

SECTION-III

PRODUCTION OF WOOD AND NON-WOOD FOREST PRODUCTS





PRODUCTION OF WOOD AND NON-WOOD FOREST PRODUCTS

Removals from forests can broadly be classified into wood and non-wood forest products. While wood removals in the form of round wood and wood fuel are well known and well estimated, the non-wood forest products pose a challenge in estimation. The sporadic nature of their collection and that too by villagers dwelling in and around forests it becomes very difficult to estimate them. The most important of them are gums, resins, sal seeds, tendu leaves, canes, rattans and bamboos. The rest, which number to more than 200, together provide a huge quantum of revenue to the villagers. Tendu leaves, gums and resins alone are estimated to provide revenue of almost Rs. 4000 crores to the forest departments. In addition to this there is vast quantum of NWFPs underestimated. Data on the following have been covered in this section:

1. **Timber Production**
2. **Estimates of selected Non-Timber Forest Products**
3. **Annual production and value of Resins**
4. **Annual production and value Tendu Leaves**
5. **Production of Bamboos**
6. **Funds released under National Bamboo Mission**
7. **Bamboo supplied under NISTAR/Royalty free (to the forest dependent communities/societies).**

Timber has been the most important and valuable product of the forests. Other forest products like bamboo, cane, fibre and flosses, leave (tendu), oil seeds, gum, resins, essential oils, drug and spices etc though important were categorized minor. But since last three decades or so the focus on production has shifted to non-timber forest products specially, after 1988 National Forest Policy. The timber production from the forest has declined due to increased emphasis on forest conservation. To meet their increasing requirements, the wood-based industries have to augment supply by importing wood and promote plantations outside forests in farmer's land of high yielding genetically improved variety of tree species as well as raise their own captive plantations.

Timber production from government forests gradually declined with increasing restriction imposed by Central Government on felling of trees during 1980s for biodiversity conservation. Ban was imposed on clear felling of forests and as well as green felling of trees above 1000 m in hills and bringing more areas under Protected Area network. The new National Forest Policy 1988 also laid emphasis on conservation of forests and biodiversity and discouraged production of timber for industries. The annual production of timber from forests had declined to about **4 million m³** by 1990. Timber Production for the period 2006-2010 is presented in Table 3.1.

Non-Timber Forest Products (NTFP) have been known as 'minor forest produce' (MFP) because their volume and value compared to timber was recognized as minor. Therefore the development of



management models of MFPs in general, barring a few exceptions like tendu leaf, resin, bamboo, etc., were not given priority by forestry professionals. The utilization of NTFP by local communities for various purposes has also not been properly studied and documented. The availability of data on NTFP is only of how much is harvested or collected. Though there are more than 800 types of NTFPs harvested in India but annual harvest data of only a few are available to be compiled at the national level and presented in this report (Table 3.2). Data on NTFP is difficult to obtain as not all the NTFPs are nationalized and are collected by tribal and dwellers of forest fringes villages, who do not keep records of collections. Further, most of the times the states also report the revenue earned through sale/collection of NTFPs in royalty figures which is much less than the market value. This underestimates the total value of NTFPs, and consequently, their role in providing livelihood to the poor masses.

Crude resin is a thick, sticky fluid material obtained by tapping living pine tree. Resin is the source for producing rosin and turpentine which have wide utility in making soap, paper, paint, varnish, pharmaceuticals etc. A small quantity of resin is also produced from *Pinus wallichiana* which grows at higher elevations in these states. The production of the resin harvested in India during 2009-10 was about 28,000 tons having market value Rs 108 crore (Table 3.3).

The total production of tendu leaf varies between 3.3 lakh tons to 4.5 lakh tons per years with a market value of about Rs 1,000 crores per annum. The three States producing the bulk of the tendu leaf are Chhattisgarh, Madhya Pradesh and Odisha (Table 3.4).

