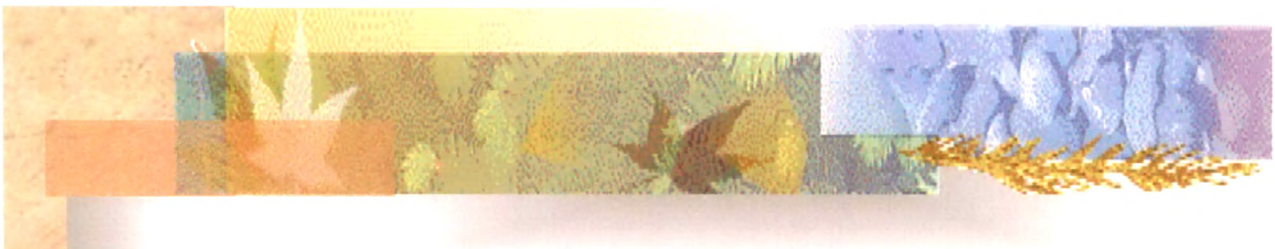


ETHNOLOGY OF TRIBALS

TRIBALS OF CHHOTA-UDEPUR FOREST DIVISION

Forests and tribals, like Hobbesian twins coexist and are inseparable. The dependence of tribals is almost total on the forest and its surroundings where they reside. Forests have provided the tribals home since time immemorial. They also provide shelter, housing material, food, edible fruits, nuts, tubers, flowers, seeds etc. Even today for food the tribals are dependent to a great extent on the minor forest produce as land ownership is marginal. The variety of trees and plants with productive value for the tribals have been traditionally available in the forests may be too many to identify and list. Today, inspite of the large and magnificent advancement in allopathic health care system in the country the tribals still have to recourse extensively and exclusively to plant and animal products since the hospital system is inaccessible in rural areas.

The state of Gujarat with its unique biogeographical and climatic conditions is also rich as far as tribal population is concerned. As per the 1991 census, the tribal population of Gujarat was around 15 % of the state population with nearly 30 tribal communities inhabiting in different hilly tracts of the state. The entire tribal population in Gujarat is concentrated in nine districts ranging from Ahwa (Dangs) to Ambaji (Banaskantha), what is commonly called or described as Eastern belt (Purva patti) of Gujarat state. However, the major tribal pocket are in the districts of Dahod, Dangs, Bharuch, Surat and Vadodara. Though the highest percentage of the tribal population is in the Dangs district, around (94 %), numerically, it is low in the sense that the total or entire population of the Dangs district was merely 1,44,000 (Census 1991). Numerically and also percentage wise, district Dahod (Carved away from Panchmahals district) has a very high tribal population i.e., (around 73 %) of the total population of the district coming around 16 lakhs (Census 1991). The state of Gujarat stands fifth as far as tribal population is concerned after the states of Madhya Pradesh, Orissa, Bihar and Maharashtra (Census, 1991).

The district of Vadodara ranks sixth in Gujarat state as far as tribal population after Dangs, Valsad, Surat, Bharuch and Panchmahals districts. The tribal population of the district of Vadodara was 8,21,649 that accounts to 13.33 % of the total tribal population of the state and 26.59 % of the total population of the district as per 1991 census. As per 1991 census the Scheduled Castes and Scheduled Tribes population

of the Vadodara district was 1,91,876 persons and 8,21,697 persons respectively. The rural-urban breakup of the population is indicted below.

Rural (i) Scheduled Castes : 95,134. (ii) Scheduled Tribes : 7,57,394.

Urban (i) Scheduled Castes : 96,742. (ii) Scheduled Tribes : 64,303.

The comparative tribal population of these six districts is mentioned in the table # 5A.

TABLE 5(A): COMPARATIVE ACCOUNT OF TRIBAL POPULATION WITHIN GUJARAT STATE

Rank	District	Total Population	Tribal Population	% of total Population
1.	Dangs	1,43,490	1,35,386	94.35 %
2.	Valsad	21,73,672	11,81,404	54.35 %
3.	Panchmahals	29,56,456	13,95,050	47.18 %
4.	Bharuch	15,46,145	7,03,956	45.52 %
5.	Surat	33,97,900	12,25,080	36.05 %
6.	**Vadodara**	**30,89,610**	**8,21,697**	**26.59 %**

Source: Census of India, 1991.

The distribution of SC and ST population in six major tribal inhabited districts of Gujarat is given in table # 5B.

TABLE 5(B): PERCENT OF SCs AND STs IN GUJARAT

District	Total Population	All Areas (%)		Rural (%)		Urban (%)	
		SCs	STs	SCs	STs	SCs	STs
Dangs	1,43,490	0.73	93.96	0.18	98.29	5.18	59.07
Valsad	21,73,672	3.03	54.53	2.61	64.79	4.32	22.14
Panchmahals	29,56,456	3.67	47.19	3.41	51.22	5.81	13.23
Bharuch	15,46,145	4.27	45.53	3.74	54.14	6.23	13.67
Surat	33,97,900	3.66	36.05	2.81	65.77	4.50	7.01
Vadodara	**30,89,610**	**6.21**	**26.60**	**5.40**	**43.00**	**7.28**	**4.84**

Source: Census of India, 1991.

It is inferred from the above data that Vadodara district holds a unique position in Gujarat with reference to the tribal population. Chhota-udepur forest division in Vadodara district is the major tribal pocket of the state as well as the district. Following table # 5C gives a comparative position of the tribal population of

Chhota-udepur forest and table # 5D shows the population and literacy rate of the tribal communities of Chhota-udepur forest division.

TABLE 5(C): COMPARATIVE TRIBAL POPULATION OF CHHOTA-UDEPUR

Area	Total Population	Tribal Population	% of total population	% of tribal population to that of state	% of the tribal population to that of district
Gujarat State	4,13,09,582	61,63,890	14.92	-----	-----
Vadodara	30,89,610	8,21,649	26.59	13.33	-----
C-udepur forest division	**7,39,373**	**5,94,503**	**80.40**	**9.64**	**72.35**

Source: Census of India, 1991.

TABLE 5(D): POPULATION OF EACH SCHEDULED TRIBE AND LITERATES AMONG THEM (CHHOTA-UDEPUR FOREST DIVISION)

SC. TRIBE	YEAR	T, R, U.	TOTAL POPULATION			LITERATES		
			PER	M.	F.	PER	M.	F.
Dungra bhil	1961	T	1,124,282	5,71,295	5,52,987	1,10,245	94,900	15,345
		R	1,085,682	5,50,710	5,34,972	1,03,874	89,551	14,323
		U	38,600	20,585	18,015	6,371	5,349	1,022
	% Literate					9.80 %	16.61 %	2.77 %
	1971	T	1,452,987	7,33,026	7,19,961	1,70,536	1,42,447	28,089
		R	1,386,311	6,97,918	6,88,393	1,57,142	1,31,793	25,349
		U	66,676	35,108	31,568	13,394	10,654	2,740
	% Literate					11.73 %	19.43 %	3.90 %
	1981	T	2,030,438	1,028,936	1,001,502	3,69,040	2,86,531	82,509
		R	1,909,234	963,982	945,252	3,34,395	2,60,809	73,586
		U	121,204	64,945	56,250	34,645	25,722	8,923
	% Literate					18.17 %	27.84 %	8.23 %
Dhanka and Tadvi	1961	T	1,28,024	65,429	62,595	20,261	16,857	3,404
		R	1,22,757	62,660	60,097	19,165	15,981	3,184
		U	5,267	2,769	2,498	1,096	876	220
	% Literate					15.82 %	25.76 %	5.43 %
	1971	T	1,38,585	70,843	67,742	23,635	19,402	4,233
		R	1,30,992	66,818	64,174	21,785	17,960	3,825
		U	7,593	4,025	3,568	1,850	1,442	408

