



## Research Article

# ROLE OF RAJAS SANGH AND FOREST DEPARTMENT IN PROCUREMENT AND MARKETING OF NON-TIMBER FOREST PRODUCES WITH SPECIAL EMPHASIS ON TENDU LEAVES IN RAJASTHAN

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**Abstract-** The present study was conducted on *Rajas Sangh* and Forest Department in procurement and marketing of NTFPs with special emphasis on tendu leaves in Rajasthan. The study was based on secondary data. The results of the study revealed that variety of NTFPs species gathered by the tribal people to sustain their livelihood in the state of Rajasthan. In order to avoid exploitation of people by traders, there are 20 NTFPs for which minimum support prices were fixed by *RAJAS Sangh*. Minimum support prices were increased over the time period, it was highest for *Buchanania lanzan-A* followed by *Buchanania lanzan-B*, *Datura stramonium*, *Sapindus trifolatus*, *Pongamia pinnata*, *Emblia officinalis*, *Cassia tora*, Honey, *Jatropha curcus*, *Madhuca indica* (seed), *Terminalia bellerica* and *Madhuca indica* (flower). The procurement of quantity of minor forest produces by *RAJAS Sangh* was significantly decreased from 13333.07 quintals in the year 2007-08 to 3641.47 quintals in the year 2013-14. The collection units of *Diospyrus melanoxylon* (tendu leaves) were declined from 226 (year 1995-96) to 168 (year 2015-16) while its collection rate per standard bag was increased from Rs. 250 to Rs. 750 during the same period. About 172 collection units and 1389 collection centres (Phad) were distributed across the six forest divisions viz., Kota, Udaipur, Ajmer, Jodhpur, Jaipur and Bharatpur for tendu leaves. Among the divisions, Kota and Udaipur divisions were dominant in distribution of collection units and collection centres. The income generated to state from tendu leaves were increased while its production was decreased during the reference period. Rajasthan Forest Department and Government of Rajasthan must undertake plantation of the NTFPs and medicinal plant species in the state in order to maintain ecological balance of the region and to sustain rural livelihoods.

**Keywords-** Forest, Procurement, Marketing, Non-Timber Forest Produces, Tendu.

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## Introduction

Rajasthan is eighth largest state in terms of population in India [1] with highest geographical area (342239 Sq. Km.). Rajasthan had only 9.57 per cent of the geographical area under forest in the year 2014-15 [2]. More than fifty per cent of the state's forest area lies in the Aravali hills. The Aravali Mountains crosses the state of Rajasthan diagonally for a distance of about 800 km [3]. Rajasthan has approximately 577 lakh livestock animals [4]. In 2011, State's human population reached 6.86 crore which constitutes 5.67 per cent of India's population. There is tremendous pressure on the state's forests for the collection of fuel wood, fodder and other Non-Timber Forest Produces (NTFPs). The Aravali hills consisting of tropical dry deciduous forests of Rajasthan state are the store house of a variety of NTFP yielding species and enormous potential of economic value of NTFPs is available in the state.

Economic significance of NTFPs lies in the fact that they are found mostly in areas inhabited by poor, particularly the tribal's. NTFPs play significant role in sustaining rural livelihoods of these poor tribal people living inside or at the forest-fringe areas and creating economic opportunities in terms of employment and income. Hegde (2005) also highlights the importance of NTFPs for the purposes of food security; wood and biomass; medicines and plant protection; as well as aromatics, dyes and oilseeds [5]. NTFP contributes about Rs. 5400 lakh annually to Rajasthan state Gross Domestic Product [1]. Tribal people collect and sell the

NTFPs – such as tendu leaves, ratanjot, aonla, honey, and areetha since long time. To save them from exploitation by traders, collection and trade of NTFPs in Rajasthan is controlled by Rajasthan Tribal Area Development Cooperative Federation (*RAJAS Sangh*) while of tendu leaves by Government of Rajasthan, Rajasthan Tendu leaves (Regulation of Trade) Act 1974. The forest flora of Rajasthan provides considerable numbers of species producing commercially important forest products [6]. Therefore, keeping above fact in the mind, this study was undertaken in Rajasthan with the following objectives; (i) to prepare an inventory of the NTFPs extracted in the state, (ii) to study the collection of NTFPs, and (iii) to study the marketing of NTFPs. Therefore, in this study, an attempt has been done to know role of *Rajas Sangh* and Forest Department in procurement and marketing of NTFPs with special reference to tendu leaves in Rajasthan.

