Study No. 77

PROSPECTS OF VALUE ADDITION OF FOREST PRODUCE IN TRIBAL AREAS OF MADHYA PRADESH

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CHAPTER I

INTRODUCTION

1.1 Background

Forests are an important adjunct to tribal culture and economy. Forests and tribals are inseparable in India. India is having the largest tribal population than anywhere in the world perhaps except African countries. According to the 1991 census, there were 427 scheduled tribes and 67.8 million tribesmen in the country who comprised 8.08 per cent of the total population. Nearly 683.92 lakh hectares of land or 20.8 per cent of the total land area of the country is occupied by forests. The tribal areas are generally characterised by undulating terrain, dense forest, difficult communications and low population density. The life and economy of the tribals are mainly based on natural resources comprising of primitive methods of agriculture and collection of forest produce. The socio-economic domain of the tribals is intimately connected and confined to the forests which provide them habitat, raw material for household equipments, other objects of material culture like resins, gums and dyes etc., wood for building houses, fencing and tool making etc., fire wood, medicines, fodder for cattle and grazing areas. However, in recent years, the forest is subjected to very high pressure due to population both human and cattle. Tribals living in and around forests cannot ensure sustenance on agriculture throughout the year and they have to make a living out of the forest produce. They collect various items of Minor Forest Product (MFP) to supplement their meagre income from agriculture. Though they have limited land resources for agriculture with ever growing population, more effective ways and means have to be found to generate more income and employment from the produce they collect from forests.

1.2 Indian Forest Management

Since 1878 A.D. when the Indian Forestry Act was implemented, Indian foresters looked at forests as a source of revenue by maximizing timber output. Further, being under the control of the government, Indian forests were exploited ruthlessly in both pre-and post-in-

dependence eras. It was only during the late 1970s the Government of India had a re-look at the traditional forestry menagement model. It was realised that the revenue from non timber forest products (NTFPs) or "minor forest products" had increased tremendously over time and were as much as the revenues accrued from timber sales. Realising the potential of NTFPs, the National Commission on Agriculture (NCA) in 1973 suggested the establishment of Forest Development Corporations (FDCs) to manage the collection and marketing of NTFPs. As a result, each state in the country established an FDC during the 1970s with the objective to :-

1) professionally organise the collection and marketing of NTFPs and eliminate middlemen so that maximum benefits were transferred to the tribal or rural poor engaged in the collection of NTFPs.

2) bring about qualitative and quantitative improvement in the marketing and trade of NTFPs; and,

3) exploit NTFPs on a sustainable basis.

The sole assumption behind the establishment of FDCs was that these organisations would invigorate the NTFP economy in general, bearing in mind the principles of the economics and management of the forest resources. The number of FDCs grew repidly since then. By 1990, there were a total of 26 Forest Development Corporations in various states and union territories.

Public realisation that forests play an important role in correcting the local and global environment and that theseare very essential for maintaining environmental equilibrium and sound human health, came much later, through the Forest Policy of India, 1988. This forest policy categorically stated that the forests of the country need to be looked upon as national assets, not only as sources of revenue, but also their ecological value was high lighted. As a result, maintaining and creating good environment for people through afforestation was necessitated. Policy makers also realised the sociological benefits emanating from afforestation under the Joint Forest Management Programme. The role of the community in reviving India's degraded forest/ environment has now been recognised.

The concepts and objectives of forest management have changed drastically during the last 10-20 years. Emphasis is now on the maximization of total benefits from forestry including timber, non timber and environmental benefits, rather than focusing on timber only. Under the new model of forestry management, the significance of NTFPs can be no less than that of timber or environmental benefits.

1.3 Forest Produce and Tribals

Forest produce, as such, not only plays an important role in the tribal economy but also generates employment opportunities particularly during the non-agricultural seasons. It is broadly grouped in two categories.

1. Wood based forest produce (WFP), i.e. major forest produce, which comprises of timber, small wood and the firewood, and,

2. Non-wood based forest produce (NWFP), i.e. minor forest produce, classified by the National Commission on Agriculture (NCA) as : (a) fibres and flosses, (b) grasses, bamboo, seed and canes, (c) essential oils (including oil yielding grasses), (d) oil seed, (e) tans and dyes, (f) gum, resins and oleoresins, (g) drugs, spices, poisons and insecticides, (h) leaves (i) edible products, (j) lac, (k) tassar silk, (l) wax, (m) honey and (h) other products.

Tribals, at large, depend on the collection of minor forest produce (MFP) for their livelihood. They collect various items of MFPs from the forest to supplement incomes from agriculture. It serves as employment and income cushion for them, usually as a secondary occupation. Several studies related to MFPs have revealed about the share of income earned from the collection of MFPs to their total income and also the creation of mandays of work. A study in Rajasthan has found that tendu leaves, the highest revenue earning MFP, employs 50,000 tribal people for 40-50 days, generating about 20 lakh mandays of work. A similar study has indicated that agricultural production from tribal land is inadequate to maintain a household at subsistence level. Households having less than 5 acres of forest land mainly depend on MFP collection and the percentage income to their total income realised

through the sale of MFPs varies from 10.0 to 55.3 in Andhra Pradesh, 7.0 to 41.7 in Bihar, 34.0 to 55.0 in Madhya Pradesh and 5.4 to 13.4 in Orissa. In the Panchmahal district of Gujarat it has been found that 35 per cent of the total earnings of tribals was from MFPs. Yet another study conducted in Bastar district of Madhya Pradesh indicated that an average household earns Rs.500 a year (against a total income of Rs.1,750) from the sale of MFPs without any initial input or risk.

1.4 Sale of Minor Forest Produce

Since most of the MFPs occur in widely scattered areas making economic exploitation difficult, with the recent scale of deforestation, the search of MFPs is becoming more intense, back breaking and unremunerative. Till recently, these MFPs were usually brought to the hats (local markets) where they were sold or bartered for the essential consumer goods. The middlemen used to force them to sell their produce at very low prices. The traders were in liaison with the wholesale dealers and so the produce changed a number of hands and thereby the intermediate functionaries appropriate most of the profit. There has always been a wide gap between the price or wages paid to primary collectors and final market price. It is also evident from the study conducted in Andhra Pradesh, the price realised by the tribals for their produce ranged between 11.07 per cent to 47.47 per cent in the consumer prices, indicating the extent of exploitation of the tribals by the marketing agencies, be it public or be private traders.

1.5 Value Addition to MFPs by Tribals

In terms of value contribution, minor forest produce accounts for about 30 per cent of the total value added by the forestry sector in the country but it does not fairly contribute to the tribal economy. Besides, there is also lack of attitude of value orientations among tribals which has affected the adoption of the techniques meant for value addition to forest produce after doing some primary processing at village or local level. Thus, if the tribals are encouraged to undertake some primary processing instead of selling the raw MFPs, it will add more value

to the produce, which will further enable them to get a higher price. It is therefore, imperative to study the various facets of MFP collection, processing and marketing in general and the prospects of value addition in particular. Unless and until the new prospects of value addition are explored, it will be an injustice to the people living in the tribal areas.

1.6 This Study

The study titled "Prospects of value addition of forest produce in tribal areas" was asked to be conducted by the Directorate of Economics & Statistics, Ministry of Agriculture, Government of India. Two Agro-Economic Research Centres, namely, Bhagalpur and Jabalpur were asked to conduct the study in the states of Bihar and Madhya Pradesh respectively. The Agro-Economic Research Centre, Bhagalpur coordinated the study and prepared synopsis and evolved methodology, sample design, prepared schedules and questionnaires for the study.

1.7 Relevance of the Study

Realising the contribution of MFPs in tribal economy, the proposed study is of high significance specially when the challenges of irreversible economic reforms is ahead before the people in general and tribals in particular. Since the gap between the prices paid to the tribals and the profits earned by the intermediaries is widening, when many of the industries are involved in producing variety of consumer goods by using the tribal produces as raw material, it is high time to minimise the gap by paving the ways and means for adding more value to the forest produce so that the cultural and economic exploitational value of the forest could be essentially conserved. It is needless to mention that in states like Bihar, Madhya Pradesh and Orissa no such precise and systematic study has been conducted so far. Besides, the present study is also of much importance in maintaining the ecological balance and social sustainability of the tribals.

1.8 Objectives of the Study

The main objectives of the study are as follows :

1. To identify the important MFPs specially in the context of present level of production.

2. To study the working of the institutions/organisations/ enterprises, if any, involved in the processing of MFPs in the study area.

3. To study the marketing mechanism for the disposal of MFP in raw and processed forms.

4. To examine the impact of the programmes related to additional value generation, and,

5. To suggest operational measures for providing cushion to tribal economy by way of additional value generation.

1.9 Methodology

The study is based on both primary and secondary data. The main objective of the present study was to appraise the prospects of value addition in non-wood forest products in Madhya Pradesh. Hence, it was essential to select atleast two main non-wood forest products from Universe of the study and respondents for detailed study. On the basis of maximum collection and procurement two minor forest products (MFP) namely tendu leaf and sal seed have been selected.

The study was conducted in the MFP circle/division/range/ beat/forest village. On the basis of maximum collection and procurement of tendu leaves, Bilaspur circle and Raigarh division, Gharghoda range, Gharghoda Samiti and two collection centres namely Chimtapani and Porda villages have been selected. For the study of sal seed, Surguja circle and South Surguja division, Udaipur range, Udaipur samiti and two collection centres namely Sukhri Bhandar and Manpur villages have been selected.

Primarily, all the concerned households were enlisted in each of the sample villages and thereafter enlisted households were stratified in two broad categories on the basis of their period of involvement in collection of concerned MFPs viz.

(i) involvement for less than 10 years,

(ii) involvement for 10 years and more. But unfortunately this type of categorisation was not found in the field. All MFP collectors, collected MFPs from generation to generation. Therefore we selected 50 respondents (25 from one collecting centre) randomly from the enlisted households for each of the product.

Thus, a total number of 100 respondents were randomly selected for detailed investigation.

The primary data were collected through duly structured schedules and questionnaires. The secondary data were collected from the offices of State Minor Forest Produce Trade and Development Cooperative Federation Limited and Department of Forest.

1.10 Limitations of the Study

(1) The investigation has been carried out only in two circles, divisions, ranges, samitis and collecting centres and two non wood forest products were selected for the study, hence the general acceptability of the results has its own limitations.

(2) The unavailability of official data related to non-nationalised MFPs regarding procurement and price of purchase, limit the scope of the study.

(3) In the course of our study, we did not find any research work particularly of this nature conducted specially in Madhya Pradesh, which restricted our attempt to review the past work and in framing the necessary hypothesis for this research work.

(4) Survey research method of data collection with reference to previous years/off seasons is based on recall of memory because the collectors were not maintaining the records, so it can not be free from its biases particularly in the case of illiterate and semi-literate collectors.

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CHAPTER II

SOCIO-ECONOMIC PROFILE OF SELECTED REGIONS AND SAMPLE RESPONDENTS

2.1 Forest of Madhya Pradesh

2.1.1 Forest Coverage

Being centrally situated Madhya Pradesh is called "The heart of India". It is the largest state of the country according to area. The geographical area of the state is 4,43,000 sq.km. which forms 13.47 per cent of the area of the country. The area under forest is 1,54,506 sq.km. which accounts for 34.80 per cent of the area of the state and 23.00 per cent of the forest area of the country.

Of the total forest area reservedforest area constitutes 82,700 sq.km. or 53.53 per cent, protected forest area 66,694sq.km. or 43.16 per cent and un-classified forest area 5,112 sq.km. or 3.31 per cent (Table 2.1).

Table 2.1 Circlewise forest area of Madhya Pradesh

(Area- Sq.Km.)

S.No.	Name of Circle	Reserved	Protected	Unclassed	Total
1.	Balaghat	2740.880	1310.960	-	4051.840
2.	Betul	2560.649	1378.471	-	3939.120
3.	Bhopal	4088.125	2810.545	66.000	6964.670
4.	Bilaspur	4250.616	8846.274	898.000	13994.890
5.	Chhindwara	1707.357	2613.933	15.000	4336.290
6.	Durg	1955.941	2704.509	-	4660.450
7.	Gwalior	4619.727	2034.863	-	6654.590
8.	Hoshangabad	2454.000	948.190	-	3402.190
9.	Indore	4878.621	1725.829	-	6604.450
10.	Jabalpur	6818.069	2037.571	-	8855.640
11.	Jagdalpur	5952.045	5496.740	287.899	11736.684
12.	Khandwa	9012.380	235.900	259.000	9507.280
13.	Rewa	3612.218	4043.332	-	7655.550
14.	Kanker	3863.868	3120.137	2805.101	9789.106
15.	Raipur	4005.921	2973.289	221.000	7200.210
16.	Sagar	5120.344	7028.335	439.481	12588.160
17.	Shahdol	3843.067	1649.893	-	5492.960
18.	Seoni	2711.647	1248.703	121.000	4081.350
19.	Surguja	3938.062	7965.858	-	11903.920
20.	Shivpuri	2895.433	4606.387	-	7501.820
21.	Ujjain	1671.136	1914.074	-	3585.210
	Total	82700.106	66693.793	5112.481	154506.380
	Percentage to total	53.53	43.16	3.31	100.00

The forest area of the state is composed of 27,783 sq.km. of teak (17.98 per cent), sal 25,784 sq.km. (16.69 per cent) and miscellaneous forest 1,00,939 sq.km. (65.33 per cent).

The population of the state as per 1991 census was 6,61,81,170 or 7.82 per cent of the country's population. In this respect the state ranks sixth among the states of the country. The state has high proportion of tribal population. It was 23.27 per cent as compared to 8.08 per cent of the country. The tribal population of the state forms about 22 per cent of the tribal population of the country. Of the total districts of the state 14 have nearly 80 per cent tribal population of the total tribal population of the state. The per capita forest area is 0.23 hectare (Table 2.2).

The social and economic cultures of the tribals are directly linked and dependent on forests. Their day to day life is influenced by the forest and forest products. Madhya Pradesh has varied types of forests. On one hand Gwalior, Bhind, Rajgarh and some other districts have forest of the types of shurbs and bushes. On the other hand the districts of Bastar and Surguja have forest containing big trees like teak and sal.

