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Jagdalpur

A Town in a Tribal Setting

Dr. Arun Kumar Singh¹

Dr. Sudhanshu Sekhar Misra²

ABSTRACT

Any urban centre has its own distinction which is being studied by the social scientists from different prospective. However comprehensive study of any specific urban town with due emphasis on its socio-cultural dimensions, interrelation of different indigenous and migrant population in terms of their ethnic affiliation, interaction with surrounding regions, urban agglomeration, resources, production and distribution of goods and services etc. is not very old tradition. The Anthropological Survey of India in its ninth five year plan project has initiated elaborate effort to study different small and medium towns located across the country in different ecological zones. The rationale behind preferring such town is to understand the basic themes, which determine the typical nature, which facilitated in maintaining its traditional rural features like occupational structure, settlement pattern and above all its traditional social system. Here impact of economic, ecological and socio-political changes due to urban influence cannot be denied. Earlier some such studies with different conceptual framework had been undertaken but were mostly delimited to big cities or metropolis. However the present study of Jagdalpur town, urban centre in the tribal setting is ideal case to evaluate the objectives, which is multidisciplinary in approach with emphasis on rural hinterland in general and the tribal settlement in particular.

Jagdalpur, a small town located amidst dense forest, is very old in terms of settlement and human habitation. It was a small village of altogether fifty numbers of huts, when the 13th descendent of Kakatiya dynasty king Dalpat Deo in 1770 selected this place as his Capital due to its strategic location. Since then it grew spontaneously but the real growth of this place took shape in the early part of twentieth century. When the then Diwan named panda Baijanath dreamt to shape its settlement and habitation, during his tenure in the year 1904-1910. He planned to develop this town with adequate provision

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of drainage, water supply, crossing at regular intervals and availabilities of other basic amenities. This design was a replica of London city. This dream project could not be materialised by Diwan himself. However, Colonel James, a English administrator of Jagdalpur in the year 1912 took initiative and completed the work through a special operation called forced cooperation. Here sufficient spaces were kept for drainage on both sides of the road, roads were widened, narrow lanes removed and people were rehabilitated in open spaces beyond the road. Some old people still remembers those golden days, when it was really a place of worth living with neatness all around and number of crossings (Chauraha) at regular intervals, people used to call it Chauraho Ka Sahar (town of crossing). So long Colonel James was there, special attention were paid to retain its distinction. However with the passage of time and due to various other factors substantial changes came up. After independence the territory of Baster kingdom was annexed, DNK (Dandakaranya) project launched to rehabilitate refugees of East Bengal and other places, many government offices were established to develop this town as administrative centre of the region. Moreover migration of people, emergence of other institutions and pace of urbanization led to change in the entire scenario. Here unorganised settlement, encroachment, emergence of different colonies further complicated the situation. Due to all these developments the structural face of the town changed but the very essence of social cohesiveness, traditional character and pattern of livelihood remained unchanged.

The post independence phase has witnessed new vista of development. Jagdalpur being district headquarter and commissionary town of the region with amenities of rail, bus and air services facilitated migration and influx of people of diverse socio-cultural affiliation. Our study confirm habitation of various communities from almost all the states of the country claiming it to be mini India, yet this place has retained its tradition features too. Due to urbanization and settlement of different communities, the proportion of tribal population has reduced drastically. But during the world fame Durga Puja of Baster (Jagdalpur) the large participation of tribal population from the surrounding village change the demographic profile, when it looks like a tribal village, with prevalence of typical tribal dances and other socio-religious activities all across the town. Similarly, there are some occasions like Tajia, Holi etc. when communities of different religious affiliation unite together to celebrate their festivals with equal zeal and enthusiasm. Here patronage and participation of royal kingdom was equally important, which facilitated in the consolidation and maintenance of age old tradition.

The study of Jagdalpur under the project urban Anthropology undertaken in the 9th Five Year Plan, deals with the entire gamut of urban situation. Here special care has been taken to examine the town from historical prospective as well as from contemporary situation so as to assess how far this town has maintained its social entity, its relation with the surrounding regions and the impact of urban agglomeration. Apart from this attempt have also been made to know the facts and factors of emerging trend in the present context through various socio-cultural activities and other behaviour.

INTRODUCTION

Jagdalpur, located on the southern bank of Indravati river in the district of Bastar in the newly formed state of Chhattisgarh (earlier part of Madhya Pradesh), is an important town with well defined settlement plans and road pattern. Its history goes back to the epic period of the Ramayana and the Mahabharata. During that time, Bastar formed a part of Dandakaranya. The name Dandakaranya is derived from the name of Dandak, the third son of king Ichawaku. It is believed that the Guru of Raja Dandak was Daitya Guru Shukracharya who once became very angry and cursed Raja Dandak for which the whole kingdom of Dandak was transformed into wild forest. So after the name of Raja Dandak the whole area was known as Dandakaryana, i.e., forest of Dandak. Later on it was known as Dandakarayna Janpad and in this Janpad were included the present area of Bastar district, Jeypore region of Orissa and some parts of Andhra Pradesh on the north of Godavari River.