	% Literate					17.05 %	27.38 %	6.24 %
	1981	T	1,85,091	95,185	89,906	48,491	36,937	11,554
		R	1,72,931	88,687	84,244	44,579	34,084	10,495
		U	12,160	6,498	5,662	3,912	2,853	1,059
	% Literate					26.19 %	38.80 %	12.85 %
Nayaka	1961	T	1,08,024	54,745	53,279	11,226	9,332	1,894
		R	95,630	48,203	47,427	9,376	7,782	1,594
		U	12,394	6,542	5,852	1,850	1,550	300
	% Literate					10.39 %	17.04 %	3.55 %
	1971	T	2,34,999	1,19,359	1,15,640	22,448	17,989	4,459
		R	2,14,166	1,08,561	1,05,605	18,801	15,240	3,561
		U	28,067	10,798	10,035	3,647	2,749	898
	% Literate					9.55 %	15.07 %	3.85 %
	1981	T	2,80,230	1,42,459	1,37,771	38,825	29,429	9,396
		R	2,52,223	1,28,057	1,24,166	32,290	24,869	7,421
		U	28,067	14,402	13,605	6,535	4,560	1,975
	% Literate					13.85 %	20.65 %	6.82 %
Ratha-wa	1961	T	1,35,730	69,375	66,355	6,528	6,076	452
		R	1,35,713	69,362	66,351	6,524	6,072	452
		U	17	13	4	4	4	-
	% Literate					4.80 %	8.75 %	0.68 %
	1971	T	1,92,648	99,263	93,025	10,884	9,980	904
		R	1,91,268	98,811	92,457	10,739	9,866	873
		U	1,380	812	568	145	114	31
	% Literate					9.55 %	15.07 %	3.85 %
	1981	T	3,08,640	1,56,581	1,52,059	37,627	32,522	5,105
		R	3,03,411	1,53,665	1,49,746	36,187	31,412	4,775
		U	5,229	2,916	2,313	1,440	1,110	330
	% Literate					12.19 %	20.77 %	3.35 %

SC. TRIBE- Scheduled tribe, T- Total, R- Rural, U- Urban, PER.- Persons, M- Male, F- Female.

Source: Census of India, 1961; 1971; 1981.

It is observed from the table # 5C that around 80.40 % of the total population of the Chhota-udepur forest division is dominated by the tribal communities **PLATE 10**.

The major tribal communities of Chhota-udepur forests are Rathawas and Dhankas, although the minor communities like Dungrabhils, Nayakas, Tadvi and

PLATE 10

A View of tribal communities of Chhota-udepur forests-poster at tribal museum.

Nomadic koli-rathawa tribal farmer in agriculture field. Ferkuwa village. Range Rangpur.

View of original tribal culture of Chhota-udepur.

Naninat tribes also inhabits some parts of the area as evident from the table # 5D. Out of the six tribes mentioned above, the Rathawas (more than 3 lakhs) and Dhankas (nearly 2 lakhs) are also one of the dominant tribes of Gujarat state. Within the Chhota-udepur forest division, Rathawas and Dhanka tribes are mainly found in Chhota-udepur taluka constituting nearly 88.62 % of total ST population, whereas Tadvi, Dungrabhils, Nayakas and Naninat tribes mainly resides in Naswadi taluka constituting nearly 84.54 % of total ST population of Naswadi taluka.

Among the ST population of the district, Rathawas (20 %), Bhils (16 %), Dhankas (8 %) and Nayakas (6 %) are dominant accounting for nearly half of the tribal population of the district. Within the Chhota-udepur forest division, three talukas viz., Chhota-udepur, Naswadi and Pavi-jetpur shows bulk of the tribal population. Table # 5E shows the tribal population in the three talukas of Chhota-udepur forest division.

TABLE # 5 (E): TRIBAL POPULATION OF THREE TALUKAS IN CHHOTA-UDEPUR FOREST DIVISION

TALUKA	VILLAGES	AREA (SQ. KMS)	TOTAL POPULATION	TOTAL TRIBAL POPULATION	% OF TRIBAL POPULATION
Chhota-udepur	275	1373	3,04,275	2,69,642	89 %
Naswadi	217	535	1,07,435	90,825	85 %
Pavi-jetpur	211	805	1,99,632	1,63,193	82 %
Total	**703**	**2713**	**6,11,342**	**5,23,660**	**85.65 %**

Source: The Encyclopedic District Gazetteers of India, District Vadodara, 1991.

IMPORTANT FEATURES OF TRIBAL COMMUNITIES

While reviewing the old texts and district gazetteers, it has been revealed that previously Chhota-udepur forest division was known by the name "Rath Pradesh" and hence the local inhabitants therein came to be called as "Rathawas". It is said that they belong to the Rathod community. Regarding their origin, they belong to the Vindhya ranges of Madhya Pradesh, where they were known by the name of "Bhilala". By appearance they look like Bhil tribal communities, but have more close resemblance to the tribes inhabiting the Vindhya Ranges of Madhya Pradesh.

Later on they migrated from their original locations and started residing in the areas close to the M. P. boundaries such as Halol, Kalol, Jambughoda, Dev-gadh Baria, Pavi-jetpur and Naswadi. Though they are now scattered in certain parts of Central Gujarat like Panchmahals and Dahod districts, their major population or dominance is found in the area of Chhota-udepur forest division. In all there are 52 sub-tribes under them but major ones are Damor, Parmar, Pujara, Bamania, Rathodia and Makwana.

As the sources for continuous economic benefits are very meager in this area the tribal weekly markets are important means for earning their livelihood. Following is the list of local tribal markets called as "Haths/Hats", where in they sell the household items, vegetables etc. Sometimes locals and also migrant herbal vendors are met within these markets selling extracts and dry parts of medicinal plants. Table # 5F gives the places where the local markets of tribals are held in Chhota-udepur forest division **PLATE 11**.

TABLE 5 (F): LIST OF WEEKLY MARKETS OF TRIBALS IN CHHOTA-UDEPUR FOREST DIVISION

SR. NO.	DAY	LOCATION	RANGE
1	Sunday	Panvad	Panvad
2	Monday	Kawant, Tejgadh	Kawant and Chhota-udepur resp.
3	Tuesday	-	-
4	Wednesday	Rangpur Sadhali	Rangpur
5	Thursday	Devhant, Gadh Bhikapura	
6	Friday	Zoz	Chhota-udepur
7	Saturday	Chhota-udepur town	Chhota-udepur

Source: Tribal Welfare Report (1999). Taluka Panchayat Office Chhota- Udepur, District Vadodara. Rathawas of Pal Region. (1977). Tadvi, S. Akshar Press, Ahmedabad.

PLATE 11

Tribal fair locally called as 'hatdi/hat" at Panvad range: Chhota-udepur.

