Small Scale Forest Enterprises in India with Special Reference to Roles of Women

National Review Paper

SMALL SCALE FOREST ENTERPRISES IN INDIA WITH SPECIAL REFERENCE TO ROLES OF WOMEN

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This paper is part of a project undertaken by I.S.S.T. — sponsored by F.A.O. Rome under their prog

My acknowledgements name of

to the Institute of Scocial Studies Trust(ISST) New Delhi and its Director Smt Devaki Jain for inviting me to write on the entire idea, Shri V B Eswaran, Executive Director of Society for Promotion of Wastelands Development(SPWD) New Delhi for making it possible for me to work on this paper. Ms Gargi Poddar of ISST New Delhi, who initially helped in data collection. Ms Mamta Kapur for data collection and analysis. Shri A V R Rao, Shri V P Agarwala of S.P.W.D., Dr Tushar Maulik of Indian Institute of Management Ahmedabad,Ms. Priya Shyam Sundar and Ms. Shashi Rajgopal of ISST Bangalore and Dr. N.C.B. Nath of Foundation to Aid Industrial Recovery, New Delhi for their valuable comments.

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New Delhi
June 1987

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I. DEFINITION

This paper attempts to review the small Scale Forest Enterprises (SFE) in India with special reference to the roles of women. The development of forest enterprises represents an evaluation in the relationship between people and forests. People have been using forests for centuries for a variety of purposes, before the forest enterprises(as they are currently understood) came into being. It will be difficult to understand the forest enterprises without defining the current relationship between forests and people. In India, this relationship is specified by the following characteristics:

i) Forests are alomost entirely owned by the Government but local people do enjoy cerntain rights and concessions which differ from state to state and within a state quite often from region to region. Most of the forest-based enterprises are in the non-government sector.

ii) Majority of the people in rural areas depend on forests to meet several basic needs of the household like food, herbs, housing, fuel, fooder and fibre.

iii) A major portion of these needs are fulfilled in a non-market non-cash economy,while a part of these needs are fulfilled through barter trade within rural areas.

iv) Collection of forest produce for market serves as employment and income cushion for rural people, usually as a secondary occupation but for a significant number of people and during drought and adverse conditions, for most of the people as a primary occupation. The supply side of marketable commodities largely depends on non-cash availability of inputs from forests.

v) Quite a significant number of people, both in rural and urban sector are engaged in processing of forest product as a primary occupation, yet in the overall relationship between people and forests, they occupy a comparatively smaller place.

A review of Small Scale Forest Enterprises must take the above mentioned factors into account and should begin by asking the question, what constitutes Small Scale Forest Enterprise in the Indian context.

Definition: There is as yet no standard definition of Small Scale Forest Enterprises. Definitions vary both in terms of specifying as to what is 'small scale' and also as to what constitutes 'forest enterprises'. Small Scale has been defined either in terms of investment or in terms of number of workers in an enterprise. Similarly the condition for an enterprise to be defined as forest enterprise have varied from those which consider 'processing' of major forest produce only as the forest enterprise, while some consider 'processing' of both major and minor forest produce to those which take into account only primary processing, while some consider both primary and secondary processing and some as for as taking tertiary sector into account. While the mobile activities and region-specific activities have invariably been ignored, collection of forest produce has also not found much favour with many definitions of SFE.

In view of the above-mentioned factors, the following definition of SFE has been adopted in this paper:

"Small Scale Forest Enterprise includes all such efforts which depend on forests for supply of goods (both consumption goods and intermediate goods) and are traded in formal and non-formal markets and (i) such efforts are dependent on utilisation of local skills and local village level technology, and (ii) the unit of production is such that it can be persued as a self employment or household activity or non-household cottage industry".

This definition excludes inputs into forestry sector and production in tertiary sector. Rationale for adopting this working definition has been spelt out in Annexure 1 .

II. CLASSIFICATION OF FOREST ENTERPRISES

Most of the authors have classified the forest based enterprises into two broad catagories (i) wood based enterprises(or enterprise based on major forest produce), and (ii) Minor Forest Produce(MFP) based enterprises. Further subdivision of this classification in the standard texts does not help in investigating women's role in forest enterprises. An attempt therefore has ben made to classify forest enterprises according to the wroking definition that has been developed earlier.

One of the major departure from traditional understanding of forest enterprises has been the inclusion of collection and extraction of forest products as an enterprise. Therefore, the first refinement in the above mentioned broad classification has been to further subdivide them into those (a) based on extraction and collection and (b) based on processing of forest produce. The broad categorisation of forest enterprises would now be as under:-

(i) Wood based enterprises - (a) based on collection and extraction
(b) based on processing.

(ii) MFP based enterprises - (a) based on collection and extraction.
(b) based on processing

In the definition of SFE adopted in this paper 'type of technology' has been considered as a major determinant. All the enterprises in(i) and (ii) above falling in category (a) represent one type of technology while the enterprises falling in category (b) represent a variety of technologies. Using 'type of technology' as a criterion,forest enterprises can be categorised according to the following divisions:-

(a) those based on collection,gathering,grading and cleaning

(b) those based on collection extraction and processing by using local skills and local village level technology.

(c) those based on extraction and processing by using mechanised and chemical processing, and

(d) those using integrted plants for processing.

'Unit of production' is the other major determinant of SFE and therefore forest enterprises can also be classified in terms of whether production and organisation of an enterprise can be pursued on self-employment basis, household basis, non-householod cottage industry basis or on a factory basis. Introducing these changes, the classification of forest enterprise can be depicted by the following matrix:-

	WOOD BASED ENTERPRISES				MFP BASED ENTERPRISES			
	Collection gathering cleaning and grading	Using local skills and local village level technology	Using mechanised and chemical processing	Integrated plants	Collection gathering cleaning and grading	Using local skills and local village level technology	Using mechanised and chemical processing	Integrated plants
Self-employment	Type I	Type II	Type II	-	Type I	Type II	Type II	-
House-hold	Type I	Type II	Type II	-	Type I	Type II	Type II	-
Non Household Cottage Industry	Type II	Type II	Type II	-	Type II	Type II	Type II	-
Factories	Type III	Type III	Type III	Type IV	Type III	Type III	Type III	Type IV

It will be seen from the matrix that when the factors like type of technology and unit of production are taken into account, classification of both wood-based enterprises and MFP based enterprises follows the same pattern. The forestry enterprises therefore can be classified into the following four types:

Type I : (i) Collection, gathering, cleaning and grading of forest products either as self-employment or as a house-hold activity.

Type II : (i) Collection, gathering, cleaning and grading of forest products in non-household cottage industry type of organisations.

(ii) Processing of forest products by using local skills and local village level technology as a self-employment enterprise, as a household enterprise or non-household cottage industry.

Type III : (i) Collection extraction, cleaning and grading of forest production in factory type of organisations

(ii) Processing of forest products by using village level technology or mechanised and chemical processes in factory type of organisations.

Type IV : (i) Processing of forest products in integrated plants in factories.

According to the adopted definition Type I and Type II constitute Small Scale Forest Enterprises(SFE)

III. IDENTIFICATION OF FOREST ENTERPRISES WHERE WOMEN PLAY A SIGNIFICANT ROLE:

Forestry enterprises in India present a bewildering range and it is very difficult to make even a comprehensive listing. There are a number of region specific activities (like extraction of oil from Dhatura seeds in Dungarpur) which do not find any mention in the literature. A number of products collected by tribal communities are not even known to the outside world. In such circumstances, identification of SFE where women play an important role cannot lead to the exact listing of such enterprises. At the best, by using limited data that is available about known enterprises, women's participation rate for each type of enterprises can be calculated. Although participation rate is not equivalent to women's role, it has been used as a first approximation. It will help in identifying the type of enterprises where women play a greater role and these type of enterprises will be taken up for deeper investigation.

Determining the participation rate of women for various type of forest enterprises is also not without difficulties. Various problems encountered in this task are listed below:

(i) Employment data for all the known enterprises is not available.

(ii) For the enterprises, where such data is available, it is not always separately available for men and women.

(iii) Comparison of data from various sources is not possible because of difference in units and period. Due to the nature of forest enterprises, where the employment is seasonal it is not possible to convert mandays of employment into number of persons or vice-versa.

To overcome these difficulties, following methodology

was adopted:-

(i) Amongst the various sources of data on employment in forest enterprises, National Sample Survey(of the whole of the rural and urban areas of the Indian Union, barring small pockets here and there), gives data separately for men and women and covers relatively more number of enterprises than any other single source. It was therefore decided to use NSS data as being representative (not comprehensive) of the class of enterprises for which it is available.

(ii) The enterprises covered by NSS data were regrouped into four type of categories as determined earlier. This regrouping was based on the understanding of each enterprise as revealed by the published literature and through discussions with experienced foresters. It would however be difficult to say that the groups are mutually exclusive. For making each group as an exclusive class, principle of broad banding of enterprises was followed. Thus match industry which is undertaken in both cottage industry sector and factory sector and uses both non mechanised processing and mechanised processing, was placed in type III enterprises because statistics[2] revealed that non-mechanised cottage units constitute only 25 percent of the toal production of matches in the country.

(iii) For each of these groups, indices of women's participation rate was determined as proportion of women to total number of persons participating in that group of enterprises.

Following this methodology, Table 1 was prepared and indices of women's participation for each type of enterprises were determined. Before deriving any conclusion from this analysis, it is necessary to add a note of caution on limitation of such analysis. Table 1 is based on limited

TABLE I

Indices of women's participation (figures in '00)

TYPE I					TYPE II					TYPE III					TYPE IV				
ENTERPRISES	RURAL		URBAN		ENTERPRISES	RURAL		URBAN		ENTERPRISES	RURAL		URBAN		ENTERPRISES	RURAL		URBAN	
	M	F	M	F		M	F	M	F		M	F	M	F		M	F	M	F
Production of fuel	814	623	63	27	Manufacture of bidi	5665	7686	2645	4115	Manufacture of wodden furniture and fixtures	2083	10	1567	11	Manufacture of veneer plywood & their Products	188	-	206	-
Gathering of fodder	27	76	33	33	Manufacture of bamboo and cane furniture & fixture	832	1084	102	194	Sawing & Planning of wood (other than plywood)	591	20	574	62	Manufacture of wooden industrial goods such as bobbins blocks,handles, saddling & similar equipments & fixtures	366	-	198	6
Gathering of uncultivated materials as gums, resins,lacs, barks,etc.	263	414	42	30	Manufacture of wood,bamboo & cane products not elsewhere classifed	1865	1103	334	240	Manufacture of structural wooden goods e.g. beam-posts doors & windows	5877	50	2188	59					
Other forest Products not elsewhere classified	457	316	39	46	Manufacture of wooden & cane boxes crates drums barrels & other wooden containers baskets & others rattan bamboo reed & willow raw wares made entirely or mainly of cane rattan,reed,bamboo & willow	3564	2102	1255	450	Manufacture of container & boxes of paper and paper board	32	21	191	164	Manufacture of pulp paper and paper board including newsprint	290	22	443	22
TOTAL	1561	1429	177	136						Manufacture of paper & paper board articles not elsewhere classified	47	-	137	36	TOTAL	844	22	847	28
										Manufacture of matches	230	596	262	601					