Historical Development

Not much older historical record is available for Dandakaranya, but it is known from the available history that during the period of 400-700 A.D. the whole area was ruled by the kings of Nal dynasty. The empire of Nal kings was extended upto Bilaspur in the north. During their rule Nal kings constructed temples in Bastar region. After the Nal dynasty the area was ruled by the Gang Rajvanshi who had established their capital at Barsur after coming from Jagannathpur in Orissa. Though local historians are silent on the rule of Gang kings but Kedarnath Thakur in his book Bastar Bhusan has given a good account of Barsur. According to his account Barsur was a beautiful town which had 147 big temples and equal number of ponds. Barsur is located nearly 34 km. west of Jagdalpur on the southern bank of Indravati river. Today Barsur is a big village with comparatively less importance.

From the various stone/copper plate inscriptions it is found that Bastar and its adjoining areas came under the rule of Nagvanshi dynasty sometime in the period of 1022 A.D. During this period Nagvanshi kings had captured Barsur. After ruling from Barsur for some time the Nagvanshis shifted their capital to Dantewara and later on to Chitrakot. Dantewara is located nearly 70 km west of Jagdalpur, whereas, Chitrakot is located nearly 39 km on the north-west on the southern bank of Indravati river. The Nagvanshi kings ruled this region for nearly 300 years until finally their last king Harish Chandra Deo was defeated by the Chalukya King Annam Deo of Warangal in 1313 A.D.

The Chalukuya or the Kakitaya kings ruled initially from Barsur and later on from Dantewara. During the period of their first king Annam Deo, the famous Danteswari temple was constructed on the confluence of Sankani and Dankani rivers. This temple still stands there and even today Danteswari Mai is recognized as the presiding deity of Bastar. Though the capital was shifted from Dantewara to various other places and finally to Jagdalpur in 1770, but the importance of the temple still remains intact. During this period only, the present town of Jagdalpur took the shape of an urban centre.

The Kakitaya kings who took a full control of Bastar region, as it came to be known during that period, were influenced by the changing socio-political scenario of the surrounding regions. The emergence of Maratha and Muslim power forced them to shift their capital from Madotha (near present Bastar village) to Jagdalpur during the period of Dalpat Deo. The king Dalpat Deo and his capital at Madotha became vulnerable to the Maratha attacks which forced him to opt for an alternative site of the capital of Riyasath. In this regard there exists a prevalent legend. The legend goes like this : Once Dalpat Deo was on the hunting expedition to the south of Indravati and became impressed by the observing the locational advantages of the present Jagdalpur which was at that time a village of the Maher community headed by their chieftain, Jagtu Mahara and the name of the village was Jagtu Guda. Dalpat Deo eventually shifted his capital to Jagtu Guda in the year 1770., Jagdalpur, situated on the southern side of river Indravati, had several reasons to become the capital at that period of time which are as follows :

- a) River Indravati forms a natural barrier for the invading enemies such as the Maratha and Muslims from the northern side.
- b) Jagtu Guda which later on became Jagdalpur is situated on the cliff of Indravati river. Hence, it was difficult to cross it from the northern side as it forms a wall which used to give a natural protection from defence point of view. It also helps to resist flood water.
- c) The soil of the locality was fertile. The Maher chief Jagtu helped the then king Dalpat Deo to establish his capital. Thus the name Jagdalpur is derived from the first three letters of Jagtu, i.e., Jag and the first three letters of the then King Dalpat Deo, i.e., Dal.
- d) The river Indravati became the main source of water supply as well as navigational channel.

After the establishment of the capital of Bastar Riyasath at Jagdalpur the tiny village of the Maher community started changing its form and character. Being the seat of political power it not only attracted the Rajbara or the palace of the king but also it made itself a place of attraction to various other nobles of the court of the Raja of Bastar, who started constructing their residence. This was followed by the employees of various departments of the nobility. The palace was set on the southern bank of the river Indravati very near to the important bend, which the river has taken while taking a northward turn and from Kohkapal village it again flows from east to west direction. The palace as well as the residents of the nobles were all located in the palace Parishar or nearby well fortified place with four gates on all the four directions.

There is not much information available on the early period of Jagdalpur. The only available record on the town of Jagdalpur is the C. Glassfords' Report which was sent to the Commissioner of Sirocha in 1862. It is stated in that report that Jagdalpur consists of nearly 400 huts and even the palace was big hut. It was reported that during this period a considerable number of other communities had established their homes at Jagdalpur. First to come were the Aranayak Brahman from Orissa who settled in a place located

between the Indravati river and the palace which is at present known as Bhairam Deo ward and comes under ward No. 4. The Aranayak Brahman were followed by the Vedic Brahman who settled little east of the Aranayak Brahmans' settlement. They were further followed by other Oriya population who settled to the south of the Aranayak and Vaidic Brahman settlements. Apart from the Oriya Brahman families Brahman from North (Uttar Pradesh and Chattisgarh region) along with Kshatriya families also settled in the south and south eastern portions of the palace and even today it is known as Pardeshi Para., Today this Pardeshi Para comes under the ward numbers 10 and 11 of Jagdalpur Municipality. On the northern side of the Pardeshi Para, the Muslims were settled. Among them the first to come was the family of Salam Malgujar to whom the king had given a Malgujari of 484 villages for a pair of Jewel studded shoe. The Malgujar and some other families came to Sadar Road. Thus before 1910 Jagdalpur was the cluster of different Paras such as, Oriya Brahman Para comprising basically people who were engaged in Puja Archana, the Pardeshi Para where people were engaged in different types of work in the palace and so on. The Muslim Para was the place where from the Laskar as well as the Kochwan and traders used to come. So the urban life of Jagdalpur was circled round the palace. In this period Goal Bazar also came into being which used to serve the local population as an important trading centre and market place. Another trading place was Itwari Bazar which used to be held on every Sunday. This was a rural Hat where tribal and other communitis used to bring their agricultural produce from surrounding areas. Even today Itwari Bazar is held but it is now engulfed by Sanjay Municipal Market which has been shifted from Gopal Bazar. At present it forms ward no. 19 of Jagdalpur Municipality. Apart from these Paras there exists nearly 11 villages in and around Jagdalpur. Thus it can be stated that apart from palace Parishar or Rajbara, other areas of urban settlements of Jagdalpur were Brahman Para, Pardeshi Para, Muslim Para and the Hikmi Para around which the early urbanization of Jagdalpur initiated.