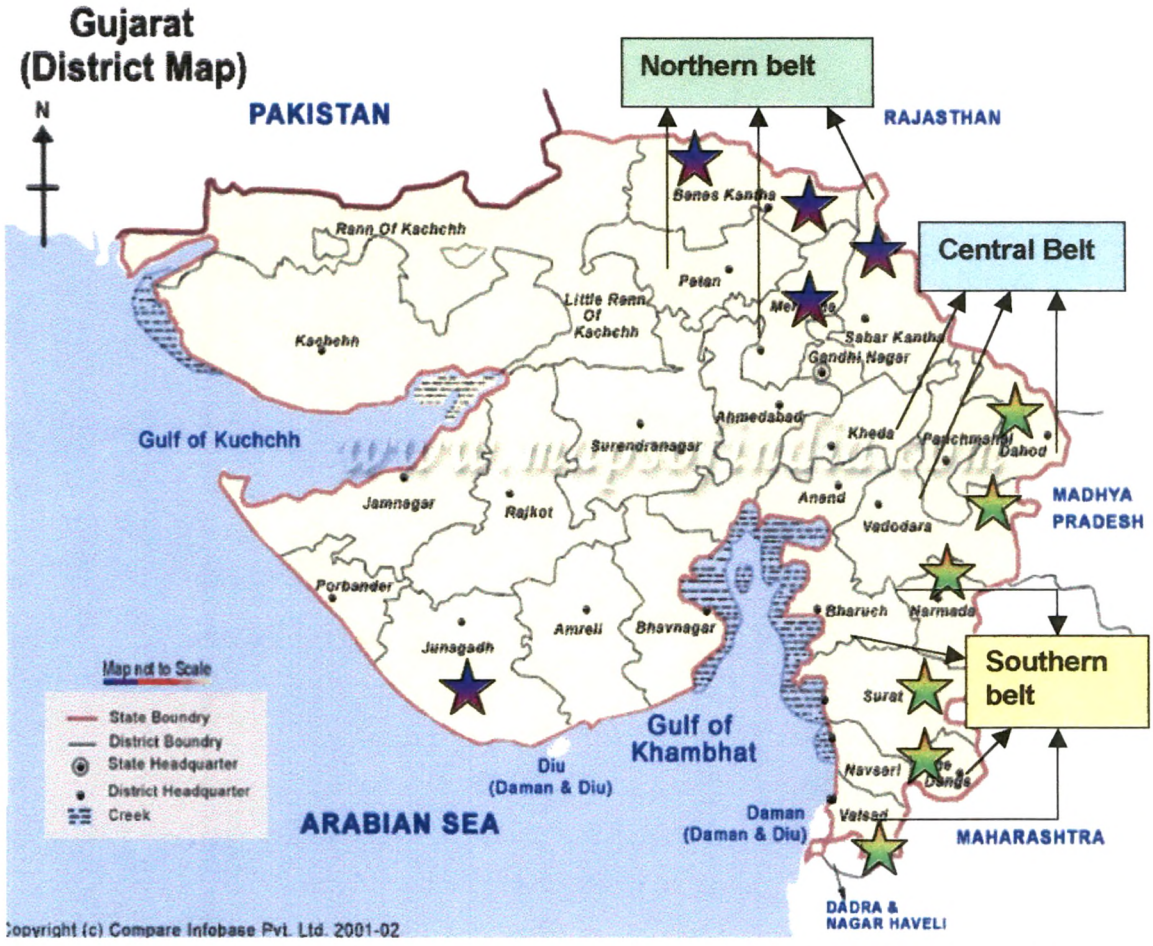
Local tribal market at Rangpur Sadhli: Range Rangpur, Chhota-udepur.

Local tribal market at Devhant-Gadh Bhikapura: Chhota-udepur forests division.

SOCIO-ECONOMIC STATUS OF TRIBALS OF CHHOTA-UDEPUR DIVISION WITH A NOTE ON TRIBAL LIFE STYLE AND TRADITIONAL CUSTOMS

As already stated the entire eastern border of the state of Gujarat is inhabited by a total of 30 tribal communities residing in the hilly forest tracts of the districts of Dangs up to North east of Banaskantha.

The dominant tribal areas of the State of Gujarat are shown in (**MAP 9**).



The yellowish-green star are the most dominant tribal pockets of the state of Gujarat.

The state can be divided into three belts viz., North belt, Central belt and South belt as far as tribal demography is concerned. Chhota-udepur forest division comes under Vadodara district (Central belt).

The Central belt unlike north is hilly and wooded, though the land under forest is comparatively of small area; e.g., 17.1 per cent of the total land in Jhalod taluka of Panchmahals district and 40.7 per cent in Chhota-udepur taluka of Vadodara district.

Regarding the agricultural land available the scenario is same as in the north belt. Only a small area of the total agricultural land has been put under agriculture even though the major occupation of the locals is agriculture and farming. The entire belt provides a unique example of a backward area located within relatively prosperous districts.

Although a greater amount of land is available for cultivation, when compared to the northern sector, the density of population in this region is relatively higher for backward region. For instance, in Chhota-udepur forest division, there were 274 persons per 50 mile as against the state average of 290. The economy of the region was heavily dependent upon agriculture with more than 90 per cent of the working population engaged in primary sector.

Though the principal crop is maize, the tribals also grow wheat and gram on a small scale. Due to lack of monsoon, drought has become a regular feature in this area. Land being poor, crop yield is invariably low. As the forests have degraded to a great extent, chances of getting even temporary employment as forest labourers have also been reduced. Hence besides being a farmer the tribals are engaged in various occupations like potters, goldsmiths etc., **PLATE 12**.

These factors have been instrumental in driving a large number of tribals after rainy season to far away places in search of employment. It is a common sight on National Highway 8 and Ahmedabad-Mumbai rail route to find the tribals of Panchmahals and Chhota-udepur in large numbers engaged as labourers for doing major and minor repair work. Other occupational opportunities in their own area are meager.

However, in Chhota-udepur taluka some constructive work has already begun to retain the original culture of these tribals and also to make them self employed and literate. The tribal museum located in the center of the Chhota-udepur town has gained much attention of sociologists, anthropologists and also of botanists as this museum has unique collection of the tribal life-styles, the plants they were using and the house-hold and religious sculptures that are now forgotten rapidly as this tribals are moving more towards urbanization **PLATE 13**. Also a Tribal Research Center, called as "Bhasha Kendra" initiated at Tejgadh village of Chhota-udepur taluka is one of the inspiring step towards the upliftment of the tribals of this area.

The fluorspar project at Kadipani in Kawant range has provided lower rung unskilled opportunities to the tribals. As has been observed in a research project

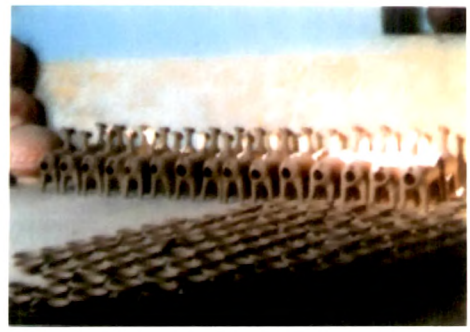
PLATE 12

Agriculture- Major occupation of people at Chhota-udepur forests division.

Local potter- another major economic source for locals of Chhota-udepur.

Local potter engaged in making earthen pots and horses used in tribal worships. Chhota-udepur forest division.

Earthen pots and horses made ready for use in tribal festivals and religious rituals.



Local tribal medicine man making herbal bhasmas. Chhota-udepur forests division.

Note the traditional earthen horses on the tribal house.

undertaken on impact of industrialization, the tribals were mostly unskilled wage earners, while most of the technical personnel have migrated from non-tribal areas, which disturbed the harmony of tribal life.

Educationally too, this belt is one of the most backwards in the state. Hardly 10 per cent of the population can be taken as literates. Although schools are now available in almost all villages, the enrolment is very poor. Only 15-20 per cent of the children in age group 6-14 are enrolled in the schools. The rate of wastage in primary education is more than 75 per cent in this region (School drop-outs). The close link between education and the economic condition of a population is more relevant in this region. Aptitude for education, by and large, is still on a low degree because of the grim struggle for survival.

The tribal development programmes have brought some changes, though it appears that they have not made so far a significant impact for a change in the tribal societies of this region. As such, for the majority of the people of this region, life continues to be so as it used to be prior to the beginning of development. This can be justified by the fact that more and more tribals from this region are migrating seasonally to earn their livelihood. The co-operative movement too, in this region, has the same story of failure.