Bamboo is a versatile natural resource and extensively used in cottage industry for making lots of household products besides use in house construction. It has been an important source of income for millions of rural Indian for sustaining their livelihoods. The major quantity of bamboos is utilized as raw material by paper and pulp industries, for housing, rural and agricultural applications, and in packing industry, etc. Besides forests it also grows in private lands in the homesteads. The total bamboo growing stock of green bamboo is about 169 million tonnes. About 28 percent of the total bamboo area with 66 percent (approx.) of growing stock is located in north-east India represented by 58 species belonging to 10 genera. The other areas rich in bamboos include the States of MP, Chhattisgarh, Maharashtra, Odisha, Andhra Pradesh, Karnataka, and the Union Territory of Andaman and Nicobar Islands (Table 3.5).

Harvesting of bamboo is done on a 3-4 years felling cycle. A lot of bamboo is given to the local people / tribals under NISTAR rights either free or on nominal royalty cost to meet their domestic/ livelihood needs. Generally commercial bamboo meant for construction/ cottage industry is disposed in numbers whereas industrial bamboo (for paper mills) in tonnes (Table 3.7).



Table 3.1: Production of timber (in '000 cum)

States / U.T. s	2006-07	2007-08	2008-09	2009-10
A & N Islands	5.29	9.28	8.97	8.06
Andhra Pradesh	293.11	191.85	88.64	116.05
Arunachal Pradesh	40.5	30.78	35.05	31.37
Assam	27.49	13.63	13.93	7.33
Bihar	7.23	7.23	6.87	5.99
Chhattisgarh	176.45	209.32	173.49	199.32
Goa	0.42	0.51	0.17	0.18
Gujarat	29.1	48.81	42.51	32.44
Haryana	165.73	140.76	166.66	164.12
Himachal Pradesh	220.82	246.97	227.98	272
Jammu & Kashmir	80.85	68.49	71.55	61.32
Jharkhand	0.56	10.76	11.62	4.67
Karnataka	65.69	44.84	44.91	45.28
Kerala	26.79	48.65	50.6	50.6
Madhya Pradesh	313.42	372.06	336.95	143.74
Maharashtra	119.12	132.61	141	125.47
Manipur	9.11	8.58	2.67	6.41
Meghalaya	0.98	1.02	0.88	0.52
Mizoram	4.41	11.62	11.71	3.13
Nagaland	25	25	25	25
Odisha	22.61	21.84	27.8	20.79
Punjab	129.06	72.33	69.76	79.58
Rajasthan	35.4	38.5	36.3	36.3
Sikkim	0.05	0.03	0.07	0.05
Tamil Nadu	5.5	4.78	4.01	4.12
Tripura	2.1	2.1	2.1	2.1
Uttar Pradesh	200.58	310.67	300.08	313.13
Uttarakhand	283.08	310.58	271.62	242.62
West Bengal	114.59	231.58	151.12	183.4
Total	2405.04	2615.18	2324.02	2185.09

Source: State Forest Departments



Table 3.2: Estimates of selected NTFPs (Value in lakh rupees)

Name of NTFP	Unit	2006-07		2007-08		2008-09	
		Quantity	Value	Quantity	Value	Quantity	Value
Andhra Pradesh							
Gums	MT	6738.27	561.14	4156.63	342.93	2619.82	244.54
Nuxvomica	MT	8387.02	133.36	1103.31	17.01	4513	71.91
Seeded Tamarind	MT	50113.4	440.63	37816.86	289.45	47783.29	382.22
Mohwa Seed	MT	9441.87	104.49	3063.44	33.7	2437.75	28.85
Mohwa Flower	MT	15519.83	93.74	6183.32	43.28	5621.99	36.74
Honey	MT	3523.28	281.53	3088	246.96	2731.89	217.11
Adda Leaf	MT	9140.67	46.7	6820.95	32.82	2819.93	13.3
Others			415.07		390.53		307.59
Total			1661.59		1006.15		994.67
Arunachal Pradesh							
Cane	Kap (72m)	62260	8.25	153368	8.47		
Assam							
Thatch	Bls	96000		1000000		1571676	
Cane	RMT	8953		8750		7790	
Chhattisgarh							
Sal Seeds	MT	4880		60600		8990	
Harada	MT	5990		4254		4965	
Gums	MT	57.74		138.2596		142.419	
Gujarat							
Grass	MT	13233.96	395.9	14933.52	429.25		
Gum	MT	53.09	9.43	128.54	4.66		
Mahuda Fruits	MT	65.82	7.43	589.96	16.04		
Mahuda Flowers	MT	376.13	68.77	2452.4	116.16		
Honey	MT	14.59	1.54	1291.15	145.1		
Others			79.95		104.98		
Total			563.02		816.19		
Himachal Pradesh							
Charcoal	MT			111	10.7	84	7.36
Grass	MT			62	2.27	1113	1.67
Fodder	MT				10.03		10.7
Medicinal Herbs	MT			951	302.72	376	265.75
Others					15.81		32.44
Jammu & Kashmir							
Anardana (Punica granatum)	MT	83.63				131.4	
Tethwan (Artimesia maritima)	MT	8					