Period between 1910-1947

After 1910 the British had established their full control over Bastar and the British posted their political agent to look after the administration of the Riyasath. During this period the political agent EAD Brist and Dewan Rai Bahadur Panda Bijnath initiated measures for planned development of Jagdalpur. A detailed master plan was prepared and Jagdalpur startd developing on a grid pattern with nearly 200 chowks, and thus Jagdalpur became famous as a town of chowks. Each and every road crosses each other. If one looks at the present map of Jagdalpur it will not be difficult to notice the area south of Circuit House to Hospital road and Municipality or Sanjay Market in the west to Lalbagh in the west the town has a good planning with wide road and pucca drain. During this period the town expanded in all directions but became more prominent with Goal Bazar serving the various needs of the town dwellers. Commercial activities were more or less confined between these two localities. Goal Bazar served as the centre for marketing of agricultural products where as Sadar road became important centre for clothes and other household goods. The southern part of Sadar road specially the present Pratap Deo ward slowly emerged as a whole-sale trading zone of Jagdalpur. Later on this zone was extended upto Balaji ward. Itwari Bazar also became important where major rural products were sold

right from vegetables to tamarind. Baila Bazar, a market for livestock, started loosing its importance during this period. However, the palace remained as the guiding point for urban development of Jagdalpur.

1947 onward

After 1947 the pace of development of Jagdalpur was further accelerated due to its importance as the district headquarters of the newly formed Bastar district of Madhya Pradesh. At present it has been bifurcated into three districts : Bastar, Kaker and Dantewara. Steps were taken to set up various offices at Jagdalpur and the most important was the establishment of the new building of the office of the Collector at the southern fringe, in the year 1962, behind Frazerpur Para to the north of Shantinagar. This gave major pull to the process of urbanization of Jagdalpur towards south. As a result Jagdalpur was extended upto Frazerpur and even Frazerpur, which was also known as *Jungle Para*, started changing its look due to the coming up of a new settlements. In between the Collectorate and the olden southern boundary of Jagdalpur, the government established Maharani Hospital and in the further south *Naya Para* emerged as the area of residential quarters for the government employees and later on private houses also came up. Besides the Collectorate Office, other offices like Commissioners' Office, All India Radio, District Court, Dairy Development Office, Zilla Panchayat Office and New Bus Stand all have been added for the south-western expansion of Jagdalpur. Establishment of cement factory at Gedam Road and the development of Frazerpur industrial area also gave a major thrust for expansion on development of Frazerpur industrial area also gave a major thrust for expansion on the southern portion of Jagdalpur and by 1980 Jagdalpur was extended upto Bypass Road, Jagdalpur Railway Station. On the south-eastern side *Naya Munda* and *Kewada Munda* also emerged as new important residential areas for the labour force who found work in different small units of Frazerpur industrial area. Behind this residential area Brindavan colony came up as a posh residential area of Jagdalpur. This area accomodates two newspaper homes of Jagdalpur, The *Dendakaranya Samachar* and *Nayee Duniya* (both in Hindi). Further east of Brindavan colony, Kumar Para developed very fast firstly due to settling of the East Pakistan refugee population in the late fiftees, who came to Jagdalpur under the Dandakaranya Project and later on after sixtees the establishment of various other offices of the State Government such as Forest Department, Kosa Silk Centre, Central School, Meterological Office, etc. On the northern portion of Lalbagh and south of Pathra Guda, Punjabi and Sindhi refugee settlements came up. The town was further extended towards east due to setting up of Police Training Camp at Kumdakot. Later on the township was extended further east and at present the eastern boundary of Jagdalpur touches Bypass Road or Jagdalpur airport going beyond *Amma Guda*. During this period Jagdalpur did not extend much towards the north because Indravati river forms a natural obstacle. At the same time the area north of *Dokrihat Para* or south of Rotary Club Building and Sindhu Bhavan is a low laying area and is prone to flood. In between the *Balaji Mandir* and *Khadag ghat* the area is used as the dumping ground of Jagdalpur Municipality. As the old Raipur Road has been closed for heavy traffic, the development of this area has slowed down. Another area which is developing fast are *Dalpat Sagar*, *Dantewari* and *Rajendra* Ward commonly known as Dharampura area, along the Chitrokot Road beyond Anupama talkies. Establishments

like Rice Mill, Housing Colony, Polytechnic and Government College have acted as a great pull factor for the process of urbanization of Jagdalpur in these areas. However, such areas fall beyond the boundary of Jagdalpur Municipality.

In the above description the process of urbanization of Jagdalpur has been discussed to understand the causes and nucleus of urbanization in various historical periods. The historical entities are still visible on the physical space of Jagdalpur. However, two roads at present are attracting the expansion of Jagdalpur, mainly the Jagdalpur – Chitrakot Road and Geedam Road. The former road is attracting various residential colonies, government offices and small industrial units whereas Geedam Road is the hub of the automobile repair centres.

