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An economic evaluation of cost and return on non-timber forest products (NTFPs) in Chhattisgarh

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Abstract

This paper entitled an economic evaluation of cost and return on Non-timber forest products (NTFPs) in Chhattisgarh shows the cost and return of the respondents in the collection and marketing of NTFPs in Chhattisgarh for different agro-climatic zone of Chhattisgarh. Two hundred farmers (NTFPs collectors) were selected randomly from twelve villages of three development block of three districts of different zones of Chhattisgarh. The results revealed that the cost of collection of NTFPs product of Mahua flower was Rs. 3172.50 per household, Sal seed Rs. 2842.50 per household, Mahua seed Rs. 1965 per household, Tamarind Rs. 1125 per household, Chiraoji seed Rs. 952.50 per household, Tendu leaves Rs. 862.50 per household, Aonla Rs. 600 per household, Baheda Rs. 510 per households and Harra was Rs. 412.50 per households. And the income of NTFPs collectors of Tendu leaves was Rs. 10076.00 per kg, followed by Mahua flower Rs. 8564.88 per kg, Sal seed Rs. 5244.40 per kg, Tamarind Rs. 3602.34 per kg, Chiraoji seed Rs. 2767.37 per kg, Mahua seed Rs. 2645.74 per kg, Aonla Rs. 1069.36 per kg, Baheda Rs. 876.41 per kg and Harra was Rs. 523.91 per kg. This shows the significant dependency of forest dwellers to the NTFPs from their native forest.

Keywords: Cost and returns, collection, marketing, tribal, NTFPs

Introduction

Chhattisgarh state is among top five forests developing state of India, and have contributing 44.21 per cent total forest area to the total geographical area of the state (economic survey, 2017). It is also coined as green state due to occurrence of densest forest of India, with huge bio-diversity habitats in it. Due to a well potential state with a tremendous wildlife and more than 200 types of NTFPs collections, it has a great scope for value addition for the same. There are so many organizations include with activities for arranging creation, assortment, handling and showcasing of non-nationalized NTFPs consider so as to offering additional work openings and vocations by Chhattisgarh State Minor Forest Produce Co-usable Federation Limited (CGMFP Federation). Legislature of Chhattisgarh has reported distinctive NTFPs, for example, tendu leaves (*Diosyros melanoxylon*), saal seed (*Shorearobusta*), harra (*Terminalia chebula*), gum (khair, dhawara, kullu and babool), tamarind, chironji, mahuha seed (*Madhulika indika*) and lac as nationalized and set up the CGMFP Federation for goal to empower exchange and development of these MFPs in light of a legitimate concern for MFP authorities, generally tribal's. Primitive or tribal of the nearer forest area are the major population group which is involves in collection of NTFPs. The tribal population is the biggest population group has 78.22 lakhs (30.62 per cent) of total population of Chhattisgarh state (Gupta *et al.*, 2015) ^[5], and collection of minor forest product is a necessary and important income activity to balancing their income basket. There are 34 forest divisions in Chhattisgarh state under 901 Primary Minor Forest Products Co-operative Society for collection of NTFPs. Division of Commerce and Industries, Government of Chhattisgarh has changed Food Processing Policy 2012-2019, which planned unique bundle conspire for ventures of more than Rs. 500 Crore. The assortment of NTFPs by tribals was fundamentally for meeting their subsistence needs. After some time, these NTFPs obtained business esteem coming about because of immense exchange exchanges and pay levels because of rising interest. Exchange NTFPs can go about as a motivating force for timberland protection by giving a kind of revenue from assets that may somehow or another seem to have minimal budgetary value (Cottray *et al.*, 2003) ^[4].

Methodology

The study was confined to all three agro-climatic sub zones of Chhattisgarh i.e., Chhattisgarh plains (Zone -I), Bastar plateau (Zone -II) and Northern hills (Zone -III).

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One district from each agro climatic sub zones viz. Kabirdham from Zone -I, Kondagaon from Zone -II and Surguja from Zone -III were selected on the basis of maximum quantity of NTFPs collected in the districts of agro- climatic sub zones of Chhattisgarh similar criteria was used for selection of block in each of the selected districts. In Kabirdham district, Bodla block, from Kondagaon district Kondagaon block and from Surguja district Ambikapur Sarguja block were selected for the study (Table 1).

Results and Desiccation

General characteristics of sampled households of selected zone of Chhattisgarh

General characteristics of the sample households are presented in table 1, which shows that the average family size was 5.18 and there is not much difference in terms of zone of Chhattisgarh.

The literacy rate was quite good i.e., 75.98 per cent. The average size of land holding was 2.25 hectares which varied from 1.95 hectare for Chhattisgarh plains to 2.55 hectares for Bastar plateau and 2.12 hectares for Northern hills. The average cropping intensity was reported to be 126.60 per cent of the sample households.