All the above-mentioned issues play a vital role in the tribal development. One of the facts that have emerged out is that the economy of the tribals in several regions revolves around the forests. In view of such a significance of forests in tribal economic life, the subject of management as well as policy regarding forests in tribal areas assume a pivotal concern to the policy makers and administrators, researchers and even to a common man.

Although the forest policy does make a mention about the local needs, the investment policy has been more focused towards the exotic needs of the economy of the wider society. In the areas like Chhota-udepur and adjoining talukas, planning programmes of tribal development or forest development in isolation has no meaning, the two must re-inforce one another.

As indicated earlier, the potential of agricultural development in these areas has obvious limitations because of the poor soil, undulating land and almost negligible irrigation facilities. Due to these reasons, both tribal development and forest development should be included on a priority basis in all forestry plans, whether conventional, intensive or commercial.

PLATE 13

Cup made of dried Butea monosperma (Lamk.) Taub. Leaves. Used for drinking liquor.

Conserving traditional tribal lifestyles. Container for storing grains. Tribal museum, Chhota-udepur.

Agricultural equipments made up of Anogeissus latifolia wood. Tribal museum. Chhota-udepur.

Ethno-musicology. New concept in ethnobotanical studies. Musical instruments at tribal museum.

Musical instruments used by tribals in festivals. Made of Anogeissus latifolia, Melia azaderach and Terminalia crenulata wood.

Last but not the least, the task of tribal development acquires yet another dimension because of the recognition of the desirability of preserving and enriching the equality of tribal life. This issue should not be neglected. It is emerging as the focus of much of the discussion and debate on tribal development. A serious threat is hovering around the tribal people in almost all the tribal belts of Gujarat who are trying to engulf their whole culture and substitute it with an alien culture. The tribal man faces the prospects of seeing his distinctive style wiped off from the ethnic map of India.

SOCIO-CULTURAL AND ECOLOGICAL ASPECTS- AN OVERVIEW

The above paragraphs gives us the idea of the demographic index and general view of socio-economic aspects of the tribals of the area explored for the present study. This brief chapter deals with the tribal culture and an overview of the socio-economic aspect of tribal villages in context to the facilities available.

PEOPLE- Division of labour exists in every family. Children normally take the animals for grazing and collect fodder leaves, grass and occasionally fuelwood in the environs of their dwelling. Women take care of the home, collect water for drinking, nurse the livestock, prepare the meals, and fetch headloads of fuelwood. Comparatively the menfolk remain idle. Only during the monsoons, they are active in farming. Rest of the time they smoke tobacco and consume country liquor.

DWELLING- A tribal hut is made from wood, mud and cow dung. The root is thatched with Borassus leaves or with mud tiles. The houses are quite spacious and are scattered throughout the periphery of forests areas **PLATE 14**. The huts or residence amidst the forests are small with little agricultural and cultivable fields surrounding the hut. The living space is shared with kitchen and store. The cereals and other grains are stored in large earthen pots or woven baskets made up of Bamboo and Borassus locally called as "Mesaro". The baskets made from Bamboo and Borassus are also used in collecting NTFP's from the forests **PLATE 15**. This baskets are plastered with mud and cow dung. A loft area provides space for storage of fuelwood for the monsoon months. A raised platform with its own shade holds the drinking water pots, outside the living quarters. A provision for bathing is made in a very limited space. A separate enclosure provides shelter to their livestock, wherein the bullocks, cows and buffaloes and their goats are segregated with partitions made from forest products. A hut is generally rebuilt after 15-20 years. The time selected

PLATE 14

View of tribal village-Chhota udepur.

Scattered tribal houses-Chhota udepur.

Devhant village-Chhota udepur.

for rebuilding is during the months of March to May. Even the agricultural implements used in routine are made of woods of Anogeissus, Melia and other durable timber species available in forests.

ACCESSIBILITY- Certain villages cannot be reached by any mode of transport except on foot. The market facilities and medical aids are difficult to reach during the monsoons, when the villages are almost stranded for a short period.

EDUCATION- All villages have primary schools upto Class IV, with exception of the few villages. The literacy among females is negligible. In the primary schools, afternoon meals are provided by the government which has encouraged parents to send their children for education. In reality, the very purpose of imparting education is defeated as children of all age groups are made to sit in one classroom. Individual attention cannot be accorded to children of various classes. Morever the arrival of teachers is just erratic and no schedules of timings are ever practiced sincerely. In the long run, the interest of children wavers and they cease to go to school. This trend is prevalent in majrority of the villages and only few villages have ideal learning facilities.

WATER AVAILABILITY- Water is available for drinking in majority of the villages from wells. In most village wells, water is about 30 ft depth. Wells may be lined by bricks or cement or may be simple 'tea cup wells'. Water for agriculture is not available from wells. Canals from minor irrigation schemes provide water for agriculture. The two major water reservoirs Sukhi dam (Pavi-jetpur range) and Jamli dam (Dolariya range) provides water for drinking and other irrigation purposes. Natural streams passing through villages are called as 'kotars'. During earlier decades, water remained in the kotars upto about end of March. Now, the kotars are dry by the end of December. Water for the livestock is also provided from the wells and canals. Hand pumps are either not in operation or water is used only for domestic work and not for drinking. There is also a permanent lake called as "Kusum-sagar" lake in the center of Chhota-udepur town, but it is hardly used due to disposal of garbage and other pollutants in the lake.

ELECTRICITY- Majority of the tribal villages are electrified. But the villages adjoining Maharashtra and Madhya Pradesh boundaries are not electrified and needs immediate electrification due to major threat of robbery in these areas. Tribals generally use oil lamps and/or have a fire burning to provide light.

PLATE 15

Basket made up of Bamboo & Borassus.

Agriculture equipments made up of Melia, Millingtonia and Anogeissus.

Mesaro- grain container used for storage made up of Borassus and Bamboo in tribal house. Village Nani-Dumali.

AGRICULTURAL AND CULTIVATION PRACTICES- The major crops of the region are Maize and Rice. Besides this some pulses like Tuver and Udad are grown in large quantities. The entire list of the major, minor and cash crops cultivated by the tribals is given in the Vegetation Pattern of the Area. For the sake of convenience the following table # 5G gives an overview of the crops grown by the tribals of the area **PLATE 16**.

TABLE 5 (G): LIST OF MAJOR CROPS GROWN BY THE TRIBALS OF CHHOTA-UDEPUR FOREST DIVISION

NO.	NAME OF THE CROP	MONTHS OF SOWING	MONTHS OF HARVESTING
1.	Maize (Zea mays Linn.) (Kharif-Monsoon crop)	June	September
	Maize (Rabi- Winter Crop)	November	February
2.	Rice (Oryza sativa Linn.)	June-July	September-October
3.	Tuver dal (Cajanus cajan L.)	June	March
4.	Wheat (Triticum sp.)	November	February
5.	Bajri (Pennisetum sp.)	September	December
6.	Jowar (Sorghum vulgare L.)	June	October
7.	Groundnut (Arachis hypogea L.)	June-July	October-November
8.	Cotton (Gossypium sp.)	June	December-March

Agricultural fields are either in valleys or in between hills or on hill slopes. Terracing is not practiced and fields on slopes show stony soil and signs of severe erosion. Trees along field boundaries are less in number and mostly are Borassus, Zizyphus, Butea, Diospyros and Tectona. Land holdings are small and get further divided when a son builds a separate house. Thus, subsistence on smaller holdings becomes more and more difficult. Agricultural implements are made up of wood of Anogeissus, Tectona, Melia and Millingtonia. Natural manure such as cow dung and goat pellets are also used. Pesticides and insecticides are not much used.

The crops harvested are mainly used for local consumption only. Very rarely cereals are sold in the market place. In villages with irrigation facilities, a second winter crop is sown. Generally, quality and crop yield are dependent on the rains. Estimates of crop yield were difficult as the grains are never sold in the local

PLATE 16

A view of tribal hut with cultivation Rangpur range of Chhota-udepur forests division.