Name of NTFP	Unit	2006-07		2007-08		2008-09	
		Quantity	Value	Quantity	Value	Quantity	Value
Guchies (Morchella Esculenta)	MT	145.96				4.76	
Others	MT	3.86				37.22	
Karnataka							
Charcoal	MT	0.5					
Honey	MT	1043.67		1181.32		66.94	
Tamarind	MT	9081.4		185.02		1255.53	
Seegikai	MT	506.31		805.28		594.89	
Cashewnut	MT	538.2		31.51		87.11	
Alalekai	MT	418.94		391.4		320.3	
Gum	MT	9.8		2			
Canes	Nos.	121700					
Uppige	MT	2447.23		591.63		988.74	
Dalchinni	MT	884.99		1032.34		678.33	
citradora	MT	502.76					
Others							
Kerala							
Charcoal	MT	239.99		0			
Ayurvedic Herbs	MT			863.64986		1116.1245	
Fibre	MT			23.5245		46.76	
Grass	MT			22.859		83.438	
(other than fodder)							
Incensive plants	MT			67.424		60.517	
Vegetable Oilseeds	MT			17.8608		20.015	
Honey	MT			97.01145		79.081	
Parts of medicinal trees	MT			21.987		8.3725	
others							
Madhya Pradesh							
Kullu Gum	MT	56.725	51.27	23.489	19.82	231.97	24.71
Sal Seeds	MT					8.922	1.13
Maharashtra							
Grass & Grazing	MT	6395	31	6729	25	3036	15.25
Hirda	MT	563.5	4	749.5	58	183.7	9.08
Gum	MT	2185.5	28	502.6	151	591.1	156.09
Mahua	MT	1911.2	82	2009.1	67	692.9	13.31
Lac	MT	3346.1	13	2493.8	7	684.6	309.15
							502.88
Manipur							
Cane	RMT	196000	0.53	116200	0.692		1067800



Name of NTFP	Unit	2006-07		2007-08		2008-09	
		Quantity	Value	Quantity	Value	Quantity	Value
Thatching Grass	Bundles	9500	0.02	5400	0.015		9500
Charcoal	MT	52.55	0.39	53	0.306		62.95
Others			25.35		27.733		
Nagaland							
Broom	MT					350	
Cinnamon	MT					65	
Punjab							
Fodder & Grazing			23.18125		15.74965		
Plants			10.48759		26.58375		
Fruits			1.05845		1.7905		
Others			0.06985		4.90356		
Tamilnadu							
Cashew		163.763		34.191		1551.893	
Tamarind		1890.27		588.694		16033.321	
Others		584.26		1202.584		19854.81	
Tripura							
Thatch	Bundles					59753	
	MT	18902.805	0.38095	390.325	1.18359		
Umbrella Handle	Nos	6675200	5.80184	5222900	4.35885	5136500	
	MT						
Agarbati Stick	MT	21855.9	43.8716	29166.71	112.341	32455.19	
Uttar Pradesh							
Bhabhar Grass	MT	45	5.82	16	2.53		
Medicinal Plants	MT	186.5	14.22	357.9	13.76		
Honey and Wax	MT	35.3	2.96	33.1	4.68		
Fodder	MT	1932.7	15.26	570	7.16		
Cane	Bundle	3808	3.21	121	0.28		
Others			66.33		92.68		
West Bengal							
Honey	MT	38.207		25.128		24.565	
Wax	MT	1.402		1.396		0.889	
Sal Seeds	MT	120.58		1408.13		75.53	
Citronella Grass	MT	710.121		322.714		209.4	
Andaman & Nicobar Islands							
Cane	RMT	705945		384970		650958	
Thatching Leaves	Nos.	968457		965165		948920	
Post	Nos.	11277		14356		13207	
Ballies	Nos.	26645		44577		21619	