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TYPE I					TYPE II					TYPE III					TYPE IV				
ENTERPRISES	RURAL M	RURAL F	URBAN M	URBAN F	ENTERPRISES	RURAL M	RURAL F	URBAN M	URBAN F	ENTERPRISES	RURAL M	RURAL F	URBAN M	URBAN F	ENTERPRISES	RURAL M	RURAL F	URBAN M	URBAN F
										Manufacture of cork and cork products	21	-	16	-					
										Logging, felling & cutting of trees & preparation of rough round hewn or river logs	2260	483	216	11					
Indice for women's participation rate	Rural 0.477		Urban 0.434													Rural 0.025		Urban 0.033	
Indice for women's participation rate (Total)	0.473															0.029			
					TOTAL	11926	11975	4336	4999	TOTAL	11141	1180	5151	944					
						Rural 0.50		Urban 0.53			Rural 0.0957		Urban 0.1548						
						0.51					0.1153								

data provided by NSS(32nds round). A number of SFE are not covered by it. There are a number of questions relating to coverage of enterprises, sample size and methodology in general. However this paper is not the proper place to go into these questions. Relevant conclusions can be derived from this data because of restructuring and reclassification attempted in Table 1. This assertion originates from the fact that whatever was considered as an enterprise by NSS and was related to forestry sector has been included and put in a particular category determined by 'type of technology' and 'unit of production'. Thus while the coverage in a particular group of enterprises is not comprehensive, it is definitely illustrative of that group of enterprises. Keeping in view these limitations the following observations are made:-

(i) Participation rate of women is higher for those forest enterprises which are dependent on (a) usage of local skills and local village level technology for collection, extraction and processing of forest products and (b) unit of production in these enterprises is such that it can be pursued as a self employment venture or a house-hold enterprise or non household cottage industry.

(ii) Participation rate of women shows a significant decline when the type of technology used for extraction and processing of forest products becomes more mechanised and production is organised in factory type establishments.

(iii) The above mentioned results hold good for both rural and urban women but the decline in rural women's participation rate is much sharper than for the urban women when production is by more mechanised processes in factory type establishgments.

Above analysis also show that rural women participate in forest enterprises in significantly greater numbers (72% of all women in forest enterprises)

than urban women. Participation rates for both rural and urban women also show a similar pattern for different categories. In the rest of the paper, therefore, differentiation between rural and urban women has not been made.

IV. MAGNITUDE OF PRODUCTION & EMPLOYMENT

a) Estimate of production & Employment

Use of limited data from NSS has been helpful only in substantiating apriori assumptions on definition of SFE and classification of forestry enterprises. It does not throw any light on the magnitude of production and employment of SFE because of its limited nature. It would be difficult to appreciate importance of SFE for women in India without an understanding of magnitude of these enterprises. To investigate these aspects of SFE, an attempt has been made here to enlarge data base by using other data sources. Since most of the other data sources follow the traditional classification (wood based & MFP based) of forest enterprises, first exercise in this task has been to make new classification (into four groups), compatiable with traditional classification.

It will be observed from Table 1 that

(i) With a few exceptions, most of the enterprises in type I and type II classifications (SFE), which show a greater participation of women, are either based on (a) collection, extraction, grading and cleaning of forest produce or (b) processing of minor forest produce. Exception to this general rule are toy industry, match industry, photo frames etc.

(ii) Similarly, most of the industries in type III and type IV classifications, which show lower participation of women, are based on major forest produce. Exception to this generalisation are distillation of essential oils, resin and turpentine factories and integrated oil extraction plants.

If some of the exceptions cited above are introduced into the traditional classification of forest enterprises (wood based and MFP based), the two classifications can be made compatible. Amongst all the exceptions to the general rules cited above, fuelwood production and charcoal making are two enterprises (which are based on major forest produce and fall in type I & II categories) which are very important in terms of total quantum of production. If these enterprises are clubbed with MFP based enterprises, traditional and new classification can correspond to each other. Thus even at the risk of some distortions, the earlier classification of forest enterprises into 4 types is being amalgamated to realign with available data purely for the purpose of determining magnitude of SFE. Modified classification is shown below :-

Earlier classification	Modified classification	Indices of women's participation for modified class of enterprises
Type I + Type II	Type A (SFE)	
	i) Harvesting of Minor Forest Produce and fuelwood	0.487
	ii) Processing of Minor Forest Produce and charcoal making	
	Type B (non-SFE)	
Type III + Type IV	Harvesting and processing of major forest produce except fuelwood and charcoal making	0.097

The modified classification helps in using the data from different sources, which makes the coverage more comprehensive than was possible by using NSS data only. Determination of magnitude of SFE both in terms of production and employment has been achieved by using this enlarged data base. It may be mentioned here that very few data sources give employment statistics segregated according to

sex and therefore for determining the position of employment of women, the above mentioned indices have been used. Data from various sources refers to a different period, uses different methodology and quite frequently different units. Although it is very difficult to eliminate all the distortions due to these differences, an attempt has been made to minimise their effect by adopting the following methodology:-

i) For each industry, data from various sources is examinated and one such estimate is accepted. Reasons for accepting a particular estimate have been mentioned as also the period to which data refers.

ii) As far as possible, uniformity of units has been maintained by conversion. (Conversion factors are indicated wherever applicable).

iii) Production figures are given in physical quantities as far as possible.

Following this methodology, production and employment for each category of enterprises has been estimated in Annexure II.

Table 2 gives the summary of production and employment in each category of enterprises. By using the indices of women's participation rate developed earlier, women's contribution has also been estimated.

Table 2

Production & Employment in Forest Based Enterprises

Enterprises	Production	Employment Total	M	F
Type A (SFE)				
a) Collection & Gathering				
(i) Fuel wood	8,399,272m^3	161.518 mmd		
(ii) Fodder Collection	25,350T	1.014 mmd		
(iii) Minor Forest produce	3,811,810T	319.23 mmd		
b) Processing of MFP	4,405,546T*	580.935 mmd		
Total Type A		1062.697	545.164	517.533
Type B (non SFE)				
a) Harvesting of major forest product(excluding fuelwood)	8,292,000m^3	54.75 mmd		
b) Processing of Major Forest Product	-	505.23 mmd		
Total Type B		559.98	505.662	54.318
Grand Total		1622.677 mmd	1050.826 mmd	571.851 mmd

* : includes 1,653,600T. of charcoal making and 80,000 T. of rope making grass which are not included in a (iii). A substantial portion of MFP is exported also. (app. 49.443 tonnes p.a. 49,443 tonnes p.a. between 1971-72 to 1973-74).

Table 2 shows that estimated employment for women in forest based enterprises is app. 571,851 million mandays. Of this app. 90.5% employment is created in small scale enterprises. Mainly because indices for women's participation rate were developed by using limited data provided by NSS, it's application to enlarged data base does introduce some distortions. It is quite posible, indeed, it is true in a number of cases, that participation rate of women in some of non-small scale enterprises is very high. But it will also be seen that the total employment creation in such industries is less than half of that of small scale enterprises. A marginal increase in women's participation rate, if calculated on actual basis (as against using indices), will not change the overall employment structure of forest enterprises substantially. In fact manufacture of matches is the only enterprise in non small scale sector which shows a substantial participation of women. All the other enterprises in this category for which data is available show the participation rate of women to be less than 10%. It can, therefore, be concluded with some amount of certainty that - 90% of employment for women is created in Small Scale Forest Enterprises.

b. **Place of SFE in National Economy**

In terms of production by forest based enterprises and their contribution to national economy, the following observations are made :

i) Current[3] GNP calculations, it seems, do not include a number of enterprises based on collection and processing of minor forest produce like (1) essential oils manufacture (2) tannin and dye stuffs (myrobalans etc.) (3) fibres and flosses (4) honey and wax (5) oxalic acid from bark (6) walnut, hazalnut etc., Katha and Kutch. Similarly a number of products from major forest produce are also not included.

(ii) The value added from processing wood and wood products for the manufacture of the final finished products is accruing to manufacturing sector in the existing system of calculation of GNP[4]

Because of these reasons, it is very difficult to assign an exact place to SFE in the current GNP calculations. However, it is clear that their value, indeed the contribution of entire forestry sector is under-estimated. It will be clear from the fact that purely as wage earning from these enterprises at minimum wage of Rs 10/- per man day, the contribution of these enterprises will be app. Rs 1622.7 crores, while the entire contribution of foresty sector to GNP was[5] estimated at Rs 332 crores in 1980-81. Because of different price-levels, the data is not exactly comparable but does give an indication of gross under-estimation of the contribution of this sector.

C. **Importance of SFE in the lives of Women**

It has been established that women contribute a lot to small scale forest-based enterprises. While making this contribution to the national economy women create several million days of employment for themselves. This employment is an extremely important part of their life as would be evident from the following observations:

(i) A study[6] conducted by Administrative Staff College of India, Hyderabad (1977-78) indicated that agricultural production from tribal land is inadequate to maintain a household at subsistance level. House-holds having less than 5 acres of land mainly depend on MFP collection[in] Andhra Pradesh, Bihar, Madhya Pradesh and Orissa. The average income realised through sale of MFP is given below:

State	Percentage Income to their total income
Andhra Pradesh	10.0 to 55.3
Bihar	7.0 to 41.7
Madhya Pradesh	34.0 to 55.0
Orissa	5.4 to 13.4

(ii) A study[7] conducted in Bastar (1981) indicates that an average household(having two adult members, at lease one child and an old person) on an average earns Rs 1500 a year(against total annual. income of Rs 1750/-) from sale of MFP without any initial input or risk.

(iii) A similar study[8] conducted by Tribal Research Institute, Ahmedabad, has shown that 35% of the total earning of tribals in Panchmahal district of Gujarat State was from MFP.

(Iv) Close to 40000 families in a belt of land 8 Km wide and 60 Km long bordered by Yamuna on the West and Ganga on the East, depend almost entirely on rope making from the bhabhar grass (Eulaliopsis binata)[9]

(v) about 300000 persons are directly or indirectly dependent on the traditional bomboo-reed industry in Kerala.[10]

These examples can be multiplied. There is no gainsaying of the fact that SFE play an important part in the life of rural population and if above examples are taken as guideline, MFP based enterprises (women's involvement is maximum in them) more significantly so. Thus, not only women contribute a great deal and play a significant role in SFE but vice-versa is also true that SFE are a very important part of life of several million women. It is therefore, essential that SFE develops into a vibrant, healthy and growing part of Indian Economy. It is in this context that the market structure raw material scenario, financial & credit structure, and role of Government has been analysed in the following sections. Attempt has been made to analyse each of these factors and bring out their importance in relation to women's role.