Zea mays Linn.- Makai cultivation at village Dhandoda. Staple food for tribals of Chhota-udepur forests division.

Banana- Musa sp. One of the major crops cultivated in Bodeli. Range Pavi-jetpur. Chhota-udepur forests division.

Locals selling out Banana along Bodeli-Pavi-jetpur road. Chhota-udepur forests division.

Cultivation of Cajanus cajan- (L.) Huth. tuvar. Major diet for tribals after maize. View along Chhota-udepur to Kevdi road. C-udepur forests.

markets. During the monsoon periods, vegetables are collected from the forests and additionally, fruit vegetables are planted around the house.

NTPF (NATURAL RESOURCES COLLECTION)- The entire data has been given under the heading of Minor forests products and dependence of tribals on forests. To bring out the dependence of tribals on the NTFP few lines are enclosed to make this point relevant. Agenda 21 (United Nations Conference on Environment and Development, 1992), termed the 'Minor Forest Produce' as "Non-wood forests produce" or "Non-timber forests products"-NTFP.

Tribal populations depends heavily on the NTFP's for income and subsistence **PLATE 17**. The main NTFP's collected from the Chhota-udepur forest division are shortlisted in the Chapter of "Data on NTFP's" and "Impact of Biotic factors on the Vegetation of Chhota-udepur forest division". In brief the main NTFP's are Madhuca flowers; Diospyros leaves and Madhuca fruits locally called as "Doli" and "Timru". In the collection of Madhuca indica flowers and fruits almost all the members of the household are involved **PLATE 18**. The area beneath the tree is cleared and during the early morning the flowers are picked from the ground. Sun-dried flowers are stored in woven baskets and sold to the State Forests Corporation Depots. Some amount of flowers are eaten fresh or cooked as vegetable. In the year 1999-2000., the Forests depots paid Rs. 60/- for 20 kgs of dried Madhuca flowers.

The fruits of Madhuca indica Muell.-Arg., is locally called as "Doli" and are also collected as NTFP for its seeds that yield a type of oil/cocoa butter. This oil is used for cooking or to light lamps. Extensive collection of "Doli" has resulted in less regeneration of Madhuca trees. Collection of seeds only for regeneration from healthy trees should be saved as it is very slow growing and a first victim to succumb to natural calamities.

Timru (Diospyros melanoxylon Roxb.,) and Kachnar leaves (Bauhinia sp.) are also collected and are used in making local cigarettes called as 'bidis'. Dried leaves are cut and filled with tobacco and rolled **PLATE 19**. Smoking timru bidis is the most common pastime for the males of the area. Kachnar (Bauhinia sp.) has become rare or occasional in the forests areas and so bidis made of its leaves are generally sold in weekly local markets at the rate of Rs. 60/- for 1000 bidis. An individual can roll around 1000 bidis in a day; which he sells at Rs. 38/- to the market seller.

One point of concern is that the collection of Diospyros leaves is most recklessly done by locals/contractors- instead of collecting leaves only, the entire

PLATE 17

Borassus flabellifer L. Tad leaves cut down for roofing & thatching purpose. Chhota-udepur.

Locals engaged in collecting Tad-fali and dried Borassus leaves. Village Dhandhoda of Chhota-udepur forests division.

Local family with basket full of fruits- Borassus flabellifer L. Village Dhandhoda.

PLATE 18

Timru- Diospyros melanoxylon Roxb. leaves collected and packed after processing. Zoz village. Chhota-udepur forests division.

Collection of Boswellia serrata Colebr.- gum. Kevdi forests. Chhota-udepur forests division.

Boswellia serrata. Colebr. Guggal gum collected by locals. Chhota-udepur forests.

Collection of Madhuca indica Muell.-Arg. – Mahuda flowers. Along Kevdi- Chhota-udepur road at Chhota-udepur forests.

Madhuca indica- Muell.-Arg. Mahuda. Important economic plant for tribals as well as locals. Kalpa-vriksha for forests dwellers. Chhota-udepur forest.

PLATE 19

Timru- Diospyros melanoxylon Roxb. leaves kept for drying after collection. Major source of economy for locals in Chhota-udepur forests division.

Diospyros leaves made into bundles called as 'pudas' of 50 leaves/bundle after drying.

Local people at Zoz village packing timru- Diospyros leaves after pruning and drying. The standard bags are filled with dried leaves.

A standard bag of timru leaves consists approximately 1000 bundles of leaves. 50 leaves per bundle.

Packing timru- Diospyros leaves after all the major processing. Team of collectors at Zoz village.

branches are chopped off which in the long run does not permit the flowers to bloosom, as the flowering coincides with the emergence of young leaves in March-April.

The items contributing towards the income of the tribals are NTFP sale, fodder collection, casual labour, sale of poultry or goats which is need base. Harvest of crops is for their sustenance and normally not sold in the market.

CULTURAL AND SOCIAL BELIEFS- Majority of the people living in and around the forests belong to the Scheduled Tribes (ST). The ST population mainly belong to Rathwa, Dhanka, Nayaka and other minor communities/tribes. The Rathwa community predominates in Chhota-udepur talukas whereas the Naswadi and Kawant talukas are dominated by the other communities. Most of the tribes living in the Chhota-udepur forests are meat eaters; some have adopted vegetarianism by becoming followers of Saint Kabir (Kabirpanthi).

Many have restored faith in Saint Kabir, and are called as 'Kabirpanthi'. They believe in the God "Bhathiji Maharaj" and worship the Lord to ward off threats from snakes and scorpions. The famous Hampheswar temple of Lord Shiva is around 35 kms from Chhota-udepur town. The road leading to this famed temple acts as a barrier to intrusion of masses. The forests surrounding this temple are a sacred grove for deity, especially with a natural spring or tributary of river Narmada next to the temple. A typical worship place for the tribals here is called as "Babadev" and is found in every village **PLATE 20**. The deities are made from clayey mud into various shapes viz., horses, jars and beehive-shaped vessels. One of the important or striking features of this temple or worship place is that the plants associated with the temple varies from place to place like Ficus benghalensis Linn., is worshiped at one place, while Garuga pinnata Roxb., is worshiped at other place and similarly Holarrhena pubescens R. Br., at some other places **PLATE 21 and 22**. Hence according to the belief the plants are associated with the worship ceremonies.

The traditional tribal paintings are called as "Pithora" **PLATE 23**. When desired wishes are fulfilled, for example, birth of a member in a family after a prolonged period; recovery from a dreaded illness; on achieving a good harvest, a 'Pithoro' is generally held in the month of January, when enough funds are available. On this occasion, relatives from various villages arrive and all the members of the village are invited for three days, wherein food and alcohol are served lavishly. About 20-25 goats and hens are offered to their deities. These are slaughtered and meat is

PLATE 20

Babadev- tribal god & goddesses. Note the hut made up of Borassus leaves at Village Antroli of Rangpur range. Chhota-udepur.

One of the largest Babadev temples of tribals at Zer village. Chhota-udepur surrounded by Ficus benghalensis L. & Madhuca indica Muell.-Arg.

Tribal worship: Vagasthal hills of Chhota-udepur forests. Wood Pillars made of Anogeissus latifolia Guill. Thread made of Cocus nucifera Linn. fibers.

PLATE 21

Babadev- tribal god and goddesses in forests areas: Site for worship and conserving plants: Note the Holarrhena plant in flowering around the sacred site. Range Chhota-udepur.

Closer view of traditional tribal offerings to their god and goddesses. Holarrhena pubescens (Buch.-Ham.) Wallich ex G. Don. flowers used in worship ceremony at Gabadia village of Chhota-udepur forest division.