Demographic Profile

Population forms an important and fundamental aspect of a town and a large section of the region's population live in towns. Jagdalpur is not an exception. The region in which Bastar is located has two more towns, Kanker in the north and Kirandul in the south besides Jagdalpur. Basically Bastar is dominated by rural population.

The total population of Jagdalpur according to 1991 census was 66,154 comprising 34,079 males and 32,075 females.

Table – 1 : Population variation of Jagdalpur

Sl. No.	Year	Persons	Variation	Male	Female	Female variation	Male variation
1	1901	4762	—	—	—	—	—
2	1911	6068	+1306	3049	3019	—	—
3	1921	7313	+1245	3603	3710	+691	+554
4	1931	10128	+2814	5041	5087	+1377	+1438
5	1941	11304	+1176	5670	5634	+547	+629
6	1951	13793	+243	6833	6910	+1276	+3964
7	1961	20412	+6619	10797	9615	+2705	+3964
8	1971	31344	+10932	16779	14565	+4950	+5982
9	1981	51286	+19942	27069	24217	+9652	+10290
10	1991	66154	+14868	34079	32075	+7858	+7010

(Source : Census of India)

In Table No. 1 the data have been presented as collected from different census records of Jagdalpur. It is seen here that Jagdalpur has maintained a positive growth rate of population since its origin. Starting with a small town of 4762 population strength, the capital of

Bastar Riyasat, today Jagdalpur remains as the district headquarter town with a population of 66154. So from a humble beginning of 4762 persons in 1901 it has grown to 66154. The growth of population has not been even since 1901. From 1901 to 1951 the growth of population was steady. But after 1951 there is a steep increase in the population and the curve after this period rises sharp in the vertical direction. For better understanding the population has been computed in ratio per centum taking $1901 = 100$ which forms table No. 2

Table – 2 : Population Growth : Ratio per centum

Sl. No.	Year	Persons	Male	Female
1	1901	127	—	—
2	1911	127	—	—
3	1921	145	118	123
4	1931	213	165	169
5	1941	237	186	187
6	1951	290	224	229
7	1961	429	354	318
8	1971	658	550	582
9	1981	1077	888	802
10	1991	1389	1118	1062

(Source : *Census of India*)

The following considerations emerge out from the analysis of table no. 2.

- a) During the periods of 1901-1921 the population of Jagdalpur has increased but did not cross the 200 ratio per centum limit. But in 1931 the decadal ratio percentum increased and crossed 200 which had persisted till 1951.
- b) The ratio per centum for periods 1961 and 1971 shows increased so the curve may be termed as sharp.
- c) During the periods of 1981-91 ratio per centum has a high rise and the curve became very steep.

In fact it rose to vertical line since 1981 and it is believed that this trend will be sustained in coming future.

It has been observed that there has been a population growth during the various census records. Let the causes for this growth of population be examined specially for 1951.

- a. There has not been many works or attempts to understand the urban profile of Jagdalpur. There is a gazetteer for the Bastar State from where one can get some information on the cause of development of Jagdalpur. Jagdalpur grew as the capital of Bastar Riyasat and the king used to control the settlement and population of the town. Hence in the initial period upto 1951 the growth of Jagdalpur was mainly a natural increase. However, after 1910 we find that there has been a systematic effort by the ruler / administrator to develop Jagdalpur as a town and as a result today the road and drainage pattern of the town seem to be better than before.
- b. The period between 1951 and 1971 witnesses a sharp increase in the population of Jagdalpur. Along with other places Jagdalpur also witnessed a socio-political change. With India's independence the feudal system gave way to the birth of new district of Bastar with the head quarter at Jagdalpur. With the setting up of the district headquarters as well as other Government offices a large number of government employees came to work in the government offices and Jagdalpur became a town of government employees. Along with this, other population also arrived at Jagdalpur.
- c. After 1971 Jagdalpur and its surrounding regions were open for industrialization and lots of medium and big industries came up in the vicinity of Jagdalpur. The areas of Geedam Road and Chitrakot Road became busy roads connecting Jagdalpur to the nearby industrial area.

Description of Household Survey

Jagdalpur town comprises thirty one wards. The sample population has been taken from all the wards to have better representation from each and every ward. The demographic and census details of the sample population has been covered through the canvassing of household schedules. Here altogether 393 household schedules have been filled up visiting their respective houses. The entire generated data have been analysed and divided into altogether eight tables to describe mainly population by sex, castewise distribution of the community, family type and family size, settlement pattern, rate of literacy, standard of education and occupational status of the communities.