V. MARKET

(a) **Structure** - The relationship between the products of SFE, ultimate consumers, their geographical location and marketing channel can be shown as under :

Market Structure

Product	Consumers	Location	Marketing Channel	Remarks
Fuelwood & Fodder	Households	Large Villages nearby towns	Direct sale and Weekly markets	Most of the fuelwood sold by women represents illicit removal from forests and is, usually, not sold for industrial or institutional use.
Minor Forest produce	i) Processing units ii) Exports iii) Urban households	Scattered over a very large geographical area	i) Pvt.Traders ii) Contractors iii) Govt. Agencies	i) A major protion of MFP like kendu leaves, fibres & flosses, oil seeds, tans & dyes, resins is used by processing industries through the intermediaries mentioned in Col.4 ii) A substantial portion of MFP like myrobalans, gums and lac are exported. iii) A very small portion of MFP like honey and sandal wood is purchased by urban households through private traders.
Processed MFP	i) downstream industries ii) exports iii) urban households	""	i) Pvt.traders ii) Government Agencies	i) Products like essential oils, nonedible oil, tannis, resin etc. are purchased by downstream industries like soap making units, chemical, pharmaceuticals industries and cosmetic industries. ii) Above mentioned products and shellacs are also exported. iii) Products like ropes, bidis, katha are sold through private traders and sometimes in weekly bazars. iv) Bamboo products, cane products are sold through both pvt.agencies and Govt.agencies.

It will be seen from the market structure that the producers (women) have very limited direct access to the consumers. Except for a small part of sale that is made in local villages, weekly bazars and nearby towns; major portion of their produce is sold to intermediaries like private traders, contractors and government agencies, who operate in that area. Thus, although the products from SFE reach a very large market, as far as producers are concerned, the market is geographically very limited and consists of consumers living in nearby areas and the intermediaries operating in that areas.

The inability of producers to expand their market is related to three facts, (1) seasonality of production (2) lack of holding power and (3) uneconomic size of production. Although activities relating to collection of MFP are carried out almost throughout the year, in relation to a particular MFP, season is limited; for example, Tendu leaves are collected during April-May when the new flush of leaves is maturing; Harra (chebulic myrobalan) is collected when it is shed on ripening in early cold weather; Pine trees are tapped for resin during warm and hot weather. Thus collection of specific MFP is seasonal. In absence of local processing facilities most of these products have to be sold during the season, when buyers (intermediaries) are visiting the area. Even those products with longer shelf life are sold because of immediate need of cash. Consider for example products like fuelwood which is collected throughout the year except during the rainy season. Immediate cash needs force most of women head loaders to sell their products at a very low price. Also because each head loader operates on her own, there is no way of fetching better prices in a far off market. Quantity being very small, transport cost will not be justified. Thus, despite the shortage of fuelwood and fooder, women headloaders do not even earn sufficient compensation for their labour.

Note:- Phenomenon of headloaders has now been very widely reported including the exploitative nexus that operates amongst foresters and railway employees - foresters extracting money for illicit removal of wood and railway personnel for ticketless travel with headloads on what are now know as headload specials.

Limited access to market (consumers) is more pronounced in the case of manufactured items like bamboo and cane items, leaf plates, toys etc. Except for a small demand in nearby villages for specific items, the rest of the market is geographically dispersed over a wide area and for most of the small manufacturers (usually one person or family) remains inaccessible. It is more true for the women entrepreneurs. Beset with other roles within family, traditionally assigned to women, their ability to look for far off markets is even more restricted. Small size of production further aggravates problem forcing the women into vicious cycle of small market, low production leading to small surplus. Limited surplus makes them more vulnerable and makes their exploitation possible because it continuously erodes their bargaining capacity as their need for conversion of small production into cash becomes more acute.

b. **Market Size & Pricing**

Limited access to market and dependence on intermediaries(governmental or private) have a direct effect on prices. Prices of produce-whether sold directly to consumers or to the intermediaries - bear no relation ship to the cost of labour, inputs and transportation. In the case of direct sale, three factors combine to depress the prices:

(i) Localised activities for localised markets create a supply position in excess to local demand.

(ii) Traders in the same commodity control the market and dictate the prices during and off-season; and

(iii) selling of the produce during flush season and purchase of same produce during off season.

There are many examples to support these observations: "An average family of five members, working from dawn to dusk, produces roughly 100 Kg of rope every fortnight..... the rope is then sold at weekly markets at Daudpura and Biharigadh, close to Saharanpur. Few rope makers' families earned more than Rs 125/- a month about four years ago." "At the markets, the rope-makers are compelled to take whatever price has been fixed by the Saharanpur traders for money is always desperately short."[11](India Today, July 15, 1983, P.114). The year 1986 represented third consecutive year of drought in tribal belt of Southern Aravallis forcing throusands of tribal families to resort to selling fuelwood The market for new entrants in the fuelwood business was also Udaipur. The net result of excess supply of fuel wood was a steep fall of 40% in the prices. During the same period in the same region, village people were buying fodder from Udaipur at the rate of Re 1/- per Kg. which they themselves had sold at as low a price as Re 0.30 to Re.0.40 per Kg immediately after monsoon.[12]

In the case of sale to intermediaries, the situation is worse - producers having absolutely no control either on the prices or the quantity to be purchased. Since the nationalisation of trade of a number of MFP items by many state governments, the govt. agencies have been the biggest purchaser. However, price fluctuations are erratic for both nationalised items and non-nationalised items. Very few products show stable and increasing trends in price realisation.

Price behaviour and fluctuation in total quanity procured for selected items for a few states is analysed here.

Percertage change in quantity and procurement prices/unit[13]

Andhra Pradesh

Year / Product	1977-78 over 1976-77		1978-79 over 1977-78		Remarks
	Qty	Price	Qty	Price	
1. Adda Leaves (Mahuline leaf)	+ 55%	-11.5%	-24%	+ 58.7%	Girijan Cooperative Corporation Limited Visakhapatnam has ben given monopoly rights for collection and marketing of all MF/ items except Tendu leaves
2. Gum*	+ 13%	+13.7%	+120%	- 4.3%	
3. Oilseeds of tree origin (kusum+Mahua)+	+ 60%	+28.0%	-69%	-30.3%	* Discussions with forest officials of A.P. reveal that price of gum karaya has come down from avg. of Rs 7-10 per Kg to Rs 4 - 5/- per Kg in last 3 years(1983-86)
4. Myrobalans	+ 16.5%	-10.8%	-27.6%	+60.0	
5. Neem Seeds	- 82.8%	+1.4%	+1411.0%	-17.9%	

Year / Product	1979 - 80 over 1978-79		1980-81 over 1979-80		Remarks
	Qty	Price	Qty	Price	
Gujarat					
1. Mahua Seeds	+ 12.7%	+ 6.1%	- 35.5%	+ 30.8%	Both the items are procured on monopoly basis by Gujarat Forest Dev. Corporation.
2 Gums	- 11.7%	- 53.8%	- 39.3%	+ 223.2%	
Maharashtra					
1. Bamboo	+ 6.6%	- 33.5%	+ 13.3%	+ 8.6%	Collection is through "State Tribal Development Corporation" or "Forest Labour Coioperative Societies" or through Contractors.
2. Gum	+ 11.8%	+ 44.0%	+234.0%	- 72.1%	
3. Lac	+ 48.0%	- 84.7%	- 24.4%	+ 41.8%	

The limited data presented above makes it very clear that -

(i) Quantities procured and price per unit show wide flucutations.

(ii) Usually when the quantity procured is high price per unit is very low and vice-versa.

The net result is that the poor producers' income always remains low. When the producer sells more his income is depressed by poor price realisation and when price realisation is beter, income is depressed by lower sales. It would not be correct to say that it is true for all the commodities. There are a number of products which show continuously increasing trend in sales and prices across geographical regions. Good example of such commodities are tendu leaves and resins, both of which show an increasing trend in production and prices.

Reasons for this comparative stability of market of these products are not difficult to identify. Over the years, bidi industry (the biggest consumer of tendu leaves) has developed into a well-established industry. More than 95% of the material is consumed in the country itself. It is essential for bidi industry to procure the material during the season for the entire year. Failure to do so means loss for the bidi industry. Thus, there is compulsion both for the producer and purchaser. That is why the trade has reached the most interior parts. There are no assembling markets as such for tendu leaves, and the important villages and towns in producing areas, where facilities for storage and transporation are available, usually serve as assembling centres.[14] Madhya Pradesh, Maharashtra, Rajasthan, Orissa, Andhra Pradesh and Uttar Pradesh Governments have nationalised the trade in the tendu leaves. However, it is not only the nationalisation of trade but also the existence of continuous downstream demand from a well-established industry that keeps the trade in tendu leaves buoyant. It is nobody's case that everything is right with tendu leaves trade(in fact, continuous battle between organised tribal societies and contracting agencies over prices of tendu leaves in Andhra Pradesh has drawn nation-wide attention), however, the fluctuation in production and prices are less than that in other products. In the year 1979-80 and 1980-81, 5. 54 million standard bags and 6.11 million standard bags were collected which in terms of weight varies from 2.7 million tonnes to 3.00 million tonnes yielding a net revenue of Rs 547 million

and 553 million respectively.[15]

Resin collection provides a similar example. Collection of resin and output of processed products was more or less stagnant during sixties as would be evident from the following table:[16]

Year	Collection Crude resin (tonnes)	Output of processed products	
		Resin (tonnes)	Turpentine (kilolitres)
1961-62	30,268	22,769	5,493
1965-66	40,028	32,261	7,867
1969-70	41,716	31,218	7,860

The stagnant output in the sixties was due to lack of adequate processing facilities and consequent lack of demand. With the establishment of additional processing facilities and augmentation of capacity of existing factories in early seventies, the demand for resin increased tremendously as would be evident from the following table:[17]

Year	Crude Resin Production in tonnes			Total
	H.P	U.P.	J & K	
1970-71	14390.5	25080	2400	41870.5
1973-74	17294.5	34317.7	7170	58782.2
1974-75	16131.3	37183.3	16670	69984.6

Installed capacity of government factories alone in middle of seventies was approximately 40000 tonnes. All of these are located in Western Himalayas and Terai region near the producing centres. The industry has a profound effect on the economy of the hill regions of Western Himalayas.

Although unscrupulous private enterpreneurs have indulged in destructive resin-tapping practices (which is impossible without the connivance of local officials), the point here is that creation of local processing facilities has led to continuous increase in production, lending a stability in market for the producers of crude resin.

In contrast to tendu leave and crude resin collection, enterprises like lac, gum, oil seeds, myrobalan collection show wide fluctuations in terms of total market and prices. Some of these enterprises are analysed here :

Lac & Products : Lac is used by several industries like plastics, electricals, adhesives, leather and wood finishing, printing ink and other industries. It is also the main ingredient for making sealing wax. India held a virtual monopoly of lac production till 1950, when other countries specifically Thailand entered the market in a big way. Despite the fact that India has been the biggest producer of lac in the world; no significant and deliberate development of downstream industries has taken place. Only 10 percent of the total production is used for internal consumption and the fate of industry is used for internal consumption and the fate of industry is therefore totally linked to export market. Export market show violent fluctuation both in terms of demand and price realisation. It will be evident from the following figures[18] of average annual production.

Period	Average annual production of lac [in tonnes]
1951 - 60	41,485
1961 - 70	30,017
1971 - 75	20,015
1976 - 81	18,486

Although unit price realisation of export quality of lac has recently shown an upward trend (Rs.9.38 per Kg. in 1978-79, Rs.10.07/Kg. in 1979-80 and Rs.12.15/Kg. in 1980-81)[19] very little of this surplus goes to producers. It is observed that "the marketing arrangements of lac at present are still primitive. The cultivator harvests the lac crop and brings it in head-loads to the nearest village market, which is the primary market. An inter-mediary buys the lac and sends it to either a manufactuerer or another agent in the secondary market. The manufacturer then despatches it either directly to the export market or to a manufacturer-cum-exporter, a merchant exporter, or even another intermediary. The transactions may pass through many

intermediaries before the product is finally despatched to the export market.[20] It is clear that cultivator is operating in a shrinking market and does not benefit by higher price realisation in the export market.