## Materials and Methods

Rajasthan was purposively selected for the present study. All the estimates in this paper are based on secondary data. The secondary sources were used for the collection of data and information such as publications of *RAJAS Sangh* (Government of Rajasthan) and Rajasthan Forest Department, previous research reports, government annual reports and manuscripts. These secondary sources gave a comprehensive idea about the collection and marketing of NTFPs and related economy. Tabular analysis along with descriptive statistics was used to

interpret the information.

## Results and Discussion

**Inventory of the NTFPs collected:** It was found that forty four (44) NTFPs and

medicinally important species gathered and utilized by the rural people in the Rajasthan. Out of these species, plant trees are found to be dominant followed by herbs, shrubs and climbers. The following seasonally available NTFPs in Rajasthan have been listed [Table-1].

**Table-1 Availability and collection time of NTFPs in Rajasthan**

S. No.	Local name	Scientific name	Part(s) used	Collection time
1	Adusa	<i>Adhatoda vasia</i>	Leaves	Jan-June
2	Akul	<i>Alangium lamarcana</i>	--	Sept-Oct.
3	Areetha	<i>Sapindus trifolatus</i>	Fruit	March
4	Arandi	<i>Ricinus communis</i>	Non-edible oil	Nov.- Dec.
5	Aonla	<i>Emblia officinalis</i>	Fruit	Oct-Jan
6	Aswagandh	<i>Withania somnifera</i>	--	Round the year
7	Bael	<i>Aegle marmelos</i>	Fruit pulp, leaves	April-June
8	Babul	<i>Acacia nilotica</i>	Gum	March-June
9	Bahera	<i>Terminalia bellerica</i>	Fruit	Nov-Jan/March-May
10	Choti kateri	<i>Solanum suratense</i>	--	May-June
11	Chitrak	<i>Plumbago zeylanica</i>	--	Oct-June
12	Dhaturi	<i>Dataura stramonium</i>	--	April-may
13	Dhawda	<i>Anogeissus latifolia</i>	Gum	Dec-Feb
14	Dhokra	<i>Anogeissus pendula</i>	Gum	March-June
15	Giloy	<i>Tinospora cordifolia</i>	--	Feb-June
16	Godal	<i>Lannea coromandelica</i>	Gum	March-June
17	Ghat bor	<i>Zizyphus xylopara</i>	--	April- March
18	Gokharu	<i>Tribulus terrestris</i>	--	Sept-Oct
19	Jamun	<i>Syzygium cumini</i>	Fruit	Jun-July
20	Kali musli	<i>Curculigo orchioides</i>	--	Sept - Oct
21	Kanji	<i>Pongamia pinnata</i>	Non-edible Oil	Jan-march
22	Karaya	<i>Sterculia urens</i>	Gum	March-June
23	Khakhra	<i>Butea monosperma</i>	leaves, Gum	Winter/March-June
24	Khair	<i>Acacia catechu</i>	Gum	March-June
25	Karonda	<i>Carrisa carandus</i>	Fruit	May-June
26	Kemach	<i>Mucuna prurita</i>	--	Oct- Dec.
27	Kikoda	<i>Momordica dioica</i>	Fruit	May
28	Kohda	<i>Terminalia arjuna</i>	--	Round the year
29	Malkangni	<i>Celestrus spp.</i>	--	Round the year
30	Mahua/Dolma	<i>Madhuca indica</i>	Flower, Fruit	May & July
31	Marorphali	<i>Helictres isora</i>	Fruit	Oct-Feb.
32	Mom (bee-wax)	--	--	Round the year
33	Neem	<i>Azadirachta india</i>	Seed	June-July
34	Puwar	<i>Cassia tora</i>	Leaves, seed	Sept-Dec.
35	Ratanjot	<i>Jatropha curcus</i>	Seed	Aug-Sep & Mar-Apr
36	Sahad (honey)	--	--	Round the year
37	Safed musli	<i>Chlorophytum tuberosum</i>	--	Sep-Oct
38	Satavari	<i>Asparagun racemosus</i>	--	Sep-Oct
39	Sankh pushpi	<i>Evolvulus alsinioides</i>	--	Sep- Nov
40	Sitaphal	<i>Annona squamosa</i>	Fruit	Nov-Dec
41	Salar	<i>Boswellia serrata</i>	Leaves, gum	Gum (March - June)
42	Tendu	<i>Diospyrus melanoxylon</i>	Leaves, Fruit	Apr-May
43	Vajradanti	<i>Barleria cristata</i>	--	Sept.- Nov.
44	Vidarikand	<i>Puraria tuberosa</i>	--	Dec-Jan.