2.1.2 Administrative Structure

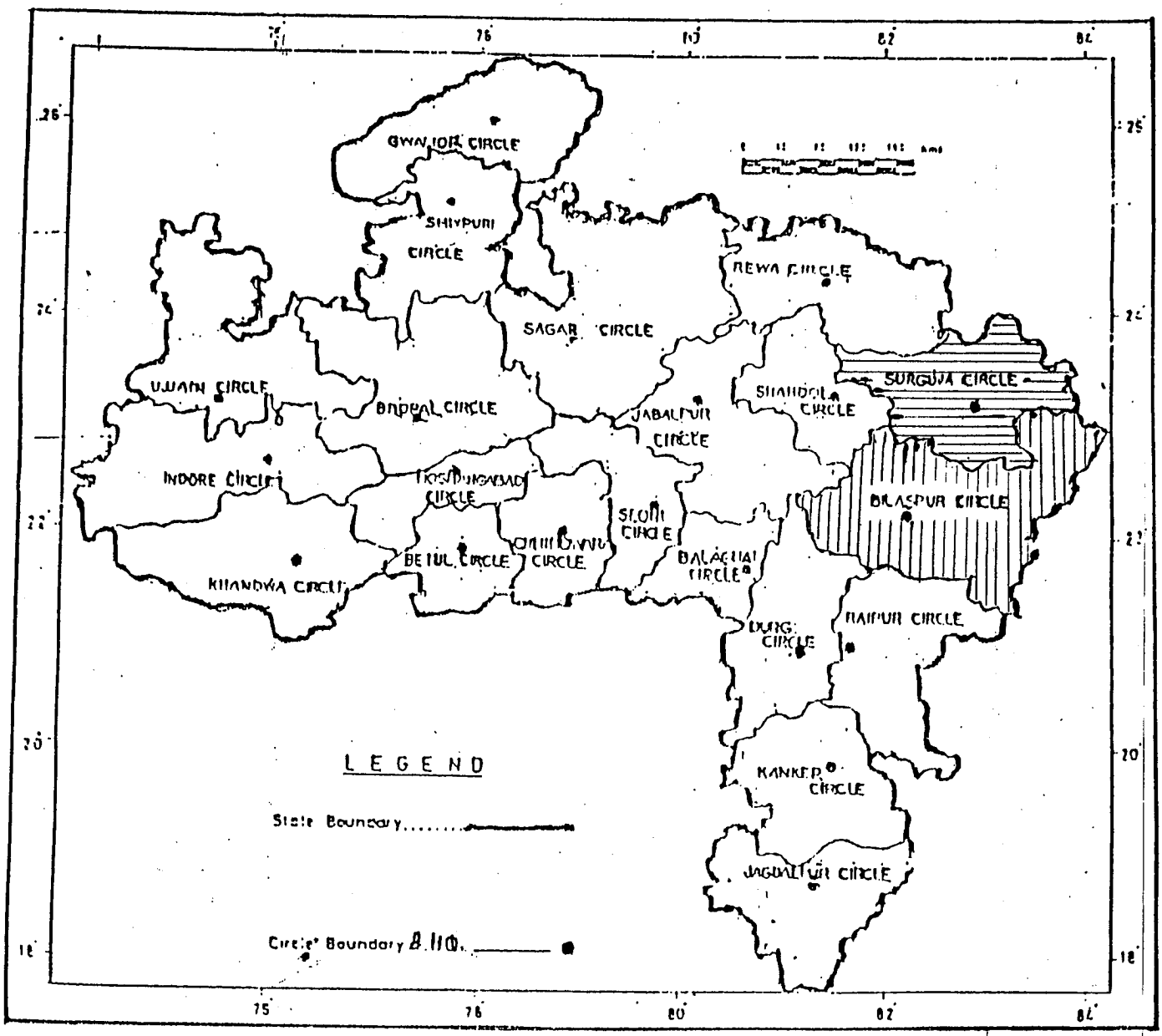
Madhya Pradesh forest department is headed by Principal Chief Conservators of Forest (3 posts). They are helped by 6 Additional Principal Chief Conservators of Forest and 14 Chief Conservators of Forest. The other posts include Conservators of Forest Deputy Conservators of Forest and Assistant Conservators of Forest. The field staff include posts of Range Officer, Deputy Range Officer, Forester and Forest Guard.

In Madhya Pradesh, forest department has been delineated into 21 forest circles and 81 territorial divisions. The number of divisions in a circle varies from 2 to 7. The number depends the size of the circle and forest concentration in the circle. While 3 circles had 2 divisions each, 7 circles had 3 divisions each and 5 circles had 4 divisions each. While 3 circles had 5 divisions each, 2 circles had 6 divisions each and remaining 1 circle had 7 divisions.

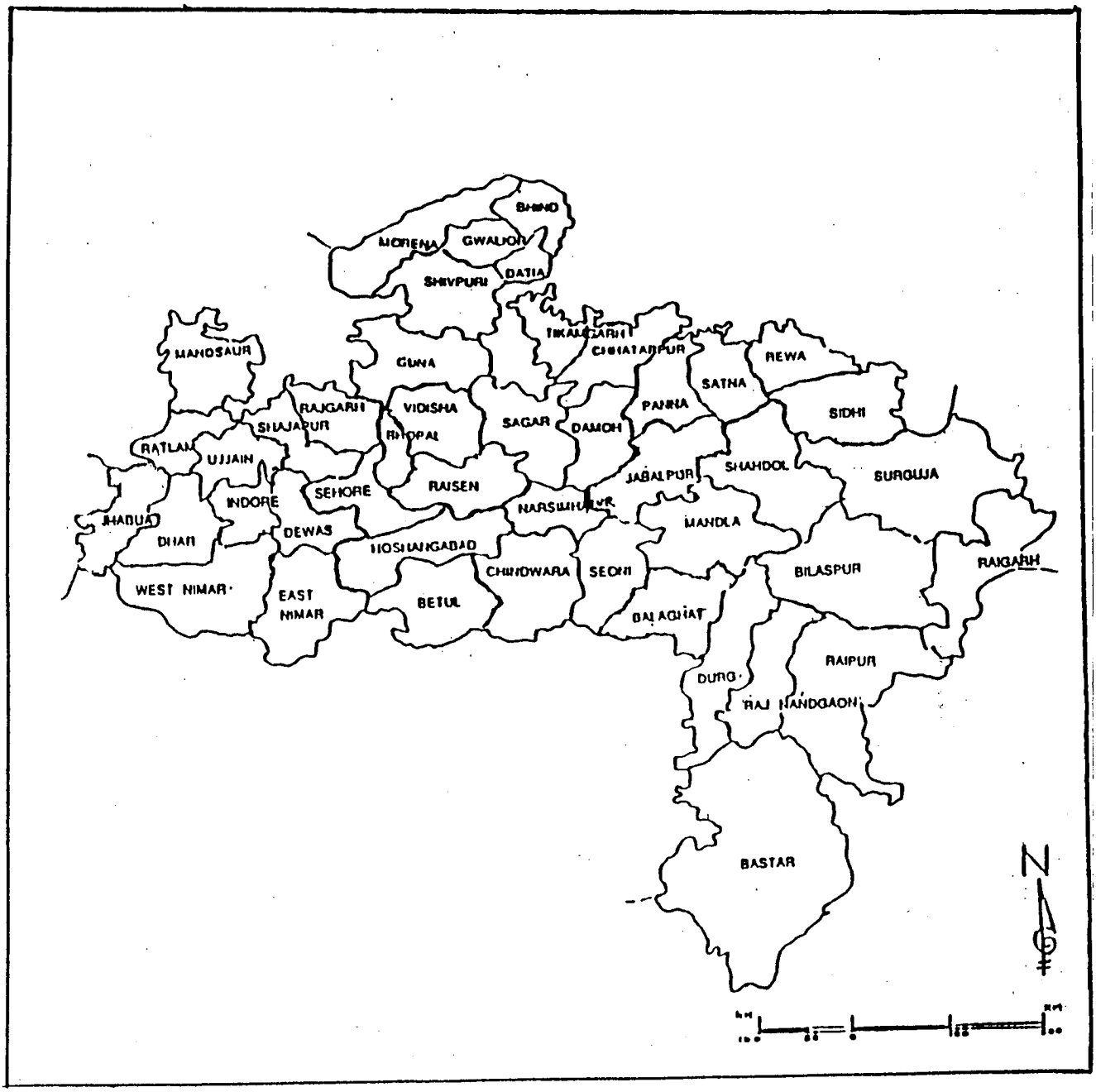
Table 2.2 Districtwise forest area and tribal population in Madhya Pradesh

S. No.	Name of district	Geographical area in sq.km.	Forest area in sq.km.	% of forest area to geographical area	Total population	Tribal population	% of tribal population to total population	Per capita forest area (in hectare)
1.	Balaghat	9,229	4,051.84	43.90	13,65,870	2,98,665	21.87	0.30
2.	Bastar	39,114	21,525.79	55.03	22,71,314	15,29,888	67.36	0.95
3.	Betul	10,043	3,939.12	39.22	11,81,501	4,43,132	37.51	0.33
4.	Bhind	4,459	91.45	2.05	12,19,000	3,291	0.27	Neg.
5.	Bilaspur	19,897	7,913.28	39.77	37,93,566	8,73,741	23.03	0.21
6.	Bhopal	2,772	429.94	15.15	13,51,479	41,205	3.05	0.03
7.	Chhatarpur	8,687	1,993.18	22.94	11,58,076	43,482	3.75	0.17
8.	Chhindwara	11,815	4,336.29	36.70	15,68,702	5,40,708	34.47	0.28
9.	Damoh	7,306	3,046.78	41.70	8,98,125	1,11,114	12.37	0.34
10.	Datia	2,038	267.39	13.12	3,96,317	6,780	1.71	0.07
11.	Dewas	7,020	2,500.39	35.62	10,33,807	1,55,493	15.04	0.24
12.	Dhar	8,153	1,369.91	16.80	13,67,412	7,31,272	53.48	0.10
13.	Durg	8,537	1,723.64	20.19	23,97,134	2,98,059	12.43	0.07
14.	Guna	11,065	4,252.64	38.43	13,10,317	1,57,426	12.01	0.32
15.	Gwalior	5,214	1,396.89	26.79	14,12,610	40,976	2.90	0.10
16.	Hoshangabad	10,037	3,402.19	33.90	12,67,211	2,20,038	17.36	0.26
17.	Indore	3,898	851.91	21.86	18,35,915	1,00,913	5.50	0.05
18.	Jabalpur	10,160	2,189.55	21.55	26,49,962	4,74,466	17.90	0.08
19.	Jhabua	6,782	1,882.24	27.75	11,30,405	9,68,372	85.67	0.17
20.	Mandsaur	9,791	2,242.36	22.90	15,56,208	74,625	4.80	0.14
21.	Mandla	13,269	6,666.09	50.24	12,91,263	7,85,587	60.84	0.52
22.	Morena	11,594	4,998.86	42.25	17,10,574	95,216	5.57	0.29
23.	Narsinghpur	5,133	1,240.98	24.18	7,85,496	1,01,368	12.90	0.16
24.	Khandwa	10,779	4,677.24	43.39	34,31,662	3,83,231	26.77	0.14
25.	Khargone	13,450	4,830.04	35.91	20,28,145	9,37,710	46.23	0.24
26.	Panna	7,135	4,012.04	56.23	6,87,945	1,02,530	14.90	0.58
27.	Raigarh	12,924	6,081.61	47.05	17,22,291	8,21,477	47.70	0.35
28.	Raipur	21,258	7,200.21	33.87	39,08,042	7,14,027	18.27	0.18
29.	Raisen	8,466	3,353.09	39.60	8,76,461	1,26,254	14.40	0.38
30.	Rajgarh	6,154	284.24	4.62	9,92,764	32,775	3.30	0.02
31.	Rajnandgaon	11,127	2,936.81	26.39	14,39,951	3,62,355	25.16	0.20
32.	Ratlam	4,861	1,181.18	24.30	9,71,888	2,26,156	23.27	0.12
33.	Rewa	6,314	1,051.90	16.66	15,54,987	1,93,105	12.42	0.07
34.	Sagar	10,252	2,763.11	26.95	16,47,736	1,39,467	8.46	0.17
35.	Satna	7,502	2,230.16	29.73	14,65,384	2,02,412	13.81	0.15
36.	Sehore	6,578	1,730.79	26.31	8,41,358	85,643	10.18	0.21
37.	Seoni	8,758	2,840.37	32.43	10,00,831	3,69,827	36.95	0.28
38.	Shahdol	14,028	5,492.96	39.16	17,43,869	8,07,764	46.32	0.31
39.	Shajapur	6,196	57.73	0.93	10,33,248	24,452	2.37	Neg.
40.	Shivpuri	10,278	3,249.18	31.61	11,32,977	1,27,762	11.28	0.29
41.	Sighi	10,526	4,373.49	41.55	13,73,434	4,18,004	30.43	0.32
42.	Surguja	22,337	11,903.92	53.29	20,82,630	11,17,577	53.66	0.57
43.	Tikamgarh	5,048	773.05	15.31	9,40,829	38,850	4.13	0.08
44.	Ujjain	6,091	103.96	1.71	13,83,086	29,160	2.11	Neg.
45.	Vidisha	7,371	1,166.61	15.83	9,70,388	42,689	4.40	0.12
	Total	4,43,446	1,54,506.40	34.84	6,61,81,170	1,53,99,034	23.27	0.23

MAP : FOREST CIRCLES OF MADHYA PRADESH



MAP : DISTRICTS OF MADHYA PRADESH



2.1.3 Revenue From Forest Products

In Madhya Pradesh forests not only form significant area and give very useful products, but also contribute significantly to the gross revenue to the state. During the year 1988-89, the total revenue of the state stood at Rs.2,873.25 crores. The total revenue from forest in that year was Rs.333.41 crores. Thus the contribution of forest revenue to state revenue was 11.60 per cent. In the year 1989-90 the percentage increased to 12.42 but again decreased to 9.98 in the year 1990-91. In 1991-92 the percentage again increased and was 10.76. In the years subsequent to 1991-92 the percentage contribution of forest revenue to state total revenue varied between 6.18 and 8.55. The percentage contribution was least (6.18) in 1997-98. It is thus observed that the percentage contribution of forest revenue declined from year to year since 1993-94. This was not due to decline in gross revenue from forest but overall increase in total state revenue (Table 2.3).

Table 2.3 Yearwise revenue from forest vis-a-vis total state revenue, Madhya Pradesh

(Rs.in crores)

Year	State total revenue	State revenue from forest (Gross)	Contribution of forest revenue in state total revenue
1988-89	2873.25	333.41	11.60
1989-90	3404.83	422.83	12.42
1990-91	3737.66	373.08	9.98
1991-92	4448.38	478.50	10.76
1992-93	5313.48	399.27	7.51
1993-94	5762.06	492.52	8.55
1994-95	6323.04	499.36	7.90
1995-96	7490.66	557.17	7.44
1996-97	8479.58	546.56	6.45
1997-98	9909.50	612.82	6.18

For obtaining revenue from forest, expenditure has to be incurred. The surplus of gross revenue over expenditure gives the net revenue from forest. The net revenue was Rs.68.60 crores in 1988-89. It increased abruptly to Rs.176.11 crores in 1989-90. In the year 1990-91 it declined to Rs.115.42 crores but again

increased to an all time high of Rs.182.18 crores. In the subsequent years it varied between Rs.56.01 crores to Rs.168.50 crores. In the last two years of the reference period the net revenue seemed to decline to around Rs.60 crores. The declining trend was not due to declining gross revenue but increase in expenditure (Table 2.4).

Table 2.4 Yearwise trend of gross revenue, total expenditure and net revenue from forest, Madhya Pradesh

(Rs. in crores)

Year	Gross revenue	Total expenditure	Surplus (Revenue-Expenditure)
1988-89	333.41	264.61	68.80
1989-90	422.83	246.72	176.11
1990-91	373.08	257.58	115.42
1991-92	478.50	296.32	182.18
1992-93	399.27	309.67	89.60
1993-94	492.52	324.02	168.50
1994-95	499.36	361.27	138.09
1995-96	557.17	401.73	155.44
1996-97	546.56	490.55	56.01
1997-98	612.82	552.22	60.60

As described earlier two minor forest products namely tendu leaves and sal seed were selected for the study. The figures for gross revenue and net revenue were available for tendu leaves and for all the minor forest produce excluding tendu leaves for the last 10 years. It was observed that gross revenue and expenditure for tendu leaves varied from year to year depending upon the prices received for the leaves on one hand and the method of collection of this on the other and the expenditure incurred for collection. The gross revenue increased from Rs.6,662 lakhs in 1988-89 to Rs.33,869 lakhs with fluctuations from year to year. The expenditure also varied from year to year and was Rs.923 lakhs in 1988-89 and Rs.24,405 lakhs in 1997-98. The relative net revenue varied from Rs.5,739 lakhs in 1988-89 to Rs.9,464 lakhs in 1997-98. It was observed that the net revenue generally increased from the year 1993-94 to 1997-98 with an exception in 1996-97 (Table 2.5).

Table 2.5 Yearwise gross and net revenue earnings from tendu leaves, Madhya Pradesh

(Rs. in lakhs)

Year	Gross revenue	Expenditure	Net revenue
1988-89	6,662	923	5,739
1989-90	40,515	14,876	25,639
1990-91	24,847	20,912	3,935
1991-92	29,807	18,000	11,807
1992-93	28,599	20,147	8,452
1993-94	25,277	19,829	5,448
1994-95	29,940	21,095	8,845
1995-96	28,939	19,780	9,159
1996-97	33,884	26,938	6,946
1997-98	33,869	24,405	9,464

The net revenue from minor forest produce excluding tendu leaves was Rs.59.29 lakhs in 1988-89. In 1989-90 it increased to Rs.117.68 lakhs but again decreased to Rs.43.46 lakhs in 1990-91. In three years subsequent to 1990-91 the revenue was in the negative. In the last three years of the reference period the net revenue was Rs.135.80 lakhs, Rs.178.30 lakhs and Rs.166.51 lakhs respectively (Table 2.6).