Table – 3 : Population of the Sample Communities by Sex

Sl. No.	Name of Comm- unities	Total numbers of families	Total popu- lation	%	Male	%	Female	%
1	Agarwal	03	27	1.3	12	44.4	15	55.6
2	BODHAI	02	14	.7	06	42.9	08	57.1
3	BANIA	02	17	.8	09	52.9	08	47.1
4.	BHATRA	15	61	2.8	30	49.2	31	50.8
5	BANJARA	01	06	.3	03	50	03	50

Sl. No.	Name of Comm- unities	Total numbers of families	Total popu- lation	%	Male	%	Female	%
6	BRAHMIN	67	373	17.2	190	51	183	49
7	CHRISTIAN	37	147	6.8	73	49.7	74	50.3
8	DHOBI	06	30	1.4	15	50	15	50
9	DHURWA	06	32	1.5	19	59.4	13	40.6
10	DHAKAD	04	25	1	14	56	11	44
11	DEVANGAN	14	99	4.6	50	51	49	49
12	GHADWA	05	30	1.4	20	66.7	10	33.3
13	GUJRATI	01	06	.3	04	66.7	02	33.3
14	GOND	22	90	4.2	39	43.3	51	56.7
15	HALWAI	01	05	.2	02	40	03	60
16	HALBA	02	18	.8	10	55.6	08	44.4
17	HARIJAN	09	66	3.1	30	45.6	36	54.4
18	JAIN	05	27	1.3	13	48.1	14	51.9
19	KARAN	01	05	.2	03	60	02	40
20	KHATRI	01	06	.3	04	66.7	02	33.3
21	KRALIAN	02	07	.3	04	57.1	03	42.9
22	KURMI	04	26	1.2	14	53.8	12	46.2
23	KAYASTHA	11	52	2.4	31	59.6	21	40.4
24	KAWAR	01	05	.2	03	60	02	40
25	KALAR	02	10	.5	07	70	03	30
26	KEWAT	03	18	.8	10	55.6	08	44.4
27	KORI	01	07	.3	03	42.9	04	57.1
28	KUMHAR	03	15	.7	06	40	09	60
29	KAHAR	04	18	.8	11	61.1	07	38.9
30	LODHI	01	04	.2	01	25	03	75
31	LOHAR	03	17	.8	09	52.9	08	47.1
32	MAHARA	14	75	3.5	34	45.3	41	54.7
33	MURIA	05	27	1.3	16	59.3	11	40.7
34	MUSLIM	34	237	11	112	47.3	125	52.7
35	MARAR	04	17	.8	10	58.8	07	41.2
36	MAHAWAR	01	05	.2	03	60	02	40
37	MANJHI	01	03	.1	02	66.7	01	33.3
38	MAHARASTRIAN	02	11	.5	05	45.5	06	54.5
39	NAMSUDRA	05	37	1.7	21	56.8	16	43.2
40	NAI	03	17	.8	10	58.8	07	41.2
41	PATEL	01	04	.2	02	50	02	50

Sl. No.	Name of Comm- unities	Total numbers of families	Total popu- lation	%	Male	%	Female	%
42	PANIKA	02	10	.5	03	30	07	70
43	PUNJABI	01	09	.4	05	55.6	04	44.4
44	PAIK	01	02	.1	01	50	01	50
45	PANARA	02	25	1	15	60	10	40
46	RAJPUT	22	125	5.8	66	52.8	59	47.2
47	ROUT	01	124	5.7	65	52.4	59	47.6
48	SINDHI	08	41	1.9	19	46.3	22	53.7
49	SETHIA	01	03	.1	02	66.7	01	33.3
50	SIKH	04	14	.7	06	42.9	08	57.1
51	TELGU	12	63	2.9	32	50.8	31	49.2
52	TELI	01	06	.3	04	66.7	02	33.3
53	VISHWAKARMA	06	24	1	11	45.8	13	54.2
54	VAISNAV	02	08	.4	04	50	04	50
55	VAISYA	03	16	.7	08	50	08	50
TOTAL		393	2166	100	1101	50.80	1065	42.20

The table number three depicts the population of the sample by sex. Here altogether 393 household schedules have been filled, which falls within the municipal boundary. The sample size of the total communities count altogether 2166 members, where the total male population counts 1101 members, i.e., 50.83 per cent only while female population counts 1065 members, i.e., 49.17 per cent only. This shows that the number of males are slightly higher than the females in the total sample population. But at the community level there is slight variation. In some cases like Bania, Dhakad, Chawda, Gujarati, Kayastha, Kawar, Kalar, Nai, Raut and so on males are marginally higher in number while in cases of Agarwal, Badhai, Halwai, Kumhar, Lodhi and Panika females are comparatively more in number. This variation is mainly due to lesser number of representation of the communities. Moreover, some other factors like migration, occupational mobility and family structures are also contributing factors. In this table other important features worth mentioning is that in the sample population all the communities have not been evenly represented. Here Brahman, Christian, Gond, Muslim and Rajputs have larger representation due to their distribution in many wards while some communities have been represented very marginally due to their lesser number and less distribution in other wards. Such communities includes Banjara, Gujrati, Halwai, Karan, Khatri, Keralian, Kori, Lodhi, Manjhi, Sethia and so on Most of them are migrated communities.