Another remarkable feature of this enterprise is that although Bihar is the largest producer of basic raw material, the main industrial products (i.e. machine made and hand made shellac) are mostly the output of industries based in West Bengal. There are no local processing facilities. Nature's abundant endowments have benefitted the local residents least. It is those from outside who have skills, money and technology and who get the surplus. Like in other industries, it is also true about SFE that the skilled workers are 'outsiders' who come in directly and the unskilled workers are women from local areas.

Myrobalans : The collection of myrobalans is done by tribals living in the interior of forests. Due to lack of organised marketing, they do not get a fair remuneration. Even after nationalisation of trade by some states, situation has not improved. After the nationalisation of trade of myrobalans in Madhya Pradesh, collection shows the following trend :-[21]

1970 - 71	...	23,017	tonnes
1971 - 72	...	53,380	""
1972 - 73	...	18,557	""
1978 - 79	...	17,000	""]
1979 - 80	...	4,800	""] Harra only
1980 - 81	...	800	]

It is clear that tribal collectors have no guarantee about the size of the market. The reason given for sudden decline in 1972-73 was that there was unutilised stock in hand. It may also be noted that in 1970-71, installed capacity for crushing of myrobalans was 24000 tonnes in Madhya Pradesh, while the actual production was just 600 tonnes.[22] Another major market for myrobalans has been export market which also shows similar fluctuations as shown by the following table [23]

Qty : tonnes
value : Rs.lacs

1969-70		1970-71		1971-72		1972-73		1973-74	
Qty.	Value	Qty.	Value	Qty.	Value	Qty.	Value	Qty.	Value
10,835	48.41	3,054	24.16	7,100	61.83	1,010	16.50	4,907	38.09

both the quantity and prices show wide fluctuation. It has already been pointed out that even if prices showed an upward trend export market does not benefit the collectors (producers). It may also be added that the potential of myrobalan has not been realised, in fact whatever poor collectors gather is not bought by the intermediaries because of lack of demand by downstream tannin export units and fluctuating export market. At the same time India keeps on importing tannin extract. Value of tannin extract import in 1976-77 was Rs.81 million. [24]

The situation in case of gums, oilseeds and other MFP is no different. In fact some of the processed items like essential oils also show a similar trend. That is there is no stability of the demand and prices in the market.

Price realisation by collectors is adversely affected also because of lack of knowledge and training. Timru or bidi leaves without any 'mata' and 'tipki' may fetch as high a price as Rs.3/- per Kg. and even if a small percentage of leaves in a phad contains defective leaves, the price suddenly drops to about Rs.2/- or Rs.1.50 per Kg.* There has, however been no significant work in educating the primary collectors about these finer points and their ability to earn higher amount remains merely a matter of chance.

It was pointed out in the section 'market structure' that as far as women enterpreneurs are concerned, they operate in a very small part of the overall market. It is also clear from the analysis in this section that the overall market for SFE products itself is prone to wide fluctuations both in terms of size of demand and prices. Its effects on the accessible market to women are worse. This limited market

at micro-level shows even more violent fluctuations, forcing most of the women to remain at lower end of technology and even more unwilling to make any additional investment. Thus uncertainty of market and women's position at lower end of technological spectrum is intrinsically linked.

c. **Competetion and substitutes:** SFE face tough competion from organised sector in a number of products. The products in which both SFE and organised sectors operate include among others bamboo, cane and reed products, resin processing, small wood items, processed oil etc. Their difficulties vis-a-vis organised sector are small production, limited access to market, lack of holding capacity,increasing difficulties in accessibility to raw materials and transport facilities. The source of raw-material has over a period of time shifted from nearby village forests (either they have vanished or the rights of village people have diminished) to the forest depots, usually located in townships and cities. The purchase of material and transportation to production centres (homes in villages), means investment of cash, usually a difficult proposition with village people, particularly women, resulting in low investment and low production and an urgency to convert the product in cash. In a very few cases some government and non-government organisations, particularly KVIC have been able to provide both finance and marketing support but in most cases the products have been sold in local markets or to traders at a very low price. Organised sector with a better access to raw material and finance is able to sell the products to a larger market including local markets, further reducing the opportunities for SFE. Even in the items where the challenge from organised sector is not so strong SFE face a bleak future with cheaper substitutes coming in the market. It is particularly true about competition from nylon-and-alluminium folding cots to manufacturers of cot and rope, from thick polyethylene sheets to reed mats, lac manufacturers because of substitution of wooden furnitures with aminate, steel aluminium and plastic which do not require spirit varnish and french polish - major usage of lac, substitution of kapok floss by foam rubber as stuffing material, and replacement of Kapok floss by fibre glass as a thermal and accoustic insulators.[25] All the substitutes mentioned above

are cheaper and performance wise better and longer lasting. There is little doubt that demand for these products of SFE will continuously diminish.

The analysis of the market for SFE products show that :

(i) Although the market for SFE products is large, as far as producers are concerned, the accessible market is restricted to local markets and intermediaries operating in that area. Limited access to market leads to smaller surplus eroding their bargaining capacity and making women more prone to exploitation.

(ii) It is those from 'outside' who have skills, money and technology, who get the surplus. The skilled workers are outsiders who come in directly and unskilled workers are women from local areas. From the point of producers, size of demand and prices show wide fluctuations leading to instability of market in which they operate. Uncertainty of market and women's position at the lower end of technological spectrum is intrinsically linked.

(iii) Those products which have well-established downstream users located in producing areas show more stability.

(iv) SFE face tough competition from the organised sector dealing in same products and from substitute products.

VI. **RAW MATERIAL:** Four major trends are noticed in relation to raw material which adversely affect SFE :

a) Large scale deforestation is leading to erosion of raw material base leading to difficulties in procurement and in some cases vanishing of some of the enterprises.

b) SFE and organised sector are competing for the same raw material to the disadvantage of former.

c) Erosion of rights and concessions of village and tribal communities in forest areas is making it difficult to procure raw material and investment needed has gone up manifold.

d) Efforts at regeneration of forests are independent of the needs of raw material by SFE and therefore future of SFE does not hold any promise.

These observations are supported by the following evidence:

a) Complete deforestation of **'Punkhi'** trees (Gyrocarpus Spp.) in Andhra Pradesh and **'Khirni'** trees (Wrightiatinctoria) from Udaipur region has totally demolished village-based toy industries from these areas. The industry has now shifted to organised sector with better procurement facilities from different region than the original inhabitat. The biggest threat from deforestation is to that part of SFE with which women are most intensively concerned i.e. collection and extraction of forest produce. As such most of the minor forest products occur in widely scattered areas making economic exploitation difficult; with the present scale of deforestation, the search of women for MFP (in some cases their only source of livelihood) is becoming more intense, back-breaking and unremunerative.

(b) With the growth of forest-based industry instances of big industry indruding into those forests where thousands of MFP gatherers have been earning their livelihood are becoming more and more frequent. Bharat Dogra in his paper "Forest People - Victims of Ever Changing yet Unchanging Official Policy" quotes the following insightful examples about Chenches tribe of Nallamalia Hills in Andhra Pradesh from the book "Tribes of India - The struggle for Survival" written by Christ Von-Fuver-Haimendorf.

"The Chenchus represent thus the unusual case of a forest tribe of semi-momadic collectors and hunters who notwithstanding close contact with advanced populations and the agents of a regular administration have remained gatherers even though the bulk of the produce they gather is no longer food for their own consumption.

Until 1979, forest conservancy and the pursuance of the Chenchus' traditional life-style were not in conflict, and in view of the value of the produce collected for pharmaceutical and other industries there was every reason to believe that this situation could persist for the foreseeable future. However, in 1980 a development occured which threatens to undermine the very basis of Chenchu economy. When I revisited the upper Amrabad Plateau in Novemeber, 1980, I noticed large-scale inroads into the bamboo forest, and learn that the Sirpur Paper Mills, whose activities had already destroyed the greater part of the bamboo forests of Adilabad District had been awarded a contract for the exploitation of Bamboo on the upper Amrabad Plateau. The agents of the Sirpur Mills had brought in hundreds of forest labours, many of them recruited in distant Madhya Pradesh as well as a fleet of trucks. The local forest officers told me that they were in a position to control the extent and the manner of the exploitation of bamboo, and whereas there is a method of cutting bamboo which safeguards future regeneration, it was obvious that the felling was carried out without any regard for the conservation of the stocks of bamboo.

"For the Chenchus, the destruction of bamboo in their habitat will be catastrophic. They depend on bamboo not only for the construction of their huts and for making many of their utensils, above all for the manufacture of baskets and mats, which they traditionally sell or barter for agricultural produce. It is no exaggeration to say that the depletion of the stocks of bamboo in the forests of the Amrabad Plateau would make the area virtually uninhabitable for its original denizens."

Further, in the competition between SFE and organised sector, official agencies are discriminating against SFE as would be evident from the following examples :-

(i) In Madhya Pradesh in 1981-82 industrialists paid the forest department 54 paise for a 4 metre bamboo, while forest dwellers paid a little over Rs.2 per bamboo to the forest department.[27]

(ii) Until recently paper mills in Karnataka were getting bamboo at Rs.15 per tonne while the villagers had to pay Rs.1,200/-.[27]

(iii) In Tamil Nadu the earnings of basket weavers have declined from Rs.8 per day in the early seventies to Rs.6 in the early 1980s because bamboos are increasingly sold to paper mills. What is more, the basket weavers are now subject to sudden periods of unemployment.[27]

(iv) Bhabbar grass is sold by Uttar Pradesh Forest Corporation at an average of Rs.72.50 per quintal to rope makers. Perversely, however, the ceiling price of the grass sold to paper mills - the major customer is Ballarpur Paper Mills at Yamunanagar in Haryana - is only Rs.40 per quintal.[28]

(c) People living in and nearby areas of forest have enjoyed from time immemorial unbridled rights on forest wealth. Their total economy is forest based from food, fuel, fooder, housing, agricultural implements to income earning activities. Over a period of time, specifically after 1951, their rights have seen continuous erosion. From unbridled rights to concessions

to sale on nominal charges has been a long and continuous process of erosion of rights of people. Chowdhry Committee Report[29] makes a fairly comprehensive listing of the current rights and concessions enjoyed by the people in 12 states in relation to fuelwood, timber, bamboos and other MFP. A careful study of the report reveals that in the states of Andhra Pradesh, Karnataka and West Bengal, fuelwood collection is not allowed. In Karnataka, firewood is obtained on head loads and cart loads on payment of a licence fee. In West Bengal limited concessions are given to forest villages only. Despite the policy of A.P., all people collect fuelwood, although only forest dwellers are allowed free collection for domestic consumption. On the other hand, in Bihar and Madhya Pradesh, fuelwood collection on headloads is allowed both for demestic consumption and sale. In other states collection is allowed for demestic consumption only.