Table 2.6 Yearwise revenue earnings under minor forest produce (excluding tendu leaves)

(Rs. in lakhs)

Year	Gross revenue	Expenditure	Net revenue
1988-89	63.32	4.03	59.29
1989-90	293.26	175.58	117.68
1990-91	333.28	289.82	43.46
1991-92	266.72	296.69	(-) 29.97
1992-93	264.75	299.90	(-) 35.15
1993-94	190.03	180.87	9.16
1994-95	5.27	67.49	(-) 62.22
1995-96	366.17	230.37	135.80
1996-97	424.16	245.86	178.30
1997-98	243.77	77.26	166.51

2.2 Features of the Selected Circles and Divisions

As indicated earlier Bilaspur and Surguja circles were selected for the study. While Bilaspur circle was selected for tendu leaves, Surguja circle was selected for sal seed.

2.2.1 Bilaspur Circle

This circle comprised 4,250.616 sq.km. of reserved forest, 8,846.274 sq.km. of protected forest and 898.000 sq.km. of unclassed forest. These three kinds of forest formed 30.37, 63.21 and 6.42 per cent of the total forest area of the circle which was 13,994.890 sq.km. or 9.06 per cent of the forest area of the state. Bilaspur circle has 5 divisions viz. Bilaspur, North Bilaspur, Korba, Raigarh and Jashpur. Of these Raigarh division has been selected for the study. Further, Raigarh division has been delineated into 12 ranges. Of these Gharghoda range has been selected for the study. This range had collected largest number of standard bags of tendu leaves during the year 1997-98. Within Gharghoda range 15 cooperative societies are functioning and of these Chimtapani society forms the society level unit. Incidentally Chimtapani society had the distinction of contributing largest number of standard bags of tendu leaves. In the Chimtapani society 8 collection centres are in operation and of these two, namely, Chimtapani and Porda collection centres formed the lowest units of selection. These two had contributed largest and second largest number of standard bags of tendu leaves and from each collection centre 25 tendu leaves collectors have been selected randomly.

2.2.1.1 Climate and Soil

Madhya Pradesh has been divided into 12 Agro-Climatic Regions. Bilaspur circle comes under Chhattisgarh Plains and comprised an area of 7,657 thousand sq.km. It has a warm humid climate with a rainfall ranging between 1,200 to 1,600 m.m. The soils are red and yellow (medium) and the texture is sandy to clayey

2.2.1.2 Crops grown

The main crops of the Bilaspur circle are paddy, kodo-kutki, urad, wheat, teora, linseed and sesamum.

2.2.2 Surguja Circle

Surguja circle comprises 11,903.920 sq.km. of forest area which forms 7.70 per cent of the forest area of the state. Of the total forest area 3,938.062 sq.km. (33.08 per cent) is reserved forest and 7,965.858 sq.km. (66.92 per cent) protected forest.

Surguja circle has been delineated into 5 divisions namely North Surguja, South Surguja, East Surguja, Manendragarh and Baikunthpur.

Of these South Surguja division has been selected for the study. Further, South Surguja division has been delineated into 7 ranges. Of these Udaipur range has been selected for the study. This range collected a significantly high quantity of sal seed in 1998. Within Udaipur range 4 cooperative societies are functioning. Since Udaipur society recorded highest quantity of salseed collection, it was selected. At the collection centres' level 2 centres out of 8 viz. Manpur and Sukhri Bhandar were selected. These two centres had recorded highest and second highest collection of sal seed. From each collection centre 25 collectors of sal seed have been selected.

2.2.2.1 Climate and Soil

Surguja circle represents Agro-Climatic Region of "Northern HillsRegion of Chhattisgarh. The region comprises 5,730 thousand sq.km. of area and has a cool and wet climate having the rainfall ranging between 1,200 to 1,600 m.m. The soil is gravelly and moderately fertile.

2.2.2.2 Crops Grown

In Surguja circle the main crops grown are paddy, maize, kodo-kutki, wheat, linseed, mustard and sesamum.

2.3 Characteristics of Sample Respondents

In Raigarh division, of the 50 selected households 70.00 per cent belonged to scheduled tribes, 16.00 per cent to backward castes and 14.00 per cent to scheduled castes. In South Surguja division as high as 94.00 per cent of the households belonged to scheduled tribes, 4.00 per cent to backward castes and remaining 2.00 per cent to scheduled castes (Table 2.7).

Table 2.7 Castewise number of households, selected divisions, Madhya Pradesh

Caste	Raigarh division	South Surguja division	Total
Scheduled tribes	35	47	82
Scheduled castes	7	1	8
Backward castes	8	2	10
Total	50	50	100

The sample households when stratified according to family income showed similar picture for the two divisions. In Raigarh division 62.00 per cent of the households had income below Rs.12,000 each. In South Surguja division the percentage of such households was 64.00. In Raigarh division 34.00 per cent of the selected households had income ranging between Rs.12,001- Rs.24,000. In South Surguja division the percentage was 32.00. While 4.00 per cent of the households in Raigarh division had income between Rs.24,001-36,000, 2.00 per cent of the households in South Surguja had that amount of income. Only 2.00 per cent of the households in South Surguja division had income above Rs.36,001. It was observed that the proportion of income from forest produce declined with the increase in total income. This showed that the households with lower total income depended more on income from forest produce (Table 2.8).

Table 2.8 Proportion of per household income from collection of forest produce to total family income in different income groups, selected households, Madhya Pradesh

Income group	Raigarh division				South Surguja division				Total			
	No. of House-hold	Total income	Income from forest produce	Proportion of forest produce income to total income	No. of House-hold	Total income	Income from forest produce	Proportion of forest produce income to total	No. of House-hold	Total income	Income from forest produce	Proportion of forest produce income to total income
Up to Rs.12,000	31	8,065	2,680	33.23	32	8,469	1,921	22.68	63	8,267	2,295	27.76
Rs.12,001- 24,000	17	14,084	4,080	28.97	16	14,967	1,968	13.15	33	14,512	3,056	21.06
Rs.24,001 - 36,000	2	25,010	5,761	23.03	1	26,992	2,142	7.94	3	25,671	4,554	17.74
Rs.36,001- 48,000	-	-	-	-	1	41,175	4,175	10.14	1	41,175	4,175	10.14
Total	50	10,790	3,279	30.39	50	11,573	1,986	17.16	100	11,181	2,632	23.54

The distribution of the selected households according to size of land holdings showed that largest percentage of them (42.00 in Raigarh division and 56.00 in South Surguja division) had land holdings below 1.00 hectare each. The next largest percentage of households (22.00 each in both the divisions) had land holdings between 1.01-2.00 hectares each. While 12.00 per cent of the households in Raigarh division were landless, none of the households in South Surguja division belonged to landless category. In the size group of 2.01-4.00 hectares there were 18.00 per cent households belonging to Raigarh division and 14.00 per cent in South Surguja division. Six per cent households in Raigarh division and 8.00 per cent households in South Surguja division had land holdings between 4.01-10.00 hectares (Table 2.9).

Table 2.9 No.of households and area owned according to size of land holdings, selected households, Madhya Pradesh

(Area - hectares)

Size of land holding	Raigarh division			South Surguja Division			Total		
	No.of H.H's	Area owned	Average size of land holding	No.of H.H's	Area owned	Average size of land holding	No.of H.H's	Area owned	Average size of land holding
Landless	6	-	-	-	-	-	6	-	-
Below 1.00 hect.	21	12.86	0.61	28	17.45	0.62	49	30.31	0.62
1.01-2.00	11	13.76	1.25	11	13.14	1.19	22	26.90	1.22
2.01-4.00	9	22.04	2.45	7	15.61	2.23	16	37.65	2.35
4.01-10.00	3	12.00	4.00	4	17.81	4.45	7	29.81	4.26
Total	50	60.66	1.21	50	64.01	1.28	100	124.67	1.25

The total population of the selected households was 434. The ratio of male : female was 50:50. Of the total population 63.82 per cent belonged to the age group of 15-59 years. This class is also known as working class. While 31.57 were children, 4.61 per cent were aged above 60 years (Table 2.10).

Table 2.10 Distribution of population according to age and sex, selected households, Madhya Pradesh

Age group	Raigarh division			South Surguja division			Total		
	M	F	T	M	F	T	M	F	T
0-14	22	31	53	38	46	84	60	77	137 (31.57)
15-59	72	65	137	76	64	140	148	129	277 (63.82)
60& above	6	4	10	4	6	10	10	10	20 (4.61)
Total	100	100	200	118	116	234	218	216	434 (100.00)

Regarding marital status it was noted that 56.45 per cent of the total population was married, 40.79 per cent was unmarried and the remaining 2.76 per cent widowed (Table 2.11).

Table 2.11 Marital status of population, selected households, Madhya Pradesh

Marital status	Raigarh division			South Surguja division			Total		
	M	F	T	M	F	T	M	F	T
Unmarried	37	40	77	54	46	100	91	86	177 (40.79)
Married	63	59	122	62	61	123	125	120	245 (56.45)
Widowed	-	1	1	2	9	11	2	10	12 (2.76)
Total	100	100	200	118	116	234	218	216	434 (100.00)

As the sample households belonged to tribal and backward areas of the state, illiteracy was widespread. Of the 434 persons, 68.66 per cent were illiterate. While 20.05 per cent population had education upto primary level, 8.99 per cent were educated upto primary level, 8.99 per cent were educated upto middle school level. Only 2.30 per cent were literate upto higher secondary level (Table 2.12).

Table 2.12 Literacy level of population, selected households, Madhya Pradesh

Education level	Raigarh division			South Surguja division			Total		
	M	F	T	M	F	T	M	F	T
Illiterate	46	70	116	78	104	182	124	174	298 (68.66)
Up to Primary	33	20	53	25	9	34	58	29	87 (20.05)
Upto Middle	14	9	23	13	3	16	27	12	39 (8.99)
Higher Secondary	7	1	8	2	--	2	9	1	10 (2.30)
Total	100	100	200	118	116	234	218	216	434 (100.00)

The agriculture in the area had a very weak infrastructure. Of the total operated area of the selected households only 1.30 per cent had irrigation facilities. The remaining area (98.70 per cent) was totally dependent on rainfall. There was no system of leasing in and leasing out of land in Raigarh division. In South Surguja division a meagre 4.16 per cent area was either leased in or leased out (Table 2.13).

Table 2.13 Operated area selected households, Madhya Pradesh

Size of operated area	Raigarh division			South Surguja Division				Total		
	Operated/Owned area			Owned area	Leased-in	Leased out	Operated area	Operated area		
	Irri-gated	Unirri-gated	Total	Unirri-gated	Unirri-gated	Unirri-gated	Unirri-gated	Irri-gated	Unirri-gated	Total
Below 1.00	0.61	12.25	12.86	17.45	-	0.40	17.05	0.61	29.30	29.91
1.01—2.00	1.00	12.76	13.76	13.14	0.81	-	13.95	1.00	26.71	27.71
2.01 -4.00	-	22.04	22.04	15.61	-	1.41	14.20	-	36.24	36.24
4.01-10.00	-	12.00	12.00	17.81	-	-	17.81	-	29.81	29.81
Total	1.61	59.05	60.66	64.01	0.81	1.81	63.01	1.61 (1.30)	122.06 (98.70)	123.67 (100.00)

The lower dependence on agriculture of selected households can also be seen from the occupational distribution of the households. In Raigarh division only 36.00 per cent households had agriculture as primary occupation. Twenty eight per cent each depended on agricultural labour and collection of forest produce. Only 6.00 per cent had petty occupations and 2.00 per cent were engaged in non-agricultural labour. Of the households engaged in secondary occupations 44.00 per cent had collection of forest produce as secondary occupation. Another 26.00 per cent had agriculture as secondary occupation and 22.00 per cent had agricultural labour as secondary occupation.

In South Surguja division 60.00 per cent households had agricultural labour as primary occupation and 34.00 per cent had agriculture as primary occupation. Among the secondary occupations 40.00 per cent households had agriculture, 32.00 per cent had forest produce collection and 28.00 per cent had agricultural labour.

However, the occupations when viewed from the point of view of income accrued indicated that agriculture was most important occupation contributing 46.90 per cent in Raigarh division. Agricultural labour was second important occupation contributing 25.06 per cent and collection of forest produce contributed 19.39 per cent. In South Surguja division agricultural labour was the most important primary occupation contributing 55.12 per cent and agriculture was second important contributing 41.16 per cent(Table 2.14).

Table 2.14 Distribution of households according to income earned from primary, secondary and tertiary occupations, selected households, Madhya Pradesh

Occupation	Raigarh division								South Surguja division							
	Primary		Secondary		Tertiary		Total		Primary		Secondary		Tertiary		Total	
	No.of Households	Income	No.of Households	Income	No.of Households	Income	No.of Households	Income	No.of Households	Income	No.of Households	Income	No.of Households	Income	No.of Households	Income
Agriculture	18	1,30,133 (46.90)	13	46,638 (26.40)	13	21,938 (25.70)	44	1,98,709 (36.83)	17	1,37,986 (41.16)	20	66,717 (40.84)	13	19,783 (23.46)	50	2,23,486 (38.62)
Agriculture labour	14	69,525 (25.06)	11	38,025 (21.52)	13	23,350 (27.36)	38	1,30,900 (24.26)	30	1,84,775 (55.12)	14	63,565 (38.91)	-	-	44	2,48,340 (42.92)
Non-agriculture labour	1	6,000 (2.16)	2	6,700 (44.01)	1	1,350 (1.58)	4	14,050 (2.60)	-	-	-	-	-	-	-	-
Forest produce collection	14	53,808 (19.39)	22	77,741 (3.79)	14	32,405 (37.97)	50	1,63,954 (30.39)	1	4,938 (1.47)	16	33,064 (20.25)	33	61,281 (76.54)	50	99,283 (17.16)
Others	3	18,000 (6.49)	2	7,560 (4.28)	5	6,311 (7.39)	10	31,871 (5.92)	2	7,560 (2.25)	-	-	-	-	-	7,560 (1.30)
Total	50	2,77,466 (100.00)	50	1,76,664 (100.00)	46	85,354 (100.00)	50	5,39,484 (100.00)	50	3,35,259 (100.00)	50	1,63,346 (100.00)	46	80,064 (100.00)	50	5,78,669 (100.00)

Table 2.14 continued....

Occupation	Total								Average Income per Household
	Primary		Secondary		Tertiary		Total		
	No.of Households	Income	No.of Households	Income	No.of Households	Income	No.of Households	Income	
Agriculture	35	2,68,119 (43.76)	33	1,13,355 (33.34)	26	40,721 (24.62)	94	4,22,195 (37.76)	4,491
Agriculture labour	44	2,54,300 (41.50)	25	1,01,590 (29.88)	13	23,350 (14.12)	82	3,79,240 (33.92)	4,625
Non-agriculture labour	1	6,000 (0.98)	2	6,700 (1.97)	1	1,350 (0.82)	4	14,050 (1.26)	3,513
Forest produce collection	15	58,746 (9.59)	38	1,10,805 (32.59)	47	93,686 (56.63)	100	2,63,237 (23.54)	2,632
Others	5	25,560 (4.17)	2	7,560 (2.22)	5	6,311 (3.81)	12	39,431 (3.52)	3,286
Total	100	6,12,725 (100.00)	100	3,40,010 (100.00)	92	1,65,418 (100.00)	100	11,18,153 (100.00)	11,181

The important crops on the selected farms were paddy (62.26 per cent), urad (14.93 per cent), maize (4.16 per cent), kulthi (3.69 per cent) and groundnut (3.56 per cent). There was only marginal difference in the cropping pattern between the two selected divisions. The cropping pattern was food crops oriented (Table 2.15).

Table 2.15 Cropping pattern, selected households, Madhya Pradesh

(Area Hectares)

Crop	Raigarh division	South Surguja division	Total	Percentage to gross cropped area
Paddy	42.81	40.37	83.18	62.26
Wheat	0.20	0.15	0.35	0.26
Maize	-	5.56	5.56	4.16
Bajra	-	0.40	0.40	0.30
Kodo-kutki	0.30	2.82	3.12	2.34
Urad	16.47	3.47	19.94	14.93
Moong	0.70	-	0.70	0.52
Kulthi	3.34	1.59	4.93	3.69
Lentil	0.20	2.59	2.79	2.09
Groundnut	4.36	0.40	4.76	3.56
Mustard	-	0.05	0.05	0.04
Jagni	0.82	-	0.82	0.61
Sesamum	0.60	2.26	2.86	2.14
Linseed	0.30	2.02	2.32	1.74
Sugarcane	-	1.82	1.82	1.36
Gross cropped area	70.10	63.50	133.60	100.00

Livestock on the selected farms constituted mainly draught power. Milch animals had no importance. Goats and poultry which provide meat were in significant number (Table 2.16).