Source: State Forest Departments



Table 3.3 Annual Production and value of Resins in India during 2006 to 2010.

Weight: 100 Tons
Value: Crore Rupees

States	2006-07		2007-08		2008-09		2009-10	
	Weight	Value	Weight	Value	Weight	Value	Weight	Value
Arunachal Pradesh	4.43	0.19	4.09	0.23	4.06	0.27	1.60	(0.10)
Himachal Pradesh	85.91	45.10	85.14	44.70	75.96	39.88	65.00	45.5
Jammu & Kashmir	49.69	17.12	38.60	7.09	24.42	13.29	16.93	8.31
Uttarakhand	198.19	46.33	192.98	29.97	187.52	30.81	196.08	54.57
Total	338.22	108.74	320.81	81.99	291.96	84.24	279.61	108.48

Source: State Forest Departments

Table 3.4: Annual Production and Value of Tendu Leaves in India

Weight: 100 Tons
Value: Crore Rupees

States	2006-07		2007-08		2008-09		2009-10	
	Weight	Value	Weight	Value	Weight	Value	Weight	Value
Arunachal Pradesh	4.43	0.19	4.09	0.23	4.06	0.27	1.60	(0.10)
Andhra Pradesh	271.80	36.36	368.58	73.42	310.80	56.18	327.00	54.41
Chhattisgarh	643.80	191.60	1,030.80	325.59	801.00	235.56	927.00	335.30
Gujarat	77.12	3.17	191.75	7.09	(143.01)	(5.26)	(143.01)	(5.26)
Jharkhand	183.60	21.51	450.00	50.61	339.00	43.44	340.80	15.26
Karnataka	4.59	(0.61)	6.87	(1.37)	3.86	(0.70)	3.42	(0.57)
Madhya Pradesh	1,452.60	373.64	1,089.00	201.86	1,197.00	262.99	(1,204.2)	(264.57)
Maharashtra	337.75	25.27	460.17	93.95	424.34	45.32	397.94	66.34
Odisha	387.65	247.71	445.70	264.30	415.12	301.79	403.07	326.49
Rajasthan	139.80	3.75	315.60	16.36	206.40	8.56	(189)	(7.84)
Uttar Pradesh	173.66	4.81	163.16	4.68	130.40	(3.74)	(132.7)	(3.8)
West Bengal	11.64	(7.44)	8.49	(5.03)	8.03	(5.84)	9.07	(7.35)
Total	3,684.01	915.87	4,530.12	1,044.26	3,978.96	969.38	4,077.22	1,087.19

NB:

- Figures in parentheses are estimated.
- Reporting of tendu leaf production by States is in standard bag unit (one standard bag = 1000 bundles; one bundle=50 tendu leaf).
- Conversion factor 1 standard bag = 60 kg has been used to arrive production figures in tons.

Source: Estimates prepared from data supplied by State Forest Departments.