As far as small timber and bamboos are concerned except for some north-eastern states, most other states charge (erroneosuly labelled as concessional rate) a fee from village people. In most cases, concessional supplies is from forest depot or nistar depots. Additional investment required for purchase of raw material and availability of raw material away from producing centres has effected SFE very adversely. The worst sufferers being the women, unable to make additional investments and procure material from distant procurement centres. It seems that women are seen to be economic only when the entire production process is based on exploitation of their labour. Yet some income is better than no income. Erosion of their rights and emerging bias in favour of large industries is depriving them of even this income. It is difficult to say what is more exploitative: less than justifiable income by exploitation of their labour or no opportunity to earn any livelihood.

(d) While the biggest threat to the livelihood of people dependent on MFP collection and other SFE has come from large scale deforestation, new afforestation efforts and the composition of new plantations does not seem to hold much promise for them.

Changing composition of forests shows the predominance of species, which do not yield or yield very little of the MFP items, in the collection and processing of which villages communities particularly women, have been getting employment. The hue and cry that has created country-wide awareness about deforestation has led to initiation of several afforestation efforts. These efforts have, however, largely contributed to development of raw material base for large industries, with absolutely no regard to the requirement of SFE. If one were to compare the species composition of new forests and MFP collection in the past from various states, there will be no correlation between the two. Minimum of 75% of the species that are being planted are for the purposes of large industries and even the remaining 25% have very little relationship with current MFP collected or other SFE. Thus not only deforestation has decimated SFE but new afforestation also does not hold any promise. There is therefore no surprise that tribals and other village communities are protesting violently against the changing composition of their forests. "In Bihar, the tribal groups have been demanding for a long time a separate State, Jharkhand. Forest related issues have become a subject of a major revolt against the State Administration. Hundreds of tribals have been arrested over the last four years and at least 25 killed.

The main forest issue here is the replacement of native sal trees by teak by the Bihar Forest Development Corporation, an activity which began in 1977 in the Singhbhum district of the Chhota Nagpur Plateau.

Teak is a purely commercial timber of no value to the tribals or their cattle .....

In 1978, after nearly a year of petitioning the Government against teak plantations, the Singhbhum tribals began raiding teak nurseries, destroying saplings and forest buildings. In mid - 1978, forest officials inspecting a teak nursery were locked up for 22 hours and had to be rescued by the police. As the tribal opposition grew, it met with stiff resistence from the State Administration. Between November 1978 and

January 1979, the police fired on demonstrators in Singhbhum on at least six occasions. As A.K.Roy, an M.P. from the area puts it, for the tribals,sal has become, symbol of Jharkhand and sagwan (teak) a symbol of Bihar."[30] Other examples of protests against changing composition of forests are Appiko movement in Karnataka against Eculayptus and movement against pine plantations in Bastar in Madhya Pradesh. It is not in the least surprising that women have played a key role in most of the above-mentioned protest movements. For them, erosion of raw-material base is essentially erosion of life support system.

VII FINANCIAL STRUCTURE OF SFE

Major characteristics of SFE in terms of finance and organisation structure can be summarised as under :-

i) A major protion of SFE fall in self-employment sector. Some SFE are in household sector and still fewer in non-household cottage sector. Approximately 70% of SFE enterprises are pursued as self-employment venture (100% of fuelwood collection, fodder collection and MFP collection ventures are self-employment or wage labour ventures. Similarly 50% of MFP processing is also done by individuals.)

ii) Investment per enterprise is very low, resulting in low production. Using NSS data (29th round) on self-employment in non-agriculture sector for 15 states, total working capital requirement per enterprise for 4 types of SFE, vary from Rs.0.59 in M.P. to Rs.395/- only. (Please annexure 3).

Dr. Nirmal Chandra Sahu in his doctoral dissertation on "Economics of Forest Resources : Problems and Policies in a Regional Economy";[31] provides significant data on financial structures of some of the forest based enterprises for the State of Orissa. While Dr. Sahu's findings supports the above mentioned findings on national scale, it also provides additional data on value added. It is difficult to assume the suitability of this data for the entire economy but it can difinitely be used as an illustration to investigate the structure of SFE where women play a significant role and compare it with the other forest based enterprises. That data from Dr. Sahu's dissertation (published as a book)* has been segregated according to the classification followed in this paper and has been presented in the table;

Table 3

Enterprises	Productive Capital employed	No.of persons employed	Value added by manu-facturer	Ratio of value added to Capital employed	Capital employed per person employed	Year to which data refers
1	2 [Rs.in lakhs]	3.	4.[Rs. in lakhs]	5. %	6.[in Rs.]	7.
Type A (SFE)						
i) Bamboo & Cane	57.24	63620	168.37	294%	90/-	1969
ii) tobacco manufactu-ring inclu-ding 'bidi' making(SSI sector)	3.06	3590	85.75	2802%	85/-	1969
iii) tobacco manufacturing including 'bidi'making (Factory Sector)	27.69	555	27.90	100%	4989/-	1973
TOTAL	87.99	67765	282.02	320%	130/-	-
Type B (Non SFE)						
i) Saw Mills	160.61	2266	68.30	43%	7088/-	1973
ii) Paper & paper product	2832.31	7822	964.29	34%	36210/-	1973
iii) Wooden furniture & fixtures	26.50	435	7.91	30%	6092/-	1973
iv) Woodware	158.60	50450	363.04	229%	314/-	1969
	3178.02	60973	1403.54	44%	5212/-	

Combining the results obtained from this table with the earlier findings, it may be concluded that -

(i) The SFF (showing greater participation rate of women) yield higher value added for every rupee of investment - total investment itself being very low.

(ii) Such SFE show very small investment for creation of employment opportunities as compared to the other forest based enterprises.

Despite the fact that value added per rupee of investment is very high for SEF, overall quantum of surplus remains very low. Further investigation on distribution of 'surplus' will help in determining what actual benefits accrue to women. In absence of data on distribution of surplus, one can only hypothesise that when divisible surplus is small and if one of the bargaining partner is weak (as women entrepreneurs are because of lack of holding capacity) he (she) is usually the sufferer notwithstanding protective legislation (Minimum Wages Act etc.)

With the erosion of rights in forest areas, working capital requirement of SFE will go up. They already show an upward trend in case of bamboo products. Without proper credit facilities it would be difficult for number of women to pursue these activities. Their credit requirement will go up not only for working capital for raw material but also for increasing the production to enable them to organise the marketing of their products, so that distress selling does not take place. Increased credit requirements and need for organised marketing will pose a very big challenge to the position of women in SFE. In a number of other industries experience shows that banking transactions and creation of more organised structures have usually worked against women's participation. By far, KVIC is the only organisation which has been able to maintain and in some cases increase women's participation rate, even after getting into the business of credit facilities and organised markeing. (Please see Table 4).

Table 4

MEN PARTICIPATION IN KVIC SECTOR OF SFE *

		App. % of Women Participation
1.	ge Match	45
2.	lur making and (palm products	35
3	Ndible oils aoap	40
4	Hade paper	10
5	Cction of Forest P\& for medicinal puses	50
6	Co;tion of	
	(i;ums	50
	(ii)esins	20
7	Kat	50
8	Bamt and cane work	35 to 40

* Table based o data provided by in the article "Technologies for reducing drudgery for rural women : Experience of Khadi and V.I. Commission by Tara R. Sathe in 'Women and Technology' - 1985 page 86.

VIII. **ROLE OF GOVERNMENT** : In the earlier sections, it has already been pointed out that (a) deforestation has had adverse effects on the very survival of SFEs and the worst sufferers have been the women. Government, being the sole owner of forest wealth in country, cannot escape its responsibility for this plight of women. (b) Government's afforestation efforts have disregarded the requirements of raw material by SFE and have mostly concentrated on developing raw material base for large industries. (c) Very little effort has been made to improve technical skills by training of women entrepreneurs or for providing some sort of security to them by such intervention which could have established the uncertain markets. These are the examples where the adverse effects on women are mostly because the Government has ignored or has just not recognised the importance of SFE or its interrelationship with the quality of life of women. However, even in the areas where Govt. has made intervention also do not seem to have shown any improvement. In this section, some of these interventions are analysed.

In order to make adequate and sustained supplyof MFP to village, small and medium scale industries and at the time, to ensure remunerative rates to primary collectors, trade of MFP items in some of the states was nationalised. Through suitable legislation some states acquired monopoly rights to procure nationalised items. A number of states created separate agencies for the purpose.

In Andhra Pradesh, Forest Department carries out state trading in Tendu leaves while the collection and marketing of other MFP items have been given on monopoly basis to Girijan Cooperative Corporation Ltd. Visakhapatnam. In Bihar, Kendu (Tendu) leaves and oil seeds (Sal, Karanj, Mahua and Kusum) are nationalised items. Kendu leaves collection is being undertaken departmentaly while the Forest Development Corporation has monopoly over oil seeds and

their procurement is being done by involving LAMPS and other agencies. Gujarat has established "Gujarat Forest Development Corporation" which procures MFP like Timru (Bidi) leaves, Madhua flowers and seeds, Pusad seeds, gums and other items on monopoly basis. In M.P. Tendu leaves, sal seed, Harra, Gums (five types), Khairwood, and Bamboo are nationalised items specified for monopoly state trading. Gums, Khairwood, and Bamboo are collected through departmental agency. Tendu leaves, salseed and Harra were largely being dealt with through purchaser - agent system till recently, but the M.P. Government has now switched over to direct tender system. However in the tribal districts MARKFED has been appointed as the purchaser and LAMPS as agent. In Orissa, Kundu leaves are collected by Forest Department but marketing is handled by Orissa Forest Corporation. The State has nationalised the trade of sal seeds. In Rajasthan, in the tribal areas, MFP collection monopoly has been given to Tribal Area Development Cooperative Federation which involves the LAMPS in collection of grasses, gums, fruits, medicinal plants etc.

The objective of giving description of nationalisation of various items is to show that such 'nationalisation' of the trade of M.F.P. has been done in bits and parts, confined more to the large-scale operations and more remunerative items. The objective if any, seems to be the maximisation of revenue for the State Government. Indeed, the Government of Madhya Pradesh has almost reversed its policy in case of tendu leaves, harra and salseed collection and 'nationalisation' remains only in name to the extent it gives rights to the state for collection of revenue from contractors. It will also be observed that in Bihar, lac is a very important item but has not been nationalised. It is anybody's case if it is so because of uncertain export market. In the case of Rajasthan, it has been observed that "No attempt has been made towards regeneration of MFP items, MFP collection

has in fact gone down year after year". In 1981, National Committee on the Development of Back ward Area, in its report on tribal areas summed up the experience of nationalisation of MFP in these words :-

"The trade in some of the minor forest produce was nationalised in some States. The States acquired through suitable legislations, monopoly rights to purchase the nationalised items. They also fixed the charge for collection of minor forest produce. However, the situation did not improve substantially, even in nationalised commodities. The States, started the practice of sale of future collection to the contractors and entered into agreements with them accordingly. Since under the law only State can purchase the nationalised commodities, the collection in some cases is from the tribals directly by the department, but in most cases it is done through agents formally or informally. The agents appointed by the State are generally men of the final purchaser because it solves the problem of quality of collection and handling storage, finaces etc. which would be the responsibility of the departments. The agents purchase the produce formally on behalf of the department but the collection is simultaneously deemed to be handed over to the final purchaser. The state in this arrangement becomes entitled to the margin between the final sale price and the collection charges, which may be mutually agreed to. In this arrangement the primary objective of removing the middleman and passing on the maximum benefit to the primary collector is lost. In many cases, there has been a reversal of the policy of nationalisation and the old system of working through the contractors has been resumed."