Table – 4 : Caste wise distribution of population

Sl. No.	Name of community	Category
1	AGARWAL	GENERAL
2	BADHAI	OBC
3	BANIA	OBC
4	BHATRA	ST
5	BANJARA	ST
6	BRAHMAN	GENERAL
7	CHRISTIAN	ST
8	DHOBI	OBC
9	DHURWA	ST
10	DHAKAD	GENERAL
11	DEVANGAN	OBC
12	GHADWA	OBC
13	GUJRATI	GENERAL
14	GOND	ST
15	HALWAI	OBC
16	HALBA	ST
17	HARIJAN	SC
18	JAIN	GENERAL
18	JAIN	GENERAL
19	KARAN	NOT KNOWN
20	KHATRI	GENERAL
21	KERALIAN	GENERAL
22	KURMI	OBC
23	KAYASTHA	GENERAL
24	KAWAR	NOT KNOWN
25	KALAR	NOT KNOWN
26	KEWAT	OBC
27	KORI	SC
28	KUMHAR	OBC
29	KAHAR	OBC
30	LODHI	NOT KNOWN
31	LOHAR	OBC
32	MAHARA	OBC
33	MURIA	ST
34	MUSLIM	GENERAL
35	MARAR	NOT KNOWN
36	MAHAWAR	NOT KNOWN

Sl. No.	Name of community	Category
37	MANJHI	NOT KNOWN
38	MAHARASTRIAN	GENERAL
39	NAMASUDRA	SC
40	NAI	OBC
41	PATEL	GENERAL
42	PANIKA	ST
43	PUNJABI	GENERAL
44	PAIK	NOT KNOWN
45	PANARA	OBC
46	RAJPUT	GENERAL
47	ROUT	OBC
48	SINDHI	GENERAL
49	SETHIA	GENERAL
50	SIKH	GENERAL
51	TELEGU	GENERAL
52	TELI	OBC
53	VISHWAKARMA	OBC
54	VAISNAV	GENERAL
55	VAISYAA	OBC
		NUMBER
1	GENERAL CASTE	18
2	OTHER BACKWARD CASTES	18
3	SCHEDULED TRIBES	8
4	SCHEDULED CASTES	3
5	NOT KNOWN	8
TOTAL		55
		100.01

The table number four depicts the ethnic composition of the sample communities. there are altogether fifty five different communities covered under household schedules, who are dwelling in the town. Out of total communities, the highest number of communities counting eighteen in number, i.e., 32.73 per cent belong to Other Backward Communities while the similar number of communities, i.e., 32.73 per cent of total communities fall in the general caste groups. The scheduled tribes are other important communities of the town, which are altogether eight in number, i.e., 14.55 per cent of the total number. Almost similar number of communities denied to disclose their caste identity. So they have been grouped under 'caste not known' group which constitutes 14.55 per cent of the

total population. Apart from it there is a sizeable population of scheduled caste communities also like the Harijan, Kori and the Namasudra, who are mostly migratd groups. This group constitute 5.45 per cent of the entire communities covered under household schedules.

Table – 5 :

Sl. No.	Name of Comm- unities	Total numbers of families	Total popu- lation	%	Male	%	Female	%
1	Agarwal	03	27	1.3	12	44.4	15	55.6
2	BODHAI	02	14	.7	06	42.9	08	57.1

The table number five depicts the family size in different communities under the study. The sample of household families have been categorized on the basis of number of family members. Here small family denotes one to four family members and medium size family is constituted of five to six family members while large sized family counts more than six members. Here it is found that out of total 393 families the number of large families are marginally higher than the medium sized families. Statistically large sized family group, counts 31.80 per cent of the total families studied while medium sized familis are slightly lesser in number, i.e., 31.60 per cent of the total sample studied. As per study there is not much inclination towards small family with two members or towards very big family with more than six members. Even then there is substantial proportion of very large family. The average family size of the total sample is 5.51 members only.

Table – 6 : Family type

Sl. No.	Community	Total Number of families	Nuclear family	%	Joint family	%
1	AGARWAL	3	1	33.33	2	66.67
2	BADHAI	2	1	50.00	1	50.00
3	BANIA	2	1	50.00	1	50.00
4	BHATRA	15	12	80.00	3	20.00
5	BANJARA	1	—	—		100.00
6	BRAHMAN	67	46	68.66	21	31.34
7	CHRISTIAN	37	27	72.97	10	27.03

Sl. No.		Name of community			Category	
8	DHOBI	6	2	33.33	4	66.67
9	DHURWA	6	3	50.00	3	50.00
10	DHAKAD	4	2	50.00	2	50.00
11	DEVANGAN	14	6	42.96	8	57.14
12	GHADWA	5	2	40.00	3	60.00
13	GUJRATI	1	1	100.00	—	—
14	GOND	22	21	95.45	1	4.55
15	HALWAI	1	1	100.00	—	—
16	HALBA	2	1	50.00	1	50.00
17	HARIJAN	9	5	55.56	4	44.44
18	JAIN	5	3	60.00	2	40.00
19	KARAN	1	1	100.00	—	—
20	KHATRI	1	—	—		100.00
21	KERALIAN	2	2	100.00	—	—
22	KURMI	4	2	50.00	2	50.00
23	KAYASTHA	11	8	72.73	3	27.27
24	KAWAR	1	1	100.00	—	—
25	KALAR	2	1	50.00	1	50.00
26	KEWAT	3	2	66.67	1	33.33
27	KORI	1	—	—		100.00
28	KUMHAR	3	2	66.67	1	33.33
29	KAHAR	4	2	50.00	2	50.00
30	LODHI	1	1	100.00	—	—
31	LOHAR	3	3	100.00	—	—
32	MAHARA	14	11	78.57	3	21.43
33	MURIA	5	4	80.00	1	20.00
34	MUSLIM	34	24	70.59	10	29.41
35	MARAR	4	4	100.00	—	—
36	MAHAWAR	1	1	100.00	—	—
37	MANJHI	1	1	100.00	—	—
38	MAHARASTRIAN	2	2	100.00	—	—
39	NAMASUDRA	5	3	60.00	2	40.00
40	NAI	3	3	100.00	—	—
41	PATEL	1	1	100.00	—	—
42	PANIKA	2	1	50.00	1	50.00