Table 2.16 Livestock on selected households, Madhya Pradesh

Particulars	Raigarh division	South Surguja division	Total
Bullocks	69	107	176
He buffaloes	14	22	36
Cows	41	45	86
She buffaloes	4	3	7
Calves & Heifers	11	15	26
Goats	71	81	152
Poultry birds	19	35	54

The forest products collected by selected households were tendu leaves, sal seed, mahua flowers and mahua seed in both the divisions, Chironji, tulsi seed, kusum seed, gum, dhawai flowers and phool bahari were collected by selected households of Raigarh division only.

The pattern of disposal showed that mahua flowers, mahua seed and phool bahari were partly retained for home consumption. While mahua flowers were used for preparing country liquor and adding in food products, mahua seed was used to extract oil for home consumption. Other products were sold in entirety.

In value terms tendu leaves occupied the first place and mahua flowers were second in importance. Mahua seed came third and sal seed was fourth important produce from the economic point of view (Table 2.17).

Table 2.17 Disposal of MFPs, selected farms, Madhya Pradesh

Name of M F P	Raigarh division						South Surguja division					
	Collected		Consumed		Sale		Collected		Consumed		Sale	
	Qty. (Qtls.)	Value (Rs.)	Qty. (Qtls.)	Value (Rs.)	Qty. (Qtls.)	Value (Rs.)	Qty. (Qtls.)	Value (Rs.)	Qty. (Qtls.)	Value (Rs.)	Qty. (Qtls.)	Value (Rs.)
1. Tendu leaves (Std.Bag)	181.50	72,595	-	-	181.50	72,595	88.29	35,314	-	-	88.29	35,314
2. Sal seed	2.00	600	-	-	2.00	600	45.50	13,637	-	-	4.55	13,637
3. Mahua flower	151.45	60,583	8.72	3,487	142.73	57,096	109.06	43,625	15.00	6,000	94.06	37,625
4. Mahua seed	21.15	18,492	15.80	13,822	5.35	4,670	7.65	6,707	6.40	5,571	1.25	1,136
5. Chironjee	11.10	9,144	-	-	11.10	9,144	-	-	-	-	-	-
6. Tulsi seed	1.30	355	-	-	1.30	355	-	-	-	-	-	-
7. Kusum seed	1.82	545	-	-	1.82	545	-	-	-	-	-	-
8. Gum	0.08	160	-	-	0.08	160	-	-	-	-	-	-
9. Dhawai flower	0.50	160	-	-	0.50	160	-	-	-	-	-	-
10. Phool bahari (Number)	192	960	6	30	186	930	-	-	-	-	-	-
Total		1,63,594		17,339		1,46,255		99,283		11,571		87,712

Table 2.17 continued....

Name of M F P	Total						Average rate of collection of M F P per quintal
	Collected		Consumed		Sale		
	Qty. (Qtls.)	Value (Rs.)	Qty. (Qt.s.)	Value (Rs.)	Qty. (Qt.s.)	Value (Rs.)	
1. Tendu leaves (Std.Bag)	269.79	1,07,909	-	-	269.79	1,07,909	400
2. Sal seed	47.50	14,237	-	-	47.50	14,237	300
3. Mahua flower	260.51	1,04,208	8.72	3,487	251.79	1,00,721	400
4. Mahua seed	28.80	25,199	15.80	13,822	13.00	11,377	875
5. Chironjee	11.10	9,144	-	-	11.10	9,144	825
6. Tulsi seed	1.30	355	-	-	1.30	355	275
7. Kusum seed	1.82	545	-	-	1.82	545	300
8. Gum	0.08	160	-	-	0.08	160	800
9. Dhawai flower	0.50	160	-	-	0.50	160	320
10. Phool bahari (Number)	192	960	6	30	192	930	5 per Nos.
Total		2,62,877		17,339		2,45,538	

CHAPTER III

PRODUCT PROFILE OF IMPORTANT MINOR FOREST PRODUCE

Madhya Pradesh forests produce a number of non timber forest products (NTFPs) which are also called minor forest products (MFPs) or non wood forest products. Keeping in view the significance of MFPs in the economy of the tribal households it becomes important to understand the various facets of MFP collection, processing and marketing by the tribals for income and employment generation. For this, profile of important items of MFPs are examined which provide substantial income and employment opportunities to the tribals in the state. The product profile includes mode of collection of important items, its processing at the tribal level and selling these to various marketing agencies.

There are only two marketing agencies that are purchasing MFPs from the tribal households i.e. the private traders and the Madhya Pradesh State Minor Forest Produce (Trading & Development) Federation Limited (MPSMFPF). Since 1989, the management of MFPs in the state is looked after by the MPS MFPF. MPS MFPF handles mainly four nationalised MFPs. These are tendu leaves, sal seed, myrobalans (harra) and gum. The nationalisation of trade was done with a view to collect MFPs as much as possible to provide maximum employment to the tribal people and enhance the income of tribals and MPS MFPF. In the absence of any reliable information about the quantities of non-nationalised MFPs by the private traders it does not substantially influence the major conclusions of the study. The procurement and marketing figures supplied by the MPS MFPF have been relied upon to analyse various facets of MFP transactions in the tribal areas in the state.

Keeping in view the significance of availability in quantity and value in different tribal areas in the state, fifty items are considered to be the most important which contribute considerable proportion of tribal household income. However, details of about 20 such items are narrated in the following paragraphs.

3.1 Tendu leaves

Tendu leaves is one of the nationalised MFPs and also our one of the sample MFP. Tendu leaves is widely collected MFP item in the tribal areas of Madhya Pradesh. It is used for rolling beedis. It is not only a major revenue earner but also plays a significant role in the economy of local people particularly the tribals. Its collection and sale is nationalised and the MPS MFPF through its forest produce primary cooperative societies engages the local villagers for collection. The collection rate of one standard bag i.e. 50,000 leaves (one bundle containing 50 leaves) has gone up from Rs.85 in 1988-89 to Rs.400 in 1998-99. The collection rate per standard bag has gradually increased. In 1988-89, 7,215 thousand standard bags or in value terms Rs.61.33 crores worth tendu leaves were collected. In the year 1998-99, a total of 4,484 thousand standard bags or in value terms Rs.179.36 crores worth tendu leaves were collected. This would give an idea about the amount disbursed to the local people or tribals. It was further observed that the number of standard bags collected during the period 1991-92 to 1998-99 hovered around 4,000 to 5,000 thousand standard bags. On the other hand the rate per standard bag collected showed an increasing trend. It increased by about 5 times during the period 1988-89 to 1998-99. This resulted in the increase in value of tendu leaves collection from Rs.61.33 crores to Rs.179.36 crores during the last decade with small fluctuations in between (Table 3.1).

Table 3.1 Collection/Procurement of tendu leaves by MPS MFPF during 1988-89 to 1998-99

Year	Standard bags collected (Thousands)	Collection rate per std.bag (Rs.)	Total value (Rs.crores)
1988-89	7,215	85	61.33
1989-90	4,361	150	65.41
1990-91	6,115	250	152.87
1991-92	4,616	250	115.40
1992-93	4,506	250	112.65
1993-94	4,131	300	123.93
1994-95	4,238	300	127.14
1995-96	3,936	300	118.08
1996-97	4,443	350	155.50
1997-98	3,995	350	139.82
1998-99	4,484	400	179.36

After the collection of tendu leaves the MFS MFPF stores it in godowns. Thereafter it is auctioned to traders. In 1995-96 the sale value of 3,936 thousand standard bags was Rs.289.26 crores. In the year 1996-97 the sale value of 4,443 thousand standard bags came to Rs.332.74 crores. In the year 1997-98 for which the value of sale was available 3,995 thousand standard bags fetched a value of Rs.338.70 crores.

The rate of collection per standard bag is fixed by a committee of officials of the Madhya Pradesh State Minor Forest Produce (Trading and Development) Federation Limited and the Government of Madhya Pradesh.

Most of the tendu leaves collected by the tribals are sold in a raw form without either taking up primary processing of removing the stem or secondary processing of making leaf plates which adds value to the tribal produce fetching more income from the activity. The processing is done by the private traders engaging labourers who earn a lot of money during the season by way of contract wages. Instead, if the tribals themselves take up the primary processing of removing the stems they would get good price for their leaves. Instead of selling the raw leaves in the season if they learn making leaf plates as finished products, they gain extra income even after the season is over. It takes one day to produce 100 leaf plates if one spends 2 or 3 hours of spare time at home.

3.2 Sal seed

MFP sal seed is another widely collected product in the tribal areas of Madhya Pradesh and also one of our sample MFPS. Traditionally, sal seed oil was used as non-edible oil. With the development and modernisation of oil extraction process, the sal seed oil has become a edible commodity. It is also used for manufacturing of lubricants for aeronautics, for human consumption and in the sophisticated products such as chocolates and biscuits. Among the non-edible uses are oilcakes, soaps and greases.

Sal seed, a tree species, provide edible products which are important in the context of tribals as these supplement their

income. Sal seed is one of the nationalised products in Madhya Pradesh and MPS MFPF gets it collected directly from the primary collectors who are mostly tribals. Collection rate of sal seed has gone up from Rs.100 per quintal in 1988 to Rs.300 per quintal in 1998. The collection rate per quintal has gradually increased. However, the quantity collected varied considerably from year to year. This resulted in considerable variation in the total value of sal seed collected from year to year. While the minimum total value was Rs.0.55 crores in 1990, it was highest (Rs.12.72 crores) in 1996. In the recent past the sal trees were badly affected by sal borer insect. It resulted in felling of affected trees thereby affecting the sal seed collection(Table 3.2).

Table 3.2 Procurement of sal seed by MPS MFPF during 1988 to 1998.

Year	Quantity of procurement (Quintals)	Rate of procurement per quintal (Rs.)	Total value (Rs. crores)
1988	3,36,400	100	3.36
1989	6,73,596	110	7.41
1990	47,788	115	0.55
1991	1,98,163	120	2.37
1992	5,46,900	135	7.38
1993	4,38,113	150	6.57
1994	1,39,292	150	2.09
1995	3,61.687	160	5.79
1996	7,95,165	160	12.72
1997	2,26,444	200	4.52
1998	44,141	300	1.32

The ultimate users of sal seed in the state were oil mills located at Jagdalpur, Raipur, Bilaspur, and Mandla, all in the predominant tribal areas. The value of sal seed sold to the industries in Madhya Pradesh ranged between Rs.9,72,430 in 1990-91 to Rs.12,65,00,000 in 1996-97. There was no trend in the value of sal seed obtained during the period 1982-83 to 1996-97, the last year for which data was available (Table 3.3).

Table 3.3 Yearwise value of sal seed sold to oil industries by MPS MFPF during 1982-83 to 1996-97

Year	Value of sal seed (Rs.)
1982-83	25,54,139
1983-84	56,43,805
1984-85	52,72,677
1985-86	1,95,74,006
1986-87	1,47,80,701
1987-88	61,10,198
1988-89	53,27,812
1989-90	99,53,802
1990-91	9,72,430
1991-92	64,21,256
1992-93	2,03,93,434
1993-94	1,64,68,520
1994-95	55,79,210
1995-96	5,79,00,000
1996-97	12,65,00,000

It will be interesting to note that with the improved process of oil extraction the oil is being used in the preparation of vegetable ghee. It is also being exported to United Kingdom, Japan and many European countries. Some countries also import sal seed and sal cakes.

The sal seed has an oil content of nearly 12.5 per cent. It may not be out of place to mention that with the nationalisation of sal seed and with the entry of MPS MFPF on the marketing scene the trade in sal seed has increased enormously and has profited the poor tribal population.

3.3 Myrobalans (Harra)

This forest product is also nationalised and MPS MFPF is the sole purchaser of this produce. Since the myrobalans gets reduced in weight after drying it is generally sun dried and sold to the purchaser. This reduces the transportation cost.

Myrobalansis the fruit of terminalia chebula plant which is wide spread throughout the forest tracts of the state. Though two other varieties of myrobalans i.e. baheda and awala are available in the forests these are considered to be inferior to the chebulic myrobalans and their occurance is also very limited. The ripe fruits are collected during the months of December and January, which is the peak season for its ripening and dried in the sun by spreading them evenly on the floor until the moisture is completely exhausted. It does not need any primary processing at the tribal level except drying the fruit in the sun. After drying, the produce is sold to MPS MFPF which is sole marketing agency for nationalised MFP. MPS MFPF has been purchasing considerable quantities of myrobalans from the tribals since 1988-89.

In the case of this MFP also the rate of collection per quintal has steadily increased from Rs.75 in 1988-89 to Rs.300 in 1998-99. However, the quantity collected during this period varied from year to year. The smallest quantity collected was 25,753 quintals in 1997-98 as well as 34,000 quintals in 1998-99. The largest quantity collected was 1,97,494 quintals in 1990-91. It shows that the quantity collected in the recent past is going down. Due to variation in quantity collected in different years there was no trend in the value of produce collected in different years. It was lowest (Rs.0.51 crores) in 1997-98 and highest (Rs.1.57 crores) in 1990-91 (Table 3.4).

Table 3.4 Procurement of harra by MPS MFPF during 1988-89 to 1998-99

Year	Quantity of procurement (Quintals)	Rate of procurement per quintal (Rs.)	Total value (Rs. crores)
1988-89	98,907	75	0.74
1989-90	1,15,454	80	0.92
1990-91	1,57,494	100	1.57
1991-92	1,44,969	100	1.45
1992-93	1,40,055	110	1.54
1993-94	87,612	110	0.96
1994-95	55,056	110	0.61
1995-96	1,07,150	130	1.39
1996-97	92,082	170	1.56
1997-98	25,753	200	0.51
1998-99	34,000	300	1.02

After the collection of myrobalans the MPS MFPF stores it in godowns. Thereafter, it is auctioned to traders. In 1995-96 the quantity thus auctioned was 1.07 lakh quintals and the price obtained was Rs.3.65 crores. In 1996-97, 0.88 lakh quintals of myrobalans was auctioned bearing a value of Rs.1.94 crores. In the year 1997-98 the quantity auctioned was 0.25 lakh quintals and the value obtained therefrom was Rs.2.43 crores.

Myrobalans are mainly used as tanins for tanning leather. They are also used for water softening as a mud thinner in oil drilling operations, in the manufacture of ink as a mordent in the dyeing of cotton and for the weighing of silk. It is widely used in the country and some quantity is exported.

Though tribals could collect large quantities of myrobalans during the season, since the rates offered by the MPS MFPF are very low and unattractive, they are not in a position to earn significant amount by this activity. The MPS MFPF should devise suitable method to add value to the produce which increases the price of the commodity in the market so that it can offer a better price to the tribal. This acts as an incentive to expand the collection activity of the tribals to the optimum level which increases their earning capacity to a reasonable extent.

3.3.1 Baheda

Baheda is one of the non-nationalised MFP. The tree grows upright and has broad leaves. The fruit is collected in the months of November and December. The fruits are collected when they fall to the ground or these are collected by shaking with the help of long bamboo. They are dried in sun and stored in gunny bags. The seed is used to treat high blood pressure, ulcers and as digestive material. It is also used in tanning industries and dyeing. The oil is used to make soaps and edible oil.

The rate of collection is Re.1 to Rs.1.50 per kg. It is sold at the rate of Rs.2 to Rs.3 per kg. The approximate production in the state is 1,000 m. tonnes.