The collection of forest produce through contractors has led to heavy exploitation of tribals all over India. Firstly, contractors rarely hire local tribals who inhabit

the forests but instead bring in work gangs from outside. Secondly, even if they do hire tribals, they pay them very little. Contractors in Madhya Pradesh, for instance pay local tribals Rs.50/- a quintal for sal seeds. Then they pay the State Government royalty of Rs.30/- but finally sell the product at Rs.250/- a quintal a profit of 200%. In a brilliant analysis of the situation, Bharat Dogra[33] in his paper "Forest people - Victims of Ever-changing yet unchanging official policy" mentions :-

"That the implementation of the policy has been slow, however is not our main complaint with the nationalisation of M.F.P. The main complaint is that in the existing rural power structure where it has been implemented, nationalisation has generally dissolved into reprivatisation in one form or other, with the vested interests entering the new frame work also and what is ultimately more important, the working and living condition of the MFP gatherers not improving in a significant way."

These observations are sufficient to highlight the failure of the government agencies even in those areas where they made direct intervention.

IX CONCLUSION

(i) Participation of women is higher for those forest enterprise which are dependent on (a) usage of local skills and local village level technology and (b) unit of production in these enterprises is such that it can be pursued as a self-employment venture or a household enterprise or a non household cottage industry.

(ii) Participation of women in forest enterprises shows a significant decline when the technology becomes more mechanised and production is organised in factory type establishments.

(iii) The above mentioned results (i) and (ii) hold good for both rural and urban women but the decline in rural women's participation rate in forest enterprises is much sharper than the urban women when production is by more mechanised processes in factory type establishments.

(iv) It is estimated that forest based enterprises provide a minimum of 1622.677 million days of employment. Of this, women contribute 571.851 million days of labour. More than 90 percent of women's contribution to forest based enterprises is in small scale sector.

(v) Although the market for SFE products is large as far as producers are concerned, the accessible market is restricted to local markets and intermediaries operating in the area. Limited access to market leads to smaller surplus eroding their bargaining capacity and making women more prone to exploitation.

(vi) Uncertainly of market (in terms of demand and prices) and women's position at the lower end of technological spectrum is intrinsically linked.

(vii) With the present scale of deforestation, the search of women for MFP (which is the main raw-material of their enterprises and in some cases their only source of livelihood) is becoming more intense, back-breaking and unremunerative.

(viii) Erosion of traditional rights over forest produce and biased pricing of raw-material in favour of large industries has affected SFE adversely. The worst sufferers are women because of their inability to make additional investment and procure materials from places far away from producing centres.

(ix) Efforts at regeneration of forests are independent of the need of raw material of SFE and do not hold any promise of improvement in the current situation.

(x) Value added per rupee of investment is very high for SFE but the overall quantum of surplus remains very low.

(xi) Barring some efforts by agencies like KVIC, no attempt has been made to improve technical skills by training of women enterprenures or for providing some sort of security to them by such interventions which could have established the uncertain markets. Even in the areas where Government has made direct intervention, no improvement is noticeable in position of women in particular and SFE in general.

ANNEXURE I
RATIONALE FOR THE ADOPTED DEFINITION

The necessity for developing a definition of Small Scale Forest Enterprises is felt because

(i) There is no standard definition of forest enterprises

(ii) There is no standard definition of Small Scale Forest Enteprises, and

as a result (as has already been mentioned in the text) there are a number of definitions which are currently being used, each of them reflecting a particular point of view or evolved to serve a particular purpose. A similar attempt has been made here to develop a working definition of Small Scale Forest Enterprises with specific purpose of understanding the role of women.

A perusal of prevalent definitions* shows the following general characteristics :

(i) Determinants of the size of enterprise are level of investment and number of workers.

(ii) Determinant of a forestry activity to qualify as forest enterprise is 'processing' of forest produce.

(iii) Type of technology, non-processing activities, region-specific and mobile activities have been ignored.

In absence of a standard definition, it will be necessary to develop an appropriate definition of Small Scale Forest Enterprises (SFE) which takes into account the peculirities of forest based activities in India and helps in bringing out the roles of women in proper perspective. The first exercise in this task is to judge

if the 'determinants' for forest enterprises in the above mentioned definitions are relevant in the Indian context. It is equally necessary to understand if the absence of some determinants in the prevalent definitions affects the appropriateness of a definition.

(a) 'Processing' has been considered as a key determinant by a number of definitions of forest enterprises. In the Indian context, this emphasis on processing seems to be a result of predominances of agriculture sector, of which forestry sector was a part. Till very recently, both in terms of planning process as well as maintenance of statistics, forestry and forest based enterprises formed a part of agriculture and Agro-Industries respectively. The importance attached to 'processing' in defining forest enterprises can be attributed to this line of thought whose origin is agriculture and is not in consonance with the fact that while there is some logic in considering 'processing' of agriculture produce as key determinant of Agro-industries (in view of short rotation of crops and almost no other way of getting the raw materials except by harvesting the crops). it is not so clear in the case of forest enterprises. Unlike in the agriculture sector, usually the periodic collection of a number of forest products leave the forests standing (in tact). Thus the enterprise does not destory the factory (forests) which produces the raw material. Again, unlike the harvesting of agriculture produce, collection of forest products in India is not an easy exercise in view of the problems like (1) very scattered growth of trees (ii) wide variation in the yield from year to year (iii) short collection season (iv) lack of transport and road facilities and (v) lack of adeqauate finance. Against such odds, forest products are collected and like any other enterprise packaged in a specific way and made available to customers at predetermined distribution points. The entire exercise involves a great deal of investment of time (in location and transportation of products) and understanding of the market. These activities are, however, pursued in non-organised sector and hence have not been recognised as forest enterprises. Breaking away from agriculture syndrome and giving due recognition

to the circumstances in the Indian context, 'processing' does not seem to be a necessary condition for classifying a forest activity as an enterprise.

(b) Key determinants for designating an enterprise as a small scale enterprise are size of investment and number of workers according to prevalent official definitions. Current administrative orders define small scale industry as all those enterprises where investment in plant and machinery does not exceed Rs. 3.5 million. Similarly, small scale industry, according to labour laws is defined as those which employ 10 to 49 workers with power and 20 to 99 workers without power. Reality of forest enterprises does not suggest acceptance of these definitions if the objective is to understand women's role in them. Consider for example the case of match industry and oil extraction from forestry seeds. Matches are made in both mechanised units and non-mechanised cottage industries. In both the cases investment is far less than Rs. 3.5 million. Similarly oil extraction from forestry seeds is done through village Dhanis as well as in integrated plants, investment limit not exceeding Rs. 3.5 million in either of the cases. However, women play a greater role in non-mechanised cottage match industry and village oil extraction units as compared to machanised match industry and integrated oil extraction plants. Similarly consider the example bidi industry - both as leaves collection enterprise and bidi making. As such leaf collection is done by individuals for a contractor and bidi making is usually done at home working for the same contrcator or other contractors. A single corporate entity may be controlling a number of such contrattors and can be very large in terms of number of workers it controls. Irrespective of the size of such units, women play a very significant role in this industry mainly because they can pursue leaf collection as a self-employment venture and can make bidis as a household activity. Thus instead of size of investment and number of workers in an enterprise, it is the unit of production which is important as far as women are concerned. When the unit of production is small and can be pursued as a self-employment, household, non-household

cottage activity, women participate in it more intensely. As the unit of production becomes large, enterprises become more organised into factory type of establishments women are pushed out of jobs, firstly because their time allocation to various activities is no more a matter of their discretion and secondly protection offered by industrial laws in such units attract more dominant male members in the family to displace their own women in such jobs.

The size of investment, and number of workers as determinants of SFE also prove to be of little relevance. It has already been stated that unit of production is a more relevant criterian and non-processing activities do constitute a part of SFE in the Indian situation.

It is still to be seen if the absence of reference to type of technology in the current definitions restricts the scope of SFE.

(c) Available literature shows that there is a definite link between type of technology used in an enterprise and women's participation in it. When the work in an enterprise is dependent on native skills and local village-level technology women's opportunity to participate in the enterprise is greater. However, when local skills and local technology is substituted by acquired skills (through training) and more mechanised processes, women get displaced. Examples of match industry and oil extraction units have already been quoted. These observations are also substantiated by other studies in non-forestry sector. Technology range in forest enterprises vary from collection techniques of various minor forest produce to intergrated paper mills and it will be appropriate to define the type of technologies relevant to SFE.

New criterian for defining SFE that emerges from the above-mentioned factors includes 'units of organisation' and 'type of technology' as key determinants. It also rejects processing as a necessary criterian for an SFE and includes collection of forest produce as a relevant enterprise in the Indian context. Inclusion

of collection of forest produce, however, introduces a new dimension to the definition of SFE, which merits some discussion.

(d) It has already been mentioned that a substantial portion of forest produce is collected to meet household needs and this portion is not traded in the market. Relevant question here is whether all collection activities, be they for self-consumption or for market, should be treated as an SFE or only those collection activities which result in market exchange should be included. It should be noted that collection of forest produce for domestic consumption is very important for the quality of life of rural population, specifically that of women. At the same time, it may be mentioned that this activity (collection for self-consumption), its growth and dynamics are dependent on very different factors than the activities which deal with market situation. While in the first case, growth of an activity is dependent on legal rights and customary rights of village communities, in the second case, market forces like competition, prices, location etc. play an important role. Clubbing together all collection activities will distort the analysis at a later stage. While the analysis of collection activities for self-consumption will lead to evaluation of rights and concessions of village communities, relevance of various developmental strategies, availability of substitute products which fulfil the same needs as the collected forest products and eventually the factors affecting the quality of life of rural women. It is clearly beyond the scope of this paper, which essentially needs to concentrate on size of market, dimensions of market activities, pricing of products, availability of raw material and financial structures within which SFE function. Therefore, despite the importance of collection activities for self consumption they are not considered as SFE.

(e) It is also important to define the boundaries of SFE before specifying the new definition. Forestry sector encompasses activities which start from raising of saplings, plantation, maintenance, harvesting of forest produce, primary processing, secondary processing and in a number of case to tertiary processing. Inputs into the

forestry sector) like raising saplings, plantation etc) are however, pre-forest activities and not forest based activities and hence have not been considered in this paper. After the harvesting of forest produce, a number of primary processing activities take place (like coversion of wood into logs) to make forest products amenable for utilisation by secondary industries (like furniture marking etc). After the secondary processing, the products find multiple usage, but it is not easy to trace further processing activities on these products and statistically it is a very grey area. Consider the example of conversion of wood into pulp and paper, then printing of newspaper and thereafter recycling of waste or extraction of katha from wood of Khair trees and the activities like pan shops in the tertiary sector which use this product. For these reasons, teritiary sector has not been taken into account.