Source: Authors compiled from different sources [6, 9, 10, 11, 12]

## Minimum Support Price for minor forest produces

Gram Sabha may decide to sell the minor forest produce collected from its area to RAJAS Sangh at minimum support price. The committee constituted for fixing minimum support price for purchase of minor forest produce by RAJAS

Sangh have representation of the Panchayati Raj Institution. The minimum support prices for minor forest produces were reported to have a substantial increase in the year 2014-15 over the year 2010-11 [Table-2]. The highest increase was observed in case of Achaar – A (300%), followed by Achaar – B

(250%), Daturi (200%), Areetha (150%), Karanj (110%), Aonla (110%), Puwar (100%), Honey (76%), Ratanjot (63.16%), Dolma (57.14%), Baheda (50%), Mahua flower (33.33%), Gum-Dhawda-C (25%), Bilvagudaa (15.38%), Gum-

Dhawda-B-II (14.29%), Gum-Dhawda-A (13.33%) and Gum-Dhawda-B-I (9.09%) while there was no change in minimum support price of Gum-choodi, Gum-khair and Wax during the study period.

**Table-2 Minimum Support Price for minor forest produce fixed by RAJAS Sangh (Rs./Kg)**

Produce	2010-11	2011-12	2012-13	2013-14	2014-15	Growth (%)
Mahua flower	15	15	18	18	20	33.33
Dolma	14	16	20	18	22	57.14
Datura	10	10	10	10	30	200.00
Areetha	4	10	10	10	10	150.00
Baheda	2	2.5	2.5	3	3	50.00
Puwar	7.5	10	10	11	15	100.00
Karanj	10	10	17	19	21	110.00
Ratanjot	9.5	12	12	12	15.50	63.16
Aonla	20	32	32	42	42	110.00
Honey	75	110	125	125	132	76.00
Achaar - A	25	35	65	65	100	300.00
Achaar - B	10	15	35	35	35	250.00
Gum-Dhawda-A	375	375	375	375	425	13.33
Gum-Dhawda-B-I	275	275	275	275	300	9.09
Gum-Dhawda-B-II	175	175	175	175	200	14.29
Gum-Dhawda-C	80	80	80	80	100	25.00
Gum-choodi	50	50	50	50	50	0.00
Gum-khair	60	60	60	60	60	0.00
Wax-white	80	80	80	80	80	0.00
Bilvagudaa	13	13	13	13	15	15.38

Source: RAJAS Sangh, 2014-15

#### Procurement of minor forest produces:

The procurement of quantity of minor forest produces in Rajasthan at two points of time from 2007-08 to 2013-14 has been depicted [Table-3].