The costs and returns of collection and marketing of NTFPs of Chhattisgarh

Table 2 presented the costs and returns of collection and marketing of NTFPs in overall Chhattisgarh state. There where the maximum collection of NTFPs of Mahua flower was 277.90 kg (27.34 per cent), followed by the Sal seed 262.22 kg (25.80 per cent), Tamarind 113.89 kg (11.20 per cent), Mahua seed 100.79 kg (9.92 per cent), Tendu leaves 100.76 kg (9.91 per cent), Baheda 63.60 kg (6.26 per cent), Harra was 43.55 kg and (4.28 per cent) Chiraoji seed 22.20 kg (2.87 per cent), and minimum collection of NTFPs of Aonla 24.60 kg 2.42 per cent.

The cost of collection of NTFPs product was maximum for Mahua flower with Rs. 3172.50 per household (25.50 per cent) followed by Sal seed Rs. 2842.50 per household (22.85 per cent), Mahua seed Rs. 1965 per household (15.79 per cent), Tamarind was Rs. 1125 per household (9.04 per cent), Chiraoji seed Rs. 952.50 per household (7.66 per cent), Tendu leaves Rs. 862.50 per household (6.93 per cent), Aonla Rs. 600 per household (4.82 per cent), Baheda Rs. 510 per household (4.10 per cent) and the minimum cost of collection of Harra was Rs. 412.50 per household and 3.32 per cent. The analyzed of collected data it shows that the employment days involved in collection of NTFPs were maximum days of Mahua flower with 21.15 days per household, followed by Sal seed 18.95 days per household, Mahua seed 13.10 days per household, Tamarind 7.50 days per household, Tendu leaves 5.75 days per household, Chiraoji seed 6.35 days per household, Baheda 3.40 days per household, Aonla 4.00 days per household and the minimum cost of collection for Harra was 2.75 days per household.

The analysis of collected data it shows that the average wage rate of collectors in study area was Rs. 150 per day. The selling price of identified in different NTFPs were maximum for Chiraoji seed with Rs. 124.65 per kg, followed by Tendu leaves Rs. 100 per kg, Aonla Rs. 43.47 per kg, Tamarind Rs. 31.63 per kg, Mahua flower Rs. 30.82 per kg, Mahua seed Rs. 26.25 per kg, Sal seed Rs. 20 per kg, Baheda Rs. 13.78 per kg and the minimum selling price of Harra was Rs. 12.03 per kg. The table 2 presented the maximum income of the NTFPs collector of Tendu leaves was Rs. 10076 per kg (28.49 per cent), followed by Mahua flower Rs. 8564.88 per kg (24.21 per cent), Sal seed Rs. 5244.40 per kg (14.83 per cent), Chiraoji seed Rs. 2767.37 per kg (7.82 per cent), Tamarind were Rs. 3602.34 per kg (10.18 per cent), Mahua seed Rs. 2645.74 per kg (7.48 per cent), Aonla Rs. 1069.36 per kg (3.02 per cent), Baheda Rs. 876.41 per kg (2.48 per cent) and minimum income of the NTFPs collector of Harra were Rs. 523.91 per kg and 1.48 per cent.