3.3.2 Awala

Awala is a very common tree in the forest of Madhya Pradesh. It is also a non-nationalised MFP. The fruits are consumed raw or transformed into many spicy and sweet delicacies. It is very rich in vitamin 'c' and therefore helps to resist against disease and infection. It is also used in many aurvedic medicines. The combination of dried awala with harra and baheda has rich medicinal value. The combination is used for removing the dandruff and some eye ailments. The bark of the tree is used for tanning. The season for the collection of this fruit is January to March. Either the fruits are collected when dropped to the ground or shaking of the trees by long sticks. The green fruits or ripe yellow fruits are transported by collecting these in gunny bags. The pulp is separated from seed and is dried in the open. When the pulp is devoid of water it is stored in gunny bags.

The rate of collection is from Re.1 to Rs.2 per kg.of green and yellow fruits. The rate of dried fruits is Rs.4 to Rs.5 per kg. The estimated production of green and yellow fruits is 2,000 tonnes. The rate for sale is Rs.2.50 to Rs.3 for green and yellow fruits and Rs.8 to Rs.10 for dried fruits.

3.4 Gum

Gum is one of the nationalised MFP and constitutes a significant percentage of total value sold by the tribals. Although gum is obtained from different plants, the record is available only for two types, viz. salai gum and kullu gum. Among these salai gum is more important as it contributes more to the total value. However the collection rate of kullu gum is much higher. In 1996-97, 4,513.98 quintals of salai gum was collected at the collection rate of Rs.1,550 per quintal. The total value amounted to Rs.0.69 crores. In 1997-98 the total value amounted to Rs.1.07 crores. In the year 1998-99 the value decreased to Rs.0.84 crores (Table 3.5).

Table 3.5 Procurement of salai gum by MPS MFPF during 1996-97 to 1998-99

Year	Quantity of procurement (Quintals)	Rate of procurement per quintal (Rs.)	Total value (Rs.crores)
1996-97	4,513.98	1,550	0.69
1997-98	5,947.32	1,800	1.07
1998-99	4,200.00	2,000	0.84

In the case of kullu gum the quantity collected in 1995-96 was 86.02 quintals. In 1996-97 it shot up to 184.45 quintals. In the subsequent years the quantity decreased to 28.18 and 15.73 quintals. Although the collection rate was quite higher the value of produce collected was quite small. In 1995-96 the value was Rs.0.02 crore. In 1996-97 it increased to Rs.0.43 crore. In the subsequent years, however, the value declined and was negligible in 1998-99 (Table 3.6).

Table 3.6 Procurement of kullu gum by MPS MFPF during 1995-96 to 1998-99

Year	Quantity of procurement (Quintals)	Rate of procurement per quintal (Rs.)	Total value (Rs. crores)
1995-96	86.02	16th Oct.-14th Feb.- Rs.2300	0.02
		15th Feb.-15th June- Rs.3000	
		16th June-15th Oct.- Rs.1750	
		Average - Rs.2350	
1996-97	184.45	- - do --	0.43
1997-98	28.18	- - do --	0.01
1998-99	15.73	- - do --	Neg.

Gum is formed as a result of disintegration of plant tissues through a process called 'gummosis : Gum is extracted from the trees by making incisions whereby gum emanates in the liquid form. This liquid dries up on exposure and takes the form of a lump. These lumps are collected by the tribals and again dried in sun until the moisture is totally removed. The gum is used in food articles, beverages and making water colours, confectionary, cosmetics and printing inks. It is also used in

textile industries for sizing, finishing and dyeing. It is also used in pharmaceuticals.

The raw gum collected by the tribal households containing foreign bodies like mud, bark pieces of the tree and other organic matter is estimated to constitute about 20 per cent of the total gum collected by the tribal households. Unless removed completely, these foreign bodies add colour to the gum lowering the quality of gum to a considerable extent. Besides, the raw gum collected by the tribals contains a high percentage of moisture because it is collected in a hurry to accumulate as much as possible within a limited time without allowing it to dry naturally on the trees. When the wet gum is handled by human hands it gets contaminated and loses its colour and other properties.

Gum is normally classified into three varieties depending upon the colour, texture, content of moisture and other qualities. These are :

1. Transparent white gum
2. Gum with some colour due to organic material mixed up, and
3. Dark coloured gum with the mixture of mud, bark and other organic particles.

It is suggested that tribals should be trained to collect pure gum free of admixture of dirt, bark particles and other organic material. Moreover, they should dry the produce as much as possible at home and bring the produce to the collection centres duly graded in the above three mentioned grades so that they would get remunerative price for different grades of the produce.

3.5 Mahua

Mahua trees give two important products viz. mahua flower and mahua seed. While mahua flower is used to prepare country liquor, mahua seed is used to extract oil. Mahua products are available in large quantities in Madhya Pradesh. However, these products are not nationalised and the tribals are free to make use of the products as they like.

3.5.1 Mahua flower

Mahua flowers are collected in the months of May and June. The flowers falling during the night are collected in the early morning in baskets by all the members of the family. The flowers are spread either in the cleaned open space or on mats and are sun dried. These flowers turn into dark brown colour when theseare stored in baskets. In the lean season theseare used for making gruel or mixed to sweeten other eatables.

There is no question of adding value to mahua flowers because tribals are habituated to dry these for storage and use in lean months. These are not converted into any other product.

The normal rate of collected flowers is between Rs.3 to Rs.5 per kg. The sale price of flowers ranged between Rs.8 to Rs.10 per kg. in 1997. The total production of mahua flowers is about 20,000 tonnes.

3.5.2 Mahua seed

The mahua seed is of great importance in the economy of the tribals. The collection of mahua seed starts from the first week of June and continues till the end of July. The oil content of the seed varies from 30 to 45 per cent. Mahua oil is used in the manufacture of soaps, linoleum, candles and jute industries. It is used as edible oil also. Among the non-edible uses lubricating greases, hair oils are important. It is not fit to be used as cattle feed. It can be used as a manure and mahua oil cake is used in mosquito repellant coils.

The collection rate of mahua seed varies from Rs.8 to Rs.10 per kg. The selling price ranged between Rs.12 to Rs.14 per kg. The total quantity estimated to be collected in a year is 10,000 tonnes.

3.6 Lac

Lac is an important MFP but it is non-nationalised. It is a secretion by an insect for its protection. The insect is reared on plants of kher, kusum, palas, ber, pipal, sal etc. It is available in practically all the forest dominated districts of the State. The lac is harvested once in two years. The lac

is used in plastic, electrical appliances, paint manufacture, leather and wood finishing, thermoplastic ware, laminated sheets, ceramics, tyres, shoes, jwellery, printing ink, varnish and paper industries. It has a ready market in all the states of India and abroad. The average rate of collection varies from Rs.30 to Rs.40 per kg. The average sale price varies from Rs.30 to Rs.50 per kg. The production capacity is 1,500 m. tonnes.

3.7 Karanj

Karanj is also a non-nationalised MFP. The tree is drought and alkaline resistant. Its seed is collected by tribals, from the tree 'pongamia glabra' is available all over the forest tracts. It is harvested from February to June. From the dry pod collected the shell is removed manually. The seed is dried in hot sun. When the moisture is fully exhausted it is carried to the market centres in gunny bags. The karanj seed contains between 25 to 40 per cent of oil. The oil is used for leather dressing, soap making, as a lubricant and pharmaceutical products. The oil also has medicinal properties and is used in many diseases. While the oil possesses insecticidal and anti-bacterial properties the oil cake is used as manure. The shell of the pod has many medicinal and industrial uses.

The rate of collection is Rs.3 per kg. The average sale price is Rs.4 to Rs.5 per Kg. The production capacity in the state is 1,500 tonnes.

3.8 Tamarind

Tamarind is an important non-nationalised edible MFP in the economy of tribals. Tamarind is a wild tree found in the tropical regions and has a luxurious growth. The tree is found in the home steads, fields and in the forest. The fruit is used in both the stages i.e. green tamarind in raw stage and ripened fruit. Ripe tamarind fruit is collected by tribal households and shell is removed at home and dried in the sun until the moisture is completely exhausted. It is sold either with seed or after removing the seed. Naturally tamarind without seed fetches more price as the weight gets reduced when seed is

removed. Moreover removing of seed needs time and labour and the tribals generally avoid it. If some time and labour is devoted to removal of seed the value of product will increase. Moreover the seed fetches additional income.

The tamarind tree starts bearing fruit after 13 to 14 years and continues to do so for nearly 60 years. An average size tree can bear two quintals of fruits. The fruits are collected from October to December and are stored in gunny bags. Tamarind fruit is used in many food items and bakery items. It is also used to prepare tartaric acid, tanning, alchohol and medicines. The tamarind seed is used to prepare starch and medicines.

The rate of collection is Rs.4 to Rs.6 per kg. and the collection rate of seed is Rs.1.50 to Rs.2.00 per kg. Average sale price is Rs.7.00 to Rs.8.00 per kg. and the sale price of seed is Rs.3.00 per kg. The production capacity of the fruit is 10,000 m. tonnes and that of seed 1,000 m. tonnes.

3.9 Honey

Honey is one of the prized free gifts of the nature and is collected by tribals all over the state. There are two varieties of honey, namely, 'Rock' and 'Apiary'. Although rock bees yield far more honey the combs are built on branches of tall trees and rocks. Moreover these bees are ferocious in nature and the combs are inaccessible. These are not reared. Rearing of bees is done for a variety of bees called the Indian Bee 'Apis cerana indica' in scientifically manufactured wooden bee boxes and the place where the bee colonies are kept in wooden boxes is known as an 'apiary'. While the honey collected from beehives built by the rock bees is called 'rock bee honey', the honey collected from the apiary boxes is called 'apiary honey'.

The apiary bee keeping requires very little investment and if the returns are good the investment is paid back in a couple of years. Rock bee honey procurement involves long trekking, rigorous labour and agility to climb trees etc. Naturally it requires strong physique. Moreover, procurement

can not be done by single man and it is a group activity. It also requires absence from home for 7 to 10 days and wandering long distances. Rock bee collection is done in three seasons. Firstly, just before the onset of monsoon, secondly, around August and September and thirdly in November and December. As compared to rock bee honey, the apiary bee honey fetches higher price because the honey is collected very systematically and is free from admixure of eggs and other organic material. It is therefore, suggested that tribals should be convinced to go in for apiary honey collection by rearing the bees in the systematic manner. It requires less labour, very meagre investment and the honey fetches higher price.

Honey has a high medicinal value and is also used in many delicacies. The wax obtained from honey comb is used for medicines, ink manufacturing, finishing and sizing. The rate of collection is between Rs.20 to Rs.30 per kg. The sale price is between Rs.50 to Rs.70 per kg. The production capacity is about 300 m.tonnes.

3.10 Chirounjee

The plant of chirounjee MFP grows to the height of 15 metres. It bears fruits between April to June. It is found in nearly all the districts of Madhya Pradesh but specifically in the districts of Surguja, Kanker, Sagar, Panna, Chhindwara, Seoni, Bilaspur, Shahdol and Bastar. The fruits are harvested by spreading cotton sheets or gunny cloth under the tree. After harvesting it is dried for some days and the seed is taken out by breaking the shell. The seed is used as dry fruit in sweets and delicacies prepared from milk. It is also used as beauty aid. While breaking the shell it should be seen that the seed doesn't break. The broken seed fetches very low value.

The rate of collection is Rs.20 to Rs.35 per kg. of fruit. The sale price is Rs.40 to Rs.50 per kg. of fruit and Rs.200 per kg. of seed. The total production capacity is 1,500 m. tonnes.

3.11 Charota seed

Charota MFP is an annual crop and gives out long and slender pods. The collection of this product is done between

October and mid January. The pods are six to nine inches long and slender. The pods are harvested when they are green or yellow in colour. Pods break when dry. The pods are dried and seeds are taken out. On drying the seeds are stored. The dried seed is pressed to extract oil which is used in soaps and beauty aids. The seeds can also be fed to cattle. It is also used in the preparation of dyes and blue. It has also medicinal value and specially used in skin disesaes.

The rate of collection is Rs.1.50 to Rs.2.00 per kg. The total production capacity is 20,000 m. tonnes. The sale price is Rs.2.50 to Rs.4.50 per kg.

3.12 Safed musli

Safed musli MFP is a perenial plant. It gives flowers and fruits in the rainy season. It is mainly found in eastern and central Madhya Pradesh. The tubers are dug out from October to December. The best quality musli is white or slightly yellow in colour. The tubers are dried and stored in gunny bags. The tubers have high medicinal value specially in post natal weakness and mental disorders.

The rate of collection of wet musli is Rs.10 to Rs.15 per kg. The sale price of completely dry musli is Rs.300 to Rs.800 per kg. depending on the quality. The production capacity in the state is 500 m.tonnes.

3.13 Nagarmotha

Nagarmotha MFP is a weed found near the water sources like rivers and nallahs. It is found in all the districts of the state. It is collected in post monsoon season between October and December. The tuber is uprooted, washed and dried. It is stored in bags with adequate aeration. The tuber is used in beauty aids, incence sticks and medicines.

The rate of collection varies from Rs.3 to Rs.4 per kg. The sale price is Rs.5 to Rs.8 per kg. The production capacity is 100 m. tonnes.

3.14 Mahul patta

Mahul patta MFP is a creeper and grows with the support of tall trees. However as a parasite it is detrimental to the

host. It gives out dark coloured flowers and pods of 8 to 10 inches long. It is mainly found in the eastern districts of the state. The leaves are harvested 3 times in a year. Firstly during June & July, secondly, in September to December and thirdly, from February to April. The leaves are wet and tied in bundles for subsequent use in leaf plates and leaf cups. It is also used in kachcha roofs.

The rate of collection is Rs.150 to Rs.200 per quintal. The sale price for 'A' class product is Rs.400 to Rs.550 per quintal and for 'B' class it is Rs.300 to Rs.400 per quintal. The capacity of production is 10,000 m. tonnes.

3.15 Palas

The uses of this tree are multiferous. The bark, leaves, flowers, seed and gum are all useful products obtained from palas. The flowers are used for the manufacture of colours and medicines. The leaves are packed in bundles and are dried. These are used for making leaf plates and leaf cups.

The rate of collection of seed is Rs.1.50 to Rs.2.00 per kg. The rate of collection of flowers is Rs.3.00. The rate of bark is Rs.3.00 to Rs.4.00 per Kg. The sale price of seed is Rs.3.00 to Rs.4.00 per kg., that of flowers Rs.8.00 to 10.00 per kg. and bark Rs.6.00 to Rs.8.00 per kg. The production capacity of seed is 500 m.tonnes, of flowers 500 m.tonnes and that of bark is 200 m. tonnes.

3.16 Phool bahari

This crop belongs to grass family. It is available in Chhindwara, Raigarh, Surguja and other eastern districts of the state. It is collected in the post monsoon season. It is cut by sharp edged implement and stored in bundles. It is used for making the temporary roofs and walls of kachcha houses. It is also used for making brooms.

The rate of collection is from Rs.3.00 to 5.00 per kg. The average rate of sale is from Rs.7.00 to Rs.8.00 per kg. The production capacity is 5,000 m. tonnes.

3.17 Sabai grass

It is a perenial grass with round inflorescence It is used for preparation of brooms. It is also used in the manufacture of paper. It is an ideal grass for checking soil erosion. It is found in many places where the rainfall ranges between 750 mm to 1,500 mm. It is harvested twice in a year, firstly, in August and September and secondly in November and December. It is harvested with the help of sharp edged implement and stored in compact bundles. It is harvested before flowering. It is also used for the preparation of ropes, mats and used in the walls and roofs of kachcha houses.

The rate of collection is Re.1 per kg. The rate of sale is Rs.2 per kg. The production capacity is 2,000 m.tonnes.

No value addition is done either at the hands of tribals or MPS MFPF or the primary cooperative societies. The raw bundles procured from the tribals are sold by primary cooperative societies to private traders in bulk without processing. The traders take up the processing by cleaning the rough grass and bundling them into various sizes adding plastic covers and sell them to the retailers adding value to the produce and earning considerable profit. If this processing is taken up by the tribals they can earn more than double the amount they get for the raw produce. If the processing is undertaken by the MPS MFPF primary cooperative societies adding value to the produce it can command better price for the produce from traders which they can plough back to the tribals by way of higher purchase prices to the produce.

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INSTITUTIONS INVOLVED IN PROCESSING AND MARKETING OF MINOR FOREST PRODUCTS

In the present chapter the details of institutions related to processing and marketing of minor forest produce are described.