It is revealed from a close examination of [Table-3] that the overall quantity of

minor forest produces procured by RAJAS Sangh was 13333.07 quintals in the year 2007-08 which was decreased to 3641.47 quintals in the year 2013-14. Overall procurement of minor forest produces was decreased by 72.69 per cent in the year 2013-14 compared to the year 2007-08.

**Table-3 Quantity of minor forest produces procured by RAJAS Sangh (Quintals)**

Produce	2007-08	2010-11	2011-12	2012-13	2013-14	Change (%)*
Mahua flower	1357.00 (10.18)	205.08	2185.00	670.00	538.43 (14.79)	-60.32
Dolma	36.55 (0.27)	41.70	105.00	3.83	90.00 (2.47)	145.84
Daturi	1.35 (0.01)	1.54	3.63	2.59	1.07 (0.03)	-20.74
Areetha	69.83 (0.52)	9.09	9.07	18.34	0.00 (0.00)	--
Baheda	6.90 (0.05)	30.43	8.72	30.65	24.91 (0.68)	261.01
Puwar	10543.87 (79.08)	2023.80	2157.32	59.99	1669.25 (45.84)	-84.17
Karanj	72.56 (0.54)	33.24	18.57	66.79	176.06 (4.83)	142.64
Ratanjot	1179.81 (8.85)	738.78	907.09	83.68	1101.37 (30.25)	-6.65
Aonla	11.06 (0.08)	0.00	2.60	37.60	5.31 (0.15)	-51.99
Honey	13.09 (0.10)	0.00	21.00	14.49	31.53 (0.87)	140.87
Achaar - A	6.32 (0.05)	0.00	0.00	2.00	1.05 (0.03)	-83.39
Achaar - B	1.36 (0.01)	2.10	0.00	1.00	2.49 (0.07)	83.09
Gum-Dhawda-B-I	0.80 (0.01)	--	--	--	--	--
Gum-Dhawda-B-II	22.60 (0.17)	--	--	--	--	--
Gum-Dhawda-C	2.24 (0.02)	--	--	--	--	--
Gum-choodi	0.86 (0.01)	--	--	--	--	--
Gum-kher-A	6.30 (0.05)	--	--	--	--	--
Wax	0.57 (0.004)	--	--	--	--	--
Total	13333.07 (100.00)	3085.76	5418.00	990.96	3641.47 (100.00)	-72.69

Source: RAJAS Sangh, 2014-15, \*Change indicates percentages increase or decrease in the year 2013-14 over 2007-08.

Further, per cent share in total procurement of minor forest produce during the year 2007-08 was highest from Puwar (79.08) followed by Mahua flower (10.18), Ratanjot (8.85), Karanj (0.54), Areetha (0.52), Dolma (0.27), Gum-Dhawda-B-II (0.17), Honey (0.10), Aonla (0.08), Achaar - A (0.05), Baheda (0.05), Gum-kher-A (0.05), Gum-Dhawda-C (0.02), Achaar - B (0.01), Gum-Dhawda-B-I (0.01), Daturi (0.01), Gum-choodi (0.01) and Wax (0.004). Additionally, per cent share in total collection of minor forest produce during the year 2013-14 was highest again from Puwar (45.84) followed by Ratanjot (30.25), Mahua flower (14.79), Karanj (4.83), Dolma (2.47), Honey (0.87), Baheda (0.68), Aonla (0.15), Achaar - A (0.03), Achaar - B (0.07) and Daturi (0.03).

The procurement of Baheda (261.01), Dolma (146.24), Karanj (142.64), Honey (140.87), Achaar - B (83.09) have increased over the years in percentage terms in minor forest produces in the year 2013-14 over 2007-08. Highest increase was observed in Baheda. The procurement of Puwar (84.17), Achaar - A (83.39),

Mahua flower (60.32), Aonla (51.99), Daturi (20.74) and Ratanjot (6.65) have decreased over the years. Highest decrease was observed in Puwar.