PLATE 22

Tribal temple at Dharsimal village of Boriyad range in shade of Ficus benghalensis Linn. Different plants used in different regions for worship. Chhota-udepur forests division.

Tribal god at Singla village- Range Chhota-udepur of Chhota-udepur forests division. Garuga pinnata Roxb., worshiped by the tribals.

PLATE 23

Pithora- Traditional tribal painting: Type one.

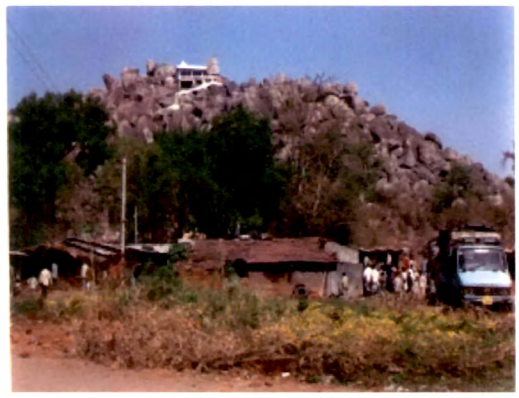
Pithora: Type 2 at tribal museum, Chhota-udepur.

Worship of Pithora: Tribal custom followed since many years in Chhota-udepur.

cooked and served to all. During the 3-day function, special pithoro painters are invited to paint the walls of the house with local dyes and colours. This tradition is practiced from generation to generation **PLATE 24**. Five feet long branches of Mitragyna parviflora locally called as "Karmi", are installed as traditional deities and worshiped for three days. During the 'Pithoro' festival, every night the tribals dance around the 'Karmi' branches.

The major festivals celebrated by the tribal inhabitants of the area are "Holi, Chul and Bhangoriu". Holi- the festival of color is a vital event of the year during March. Celebrations continue for the week. Those who have migrated to urban areas return back to their homes. This is the time when the flowering of Butea monosperma (Lamk.) Taub., locally called as "Palas or Khakharo" –Flame of the forests, coincides with the Holi celebrations heralding joy. The other two festivals mentioned are mainly celebrated when certain wish of the local tribals are fulfilled. The "Chul" festival is mainly celebrated as an offering to the god and goddesses related to health and vigour of tribals. The tribal people walk on the burnt wood of Terminalia crenulata Roth., and Anogeissus latifolia Guill., They believe that by doing so their deities get satisfied. The last festival "Bhangoriu" is associated with the local marriage ceremonies. Here the young boys and girls of tribals are allowed to select their life partners as per their wish. The most striking feature of this festivals is the typical dance of "Koli rathawas". Different body tattoos are also applied on the body during this dance **PLATE 25**. The dancing pattern is very unique such as Koli dance, Chul dance, Shivratri dance, Marriage dance, Ind dance etc., and the musical instruments used in the dance are all made up of wood of Anogeissus latifolia Guill., Millingtonia hortensis L. f., and Terminalia crenulata Roth., Hence, the cultural activities of dancing or tradition of dancing has given new horizons to the interdisciplinary aspect of "Ethnomusicology" of the tribals of Chhota-udepur. The following table # 5H is the list of tribal festivals attended by me during three years of explorations.

PLATE 24



View of Chelavada village-Chhota-udepur.

Dieties for Worship- Tribal Museum. Chhota-udepur.

Traditional offering of Goats and Hens at tribal festival as a part of worship. Village Chelavada. Chhota-udepur forests division.

View of various body tattoos used by tribals of Chhota-udepur.

Model of Pithora- painting at tribal museum. C-udepur.

TABLE 5 (H): TRIBAL FESTIVALS AT CHHOTA-UDEPUR FOREST DIVISION

NO.	DATE	PLACES/ REGION	NAME OF THE FESTIVAL
1.	11-3-2000.	Village Kawant, Range Kawant.	Bhangoriyu
2.	13-3-2000.	Vasantgadh, Range Kawant.	Bhangoriyu
3.	15-3-2000.	Village Rangpur, Range Rangpur.	Bhangoriyu
4.	17-3-2000.	Village Devhant, Range Chhota-udepur	Bhangoriyu
5.	18-3-2000.	Chhota-udepur town, Range Chhota-udepur.	Bhangoriyu and Chul festival
6.	20-3-2000.	Kawant village, Range Kawant	Gher festival
7.	22-3-2000.	Village Panvad, Range Panvad	Bhangoriyu
8.	21-3-2001	Village Panibar	Chul No Melo
9.	22-3-2001	Village Chhota-udepur, Range Chhota-udepur	Holi festival
10.	24-3-2001	Village Vagasthal, Range Chhota-udepur	Chul No Melo
11.	26-3-2001	Village Zoz, Range Chhota-udepur	Chul No Melo
12.	29-3-2001	Village Tejgadh- Raisingpura, Range Pavi-jetpur and Chhota-udepur	Chul and Holi Mela

MIGRATION- After the harvest, the majority of the tribal families migrate to urban areas to serve as labourers at construction sites. Grandparents and young children are left to look after their homes, livestock and land. Arriving in urbanized and industrialized areas, they play a significant role in the growth of cities and industries. In return, they lead a miserable life for they are deprived of a homely shelter-living on pavements of roadsides under the sky braving scorching heat and severe cold. They neither receive education nor medical health care. They cook their food with a meager supply of fuelwood, out in open. Having lived in a healthy forest environment, they migrate to cities and live in a miserable polluted environment.

PLATE 25

View of tribal festival called as "Chul" at Chhota-udepur. Note the Bamboo sticks in the hand of dancing tribals.

Tribal festival at Chhota-udepur. Holi Mela in Month of March. Flute made of Bamboo, bow and arrow made of Anogeissus, Melia and Bamboo.

Typical koli-rathawa dance at Holi festival in Chhota-udepur. Note unique body tatoos, peacock feathers & bow and arrows.

FUELWOOD AND FODDER COLLECTION- Due to the protection enforced by the forests department, fuelwood collection is not permitted and therefore people in the peripheral villages surrounding the forests areas, have to now purchase fuelwood from the marketplace, whereas people living within the forests get it free and gain an additional income by illicit collection and selling it at the market. Fuel wood is collected by headloads from the forest areas, usually by women and children. On an average, the weight of a headload is between 10-15 kgs for an adult and 8-10 kgs for a child of 8-15 years. Collection of fuelwood is a daily chore and not on the basis of reqirement. Collection is more intensively done during the summer, to stock for the monsoons. Depending upon the size of a household, a headload of fuelwood may last for 2-3 days and maximum upto one week. This is because besides firewood, agricultural wastes are also burnt. Manure is not commonly used for burning. The fuelwood requirement varies to some extent during different seasons. Consumption increases during the monsoon and winter as fire burns continuously to warm the house and heat water. Occasionally logs of wood are also used.

The tree species mainly preferred as fuelwood are Teak (Tectona grandis L. f.)- an expensive timber; cutting of these trees on the person's own land is not permitted, as all Teak trees are 'crown' property. In addition to Teak, the other species used as fuelwood are- Anogeissus latifolia Guill., Morinda pubescens Sm., (Morinda tomentosa), Butea monosperma (Lamk.) Taub., Terminalia crenulata Roth., Lannea coromandelica (Houtt.) Merr., Diospyros melanoxylon Roxb., Mitragyna parviflora (Roxb.) Korth., and Holarrhena pubescens R. Br.

Fodder for livestock is mostly agricultural wastes, emerging after harvest of various cereal crops. During the rains and in winter, undergrowth in the forests is very luxurious. Local people prefer to graze the animals in the forests.