4.1 Madhya Pradesh State Minor Forest Produce (Trade and Development) Federation

The federation was established in the year 1984. It performed the functions of collection and trade of minor forest produce. Since 1989 the work of collection and marketing of minor forest produce is being done through the primary cooperative societies so that the benefits of the minor forest produce could go to the rural masses belonging to the scheduled castes, scheduled tribes and other weaker sections of the society. To achieve this goal a total number of 1,947 primary forest produce cooperative societies were organised. At the district level 44 district minor forest produce unions were organised. At the top of this three tier system was Madhya Pradesh State Minor Forest Produce Federation (MPSMFPF) with headquarters at Bhopal as sole agent for trade in certain items of minor forest produce. The nationalised minor forest products include tendu leaves, sal seed, harra and gum. Apart from these the primary cooperative societies undertake the collection of mahua, lakh, chirounjee, honey, mahul patta, awala and other medicinal products etc. to some extent. However, the tribals are free to collect non-nationalised minor forest produce. The state government also decided to insure all the tendu leave collectors in the age group of 18 to 60 years under the social security group insurance scheme since 1991. Under this scheme the tendu leaves collectors are insured free of charge. The half of the amount of insurance premium is paid by minor forest produce federation and the remaining half by the Governmentof India. Under this insurance scheme, in the event of the death of the minor forest produce collector, an amount of Rs.3500/- is paid to the dependents. In the case of accidental deaths the amount payable is Rs.7000. In the case of total disability the amount payable is Rs.25,000 and in the case of partial disability the amount payable is Rs.12,500. Under this scheme a total number of 63,000 cases have been settled and an amount of Rs.21.09 crores has been paid to the families of MFP collectors.

In the year 1995-96 the federation paid an amount of Rs.65 crore to the state government as royalty. In the year 1996-97 the federation paid an amount of Rs.45 crores as royalty for tendu leaves alone. In the year 1997-98 the amount increased to Rs.78.05 crores. With the 73rd amendment in the constitution the gram panchayats have the total right on the royalty. Thus the MFP collectors have the right over the amount of royalty.

4.1.1 Objectives

The main objectives of the federation are to encourage the establishment of primary minor forest produce cooperative societies and to organise the collection and marketing of minor forest products through them.

2. To enter into all kinds of contracts and transactions relating to minor forest produce with a view to the gradual elimination of middlemen and thus, ensure fair wages and fair share of profits to tribal workers.

3. To supervise, assist, provide technical guidance and to develop the business of primary minor forest produce cooperative societies functioning for the benefits of tribal people and to control, coordinate and consolidate their activities.

4. To undertake the processing and grading of agricultural and forest produce and other commodities and to set up manufacturing and processing units.

5. To purchase minor forest produce and market such produce to the best advantages.

6. To raise loan and accept deposits.

7. To take up the management of any cooperative society.

8. To undertake development work relating to tribals.

Some of the above mentioned objectives of the MPSMFPF were most ideal and suitable for the economic activities of tribal people regarding MFPs production and marketing with value addition by cooperatives at tribal level.

4.1.2 Organisational Structure

The organisational structure of the federation is headed by Board of Directors with Managing Director as its member. As the second stage there is one Additional Managing Director looking

after development and research, one Executive Director looking after finance and production and another Executive Director looking after administration and trade. At the third stage there are General Managers each looking after development and research, finance and production and administration and trade. They are assisted by managers. At the district level Managing Director who is the territorial DFO looks after the district unions. Under him there is a manager and supporting staff who look after the primary minor forest produce cooperative societies. Although the MPSMFPF is deeply involved in the collection and sale of minor forest products not much work is being done in the field of processing of MFPs.

4.2 Primary Minor Forest Produce Cooperative Societies Limited

The primary minor forest produce cooperative societies are the members of the district MFP unions. The primary MFP Cooperative societies are managed by managing committees. The committees include one President and one Vice-President and 13 members. Of these 11 are elected which include 2 lady representatives. The society also has a manager who is a full time or part time employee.

4.2.1 Objectives

The main objectives of the primary MFP cooperative societies are :

1. Collection, storage, sale and purchase etc. of the minor forest products and to give advantage to the weaker sections of the society by giving them adequate labour charges and profits.
2. To initiate various programmes for collection, storage and transportation etc. and to give advise and help to the members so that they get the maximum benefits.
3. To arrange loan and advances for the members of the society.
4. To try to provide employment to the members during the slack season.
5. To distribute consumption items to the members through public distribution system.

4.2.2 Functions

The primary MFP cooperative societies are doing good job in collection, storage and sale of MFPs. No significant work has

been done in the field of processing. Apart from the nationalised MFPs, there are about 40 other MFPs having relatively low economic importance. There are non-nationalised MFPs and are collected by primary MFP cooperative societies. The data on collection rates, quantity collected and the value of quantity collected for the three years viz. 1995-96, 1996-97 and 1997-98 are available.

In the year 1995-96, the amount disbursed to the tribals was Rs.76.741 lakh. Of the various non-nationalised MFPs, chirounjee seed was most valuable as this product accounted for 36.90 per cent of the total value disbursed to the tribals. Other important product was chirota claiming 17.30 per cent of the total value of MFP disbursed. Honey (9.67 per cent) and mahul patta (7.69 per cent) were other MFPs important from the value point of view (Table 4.1).

Table 4.1 Non-nationalised MFP collection in Madhya Pradesh through Primary MFP Cooperative Societies, 1995-96

Name of MFP	Quantity collected (Quintals)	Rate of collection per kg. (Rs.)	Amount disbursed to collectors (Rs.lakh)	Percentage to total value (%)
1. Chirota	5,900	2.25	13.275	17.30
2. Awala dry	717	4.00	2.868	3.74
3. Awala green	2,100	2.00	4.200	5.47
4. Chirounjee seed	2,360	12.00	28.320	36.90
5. Chirounjee kernel	6	190.00	1.140	1.49
6. Baheda	262	2.00	0.524	0.68
7. Safed musli green	250	10.00	2.500	3.26
8. Belguda	350	3.00	1.050	1.37
9. Shatwar	308	5.00	1.540	2.01
10. Nagarmotha dry	312	3.00	0.936	1.22
11. Nagarmotha green	125	1.50	0.187	0.24
12. Sitaphal	400	4.00	1.600	2.08
13. Honey	212	35.00	7.420	9.67
14. Imli	110	4.00	0.440	0.57
15. Kullugum	32	30.00	0.960	1.25
16. Mahul patta	2,360	2.50	5.900	7.69
17. Chiraita	602	4.00	2.408	3.14
18. Lac	33	30.00	1.000	1.30
19. Broom (No's)	9,450	5.00	0.473	0.62
Total			76.741	100.00

In the year 1996-97 the total amount disbursed among member tribals (collectors) came to Rs.247.949 lakhs. In that year the number of non-nationalised MFPs swelled to 35 from the previous year's number of 19. In that year chirota seed topped the list of non nationalised MFPs claiming largest percentage of the total value disbursed (35.34 per cent). The second MFP in importance from the value point of view was mahua flower claiming 13.94 per cent. The other non-nationalised MFPs in order of importance were achar guthali (12.41 per cent), safed musli (10.17 per cent) and lac (6.62 per cent) (Table 4.2).

Table 4.2 Non-nationalised MFP collection in Madhya Pradesh through Primary MFP Cooperative Societies, 1996-97

Name of M F P	Quantity collected (quintals)	Rate of collection per Kg. (Rs.)	Amount disbursed to collectors (Rs.lakh)	Percentage to total value (%)
1. Chirota seed	43,817.12	2.00	87.634	35.34
2. Awala dry	2,397.47	4.50	10.790	4.35
3. Awala green	2,100.00	2.00	4.200	1.69
4. Achar guthali	1,026.00	30.00	30.780	12.41
5. Chirounjee	26.00	190.00	4.940	1.99
6. Baheda	262.00	2.00	0.524	0.21
7. Safed musli	2,522.27	10.00	25.223	10.17
8. Belguda	669.00	3.00	2.007	0.81
9. Shatawar	336.00	5.00	1.680	0.68
10. Nagarmotha	269.00	2.00	0.538	0.22
11. Mahul patta	555.57	2.00	1.111	0.45
12. Chiraita	723.39	4.00	2.894	1.17
13. Lac	547.23	30.00	16.417	6.62
14. Mahua flower	7,683.10	4.50	34.574	13.94
15. Neemseed	1,863.37	2.00	3.727	1.50
16. Mahua seed	94.00	9.00	0.846	0.34
17. Honey	263.21	35.00	9.212	3.72
18. Sal dhoop	110.00	15.00	1.650	0.67
19. Giloy	1.00	4.00	0.004	Neg.
20. Tikhur	7.00	4.00	0.028	0.01
21. Bhilwa	3.65	3.00	0.011	Neg.
22. Beeja flower	112.00	2.00	0.224	0.09
23. Kusum seed	22.00	3.35	0.074	0.03
24. Tulsi seed	395.00	3.00	1.185	0.48
25. Char gum	194.00	15.00	2.910	1.17
26. Dhabai flower	5.00	3.50	0.018	Neg.
27. Khekhari puttu	264.00	5.00	1.320	0.53
28. Bechandi	1.00	5.00	0.005	Neg.
29. Vajradanti seed	3.60	4.00	0.014	Neg.
30. Dhara	271.00	3.00	0.813	0.33
31. Bilora	38.75	3.50	1.356	0.55
32. Godalajadi	99.50	4.00	0.398	0.16
33. Boom (No's)	9450	5.00 per no.	0.473	0.19
34. Phool bahari(No's)	2850	5.00 per no.	0.143	0.06
35. Kantar jhadu	7534	3.50 per no.	0.226	0.09
Total			247.949	100.00

In 1997-98 the number of non-nationalised MFPs marketed by societies further increased and was 36. The amount disbursed among collectors, however, decreased to Rs.43.269 lakhs. The importance of different MFPs from value contribution point of view changed significantly. Arjun chhal (skin) contributed 17.08 per cent of the total value disbursed. Honey contributed 15.86 per cent and lac, 12.00 per cent. While achar guthali contributed 11.61 per cent, mahul patta contributed 8.80 per cent, followed by sitaphal 7.02 per cent (Table 4.3).

Table 4.3 Non-nationalised MFP collection in Madhya Pradesh through Primary MFP Cooperative Societies, 1997-98

Name of M F P	Quantity collected (quintals)	Rate of collection per kg. (Rs.)	Amount disbursed to collectors (Rs. lakh)	Percentage to total value (%)
1. Chirota seed	618.55	1.70	1.052	2.43
2. Lac	148.40	35.00	5.194	12.00
3. Aam guthali	26.63	2.25	0.060	0.14
4. Aamchur	8.60	9.00	0.077	0.18
5. Chhoti chilati	359.59	2.25	0.809	1.87
6. Tora	124.80	7.25	0.905	2.09
7. Honey	196.03	35.00	6.861	15.86
8. Chiraita	590.36	1.50	0.886	2.05
9. Baheda	342.80	2.50	0.857	1.98
10.Musli	47.39	30.00	1.422	3.29
11.Achar guthali	200.95	25.00	5.024	11.61
12.Imli	26.30	5.00	0.132	0.31
13.Phoolbahari	20.71	3.50	0.072	0.17
14.Sitaphal	868.40	3.50	3.039	7.02
15.Mahua seed	15.00	8.00	0.120	0.28
16.Shitaphal	78.31	2.75	0.215	0.50
17.Neem seed	141.26	4.50	0.636	1.47
18.Ratanjot	35.28	7.00	0.247	0.57
19.Nagarmotha	56.93	2.00	0.114	0.26
20.Dhawaiphool	55.00	3.50	0.193	0.45
21.Wax	0.23	23.00	0.005	0.01
22.Bechandi	2.50	9.20	0.023	0.05
23.Mahuaflower	3784.22	4.00	1.514	3.50
24.Mahulpatta	1523.00	2.50	3.808	8.80
25.Ber	53.70	5.00	0.269	0.62
26.Vajradanti seed	3.60	10.00	0.036	0.08
27.Awala green	100.00	2.00	0.200	0.46
28.Ratanar	52.00	12.00	0.624	1.44
29.Amerthi	59.00	5.00	0.295	0.68
30.Nirmalibeej	5.00	5.00	0.025	0.06
31.Paipal	60.00	3.00	0.180	0.42
32.Awala dry	1.00	8.00	0.008	0.02
33.Arjunchhal	369.48	20.00	7.390	17.08
34.Kosa (No's)	10100	1.31	0.132	0.30
35.Chhindbahari (No's)	103750	0.80	0.830	1.92
36.Grass (Pule)	15273	0.10	0.015	0.03
Total			43.269	100.00

4.3 Marketing Channels

Marketing channels are routes which are responsible for the transfer of the product from the producers to ultimate consumers. Thus in the case of nationalised minor forest produce (non-timber forest produce) the channel is Collector, Primary MFP Cooperative Society, MPSMFPF, Wholesaler, Retailer and Consumer.

In the case of non-nationalised minor forest produce it is Collectors Local Trader/Agent of Wholesaler, Wholesaler, Processor, Retailer and Consumer.

Specifically for tendu leaves following channels were observed :

1) Collector - Primary MFP Cooperative Society- MPSMFPF- Contractor- Wholesaler - Retailer - Bidi Maker - Consumer

2) Collector - Primary MFP Cooperative Society - MPSMFPF- Contractor- Wholesaler -Bidi Maker- Retailer- Consumer

3) Collector - Primary MFP Cooperative Society - MPSMFPF- Contractor- Bidi Maker -Wholesaler- Retailer- Consumer

More than 98 per cent of tendu leaves were marketed through above mentioned channels.

The marketing of sal seed went through the following marketing channels. About 95 per cent of sal seed was marketed through these channels.

1) Collector - Primary MFP Cooperative Society - MPSMFPF- Oil Crushing Mills- Processing Units- Wholesaler-Consumer.

2) Collector - Primary MFP Cooperative Society - MPSMFPF- Processing Units- Forwarding Agent- Wholesaler- Retailer- Consumer.

3) Collector - Primary MFP Cooperative Society— MPSMFPF - Contractor- Processing Unit- Wholesaler- Retailer-Consumer.

Other non-nationalised products have to pass through one of the following marketing channels :

1. Collector - Primary MFP Cooperative Society- Wholesaler- Retailer - Consumer.

2. Collector - Primary MFP Cooperative Society- Processing Unit- Wholesaler - Retailer- Consumer.

3) Collector - Primary MFP Cooperative Society- Wholesaler- Processing Unit- Wholesaler- Retailer- Consumer.

4) Collector - Local Trader- Wholesaler- Processing Unit- Wholesaler- Retailer- Consumer.

5) Collector - Commission Agent- Processing Unit- Wholesaler- Retailer- Consumer.

6) Collector - Local trader-Wholesaler- Retailer- Consumer.

7) Collector - Consumer.

An efficient marketing strategy is one which minimises the marketing costs and enhances the net return from a given transaction and helps in expanding the market for the produce. The MFPs reaching ultimate consumers, involved many market intermediaries. These are described below.

4.4 Marketing Intermediaries

A brief description of some marketing intermediaries performing various marketing functions is given below :

4.4.1 Village/Local Trader

The local trader was not an important functionary in the MFPs trade channel. They generally operated on a small scale and purchased products from the collector and sell the produce to wholesaler.

4.4.2 Commission Agent

Commission agents are known as Dalal in the secondary market. They were important in distribution of MFPs to distant markets. They usually exercised physical control over MFPs and negotiated the purchase of MFPs they handled. They acted on behalf of processing unit to buy MFPs at the best possible terms and conditions. They not only buy MFPs on commission basis but also transacted wholesale business on their account.

4.4.3 Wholesaler

Wholesalers are those merchant middlemen who buy and sell minor forest products in large quantities. They may buy either directly from collectors or from wholesalers. They sell MFPs

either in the same market or in the other markets. They sell to retailers, other wholesalers and processors. They do not sell significant quantities to ultimate consumers.

4.4.4 Retailer

Retailers buy goods from wholesalers and sell them to the consumers in small quantities. They are personal representatives of producers. Retailers are also close to the consumers in the marketing channel.