In order to avoid exploitation of Salar and other gum yielding trees and promote their regeneration, Government has banned extraction of Salar and other gum in the year 1985-86. The ban further extended by the Government from time to time. It has now been extended indefinitely till further orders. Ban on extraction of gum from *Anogeissus* spp. and Khair was lifted from the Saharia tribal area (Shahbad and Kishangarh) of Baran district on socio-economic ground.

#### Procurement and marketing of Tendu Leaves:

The collection and sale of NTFPs forms a significant part of the livelihoods of forest-fringe communities. The leaf of tendu is used to roll beedis is one of the most socially and economically important NTFPs. Tendu leaves is one of the prominent minor forest produce growing in the state. It is found mainly in

Banswara, Dungarpur, Udaipur, Pratapgrh, Chittoorgrh, Jhalawar, Baran districts and partially in Kota, Bundi, Alwar, Dholpur, Sirohi, and Pali districts of the state. It is used for bidi manufacturing units in Tonk, Ajmer, Nasirabad, Byaber, Kota, Baran, Chipabarod, Pratapgarh and Banswara cities in Rajasthan as a wrapper on tobacco. The Act and regulation with respect to Tendu Leaves are:

- The trade and collection of Tendu leaves is separately governed by the Rajasthan Tendu Leaves (Regulation of Trade) Act, 1974 (Act No.5 of 1974).
- The Tendu leaves is collected by the Forest Department in accordance with the Rajasthan Tendu Leaves (Regulation of Trade) Act, 1974 (Act No.5 of 1974).
- The net revenue received from collection of tendu leaves is transferred to respective Panchayats from whose area tendu leaves is collected in the ratio of production of Tendu Leaves from its area.
- The details of Tendu Leaves collected from different Gram Sabha areas is compiled by the Forest Department in accordance with the procedure finalized by the Advisory Committee constituted by the Forest Department for advising the State Government on the rate at which tendu leaves is collected every year.
- The Gram Sabha used 50% of total revenue for infrastructure development and rest 50% on cultural operations required for augmenting the production of tendu leaves in its area and
- The Advisory Committee of the Forest Department is necessarily having representation of Panchayati Raj Institutions.

#### Constitution of tendu leaves units and fixing of tendu leaves collection charges:

Tendu leaves units 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 center. The tendu leaves are collected on these centres only. Necessary orders in this regard are issued by Principal Chief Conservator of Forests and notified in Rajasthan Gazette in accordance with the provisions of section 3 of Tendu Leaves Act 1974. Collection charges per standard bag of 1000 bundles each containing 50 leaves i.e. 50000 leaves that are paid to tendu leaves collecting labourer are decided by the state government. For this purpose, an advisory committee is constituted by the state government for recommending the region wise collection rates. The changing scenario of Tendu leaves collection units and collection rates in Rajasthan from the year 1995-96 and 2015-16 is depicted [Table-4]. A close examination of the table revealed that collection units of Tendu Leaves were declined from 226 (year 1994-96) to 168 (year 2015-16) by 25.56 per cent while its collection rate per standard bag was increased from Rs. 250 to Rs. 750 by 200 per cent during the same period.

**Table-4** Tendu leaves collection unit and collection rate in the Rajasthan

S. No.	Year	Collection units (Number)	Collection rate (Rs./Standard bag)
1	1995-96	226	250
2	1996-97	221	250
3	1997-98	218	250
4	1998-99	225	280
5	1999-00	231	300
6	2000-01	228	320
7	2001-02	221	320
8	2002-02	218	320
9	2003-04	195	320
10	2004-05	194	320
11	2005-06	194	350
12	2006-07	184	350
13	2007-08	183	350
14	2008-09	183	375
15	2009-10	183	425
16	2010-11	182	425
17	2011-12	169	500
18	2012-13	174	625
19	2013-14	172	700
20	2014-15	168	750

21	2015-16	168	750
Change (%) over 1995-96		-25.56	200
Compound Annual Growth		-1.75	5.48

Source: Rajasthan Forest Department, Various Annual Reports, One standard bag of Tendu Leaves = 1000 bundles each containing 50 leaves = 50000 leaves.