LIVESTOCK GRAZING- According to the recent count (1999-2000.), there are about 4346 bullocks, 3367 cows and buffaloes, 4622 goats and some 4,300 poultry in Chhota-udepur forest division, but the production of milk, meat, eggs and other animal products are economically not viable. Free range grazing is not permitted in certain areas of forests, especially in the environs of a forest plantation. Free roaming cattle and goats have a detrimental effect on regeneration of forest trees. Stall feeding is not preferred by the tribals of Chhota-udepur forest division. They believe that like humans, the livestock also require free movement in open spaces

without any kind of bondage. Policing by the forests department has curbed grazing in the forest to a limited extent.

ENCROACHMENT- According to the pre-independence forest economy, each village was provided with its own gaucher land for grazing livestock. After 1948, with the sharp increase in human population and lax administration of forests, encroachments into forests land and gauchers was on the increase. The recent policy of transferring forest land to private ownership, since it has already been encroached may in future negatively affect the forest diversity (Brattz et al., 1992).

MINING OPERATIONS- The hills of Chhota-udepur forest division are rich in minerals. They have been commercially exploited at Kawant range, Panimines, Zoz, Limbani etc for Quartz, Manganese and Calcite. Most of the tribals living in the surrounding villages are employed at the mines. The hills are shorn off their rich forest tree mantle and bear ugly look. Can such practices be terminated in the forest areas ? Can the labourers be employed for the restoration of these devasted ecosystems ? In the year 1994, it was reported in the section of the press, that there are prospects of Uranium and Thorium presence at the Chhota-udepur forest division.

ALCOHOLISM- The state of Gujarat being dry, the tribals of Chhota-udepur region profusely consume country liquor made from Madhuca indica Muell.-Arg., flowers, toddy palm (Borassus flabellifer Linn.) and even from Jaggery and water. Local alcohol distilleries, called as "bhatti", are innumerable in the region, located along the banks of forest streams or 'kotars'. Large quantities of wood is required to heat the pot contents. The process lasts for 2-3 days. Consuming such large quantities of alcohol not only demoralizes the person but also affects his family life and prevents from supporting home needs.

MINOR FOREST PRODUCTS AND DEPENDENCE OF TRIBALS ON FORESTS

The NTFP/MFP's are collected continuously from the forest. The data on the approximate collection and income generated from such collections is given below.

DATA ON NTFP'S (CHHOTA-UDEPUR FOREST DIVISION)

Several major and minor forest products make vital contribution to the national economy. The growing stock in the forests of India was estimated at 4196 million m^2 with the net annual increment at 52 million m^2 or 1.24 % of the growing stock. Of the sustainable production of 52 million m^2, 40 million m^2 is firewood and about 12 million m^2 is timber or industrial wood (Lal et al., 1993). In terms of value addition, the major forest produces accounts for about 70 % of the total value added by the forest sector in the country (Kalla, 1988). The Minor forest products (MFP), also termed as Non-wood forest products (NWFP) or Non timber forest produce (NTFP), contribute about 50 % of forest revenue and 70 % of income through export (Campbell, 1992). MFP's also provide 10-40 % of income to the tribal households (Shiva, 1993). The National Commission on Agriculture (Government of India, 1986) classified the MFP's as follows.

Fibres and flosses
Grasses, bamboos and canes
Essential oils
Oil seeds
Tans and dyes
Gums, resins and oleoresins
Drugs, spices and insecticides
Leaves
Edible products
Lac and its products and
Miscellanous products

Though there are nearly 3000 plant species endowed with non-timber utility in India, only about 126 species are now being commercially exploited. Forests provide economic, social and cultural shelters to the tribals and have long been a part of the tribal habitat. Majority of the tribes and their economy revolve round the forests. For ages tribals and forests have led a symbiotic existence. But with the increasing rates

of deforestation the tribals are getting displaced from their natural habitat and are feeling insecure. They need to be rehabilitated through measures like increased involvement in various forest activities. The present chapter deals with the role of MFP in the economy of the tribals of Chhota-udepur forest division.

The major MFP/NTFP obtained from the forests are short listed below.

Bamboo, Kadayo Gum, Other Gums, Asitro, Timru leaves, Behada, Harde, Aonla, Karanj seeds, Mahuda flowers, Mahuda fruits, Safed-musli, Lac, Honey, Punvad seeds, Limbda seeds, Ratanjot, Darudi seeds and other forest produce.

The tables # 6A to 6C below give the details of various MFP's collected during the years 1995-96; 96-97; 97-98 upto the year 2000.-2001.

TABLE 6 (A): DATA ON NTPF'S (1995-1997, CHHOTA-UDEPUR FOREST DIVISION)

No.	Name of the minor produce	1995-1996		1996-1997	
		Quantity (Qts)	Income generated	Quantity (Qts)	Income generated
1	Mahuda flowers (Madhuca indica)	47.36	74,876.22	61.33	20,221.96
2	Mahuda seeds (Dodi) (Madhuca indica)	72.79	36,697.76	50.99	56,065.95
3	Timru leaves (Diospyros melanoxylon)	41856.43	6,59,786.00	55891.12	7,37,136.00
4	Kadaya gum (Sterculia urens)	8.07	4140.23	8.30	8,683.71
5	Dhavda gum (Anogeissus latifolia)	1.61	2128.30	0.75	991.30
6	Other gums	3.49	2534.27	11.20	9870.55
7	Charoli (Buchanania lanzan)	6.77	6364.07	14.04	6855.58
8	Puwad seeds (Cassia tora)	6.60	693.23	6.95	778.90
9	Indrajav (Holarrhena pubescens/Holarrhena pubescens)	7.20	971.20	18.12	991.75

10	Ratanjot (Jatropha gossypifolia)	4.41	983.15	11.18	6165.76
11	Kawcha (Mucuna pruriens)	-	-	4.00	2206.00
12	Khakhara leaves (Butea monosperma)	-	-	42.03	9625.00
13	Rosa grass (Cymbopogan martinii)	613.57	18407.10	464.07	11,601.75
14	Aonla (Phyllanthus emblica)	-	-	95.89	20,307.18
15	Amla pulp (Fruit pulp of Phyllanthus emblica)	-	-	105.65	57,979.55
16	Garmalo (Cassia fistula)	-	-	7.15	3948.70
17	Behda chhal (Bark) (Terminalia bellirica)	-	-	7.50	836.25
18	Kadachhal (Wrightia tomentosa)	-	-	9.82	3255.30
19	Satavari (Asparagus racemosus)	-	-	0.49	539.70

TABLE 6 (B): DATA ON NTPF'S (1997-1999, CHHOTA-UDEPUR FOREST DIVISION)

No.	Name of the minor produce	1997-1998		1998-1999	
		Quantity (Qts)	Income generated	Quantity (Qts)	Income generated
1	Mahuda flowers (Madhuca indica)	747.10	91,503.00	571.74	78,912.00
2	Mahuda (Madhuca indica) seeds	37.38	11,432.00	96.00	16,696.00
3	Timru leaves (Diospyros	17273.00	7,75,521.00	23000.00	10,77,560.00

	melanoxylon)				
4	Kadaya gum (Sterculia urens)	38.88	36,820.00	36.03	20443.00
5	Dhavda gum (Anogeissus latifolia)	7.11	4266.00	4.96	2976.00
6	Other gums	18.53	1925.00	5.04	1925.00
7	Puwad seeds (Cassia tora)	4.82	819.00	4.44	877.00
8	Charoli (Buchanania lanzan)	9.86	4411.00	5.66	3511.00
9	Rosa grass (Cymbopogon martinii)	1.72	21,327.00	1.55	9510.00
10	Karanj seeds (Pongamia pinnata)	-	-	8.90	1157.00
11	Khakhara seeds (Butea monosperma)	-	-	0.90	55.00
12	Aonla pulp (Phyllanthus emblica)	6.15	308.00	35.81	4476.00
13	Behda (Terminalia bellirica)	0.80	180.00	0.61	65.00
14	Indrajav (Holarrhena pubescens / Holarrhena pubescens)	-	-	6.92	2076.00
15	Bila (Aegle marmelos)	1.55	62.00	7.18	359.00
16	Khakhara leaves (Butea monosperma)	54.00	1000.00	-	-
17	Asitra leaves (Bauhinia purpurea / Bauhinia racemosa)	6.36	636.00	12.77	1277.00
18	Neem seeds (Azadirachta indica)	-	-	-	-