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CHAPTER V

VALUE ADDITION - PROBLEMS AND PROSPECTS

The main objective of this study is to know if value addition is possible at the stage when the product leaves the tribal. In the chapter on product profile, observations were made on the possibilities of grading, primary processing and preliminary cleaning etc. of products by tribals themselves. It was noted that intermediaries also do some kind of processing by which the value is added to the product. It is the ultimate purchaser of the unprocessed product who does cleaning, processing etc. by means of machinery and chemical processors to obtain the product in the form in which it could be sold to the ultimate consumer. Thus at the stage of the tribal the value addition is possible only by doing some preliminary cleaning, grading, sizing etc. The tribals can not do the complicated physical and chemical processing in the absence of machinery, chemicals and high investment.

The items which can be processed at the household level are grading of grass for brooms, cleaning of gum from dust and other foreign material, grading of gum according to the tree from which it is obtained, deseeding and defibreing of tamarind, sorting of leaves for plate making and grading, grading and sizing of tendu leaves and preparation of bundles of tendu leaves, extraction of non-edible oil using bullock ghanis and other household equipments etc. It is also possible to deseed and powder the shikakai and soap nuts. There are some more items which can be subjected to preliminary cleaning, drying, grading, powdering etc. at the household level.

There are some products which can be processed only on collecting in large quantities. It should, however, be remembered that cleaning and processing centres of such products are located in the tribal areas only. It would ensure additional employment to the tribals and additional income to them. Since many of the processes do not need sophisticated technology tribals can be easily employed in such processing works. Unfortunately MPSMFPF is also selling

the MFPs to the wholesalers without doing processing. If the MPSMFPF start processing the products in the tribal areas it would not only add value to the product currently sold but also give higher employment and income to the local tribals.

5.1 Problems

The problems of MFPs start from the collection of MFPs in the forest and transportation thereof from the forest to the household, preliminary cleaning, sorting, grading and drying in the households, the preliminary processing, packing, transportation and marketing to the centres of collection of MPSMFPF. From these centres the MFPs are sold by auction to the wholesalers, retailers or consumers as the case may be. In the following paragraphs the problems faced by the collectors or tribals are presented.

1. Lack of coordination and cooperation among the tribals or collectors

It was observed that there was no coordination or cooperation among the collectors or tribals. Due to this they can not command the price at which the produce is to be sold. On the other hand the purchasers of MFPs who are operating on large scale have not only monopoly but are coordinated. Due to this they can easily exploit the collectors or tribals.

2. Lack of capital

Although the tribals know that they can obtain higher price for their products if the products are subjected to some processing they can not undertake this in the absence of capital.

3. Ignorance about the benefits obtained from the ultimate products

The tribals know only about the collection and preliminary processing of the products that they undertake at the village level. They are not aware of the profits others make out of the products they collect. Therefore they do not bother to process the products at the village level and share the profits.

4. Absence of facilities of grading and standardisation of MFPs

The tribals are not only unaware of grading and standarisation of MFPs but they also do not see such processing plants within their territory. Therefore they do not intend to do any processing.

5. Lack of infrastructural facilities

The lack of infrastructural facilities in the forest area affects the prospects of value addition of MFPs at collectors' level.

6. Malpractices in the marketing of MFPs

The tribal people being illiterate and simple, are exploited by middlemen by way of short weighing, short measuring and undue deductions.

7. Delayed payment of purchased MFPs amount

The tribals are not only exploited by way of short weighment and short measurement but also are not paid for their products immediately. They are also not paid the entire amount due to them.

8. Unremunerative prices affecting collection

Since the collectors are not getting amount equal to minimum statutory wages the collection is affected.

9. Instability of MFPsproduction

The MFP production mainly takes place in summer and dry season. With the earlier arrival of monsoon showers the collection stops resulting in smaller collection.

10. Lack of knowledge of processing and storage

Due to lack of knowledge of storage and processing large quantities of MFP's are wasted.

11. Absence of cooperative infrastructure facilities

Due to lack of these facilities marketing and value addition of MFPs are affected.

12. Insects and pests attack

Due to non protection of MFPs against insects and pests the net quantity of MFPs collected decreases affecting the income of tribals.

13. Poor market intelligence

The tribals are unaware of market prices within the area and outside the area and outside the state. Therefore they can

not be selective as far as the market place is concerned.

14. Absence of regulated market

Since regulated markets are not available for MFPs the advantages of regulated markets are not enjoyed by the tribals.

15. Deforestation

With the large scale deforestation the quantities of MFPs collected are decreasing from year to year.

5.2 Prospects of Value Addition of MFPs

In the earlier chapter on product profile we have, among other things, studied the prospects of value addition. These may be reproduced below :

5.2.1 Tendu leaves

Tendu leaves are used for rolling beedis. In 1998-99 mere tendu leaves collected valued Rs.179.36 crores. One can only estimate the value of ultimate product i.e. rolled beedis made out of these. It is not to suggest that all the tribals should be asked to roll beedis instead of parting with the leaves. However a small section of tribals in a village can be trained to roll beedis particularly those who do not find alternative occupation. Most of the tendu leaves collected are sold in the raw form. If the tribals can be taught to remove the stem and to cut the leaves in the size in which the same can be used to roll beedis the tribals will fetch higher price and also get additional employment.

5.2.2 Sal seed

At present sal seed is sold by tribals in the seed form without adopting any kind of processing. It may be mentioned that the rate of collection of sal seed has gone up three times in the last 10 years. However the tribals have not increased their share in the same proportion. The uses of sal seed are many and varied. Previously the oil extracted was only for non edible purposes but with the introduction of new chemical processes the oil is being converted into an edible commodity. It is not intended to advise the tribals to adopt complicated chemical processes. However oil ghanis do exist in many villages. Instead

of selling the sal seed in the seed form if the tribals can be taught to extract oil from sal seed and sell the sal seed oil and sal cake to the industry the increase in income would be enormous. What is needed is to design and develop efficient oil ghanis at the household and village levels. It will give the tribals the oil they need for consumption and oil cakes for their livestock which are otherwise fed on mere straw and grass.

5.2.3 Harra

This product has high medicinal and cosmetic value. With the recent spurt in the fashionable world to use natural herbs instead of artificial chemicals, the demand has increased many fold. However a tribal who is unaware of the immense profitability in this product often sells this in the raw form even without properly drying it in the sun. Even if a tribal undertakes simple drying of this product in the sun he would fetch higher price due to two things : 1. lower transportation cost because of reduced weight, and 2. ready acceptability due to higher keeping quality of dry product coupled with high price.

5.2.4 Baheda

Baheda is also a fruit collected in November and December. The fruits are collected when they fall to the ground or these are collected by shaking with the help of bamboos. The product has high medicinal value. The fruits are dried in sun. Oil is extracted from seed and is used in the making of soaps and edible oils. The only processing that can be done in baheda is to sun dry, reduce its weight and to fetch higher price.

5.2.5 Awala

Awala is rich in vitamin 'C' and is used in many ayurvedic medicines. Awala is sold as green fruit or ripe yellow fruit. The precaution that should be taken is that the fruit should not be soiled or broken. In the fruit form it is used to make spicy and sweet delicacies like pickle and murabba. The fruit has to be carefully transported to the destination. The other form in which it can be sold is removing the pulp from seed and drying the pulp to remove all the water. This helps in reducing the weight and getting higher price. The dried awala pulp is usedin many medicinal preparations.

5.2.6 Gum

In the case of gum the processing includes categorisation of gum according to the tree from which it has been extracted. The another important process which will add to its value is removal of dust, organic matter and other impurities. A clear, sorted and gum free of all impurities fetches higher price. The third process which adds the value to the gum is completely drying of the gum mass.

5.2.7 Mahua

In the case of mahua value addition can be done by completely drying the flowers. It will not only reduce its weight but also increase the keeping quality. In the case of mahua seed it is recommended that oil be extracted and sold instead of selling in the seed form. A useful manure can be obtained from deoiled cake. Mahua oil can be extracted with the help of village ghanis. The process will enhance the income and give the household an avenue of employment.

5.2.8 Lac

In the case of lac a simple cleaning of the mass of lac will enhance the value.

5.2.9 Karanj

In the case of karanja thorough drying of the seed will enhance its value. Like other oilseeds if oil can be extracted in the village ghanis it will add to its value.

5.2.10 Tamarind

Tamarind is sold by the tribals in two forms. Green tamarind fruit is used in food preparations like chutney. In green form not much of value addition is possible. In the case of ripe tamarind fruit the tribals can be encouraged to remove the shell and dry the pulp in the sun till it is completely devoid of water. Value addition can also be done if the pulp is defibred and seed is removed. This process will reduce the weight of the product and the tribal will get the value of the seed which is used for the preparation of starch. These processes will also increase the employment among family members and add to the family income.

5.2.11 Honey

The tribals generally sell rock honey. It is collected from the hives built in rocks and at great hights on the trees. It requires long trekking and needs number of persons in a group. Moreover, the honey extracted from such hives is an admixture of eggs and wax and fetches lower price. If the tribals can be given a few days training in apiary bee keeping they will not be required to do trekking, require less man days, get high quality honey and therefore high price. The investment made in the preparation of wooden bee hives could be earned within a couple of years.

5.2.12 Chirounjee

In the case of chirounjee higher value can be obtained if the fruit is dried and seed is removed. The only precaution that needs to be taken is that the fruit has to be completely dry so that the seed is not crushed.

5.2.13 Charota

Charota is sold in two forms. Firstly in the form of green slender pods and secondly in the form of dry seed. In the form of green slender pods it is used to add taste to the curry. The pods when dried give out seed. The seed is used to extract oil. The process needs thorough drying and removal of seed and drying it again. If oil can be extracted in the village ghanis value can be added to the product.

5.2.14 Mahul patta and Palas

In both these forest products leaves are used to make plates and cups. Khadi and Village Industries Commission have evolved small machines to make leaf plates and leaf cups from the leaves. If a group of tribals can be financed to purchase these machines the industry can flourish in the tribal villages. It will not only give employment to the tribals but also increase their income many fold. It will help keep environment clean.

5.2.15 Phool bahari and Sabai grass

Both these vegetations belong to grass families. The tribals cut the grass, tie these in bundles and sell these to the middlemen who, in turn, make brooms for ultimate sale to the

consumers. If the simple technique of making brooms can be taught to the tribals they will earn higher income.

These are the suggested processes by which value can be added to the products presently sold by the tribals in the raw form . These processes will increase the avenues of employment of tribals and add to the income of households. These will also partly stop migration of tribals to towns in search of employment.

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CHAPTER VI

SUMMARY AND CONCLUSIONS

6.1 Background

India has 683.92 lakh hectares of land under forest. It is 20.8 per cent of the total land area of the country. The forest land is characterised by undulating terrain, difficult communications and low population density. The forests are inhabited by tribals whose life and economy are dependent on agriculture and forest products. The forests provide them edible products, shelter, firewood, medicines, fodder and other ptoducts which give them additional income. Forests also provide them employment by way of collecting forest products. Being illiterate, simple and having no business acumen they sell the forest products collected to either local businessmen or in the weekly market. The businessmen collect the forest produce from the tribals, do some preliminary processing like cleaning, grading, drying etc. and sell these to the processors located mainly in towns. The processors, in turn, sell these to the consumers by packing, bottling etc. The tribal who is either unaware of these processes or unable to take up processing is deprived of the high price which is accrued on the sale of these products to the consumers.

In the present study it is attempted to assess the avenues of value addition of forest produce at the tribal level so that the tribals are benefitted by the higher price.

6.1.1 Objectives

The main objectives of the study are as follows :

(1) To identify the important MFPs specially in the context of present level of production,

(2) To study the working of the institutions/organisations/ enterprises, if any involved in the processing of MFPs in the study area.

(3) To study the marketing mechanism for the disposal of MFPs in raw and processed forms.

(4) To examine the impact of the programmes related to additional value generation, and,

(5) To suggest operational measures for providing cushion to tribal economy by way of additional value generation.

6.1.2. Methodology

For the study two main non wood forest products viz. tendu leaves and sal seed were selected. A circle each was selected for two products. Thus Bilaspur circle was selected for tendu leaves. For sal seed Surguja circle was selected. In the case of Bilaspur circle in order to narrow down the selection to the beneficiaries level Raigarh division, Gharghoda range, Gharghoda samiti and two villages as collection centres viz. Chimtapani and Porda were selected. Similarly in Surguja circle, South Surguja division, Udaipur range, Udaipur samiti and two villages viz. Sukhri Bhandar and Manpur were selected. From each of the four selected villages 25 households were selected to make the total number of respondents to 100. Since the selected tribals were illiterate, residing in remote villages of tribal area were not conversant with survey etc., Therefore, very little information could be gathered from them.

6.2 Forest of Madhya Pradesh

Madhya Pradesh is the largest state of the country in area. The geographical area forms 13.47 per cent area of the country. The forest area accounts for 34.80 per cent of the area of the state and 23.00 per cent area of the country. The important forest species are teak and sal. The state has 23.27 per cent tribal population as compared to 8.08 per cent for the country. The per capita forest area is 0.23 hectare.

6.2.1 Administration

The forest administration is headed by 3 Principal Chief Conservators of Forest. They are helped by 6 Additional Principal Chief Conservators of Forest and 14 Chief Conservators of Forest. The other posts include Conservators of Forest and Assistant Conservators of Forest. The field staff include posts of Range Officer, Deputy Range Officer, Forester and Forest Guard. The forest department of the state has 21 forest circles and 81 territorial divisions.

6.2.2 Revenue

The forests of the state contribute significantly to the revenue of the state. In 1988-89 the contribution of the forest revenue to the total revenue was 11.60 per cent. In 1989-90 it increased to 12.42 per cent. However, in 1990-91 it decreased to 9.98 per cent but again increased to 10.76 per cent in 1991-92. Currently the contribution is around 7.00 per cent. For obtaining the revenue from forest some expenditure is required to be incurred. The net revenue or the surplus of revenue over expenditure amounted to Rs.68.80 crores in 1988-89. In the previous decade the surplus exceeded Rs.100 crore mark in six years. In the case of tendu leaves the net revenue in 1988-89 was Rs.5,739 crores and increased to Rs.9,464 crores in 1997-98. The net revenue from minor forest products excluding tendu leaves was Rs.59.29 lakhs in 1988-89. It increased to Rs.117.68 lakhs in 1989-90. In the subsequent five years it decreased and was in the negative for 3 years. In 1995-96 the net revenue shot up to Rs.135.80 lakhs. It was Rs.178.30 lakhs and Rs.166.51 lakhs in 1996-97 and 1997-98 respectively.

6.2.3 Sample Respondents

Of the 100 selected respondents 82 were scheduled tribes, 8 scheduled castes and 10 backward castes. Poverty was wide spread among the selected households. Sixty three per cent households had income below Rs.12,000 and 33 per cent had income between Rs.12,001-24,000. Only 3 per cent had income between Rs.24001-36,000 and a sole household had income between Rs.36,001-48000. The agricultural infrastructure was very poor. The average size of holding was 1.25 hectares. Of the total number 6.00 per cent were landless and 49.00 per cent had size of holding below 1.00 hectare. The illiteracy was wide spread. Of the total population of the selected households 68.66 per cent were illiterate. Those having education up to primary level were 20.05 per cent. Irrigation facilities were practically non existant. Only 1.30 per cent land had irrigation facility. This resulted in lesser dependence on agriculture and more on labour and other avenues.

The important crops on the selected farms were paddy (62.26 per cent), Urad (14.93 per cent), maize (4.16 per cent), kulthi (3.69 per cent) and groundnut (3.56 per cent).

The forest products collected by sample respondents were tendu leaves, sal seed, mahua flower and mahua seed in both the divisions. Chirounjee, tulsi seed, kusum seed, gum, dhawai flower and phool bahari were collected by sample respondents of Raigarh division only.

The pattern of disposal showed that mahua flower, mahua seed and phool bahari were partly retained for home consumption. While mahua flowers were used for preparing country liquor and adding in food products, mahua seed was used to extract oil for home consumption. Other products were sold in entirety.

