TENDU COLLECTORS?

Major NTFPs collected are mahua and mushroom. Around 67.5% of the households collect mahua and 32.8% collect mushroom.

77% of those surveyed felt that mahua should be promoted, while 27% felt that mahua seeds could be promoted.

18% wanted some training related to NTFPs: bamboo crafts, siali leaf plate-making and mushroom production.

17% of those who responded specified the need for government support in terms of market linkages and procurement.

Collection and sale details of non-tendu NTFPs by the surveyed collectors

Name of NTFP	Usage	Number of collectors	Annual collection (kg)	Annual income (₹)	Average annual income (₹)
Mahua	Sale	256	32,610	775,126	3,027
	Own consumption	1	40	0	NA
Mushroom	Sale	74	2,311	101,450	1,370
	Own consumption	51	435	0	NA
Sal seed	Sale	5	288	5,200	1,040
	Own consumption	2	60	0	NA
Mahua seeds	Sale	95	3,482	92,830	977
	Own consumption	3	50	0	NA
Char	Sale	9	99	4,060	451
	Own consumption	10	46	0	NA
Mahua fruit	Own consumption	6	97	0	NA

CONCLUSIONS

Economic dependence:

- Tendu pluckers are from the poorest sections in the poorest districts of Odisha. Nine out of ten aspirational districts are engaged in tendu plucking.
- There is a high dependence upon tendu due to a lack of alternative income-generating sources.
- The returns from tendu are marginal. In 2022, each plucker received an average of ₹2,698 as wage.
- There are several alternatives to tendu plucking, such as mahua seed, sal seed and bamboo, which offer better returns.

Environmental concerns with tendu plucking:

- There is a strong correlation between forest fires and tendu prevalence in Odisha.
- The total burnt area due to forest fires in tendu-occurring areas is estimated to be 3,018 sq km for the 2011-21 period.
- Tendu-related fires emitted 3.8 million mt of CO₂ in Odisha in 2021.

WAY FORWARD: ALTERNATIVE LIVELIHOODS

Four major pathways in the provision of alternative livelihoods:

1 Promotion of non-tendu NTFP-based livelihoods

- Non-tendu NTFPs are widely collected and offer better returns in some cases
- Additional policies, robust organisational structures, resources, market linkages, etc. needed

2 Tapping into agricultural schemes for the promotion of the agricultural sector

- Investing in and boosting agricultural productivity important to uplift tendu collectors from poverty
- Convergence of state- and central-level schemes for agriculture and allied sectors needed

3 Leveraging livelihood schemes and other available funds to promote employment generation

- Provision of alternative employment opportunities especially during lean agricultural months
- Convergence of schemes/programmes/funds necessary. Example: MNREGA and CAMPA

4 Harnessing the potential of Payment for Ecosystem Services (PES) and carbon markets

- Generating income for tendu-dependent communities
- Promoting ecological conservation

Assessment of key NTFPs as tendu alternatives in Odisha

NTFP	Key challenges and gaps	Policy support	Recommendations
Bamboo	Lack of skill training for bamboo artisans; lack of awareness about policies on bamboo; lack of market linkages; lack of processing centres	Nationalised NTFP brought under state control; establishment of the Odisha Bamboo Development Agency in 2006	Capacity-building and awareness-generation workshops; increased emphasis on bamboo plantations, especially on farmlands; access to markets and processing units
Sal seed	Low procurement due to pre-monsoon rains; collection only through operationally profitable areas; lack of storage facilities	Nationalised NTFP brought under state control; establishment of 3 sal leaf clusters in Baripada, Rairangpur and Karanjia under the Odisha Forestry Sector Development Project (OFSDP); the produce is covered under the Minimum Support Price (MSP) scheme	Development of cooperatives/federations for better procurement; provision of storage and processing facilities and markets
Mahua seeds	Poor research and development for value addition of the produce; lack of developed market infrastructure and storage facilities; lack of suitable post-harvest processing techniques	The produce is covered under the MSP scheme.	R&D on the produce and its uses; development of storage, processing and market facilities; development of market linkages
Mushroom	Low prices for primary producers; lack of processing; lack of market linkages		Development of cooperatives/federations for better procurement and prices; development of market linkages for the produce; development of processing facilities

Source: iFOREST assessment