19	Musli (Chlorophytum tuberosum)	-	-	0.46	1840.00
20	Khakhar Lac (Butea monosperma)	-	-	1.97	572.00

TABLE 6 (C): DATA ON NTPF'S (1999-2001, CHHOTA-UDEPUR FOREST DIVISION)

No.	Name of the minor produce	1999-2000.		2000.-2001	
		Quantity (Qts)	Income generated	Quantity (Qts)	Income generated
1	Mahuda flowers (Madhuca indica)	832.70	94,975.74	547.59	44,192.02
2	Mahuda (Madhuca indica) seeds	21.31	14,419.79	45.83	22,817.63
3	Timru leaves (Diospyros melanoxylon)	11822.86	3,93,485.90	11783.00	3,84,838.00
4	Kadaya gum (Sterculia urens)	2.04	2704.45	7.59	8363.02
5	Dhavda gum (Anogeissus latifolia)	1.26	1388.08	1.80	1961.71
6	Other gums	0.38	169.29	10.21	2956.98
7	Puwad seeds (Cassia tora)	2.94	388.31	3.92	678.65
8	Charoli (Buchanania lanzan)	8.25	3501.64	6.34	2235.94
9	Rosa grass (Cymbopogon martinii)	904.90	21,113.45	-	-
10	Karanj seeds (Pongamia pinnata)	-	-	-	-
11	Khakhara seeds (Butea monosperma)	-	-	18.54	3598.87
12	Aonla pulp	5.36	600.54	188.56	39,556.66

	(Phyllanthus emblica)				
13	Behda (Terminalia bellirica)	-	-	56.55	1736.95
14	Indrajav (Holarrhena pubescens / Holarrhena pubescens)	0.22	72.96	2.84	1566.82
15	Bila (Aegle marmelos)	2.50	205.00	0.20	113.80
16	Khakhara leaves (Butea monosperma)	14.64	2449.00	16.83	2064.00
17	Asitra leaves (Bauhinia racemosa)	-	-	19.19	3112.21
18	Neem seeds (Azadirachta indica)	17.30	968.80	-	-
19	Musli (Chlorophytum tuberosum)	3.73	3698.29	-	-
20	Khakhar Lac (Butea monosperma)	51.40	70,982.84	0.35	88.00
21	Ratanjyot (Jatropha gossypifolia)	-	-	2.25	377.30
22	Behda chhal (Terminalia bellirica)	-	-	15.96	1342.49
23	Arjun chhal (Terminalia arjuna)	-	-	59.87	39,604.85
24	Honey	0.98	540.40	-	-
25	Kauwcha seeds (Mucuna pruriens)	-	-	-	-

Source: GSFDC Report (Chhota-udepur, 1996,97,98,99,2000. and 2001).

After analyzing the data incorporated in the above tables it can be concluded that the maximum income has been generated from the three forests produce viz., Mahuda seeds, Timru leaves and Mahuda flowers. Besides these during the study 35 villages were selected under three categories i.e A). Core, B). Peripheral and C).

Distanced up to 5 km from forest. Each category was having approximately 10 villages. A total of 240 households have been surveyed to assess the role of NTFP's in tribal economy. An average of 5-10% households from selected villages were surveyed. Cash income obtained from sale of each NTFP species and their share in total earning has been assessed.

TABLE 6 (D): DATA ON INCOME GENERATED BY LOCALS OF 35 SURVEYED VILLAGES

NAME OF NTFP	CORE VIILAGES		PERIPHERAL VILLAGES		DISTANT VILLAGES	
	Rs/household/year	Share (%)	Rs/household/year	Share (%)	Rs/household/year	Share (%)
Mahuda flowers (Madhuca indica)	553.50	5.49	797.86	12.78	704.34	5.49
Timru leaves (Diospyros melanoxylon)	1285.60	10.45	579.15	5.08	850.98	3.01
Mahuda seeds (Madhuca indica)	38.53	0.31	189.50	3.66	176.01	0.26
Kadaya gum (Sterculia urens)	677.07	5.50	--	--	2970.00	6.97
Dhavda gum (Anogeissus latifolia)	--	--	663.98	2.31	545.86	2.93
Puwad seeds (Cassia tora)	46.66	0.38	351.78	3.23	208.24	2.73
Charoli (Buchanania lanzan)	98.88	0.78	188.75	2.66	170.46	1.60
Rosa grass	379.13	3.08	--	--	126.37	2.44

(Cymbopogon martinii)						
Karanj seeds (Pongamia pinnata)	--	--	--	--	2310.00	8.18
Khakhara seeds (Butea monosperma)	4740.60	38.54	5185.36	18.08	5172.53	19.38
Aonla pulp (Phyllanthus emblica)	161.47	1.31	359.35	1.25	1241.74	1.85
Behda (Terminalia bellirica)	--	--	1794.66	6.25	2633.22	5.79
Indrajav (Holarrhena pubescens / Holarrhena pubescens)	--	--	2485.00	8.66	828.33	2.93
Bila (Aegle marmelos)	--	--	100.00	1.04	133.33	2.01
Khakhara leaves (Butea monosperma)	--	--	200.00	1.69	166.66	1.23
Asitra leaves (Bauhinia racemosa / Bauhinia purpurea)	73.42	0.59	728.79	2.54	522.27	1.85
Neem seeds (Azadirachta indica)	--	--	1627.00	5.67	--	--

Musli (Chlorophytum tuberosum)	3001.93	24.41	1162.60	0.57	1301.51	4.60
Khakhar Lac (Butea monosperma)	756.60	6.15	435.33	1.52	397.31	2.40
Ratanjyot (Jatropha gossypifolia)	--	--	356.25	3.25	222.30	4.78
Arjun chhal (Terminalia arjuna)	--	--	4000.00	13.94	2333.33	4.72
Honey	37.00	0.30	43.13	1.15	53.09	3.18
Kauwcha seeds (Mucuna pruriens)	130.00	2.06	675.00	3.35	446.11	3.57
Kali musli (Curculigo orchioides)	--	--	--	--	1136.66	4.02
Tadi collection (Borassus flabellifer)	--	--	1024.66	0.57	1633.22	0.39
Kapas (Gossypium herbaceum)	--	--	230.00	0.15	210.00	0.38
Total Rupees	**11980.16**	**99.35%**	**23177.56**	**99.32%**	**26493.87**	**99.89%**

The above table # 6D reveals that the annual income obtained through sale of different NTFP's by the tribals of core, peripheral and distant villages were found to be Rs. 11,980.16, 23,177.56 and 26,493.87 respectively. It is interesting to note that cash earning from sale of various NTFP's increased 2 to 2.5 from core to peripheral and distant villages respectively. This finding is in contrast to the common notion that

due to high availability of forest resources, core villages will have more earning from the NTFP's.

Another important feature is that the inhabitants of core villages collect less number of NTFP products than the inhabitants of peripheral and distant villages. Diversification and variation in NTFP species from core to distant villages may be attributed to competition for collection and availability of NTFP's. Some of the focal points that have to be discussed here are the causes of less earning from sale of NTFP's in core villages. The most probable reason is the lack of proper markets, lack of transportation facilities, lack of appropriate sale prices and exploitation by middleman.