6.3 Product Profile of MFPs

Madhya Pradesh forests produce a large number of non timber forest products (NTFPs) also called minor forest products (MFPs) or non wood forest products (NWFPs). Out of the many MFPs, 50 are most important from the tribal economy point of view. As regards marketing there are only two marketing agencies that purchase MFPs from the tribals. First one is private trader and the second one Madhya Pradesh State Minor Forest Produce (Trade and Development)Federation Limited (MPS MFPF). The MPS MFPF handles mainly four nationalised MFPs viz. tendu leaf, sal seed, myrobalans (harra) and gum. In the following paragraphs details of some MFPs are given.

6.3.1 Tendu leaves

Tendu leaves are used for rolling beedis. The product is collected through primary cooperative minor forest produce societies. During the last decade the collection rate of one standard bag of 50,000 leaves has gone up from Rs.85 in 1988-89 to Rs.400 in 1998-99. Since 1990-91 the number of standard bags collected varied from 4,000 to 5,000 thousand standard bags. The value of tendu leaves collected increased from Rs.61.33 crores to Rs.179.36 crores. Tendu leaves so collected by MPS MFPF is auctioned to traders.

6.3.2 Sal seed

Traditionally sal seed was used to extract non edible oil. With the development of oil extraction processes the sal seed oil is now an edible commodity. Besides edible oil, non edible oil obtained is used for soaps and greases. The oil cake is also useful.

In 1988, 3,36,400 quintals of sal seed was collected. The rate of procurement was Rs.100 per quintal yielding a value of Rs.3.36 crores. After 1988, the quantity of procurement varied between 1.39 lakh quintals to 6.73 lakh quintals. The rate of procurement increased from year to year and was Rs.200 in 1997. In 1998, the procurement suddenly dropped to 44,000 quintals, may be due to sal borer infestation. The total value of sal seed collected varied between Rs.55 lakhs to Rs.12.72 crores. The sal seed is sold to oil industries located at Jagdalpur, Raipur, Bilaspur and Mandla, all in the predominant tribal areas of Madhya Pradesh. The sal seed has an oil content of nearly 12.5 per cent.

6.3.3 Myrobalans

6.3.3.1 Harra

The ripe fruits of harra are collected during the months of December and January. It is dried in the sun till the moisture is completely exhausted. It is sold to MPS MFPF. The rate of collection has increased from Rs.75 in 1988-89 to Rs.300 per quintal in 1998-99. However the quantity collected during this period varied considerably and, therefore, the value also varied. The MPS MFPF stores the harra in godowns and auctions it to traders. During the past three years the value of auctioned produce varied between Rs.1.94 crores to Rs.3.65 crores. Harra is used as taner, water softner, mud thinner, in manufacturing of ink and dyeing of cotton.

6.3.3.2 Baheda

The trees of baheda grow upright. The fruits are dried in sun and stored in bags. It is used to treat high blood pressure, ulcers and as digestive material. The approximate production in the state is 1,000 tonnes.

6.3.3.3 Awala

The fruits of awala are consumed raw or transformed into many spicy and sweet delicacies. It is rich in vitamin 'C' and is used in many ayurvedic medicines. The pulp is separated from seed and dried in the sun. It is then stored in bags. The estimated production of green and yellow fruits is 2,000 tonnes.

6.3.4 Gum

The gum is of two types viz. salai gum and kullu gum. In 1996-97, salai gum worth Rs.0.69 crore was procured. In 1997-98, the value increased to Rs.1.07 crores but again decreased to Rs.0.84 crore in 1998-99. In the case of kullu gum the value obtained in 1995-96 was Rs.0.02 crore. In 1996-97, the value was Rs.0.43 crore and that in 1997-98, Rs.0.01 crore. The gum is used in food articles, beverages, confectionaries, cosmetics and colours. It is also used in textile and pharmaceutical industries. The gum is of three varieties; 1) transparent white gum, 2) gum with some colour and 3) dark coloured gum.

6.3.5 Mahua

Mahua trees give two important products viz. mahua flower and mahua seed. While mahua flower is used to prepare country liquor, mahua seed is used to extract oil. Mahua flowers are collected in the months of May and June. These are sun dried and stored. The total production of mahua flowers is 20,000 tonnes.

The mahua seed is collected in June and July. The oil content varies from 30 to 45 per cent. It is used in soaps, linoleum, candles and jute industries. Now a days mahua seed oil is also converted into edible oil. The quantity estimated is 10,000 tonnes.

6.3.6 Lac

Lac is the secretion by an insect which is reared on plants of kher, kusum, palas etc. It is used in plastic, electrical appliances and paints. The production capacity in the state is 1,500 tonnes.

6.3.7 Karanj

The pods of karanj are harvested from February to June. The pods are dried and shell is removed manually to collect seed. The seed is dried in sun. It contains 20-40 per cent oil. The oil is used for soap making, lubricants and pharmaceuticals. The oil cake is used as manure. The production capacity in the state is 1,500 tonnes.

6.3.8 Tamarind

While the green tamarind fruit is used in chutney, the ripe

tamarind fruit has many uses. Ripe tamarind fruit is collected, the shell is removed and dried in sun. It is either sold with seed or without seed. Tamarind without seed fetches more price. The seed is used to prepare starch. The production capacity of the fruit is 10,000 tonnes and that of seed 1,000 tonnes.

6.3.9 Honey

There are two varieties of honey, namely, rock honey and apiary honey. The rock bee honey combs are built in rocks or branches of tall trees. Rock honey requires trekking, action in groups and fetch less price due to admixture. On the other hand apiary honey can be produced around households, is clean and fetches more price. Apiary honey, however, requires training and some initial investment. The production capacity in the state is 300 tonnes.

6.3.10 Chirounjee

The plant of chirounjee bears fruit between April and June. The fruit is thoroughly sun dried and the shell is carefully removed. The seed is used in sweets and delicacies prepared from milk. It is also used in beauty aids. The total production in the state is 1,500 tonnes.

6.3.11 Charota

The tree of charota gives out long and slender pods. The pods are dried and seeds are taken out and dried. The dried seed is used to extract oil which is used in soaps and beauty aids. The seed is used to feed cattle. The production capacity is 20,000 tonnes.

6.3.12 Safed musli

The tubers of this plant are dug out from October to December. The tubers are dried and stored. These have high medicinal value. The production capacity in the state is 500 tonnes.

6.3.13 Nagarmotha

The tuber of this plant is uprooted between October and December. It is washed and dried. It is used in beauty aids and incence sticks and medicines. The production capacity is 100 tonnes.

6.3.14 Mahul patta and Palas

The leaves of these trees are tied in bundles and are used to prepare leaf plates and leaf cups. The leaves are also used in kachcha roofs. The bark, flowers, seed and gum are all useful.

6.3.15 Phool bahari and Sabai grass

These belong to grass families. These are collected by cutting with sharp edged implements and stored in bundles. These can be used for making brooms and in roofing and kachcha walls.

6.4 Processing and Marketing Institutions

6.4.1 Madhya Pradesh State Minor Forest Produce (Trade and Development) Federation (MPS MFPF)

Among the institutions involved in processing and marketing the first one is Madhya Pradesh State Minor Forest Produce (Trade and Development) Federation (MPS MFPF). This institution does the work of collection and marketing through primary minor forest produce cooperative societies. There are 1,947 primary minor forest produce cooperative societies in the state. At district level 44 district minor forest produce unions are organised. The MPS MFPF deals in the nationalised MFPs of tendu leaf, sal seed, harra and gum. The cooperative societies undertake the collection of mahua, lac, chirounjee, honey, mahul patta and awala etc. In 1995-96 the MPS MFPF paid an amount of Rs.65.00 crores to the state government as royalty. In 1996-97 the federation paid an amount of Rs.45.00 crores as royalty for tendu leaves alone. In the year 1997-98 the amount increased to Rs.78.05 crores.

The objectives of the MPS MFPF include establishment of primary minor forest produce cooperative societies, elimination of middlemen and supervision and offering technical guidance. The objectives also include processing, marketing and manufacturing of MFPs plants, raising of loans and accepting deposits from the tribals.

6.4.2 Primary Minor Forest Produce Cooperative Societies

The societies are managed by managing committees. The objectives of the societies include collection, storage, sale and purchase of minor forest products and to give advise and help to

the members. In the year 1995-96 the societies disbursed to the tribals an amount of Rs.76.741 lakhs towards purchase of non-nationalised MFPs. The main products included chirounjee, chirota, honey and mahul patta. In the year 1996-97 the amount disbursed was Rs.247.949 lakhs. The important products were chirota, mahua flower, achar guthali, safed musli and lac. In 1997-98 the amount disbursed was Rs.43.269 lakhs. The products included arjun chhal, honey, lac, achar guthali and mahul patta.

6.4.3 Marketing channels

The important marketing channel in the case of nationalised MFPs is : Collector- Primary MFP Cooperative Society- MPS MFPF- Wholesaler-Retailer- Consumer.

In the case of non nationalised MFPs it is : Collector- Local Trader/Agent of wholesaler- Wholesaler- Processor- Retailer- Consumer.

6.5 Problems

The problems faced by the tribals in relation to collection, processing etc. of the MFPs can be categorised as below:

6.5.1 The inherent limitations

These include illiteracy, backwardness, poverty, ignorance, and complacency. Due to these they lack coordination and cooperation among themselves, lack capital, are ignorant about the benefits that they could obtain from processing etc. They are deceived due to malpractices of marketing, unremunerative prices, short weighing etc.

6.5.2 Lack of facilities of processing in the tribal and forest areas

The processors, chemical plants and oil industries are all located in semi-urban and urban areas. Therefore the tribals are unaware about the grading, processing, sizing, standardisation of MFPs and ultimate products which are offered to the consumers. They are also ignorant about the market intelligence.

6.5.3 Prospects of Value Addition

The items which can be processed at the household level are grading of grass for brooms, cleaning of gum from dust and

other foreign material, grading of gum according to the tree from which it is obtained, deseeding and defibreing of tamarind, sorting of leaves for plate making and grading, grading and sizing of tendu leaves and preparation of bundles of tendu leaves, extraction of non-edible oil using bullock ghanis and other household equipments etc. It is also possible to deseed and powder the shikakai and soap nuts.

Specifically prospects of value addition to important MFPs are noted below :

6.5.3.1 Tendu leaves

Tendu leaves are used for rolling beedis. It is not to suggest that all the tribals should be asked to roll beedis instead of parting with the leaves. However, a small section of tribals in a village can be trained to roll beedis particularly those who do not find alternative occupation. Most of the tendu leaves collected are sold in the raw form. If the tribals can be taught to remove the stem and to cut the leaves in the size in which the same can be used to roll beedis the tribals will fetch higher price and also get additional employment.

6.5.3.2 Sal seed

In sal seed it is pointed out that oil ghanis do exist in many villages. Instead of selling the sal seed in the seed form if the tribals can be taught to extract oil from sal seed and sell the sal seed oil and sal cake to the industry the increase in income would be enormous.

6.5.3.3 Harra

If a tribal undertakes simple drying of this product in the sun he would fetch higher price due to two things : 1. lower transportation cost because of reduced weight, and,2. ready acceptability due to higher keeping quality of dry product coupled with high price.

6.5.3.4 Awala

The precaution that should be taken is that the fruit should not be soiled or broken. The fruit has to be carefully transported to the destination. The other form in which it can be sold is removing the pulp from seed and drying the pulp to

remove all the water. This helps in reducing the weight and getting higher price. The dried awala pulp is used in many medicinal preparations.

6.5.3.5 Gum

In the case of gum the processing includes categorisation of gum according to the tree from which it has been extracted. The another important process which will add to its value is removal of dust, organic matter and other impurities. A clear, sorted and gum free of all impurities fetches higher price. The third process which adds the value to the gum is completely drying of the gum mass.

6.5.3.6 Mahua

In the case of mahua seed it is recommended that oil be extracted and sold instead of selling in the seed form. A useful manure can be obtained from deoiled cake. Mahua oil can be extracted with the help of village ghanis. The process will enhance the income and give the household an avenue of employment.

6.5.3.7 Lac

In the case of lac a simple cleaning of the mass of lac will enhance the value.

6.5.3.8 Karanj

In the case of karanj a thorough drying of the seed will enhance its value. Like other oilseeds if oil can be extracted in the village ghanis it will add to its value.

6.5.3.9 Tamarind

In the case of ripe tamarind fruit the tribals can be encouraged to remove the shell and dry the pulp in the sun till it is completely devoid of water. Value addition can also be done if the pulp is defibred and seed is removed. This process will reduce the weight of the product and the tribal will get the value of the seed which is used for the preparation of starch.

6.5.3.10 Honey

If the tribals can be given a few days training in apiary bee keeping they will not be required to do trekking, require less

man days, get high quality honey and, therefore, high price. The investment made in the preparation of wooden bee hives could be earned within a couple of years.

6.5.3.11 Chirounjee

In the case of chirounjee higher value can be obtained if the fruit is dried and seed is removed. The only precaution that needsto be taken is that the fruit has to be completely dry so that the seed is not crushed.

6.5.3.12 Charota

If oil can be extracted in the village ghanis value can be added to the product.

6.5.3.13 Mahul patta and Palas

Khadi and Village Industries Commission have evolved small machines to make leaf plates and leaf cups from the leaves. If a group of tribals can be financed to purchase these machines the industry can flourish in the tribal villages.

6.5.3.14 Phool bahari and Sabai grass

If the simple technique of making brooms can be taught to the tribals they will earn higher income.

6.6 Policy Implications

From the discussion on the collection, grading, drying, processing and marketing done, in the preceding pages following policy implications emerge.

1. Tribal collectors of MFPs are not organised. If the MPS MFPF takes steps to organise the collectors at the level of collection of MFPs the interest of the collectors may be protected.

2. For processing of MFPs the MPS MFPF should finance the collectors to purchase industrial tools.

3. The tribals should be made aware of grading, processing for value addition by the forest department and NGOs in the area.

4. For intensive processing and marketing activities

infrastructural facilities should be provided by Forest Department or MPS MFPF.

5. Efforts may be made by the department of marketing to establish regulated markets for the forest products.

6. The procurement prices of MFPs should be revised from time to time in view of the changing prices of sale of MFPs.

7. Plant protection measures should be adopted and indiscriminate felling of trees should be stopped.

8. Literacy programme should be launched in the tribal areas.

9. The tribals should be trained in preliminary processing, storing and marketing of MFPs.

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ANNEXURE-I

Comments received from the Agro-Economic Research Centre for Bihar, T.M. Bhagalpur University, Bhagalpur, Bihar

1. **Title of the study report examined :**

   "Prospects of Value Addition of Minor Forest Produce in Tribal Areas of Madhya Pradesh".

2. **Date of the receipt of the study report :** 17.01.2000

3. **Date of despatch of the comments by the coordinated centre** 02.02.2000

4. **Detailed comments on the methodology adopted for the study:**

   Methodologies suggested for the respondents are very clear and are in accordance with the study design.

5. **Comments on the adequacy and quality of coverage of each objective of the study:**

   Satisfactory

6. **Comments on the presentation and get up etc. of the report:**

   a) References quoted in Chapter-I have no linkage with the information relating to subject matter.

   b) Table number 2.5 (page 13) explaning gross revenue, expenditure and net revenue from tendu leaves contradicts the explanation of table numbers 2.3, 2.4 (page 11-12) which are to be checked and corrected.

   c) Typing errors/spelling mistakes are to be corrected.

7. **Overall Views on the acceptability of the report:**

   The report may be accepted after suggested corrections.

ANNEXURE-II

Action taken by the author based on the comments of the study report titled "Prospects of Value Addition of Minor Forest Produce in Tribal Areas of Madhya Pradesh".

The reviewer of the study has recommended that the report can be submitted after making corrections based on the comments.. The reviewer has made three comments relating to presentation and get up etc. of the report. The author of the study also considers that the comments are appropriate and useful. The author is thankful to the coordinator of the study Dr. U.M. Jha, Director, AERC, T.M. Bhagalpur University, Bhagalpur, Bihar for going through the report and making some useful comments.

Action on the comments :

1. First comment is related to the references quoted in Chapter-I.

   References quoted in chapter-I have been deleted.

2. Second comment is related to table No.2.5

   Table no.2.5 has been checked and corrected.

3. Third comment is related to typing errors/spelling mistakes.

   The typing errors/spelling mistakes have been checked and corrected.

(K.G.Sharma)
17.02.2000