Sl. No.	Community	Total Number of families	Nuclear family	%	Joint family	%
43	PUNJABI	1	—	—	1	100.00
44	PAIK	1	1	100.00	—	—
45	PANARA	2	—	—	2	100.00
46	RAJPUT	22	17	77.27	5	22.73
47	ROUT	19	9	47.37	10	52.63
48	SINDHI	8	6	75.00	2	25.00
49	SETHIA	1	1	100.00	—	—
50	SIKH	4	4	100.00	—	—
51	TELGU	12	9	75.00	3	25.00
52	TELI	1	—	—	1	100.00
53	VISHWAKARMA	6	5	83.33	1	16.67
54	VAISNAV	2	1	50.00	1	50.00
55	VAISYA	3	2	66.67	1	33.33
TOTAL		393	270	68.70	123	31.30

The table number six depicts the family types of different communities covered under the household schedule. Here all the fifty five communis have been broadly divided into two major groups namely joint family and nuclear family. Out of total families studied a large proportion, i.e., altogether 270 families fall under the nuclear family category which constitute 68.70 per cent of the total population while a sizeable number of them, i.e., altogether 123 families which counts 31.30 per cent of the population come under the joint family category. This shows that in spite of urban influence, the traditional joint family still exists here though its number is gradually decreasing. In the sample size no broken family was reported.

Table – 7 : Settlement pattern

Sl. No.	Community	Total Number of families	Migrated families	%	Old settler	%
1	AGARWAL	3	3	100.00	—	—
2	BADHAI	2	2	100.00	—	—
3	BANIA	2	2	100.00	—	—
4	BHATRA	15	3	20.00	12	80.00

Sl. No.	Community	Total Number of families	Migrated families	%	Old settler	%
5	BANJARA	1	1	100.00	—	—
6	BRAHMAN	67	51	76.12	16	23.88
7	CHRISTIAN	37	26	70.27	11	29.73
8	DHOBI	6	3	50.00	3	50.00
9	DHURWA	6	—	—	6	100.00
10	DHAKAD	4	—	—	4	100.00
11	DEVANGAN	14	10	71.43	4	28.57
12	GHADWA	5	—	—	5	100.00
13	GUJRATI	1	1	100.00	—	—
14	GOND	22	12	54.55	10	45.45
15	HALWAI	1	1	100.00	—	—
16	HALBA	2	—	—	2	100.00
17	HARIJAN	9	6	66.67	3	33.33
18	JAIN	5	5	100.00	—	—
19	KARAN	1	1	100.00	—	—
20	KHATRI	1	1	100.00	—	—
21	KERALIAN	2	2	100.00	—	—
22	KURMI	4	3	75.00	1	25.00
23	KAYASTHA	11	5	45.45	6	54.55
24	KAWAR	1	1	100.00	—	—
25	KALAR	2	2	100.00	—	—
26	KEWAT	3	3	100.00	—	—
27	KORI	1	1	100.00	—	—
28	KUMHAR	3	3	100.00	—	—
29	KAHAR	4	4	100.00	—	—
30	LODHI	1	1	100.00	—	—
31	LOHAR	3	2	66.67	1	33.33
32	MAHARA	14	1	7.14	13	92.86
33	MURIA	5	—	—	5	100.00
34	MUSLIM	34	21	61.76	13	38.24

Sl. No.	Community	Total Number of families	Nuclear family	%	Joint family	%
35	MARAR	4	3	75.00	1	25.00
36	MAHAWAR	1	1	100.00	—	—
37	MANJHI	1	—	—	1	100.00
38	MAHARASTRIAN	2	2	100.00	—	—
39	NAMASUDRA	5	5	100.00	—	—
40	NAI	3	2	66.67	1	33.33
41	PATEL	1	1	100.00	—	—
42	PANIKA	2	1	50.00	1	50.00
43	PUNJABI	1	1	100.00	—	—
44	PAIK	1	—	—	1	100.00
45	PANARA	2	—	—	2	100.00
46	RAJPUT	22	18	81.82	4	18.18
47	ROUT	19	13	68.42	6	31.58
48	SINDHI	8	8	100.00	—	—
49	SETHIA	1	—	—	1	100.00
50	SIKH	4	4	100.00	—	—
51	TELGU	12	12	100.00	—	—
52	TELI	1	1	100.00	—	—
53	VISHWAKARMA	6	6	100.00	—	—
54	VAISNAV	2	2	100.00	—	—
55	VAISYA	3	3	100.00	—	—
TOTAL		393	260	66.16	133	33.84

The table number seven depicts the settlement pattern of different communities. As already referred to in the report that Jagdalpur is a town, where a large number of settled population are the migrated people. The period of migration varied from pre independence era to the post independence phase including the settlement of outsiders under Dandakaranya project. This table is the true representation of the town settlement. The sample size shows that more than half population, i.e., 260 families counting 66.16 per cent are basically migrated families while only a sizeable number of 133 families are old settlers.

The table indicates that some communities like Agarwal, Badhai, Bania, Gujarati, Halwai, Kewat, Kori, Kumhar, Kahar, Lodhi, Patel, Punjabi, Sikh, Telugu, Teli, Vaisnav, Vaisya and so on are migrated communities while Dhurwa, Dhakad, Ghadwa, Halba Manjhi, Paik, Panara are the original settlers. Apart from all these communities there are some communities like Bhatra, Brahman, Christian, Harijan, Lohar and so on who come under both groups, i.e., migrated as well as old settlers because among them some families are living here since the ruler's period, and such families are considered as old settlers while members of the same community settled later for business or other purposes are grouped under new settlers category.