Table 3.5: Production of Bamboos

States	Unit	2006-07	2007-08	2008-09	2009-10
Andhra Pradesh	NOS	14212911	8657137	11084212	12882173
Arunachal Pradesh	NOS	28461	34368	21706	31806
Assam	ADMT	9456	8400	8580	1000
Chhattisgarh	NT	64832	48006.09	59067.53	38235.62
Gujarat	MT	1736.34	2329.43	N.A.	N.A.
Goa	NOS	85674	238670	76675	57513
Karnataka	CUM	192256.42	95659.48	1517153 (no.)	187763.91
Madhya Pradesh	NT	265794	117684	101882	12013
Maharashtra	MT	130191	135047	28529	27010
Manipur	NOS	1334385	1709290	1514570	1128978
Meghalaya	NOS	408375	312975	181125	220950
Mizoram	NOS	23208100	3729301	3284022	6875179
Odisha	MT	112824.19	N.A.	N.A.	N.A.
Rajasthan	NOS	1014000	1193000	1758000	239183
Tamil Nadu	NOS	3.7	129.665 (MT)	0	1254.30(MT)
Tripura	NOS	26855200	16136	24284695	842258
	MT	20257.94	48299.39	14188	N.A.
Uttar Pradesh	NOS	945700	2080100	1970700	1789400
A & N Islands	NOS	666625	701600	553870	N.A.

NB:

- It has been reported that in Nagaland during the last 5 years all the muli and kaku bamboo has flowered and perished. New regeneration is started and will take around 3 to 5 years to restock.
- The deviation from normal reporting units is given in parentheses.
- The production increases suddenly due to bamboo flowering in a year and declines drastically in the following year.

Source: State Forest Departments.



Table 3.6: Fund Released under National Bamboo Mission during 2006-07 to 2009-10
(Rs. in Lakh)

S.No.	States	2006-07	2007-08	2008-09	2009-10
1	Andhra Pradesh	0	112.8	117.65	0
2	Bihar	0	543.87	0	0
3	Chhattisgarh	275.34	786.98	548.96	427.46
4	Goa	0	31	0	0
5	Gujarat	0	194.83	450.23	370
6	Himachal Pradesh	0	127.25	188.08	0
7	J & K	0	0	110.2	20
8	Jharkhand	0	100	276.56	109.14
9	Karnataka	0	212.17	324.25	323.07
10	Kerala	0	151	48.59	30
11	Madhya Pradesh	0	601.59	0	0
12	Maharashtra	0	109.78	483.59	190.74
13	Odisha	329.97	736.72	140.94	184.68
14	Punjab	0	395.71	79.48	0
15	Rajasthan	92.85	0	270	200
16	Tamil Nadu	0	258.32	149.59	0
17	Uttar Pradesh	0	391.16	188.88	62.79
18	Uttarakhand	261.87	387	285.47	79.5
19	West Bengal	31.85	0	129.15	0
	NE STATES				
20	Arunachal Pradesh	1510.35	873.6	196	50
21	Assam	1080.31	601.36	755.16	338.44
22	Manipur	647.17	371.21	497.77	130
23	Meghalaya	508.31	332.54	355.28	338.67
24	Mizoram	865.45	1001.97	825.27	900
25	Nagaland	1315.96	1484.17	1370.44	965.34
26	Sikkim	429.32	450.44	213.84	155.5
27	Tripura	122.16	646.63	137.67	40
	Total	7470.91	10902.1	8143.05	4915.33

Source: National Bamboo Mission



Table 3.7: Quantity of bamboo supplied under NISTAR/Royalty free in selected States (in nos.)

State	2005-06	2006-07	2007-08	2008-09	2009-10	Average Annual Supply (nos.)	Average annual supply ('00 MT)
AndhraPradesh	3117637	3939053	5673632	3329682	1638726	3539746	424.77
Chhattisgarh	5098696	7484057	4297941	4737800	-	5404624	648.55
Gujarat	518075	244672	130611	-	-	297786	35.73
Karnataka	2008791	2403657	2058045	155109	854108	1495942	179.51
Madhya Pradesh	-	8635000	7162000	6605000	6721000	7280750	873.69
Maharashtra	1941670	1047746	1308839	1516546	1438487	1450658	174.08
Total	12684869	23754185	20631068	16344137	10652321	-	-

Conversion factor - 1bamboo =12 kg (Dendrocalamus spp found in these States)

Source: State Forest Departments