#### Distribution of Tendu Leaves Units in Rajasthan:

There are six divisions of forest (Kota, Udaipur, Ajmer, Jodhpur, Jaipur and Bharatpur) in the state of Rajasthan for tendu leaves. About 172 collection units and 1389 collection centres (Phad) are distributed across the divisions in the year 2013-14. There is vast variation in distribution among the divisions [Table-5].

**Table-5** Division-wise distribution of Tendu Leaves units in Rajasthan in the year 2013-14

Forest Division	Forest Range	Lumber of units	No. of collection centres (phad)
Kota	21 (35.59)	87 (50.58)	496 (35.71)
Udaipur	32 (54.24)	74 (43.02)	821 (59.11)
Ajmer	1 (1.69)	4 (2.33)	35 (2.52)
Jodhpur	3 (5.08)	5 (2.91)	35 (2.52)
Jaipur	1 (1.69)	1 (0.58)	1 (0.07)
Bharatpur	1 (1.69)	1 (0.58)	1 (0.07)
<b>Rajasthan</b>	<b>59 (100.00)</b>	<b>172 (100.00)</b>	<b>1389 (100.00)</b>

Source: Rajasthan Forest Department, Various Annual Reports

Among the divisions, Kota and Udaipur divisions are dominant in distribution of collection units and collection centres followed by Jodhpur, Ajmer, Jaipur and Bharatpur.

#### Production and Income from Tendu Leaves:

The changing scenario of production and income from Tendu leaves in Rajasthan from the year 1995-96 and 2013-14 is depicted in [Table-6].

**Table-6** Production and Income from Tendu Leaves in Rajasthan

Year	Production (No. of Standard bags in lakh)	Income (Rs. Lakh)
1995-96	4.21	567.34
1996-97	4.41	781.65
1997-98	4.17	717.71
1998-99	4.95	665.20
1999-00	5.67	845.47
2000-01	5.95	1075.89
2001-02	4.53	1417.26
2002-02	4.64	1058.67
2003-04	1.93	892.74
2004-05	3.03	552.23
2005-06	1.57	289.72
2006-07	2.33	449.62
2007-08	5.27	1652.31
2008-09	NA	815.52
2009-10	3.05	1217.22
2010-11	NA	1210.82
2011-12	2.53	1072.30
2012-13	4.49	1931.54
2013-14	2.62	994.59
2014-15	NA	573.26
<b>Change (%) over 1995-96</b>	<b>-37.77</b>	<b>75.31</b>

Source: Rajasthan Forest Department

A close examination of the table revealed that income from Tendu Leaves were increased from Rs. 567.34 lakh (year 1995-96) to Rs. 994.59 (year 2013-14) by 75.31 per cent while its production was decreased from 4.21 lakh to 2.62 lakh standard bags by 37.77 per cent during the same period.

## Conclusion

NTFPs are an integral element of the livelihoods of thousands of tribal poor in Rajasthan. The contribution of NTFPs to state gross domestic product was about Rs. 5400 lakh per annum. Some species of NTFPs are depleting over the period of the time in the state of Rajasthan. Several initiatives have been taken by Forest Department, State Government and RAJAS Sangh in order to better utilise NTFP for improving the livelihoods of forest-dependent people as well as for environmental conservation. Besides increasing minimum support prices of minor forest produces, their procurement made by RAJAS Sangh was declining which creates great challenge for RAJAS Sangh. The income from tendu leaves was increased while its production was decreased over the years in study area. The conservation and exploitation of forest produces is the great challenge for the policy makers in Rajasthan. The depletion of tendu leaves is a matter of concern for economy in Rajasthan. In future, the NTFP especially, tendu leaves should be used, improved and managed in such a manner to achieve its sustainable utilization and conservation for securing tribal people's livelihood for a long period.

**Conflict of Interest:** None declared

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