In view of the abovementioned factors, the following definition of SFE has been adopted in this paper :

"Small Scale Forest Enterprise includes all such efforts which depend on forests for supply of goods (both consumption goods and intermediate goods) and are traded in formal and non-formal markets and (i) such efforts are dependent on utilisation of local skills and local village level technology, and (ii) the unit of production is such that it can be pursued as a self employment or household activity or non-household cottage industry."

This definition excludes inputs into forestry sector and production in tertiary sector.

ANNEXURE II

Production and Employment Estimates of Forest Based Enterprises

TYPE A : Small Scale Forest Enterprises (SFE)

(a) **Collection & Gathering**

(i) **Fuelwood:**

Various estimates of fuelwood collection move in a very wide range, both in terms of quantity of fuelwood and the manpower involved in this enterprise. Variation in quantity ranges from 11,293,000 m^3 (India's Forests, 1980 published by Central Forestry Commission, figures relate to year 1975-76)[37] to 66,136,000 m^3 (Dr.M.M.Pant, Forest Economics & Valuation, figures relate to the year 1973-74).[38] The difference in these two extremes is mainly because official figures use only the recorded out-turn of fuelwood, while Dr. Pant's estimate is based on actual surveys carried out by various agencies which show the illicit removal of firewood as hadloads to be four times that of official outturn figures. Removal of firewood as headloads by people is a self-employment activity and therefore belongs to type A enterprises as per the definition. Since the estimate of Dr. Pant is based on use of actual surveys, it represents a far more convincing quantity of removal of firewood. However, all the firewood that is removed as headloads is not traded. In terms of the definition of SFE used in this paper, trading of firewood is an essential condition for it to be considered as an enterprise. It is estimated in the Report of Working Group on Energy Policy (1979)[39] - Planning Commission that only 12.7% of firewood is purchased for consumption in the household sector. Thus of the total firewood removed from forest for non-industrial purposes, only 12.7% is traded in the markets. On the basis of Dr.Pant's

estimate, this portion represents app. 8,399,272 M^3 of fuelwood. Using the conversion factor for calculation of manpower requirement for fuelwood collection (1.3 M^3 = 25 mandays), this quantity of fuelwood provides employment to the tune of 161,518 million man-days.

(ii) **Fodder Collection:**

Fodder collection as different from grazing presents severe problems of estimation of quantity and employment. NSS estimate is the only one which gives the statistics of people employed in fodder collection. According to NSS data there were about 16900 persons engaged in this enterprise and assuming 60 days of employment (being seasonal), total mandays of work generated by this enterprise works out to be 1014000 mandays. According to one estimate,* it means production (collection) of 25350 tonnes of grass. Except for few large defence establishments, and land owned by other Govt.deptt. most of this collection relates to forest area.

(iii) **Collection of Minor Forest Produce:**

Table II.a. shows different estimates of production and employment for various minor forest produce. It also states the reasons for accepting a particular set of estimate. It may be noted that :

- the list of MFP is not comprehensive and excludes some important items like collection of wild edible fruits which are sold in the local markets, leaves of various types and bark and roots of several plants which have a traditional market. These have not been included because there is no data or even an estimate of the quantity of collection of these products.

TABLE II a

Collection of minor forest produce[41]

Source Name of MFP	National Commission on Agriculture			Dr.M.M. Pant			Shri D.N.Tiwari			Accepted Estimate			REMARKS
	Production	Employment	Year	Production	Employment	Year	Production	Employment	Year	Production	Employment	Year	
Fibres & Flosses	(1) 5500 T.	--	1974	83600 T.	17.52 mmd.	1975/76	--	---	--	83600 T.	17.52 mmd	1975/76	Although based on rough estimate through indirect means, Dr. Pant's is the only estimate with wide coverage.
Bamboos, Canes, & Grasses (other than oil bearing)	(2) 220000 T.	--	1965	4525000 T.	56.68 mmd	1977/78	2206600 T.	—	1977/78	2206600 T.	27.64 mmd	1977/78	Estimate of D.N.Tiwari uses data collected from state Govt. resources, while Dr.Pant does not mention the source of data for this category. Estimate of NCA is in-complete and very old. Employment no. are calculated by taking the same conversion factor as by Dr. M.M. Pant.
Collection of raw material for essential oil	(3) 9833 T.	294990 mandays	1972/73	32266 T.	968000 mandays	--	10666 T.	320000 mandays	--	32266 T.	968000 mandays	--	NCA data is very old. Tiwari's estimate includes only certain items. Dr.Pant's seems to be more comprehensive estimate.
Collection of oil seeds	(4) 233515 T. (Nine variation only)	17.229 mmd.	1970/71	1325120 T.	60.48 mmd.	--	312000 T.	(4) 14.04 mmd.	1977/78	312000 T.	(49) 31.2 mmd.	1977/78	Tiwari mentions that oil production in any year has not exceeded 0.078 m. tonnes. Assuming a ratio of 25% oil yield (used by NCA), collection could not have exceeded 312000 T.
Tans and Dyes	107500 T.	(5) 2.14 mmd.	1967	115000 T.	2.30 mmd.	--	---	--	---	115000 T.	2.30 mmd.	--	Both the estimate are on lower side and include only myrobalans. Other tannin like barks of wattle, guavava and babul are not included.

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Source / Name of MFP	National Commission on Agriculture			Dr.M.M. Pant			Shri D.N.Tiwari			Accepted Estimate			REMARKS
	Production	Employment	Year	Production	Employment	Year	Production	Employment	Year	Production	Employment	Year	
Gums and Resins	(6) 58716 T.	--	1972 and 1969/70	64000 T.	26.40 mmd.	--	(7) 107344 T.	51.68 mmd.	1977/78	107344 T.	51.68 mmd.	1977/78	Since all the estimate are on lower side (as they do not include collection of several varieties of gum) highest estimate of prodn. and manpower given by Tiwari have been accepted.
Drugs, spices and insecticides	--	--	--	7740 T.	77.40 mmd	--	6000 M.T.	--	--	7740 T.	77.40 mmd	--	Only available estimate.
Leaves	300000 T.	--	--	320000 T.	34.24 mmd	1976	6.11 million standard bags tonnes	67.5 mmd	1980/81	320000 T	67.5 mmd	1976/1980/81	All the estimates are on lower side and include production and employment figures for collection of Kendu leaves only. Highest available estimates have been taken.
Lac Collection	29669 T.	3 million tribal cultivators	Avg. for 1966-67 to 1970-71	41500 T	4.15 mmd.	--	18486 T.	3 million cultivators	Avg. annual prodn. for 1976-81	41500 T.	30 mmd	--	i) Both NCA and Tiwari mention that 3 million tribal cultivators collect lac. ii) Lac is seasonally harvested Rangeeni strain accounts for 80 to 90 percent of lac in India, which is harvested in October, November. Assuming that each tribal cultivator gets just about 10 days of employment during the season employment cannot be less than 30 mmd. iii) Due to price fluctuation production also shows an erratic band. But the highest figure reflections for 1950-61 and has been accepted.

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Source Name of MFP	National Commission on Agriculture			Dr.M.M. Pant			Shri D.N.Tiwari			Accepted Estimate			REMARKS
	Production	Employment	Year	Production	Employment	Year	Production	Employment	Year	Production	Employment	Year	
Honey and Wax	---	---	---	170 T	0.17 mmd	---	---	---	---	170 T	0.17 mmd	---	Only available estimates
Pine Oleo-resins	---	---	---	78100 T	9.52 mmd	1974/75	---	---	---	78100 T.	9.52 mmd	1974/75	
Sandal wood	---	---	---	2190 T	0.08 mmd	---	---	---	---	2190 T	0.08 mmd	---	
Seed for propogation purposes	---	---	---	5300 T	3.25 mmd	---	---	---	---	5300 T	3.25 mmd		

1. refers to only two items viz. sisal hemp (as are sisalana) and Kapok (Ceiba pentandra) floss.
2. excluding the states of Tamil Nadu and Manipur, consists of 60000 tonnes of sabai grass and 1.6 lac tonnes of bamboo.
3. Separate data for collection of raw material for essential oils is not available. From the end-product prodn. estimates of raw material were derived by assuming 15% oil availability. For estimate of employment figures it was assumed that collection of 1 tonne will take 30 mandays. Using these assumption production figures given by NCA, Dr.Pant and Shri DN Tiwari were converted for raw material estimates and employment generated.
4. Employment generation assumed at 45 mandays per tonne of oil seed collection.

49. Avg. collection of seed per manday per Kg. = 10 (slightly less than NCA estimates)

6. Includes 17000 T. of gums of 3 variation (1972) & 41,716 T. of cruderesins (1969-70)
7. Includes 45500 tonnes of gum karaya, ghatti and others and 61844 tonnes of Resin. Tiwari also provides production figures of gum which are not included in this estimate. (There is a discrepancy in the statistics quoted by Tiwari. Page 99 says annual collection of resin as 20000 tonnes, while page 100 mentions resin production to be 61844 tonnes in 1977-78).
8. Employment @ 1 Kg./per day for gum and
   @ 10 m.d./quintal for resin
   = 045500000 m.d. for gum
   = 006184400 m.d. for resin
   = 51684400

Most of the estimates of production are on lower side. Various authors have relied on official estimates, which usually refer to more organised part of the entire trade and leave out that part which is in the unorganised sector. Even for the products which are nationalised by various state Govts., no estimates are available on pilfirage for which no revenue is collected. It should therefore be assumed that the quantities that are indicated in the Table represent a conservative estimate of production.

- All the statistics relating to employment are estimates made by various authors. Most of these estimates follow a direct correlation with production and since production itself is underestimated, there is very little likelihood that estimated employment figures are over-estimated even if in one or two cases per unit of employment has been assumed on a higher side.

Keeping in view the abovementioned limitations, it can be safely concluded that at least 3811810 tonnes of MFP are annually collected in India, providing employment at least to the tune of 319.23 million man-days.

(b) **Processing of MFP:**

Table II - b - shows the estimate of production by processing of MFP and the estimated employment through this activity. The following factors must be kept in mind while using these estimates:

- A number of processing like plate making, cups & brooms based on MFP are not included because no estimates are available. Most of the known and important activities are included.

TABLE II b

PRODUCTION & EMPLOYMENT BY PROCESSING OF MFP [42]

Name of MFP processing Enterprise	Accepted Estimate			REMARKS
	Production	Employment	Year	
Charcoal making	1653600 T.	41.34 mmd	--	Only available estimate (By Dr.MM Pant).Other estimate given by the census of India 1971,the Indian Standard Industrial Classification)workers employed in forests for production of fuel including charcoal number 28910 persons. Assuming 500 mandays of work/yrl this works out to be 8.67 mmd,which is very low.
Rope making (by using grasses)	80000 T.	53.34 mmd.	NAC (1976)	No reliable estimates are available. NAC estimates collection of grass (Eulaliopsis binata) to the tune of 80,000 T.p.a.Employment on this basis has been calculated @ 1½ Kg./manday of rope making.
Essential Oils	4840 T	18.42 mmd.	Pant (1984)	Pant's estimate includes both employment for collection and processing of essential oils. Here the figures have been seperated and manpower required for collectioin of raw material has been estimated in earlier section.
Oil Seeds	59000 T.	2.95 mmd.	1970 71(NCA)	Employment estimated @ 1 qt.of oil/5 manday.
Tannins from myrobalans	34500 T.	0.69 mmd	---	i)Estimate of production on the basis of 30% average yeield (NCA Vol.IX, Page 243).
Processing of crude resin	31218 T. (resin) 7860 Kilo litre (Turpentine)	5.08 mmd	1969-70	i) Value/tonne of Resin = Rs.2440/- Value/kilolitre of Terpentine = Rs.1100/- (1970-71 prices/NCA/IX page 283.) ii) Assuming 30% of Value as wages and wage rate of Rs.5/- day (1970-71)employment figures have been estimated. Employment estimates under valued-sum proving not included,production figures very old.