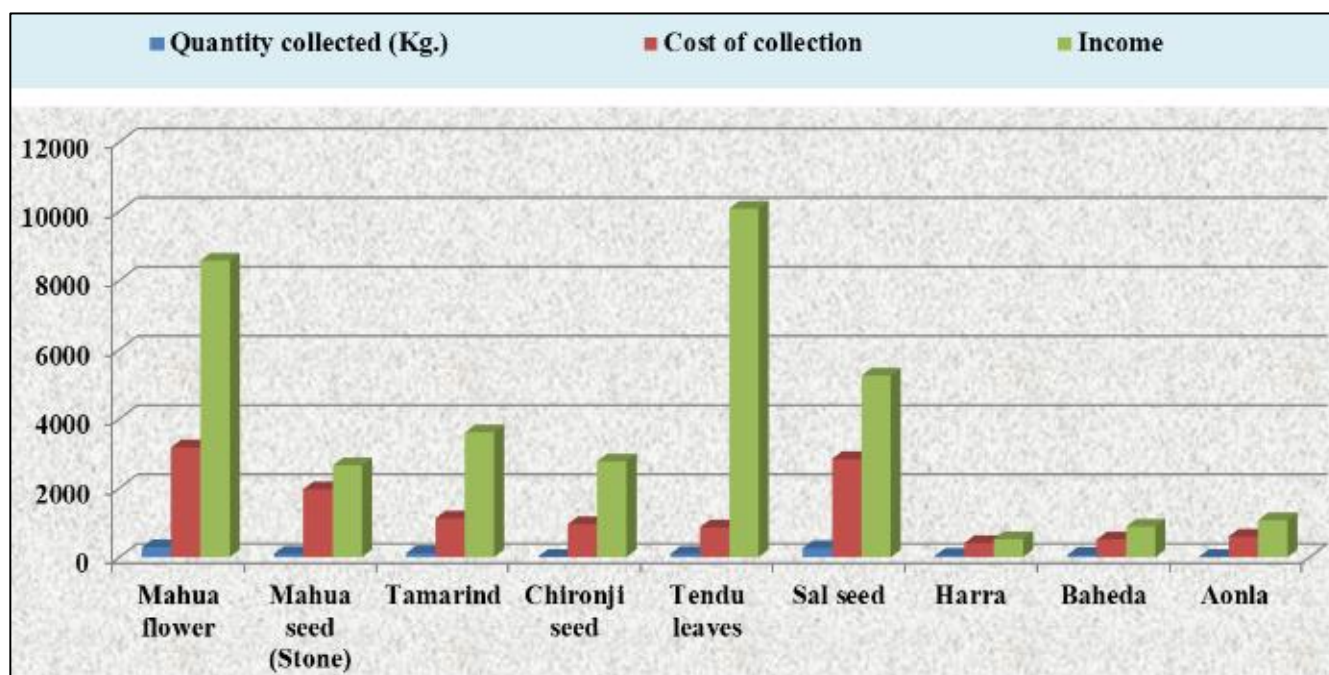


Fig 1: Average collection, cost of collection and income of different NTFPs of Chhattisgarh.

Table 1: General characteristic of sampled households of selected zone of Chhattisgarh

S. No.	Particulars	Farm size			
		Bastar plateau	Chhattisgarh plains	Northern hills	Overall
1.	Total number of sample households	80	50	70	200
2.	Average holding size (ha.)	2.55	1.95	2.12	2.25
3.	Average family size	5.50	5.23	4.79	5.18
4.	Literacy				
	a. Illiterate	2.74 (29.37)	2.27 (20.62)	2.20 (22.73)	7.21 (24.02)
	b. Primary	2.39 (25.61)	2.51 (22.80)	2.17 (22.42)	7.07 (23.55)
	c. Middle	2.42 (25.94)	2.94 (26.70)	2.42 (25.00)	7.78 (25.92)
	d. High school	1.04 (11.15)	1.49 (13.53)	1.29 (13.33)	3.82 (12.72)
	e. Higher secondary	0.49 (5.25)	1.10 (9.99)	0.93 (9.60)	2.52 (8.39)
	f. Graduate and above	0.25 (2.68)	0.70 (6.36)	0.67 (6.92)	1.62 (5.40)
	Total	9.33 (100)	11.01 (100)	9.68 (100)	30.02(100)
5.	Age group (years)				
	a. Up to 14 (children)	1.35 (27.72)	1.27 (23.13)	1.08 (22.60)	3.7 (24.44)
	b. 15-60	3.14 (64.48)	3.76 (68.49)	3.22 (67.36)	10.12 (66.84)
	c. 60 and above	0.38 (7.80)	0.46 (8.38)	0.48 (10.04)	1.32 (8.72)
	Total	4.87 (100)	5.49 (100)	4.78 (100)	15.14(100)
6.	Cropping intensity (%)	115.07	142.50	128.42	126.60

Table 2: Cost and returns of collected NTFPs of selected households from NTFPs in Chhattisgarh (Per household /year)

S. No.	Name of NTFPs	Quantity collected (Kg.)	Cost of collection	Employment days involved in collection of NTFPs	Wage rate	Selling price of NTFPs (Rs./Kg.)	Income generated through NTFPs
1.	Mahua flower	277.90 (27.53)	3172.5 (25.50)	21.15	150.00	30.82	8564.88 (24.21)
2.	Mahua Seed (Stone)	100.79 (9.98)	1965 (15.79)	13.10	150.00	26.25	2645.74 (7.48)
3.	Tamarind	113.89 (11.28)	1125 (9.04)	7.50	150.00	31.63	3602.34 (10.18)
4.	Chironji Seed	22.20 (2.20)	952.50 (7.66)	6.35	150.00	124.65	2767.37 (7.82)
5.	Tendu Leaves	100.76 (9.98)	862.50 (6.93)	5.75	150.00	100.00	10076 (28.49)
6.	Sal Seed	262.22 (25.98)	2842.50 (22.85)	18.95	150.00	20.00	5244.40 (14.83)
7.	Harra	43.55 (4.31)	412.50 (3.32)	2.75	150.00	12.03	523.91 (1.48)
8.	Baheda	63.60 (6.30)	510 (4.10)	3.40	150.00	13.78	876.41 (2.48)
9.	Aonla	24.60 (2.44)	600 (4.82)	4.00	150.00	43.47	1069.36 (3.02)
	Total	1016.50 (100)	12442.50 (100)	82.95			35370.41 (100)

Note: Tendu leaves (standard bag), one standard bag = 40 kg and contains 50000 leaves.

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