Name of MFP processing Enterprises	Accepted estimate production	Employment	Year	REMARKS
Manufacture of Bidi	Processing of 320000 Tonnes of Kendu leaves	60.33 mmd		(i) Employment figures arrived at by assuming 300 m.d.of work per person engaged in this trade and applying this factor to number of persons estimated by N.S.S. 320000 T.of bidi leaves mean 320000 T. x 15 manak bags = 4.8 m. 4.8m x 50000 leaves/manakbag = 240,000 m. leaves. Less 10% = 216,000 m. bidis assuming even as high production as 1000 bidis/person/day total employment = 216 mmd.
Lac Products	1960 T	0.196 mmd		(i) only ro percent production is consumed within country (NCA)/Vol. ix/page 258).
(i)Seedlac				
(ii)Shellac (handmade)	2378 T.	0.476 "	Triennium	(ii) Export figures increased by 10% to estimate total production in country.
(iii)Shellac (machine made	4757 T.	0.951 "	average	
(iv)button and garnet lac	803 T.	0.401 "	1971 72 to 1973-74	(iii) Employment @ 10 Kg/manday for seedlac, 5 Kg/m.d.for shellac and 2 Kg./m.d. for others.
(v)other lacs	62 T.	0.031 "		
Katha and Cutch	6010 T.	2.98 mmd	Pant ('84)	Only available estimate.
Manufacture of bamboo and cane furnitures fixtures other products and manufacture of wooden & cane boxes,crates, drums barrels,& other wooden containers, baskets & other ratton bamboo reed & willow raw wares made entirely or mainly of cane ratton, reed,bamboo & willow.	2206600 T.	393.75 mmd.	Prodn. (84) Emp.	(i) Production in tonnes is inappropriate. It only conveys that app.2 million tonnes of bamboo was used non-paper making enterprises. It does not include cane, rattan etc.and to that extent is under estimated. (ii) Employment has been arrived at by amalgamating categories is 272,276,277 and 279 of NSS data. This provides estimate of number of persons engaged in these enterprises. Assuming 300 days of employment/person total employment has been estimated.
Total	= 4,405,546 tonnes & 7960 kilolitres			580.935 million mandays

- Estimates of production relate to different periods varying between 1970-71 to 1984. Mainly because a number of these enterprise show a declining trend in production, one has to be very cautions in using these figures. However, care has been taken to err on lower side and to that extent these statistics are realistic.

- Estimate of employment presented a number of difficulties in the sense that some estimates gave the number of persons engaged in particular enterprise without providing any information or period of availability of such employment in a year, while a number of other estimates provided employment figures in term of man-days without providing any information on total number of persons engaged in that enterprise. Range of estimates also vary quite widely and in some cases as much as 300 percent. Care has been taken to accept conservative estimates and bring a uniformity in units without affecting the overall picture.

Keeping these limiations in mind, it is possible to say that processing of MFP provided at least 580.935 million mandays of employment and the volume of processed goods was at least 4,405,546 tonnes.

TYPE B (NON SFE)

(a) **Harvesting of Major Forest Produce (except fuelwood) :**

According to 'India's Forests' 1980, published by Central Forestry Commission, total production of industrial wood in 1976-77 was 8,292,000 M^3, consisting of 3,366,000 M^3 produced in the form of saw logs, veneer logs and logs for sleepers and 4,926,000 M^3 of other industrial wood, Dr.M.M.Pant has estimated total employment provided by harvesting operations of major forest produce (excluding

TABLE II - C

Production and Employment generated by processing of Major Forest Produce[43]

Name of Enterprises	NSS Estimate		Annual survey of Industries (1979/80)		Others		Accepted Estimate		REMARKS
	Prodn	Employment			Prodn	Employment	Prodn	Employment	
Manufacture of Veneer plywood and their products	39400	8776	22545		39.8 million Sq.Metre(CFC)		39.8 million Sq.Metre	39400	
Sawing & planning of wood (other than plywood)	124700	948	3443		30185 T. (CFC)		30185 T.	124700	
Manufacture of structural wooden goods such as beam posts doors and windows.	817400	394	2316				394 lacs	817400	
Manufacture of wooden industrial goods such as babbing blocks,handles, saddling etc.	57000	173	748				173 lacs	57000	
Manufacture of cork and cork products	3700	398	818		1.160 m.sq. mt.of cork sheets		1.160 m.sq. mt.of cork sheets 0.671 m. no.of cork discs.	3700	(i) ASI estimate on employment are lower because it covers only factory sector.Therefore NSS estimates have been accepted except in the case of paper and pulp industry,which is entirely in factory sector and for which ASI gives the latest statistics.
Manufacture of wooden furniture & fixtures	367100	946	5207		0.671 m.No.of cork discs		Rs.946 lacs	367100	
Manufacture of pulp paper and paper board including newsprint	77700	67289	89713		(1977) 1145562 T (India's Forests 1980)		Rs.67289 lacs	89713	(ii) ASI estimates of production are in rupee value and have been accepted only in those cases where physical estimates from other sources were not available.
Manufacture of matches Bullok cart,push carts and handcarts.	168900 1100	7788 --	30797 --		18,270 m.		18,270 m.	168900 1100	
Manufacture of sports and atheletic goods	15100	877	1620		--		Rs.877 lacs	15100	
							eqv. 505.23 M.M.	1684113	

C.F.C. = Central Forestry Commission

fuelwood) to be 54.75 million mandays. His estimates are however based on the output figures of 1973-74. Variation in the output between these two periods is very small and has been ignored.

(b) **Enterprises based on Processing of Major Forest Produce:**

Table II- c - shows various estimates of production and employment in the enterprises based on processing of major forest produce. There are a number of important ommissions in this list because of non-availability of any reliable estimates e.g. toy-manufacturing, agricultural implements, cots (manufactured in villages). Agarbatti, boat building, pencil making etc. Some of these enterprises are of considerable importance in the rural India e.g. agricultural implements. These estimates are therefore not comprehensive. Underestimation is not only due to non-inclusion of a number of enterprises but also due to lower estimation of production and employment of a number of enterprises like bullockcart and pull cart manufacturing. A number of these activities take place in non-organised sector and it is difficult to make reasonable estimates. While these limitations reduce the importance of analysis of enterprises based on major forest produce, yet it can be safely concluded that at least 505.23 million mandays of employment is generated by them every year.

ANNEXURE - 3

VALUE OF ITEMS WORKING CAPITAL PER ENTERPRISE FOR MANUFACTURE AND TOTAL WORKING CAPITAL PER ENTERPRISE.

		Raw Material	Fuel & Lubricant	Semi finished product	Finished product	Total working capital
1.10	ASSAM	37.35	2.13	21.38	42.00	111.34
1.11		122.53	4.31	52.22	97.49	285.16
1.12		-	-	-	-	-
3.10		-	-	-	-	-
1.10	BIHAR	16.27	0.56	7.06	11.31	37.58
1.11		60.40	1.35	14.90	31.72	110.83
1.12		200.00	5.00	30.00	160.00	395.00
3.10		-	-	-	-	4.43
1.10	GUJARAT	170.72	2.29	12.63	45.03	232.03
1.11		27.13	0.09	5.71	11.04	45.84
1.12		-	-	-	-	-
3.10		-	-	-	-	9.57

Annexure - 3 [Contd.]

		Raw material	Fuel Lubricant	Semi finished product	Finished product	Total working capital
1.10	HARYANA	10.00	1.78	2.40	1.77	16.87
1.11		25.42	1.25	16.28	29.95	85.27
1.12		-	-	-	-	-
3.10		-	-	-	-	-
1.10	H.P.	24.12	1.96	0.43	2.23	28.89
1.11		89.18	1.65	12.65	6.17	109.65
1.12		-	-	-	-	-
3.10		-	-	-	-	-
1.10	J & K	335.27	0.20	5.28	1.83	11.60
1.11		4.02	135.00	-	66.67	210.34
1.12		-	-	-	-	-
3.10		-	-	-	-	305.40

Annexure - 3 [Contd.]

		Raw material	Fuel Lubricant	Semi Finished product	Finished product	Total working capital
1.10	KERALA	4.11	-	0.87	9.89	14.91
1.11		35.79	-	16.84	16.47	69.31
1.12		-	-	-	-	-
3.10		-	-	-	-	6.30
1.10	M.P.	4.00	0.34	1.93	7.74	14.10
1.11		2.01	-	0.44	0.96	3.46
1.12		-	-	-	-	-
3.10		-	-	-	-	0.59
1.10	MAHARASHTRA	45.39	0.64	12.14	13.16	73.03
1.11		120.35	0.35	16.82	6.46	146.71
1.12		-	-	-	-	-
3.10		-	-	-	-	3.01

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Annexure - 3 [Contd.]

		Raw material	Fuel Lubricant	Semi finished product	Finished product	Total Working capital
1.10	A.P.	16.00	-	6.00	5.00	27.00
1.11		22.00	2.00	10.00	9.00	43.00
1.12		-	-	-	-	-
3.10		-	-	-	-	-
1.10	KARNATAKA	7.52	-	2.55	1.14	11.34
1.11		21.96	0.05	5.64	6.95	34.77
1.12		-	-	-	-	-
3.10		-	-	-	-	-
1.10	MANIPUR	21.53	-	7.08	8.08	36.69
1.11		134.84	0.16	62.71	71.82	271.62
1.12		-	-	-	-	-
3.10		-	-	-	-	-

Annexure - 3 [Contd.]

		Raw material	Fuel Lubricant	Semi finished product	Finished product	Total Working capital
1.10	MAGHALAYA	150.00	20.00	80.00	-	260.00
1.11		88.5	2.59	10.18	29.61	131.20
1.12		-	-	-	-	-
3.10		-	-	-	-	7.50
1.10	T.N.	15.00	0.08	1.09	3.86	20.10
1.11		5.34	0.12	1.28	3.70	10.45
1.12		-	-	-	-	-
3.10		-	-	-	-	-
1.10	U.P.	46.42	0.66	4.86	10.92	63.98
1.11		22.20	0.74	2.21	14.86	40.30
1.12		-	-	-	-	-
3.10		-	-	-	-	19.35

Annexure - 3 [contd.]

		Raw material	Fuel Lubricant	Semi finished product	Finished product	Total working capital
1.10	W.B.	20.89	0.06	10.96	12.56	44.80
1.11		27.98	0.36	5.95	7.37	41.67
1.12		69.37	0.65	21.75	475.62	267.98
3.10		-	-	-	-	2.03

1.10 : Wood, cork and products

1.11 : Wood, bamboo and cane furniture

1.12 : Paper and products

3.10 : Collectors of forest and miscellaneous products.

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