Table – 8 : Literates & illiterates in sample communities by sex

SL no.	Community	sample population			Total		literates				Total		Illiterate			
		Total	M	F	No.	%	M		F		No.	%	M		F	
							No.	%	No.	%			No.	%	No.	%
1	AGARWAL	24	11	13	21	87.50	10	90.90	11	84.62	3	12.50	1	9.10	2	15.3
2	BADHAI	14	6	8	12	85.21	6	100.00	6	75.00	2	14.29	-	-	2	25.00
3	BANIA	17	9	8	17	100.00	9	100.00	8	100.00	-	-	-	-	-	-
4	BHATRA	58	29	29	41	70.68	23	79.31	18	62.07	17	29.32	6	20.69	11	37.93
5	BANJARA	5	2	3	2	40.00	1	50.00	1	33.33	3	60.00	1	50.00	2	66.67
6	BNRAHMIN	356	181	175	337	94.66	179	98.90	158	90.29	19	5.34	2	1.40	17	9.70
7	CHRISTIAN	135	68	67	123	91.11	64	94.11	59	88.06	12	8.89	4	5.89	8	11.94
8	DHOBI	27	14	13	20	74.07	14	100.00	6	46.15	7	25.93	-	-	7	53.85
9	DHURWA	31	19	12	22	70.96	17	89.47	5	41.67	9	29.04	2	10.53	7	58.33
10	DHAKAD	21	13	8	17	80.95	13	100.00	4	50.00	4	19.05	-	-	4	50.00
11	DEVANGAN	96	50	46	93	96.88	50	100.00	43	93.48	3	3.12	-	-	3	6.52
12	GHADWA	28	18	10	13	46.43	10	55.56	3	30.00	15	53.57	8	44.44	7	70.00
13	GUJRATI	6	4	2	6	100.00	4	100.00	2	100.00	-	-	-	-	-	-
14	GOND	87	38	49	71	81.61	33	86.84	38	77.55	16	18.39	5	13.16	11	22.45
15	HALWAI	5	2	3	5	100.00	2	100.00	3	100.00	-	-	-	-	-	-
16	HALBA	16	9	7	13	81.25	7	77.78	6	85.71	3	18.75	2	2.22	1	12.29
17	HARUAN	62	29	33	48	77.42	26	89.66	22	66.67	14	22.60	3	10.34	11	33.33
18	JAIN	26	13	13	25	96.15	13	100.00	12	91.31	1	3.85	-	-	1	7.69
19	KARAN	5	3	2	5	100.00	3	100.00	2	100.00	-	-	-	-	-	-
20	KHATRI	6	4	2	6	100.00	4	100.00	2	100.00	-	-	-	-	-	-
21	KERALIAN	7	4	3	7	100.00	4	100.00	3	100.00	-	-	-	-	-	-
22	KURMI	25	13	12	24	96.00	13	100.00	11	91.67	1	4.00	-	-	1	8.33
23	KAYASTHA	50	29	21	47	94.00	29	100.00	18	85.71	3	6.00	-	-	3	14.29
24	KAWAR	5	3	2	3	60.00	3	100.00	-	-	2	40.00	-	-	2	100.00
25	KALER	8	5	3	7	87.50	4	80.00	3	100.00	1	12.50	1	20.00	-	-
26	KEWAT	17	9	8	15	88.24	9	100.00	6	75.00	2	11.76	-	-	2	25.00
27	KORI	7	3	4	5	71.43	3	100.00	2	50.00	2	28.57	-	-	2	50.00
28	KUMHAR	12	6	6	9	75.00	6	100.00	3	50.00	3	25.00	-	-	3	50.00
29	KAHAR	17	10	7	16	94.12	9	90.00	7	100.00	1	5.88	1	10.00	-	-

SL no.	Community	sample population			Total		literates				Total		Illiterate			
		Total	M	F	No.	%	M		F		No.	%	M		F	
							No.	%	No.	%			No.	%	No.	%
30	LODHI	4	1	3	3	75.00	1	100.00	2	66.67	1	25.00	—	—	1	33.33
31	LOHER	16	9	7	12	75.00	8	88.89	4	57.14	4	25.00	—	11.11	3	42.86
32	MAHARA	66	30	36	42	63.64	20	66.67	22	61.11	24	36.36	10	33.33	14	38.89
33	MURIA	25	14	11	21	84.00	13	92.86	8	72.73	4	16.00	1	7.14	3	27.27
34	MUSLIM	230	109	121	207	90.00	104	95.41	103	85.12	23	10.00	5	4.59	18	14.88
35	MARAR	16	10	6	15	93.75	10	0.00	5	83.33	1	6.25	—	—	1	16.67
36	MAHAWAR	5	3	2	4	80.00	3	0.00	1	50.00	1	20.00	—	—	1	50.00
37	MANJHI	3	2	1	3	100.00	2	100.00	1	100.00	—	—	—	—	—	—
38	MAHARASTRIAN	10	4	6	10	100.00	4	100.00	6	100.00	—	—	—	—	—	—
39	NAMSUDRA	34	19	15	29	85.29	17	89.47	12	80.00	5	14.71	2	10.53	3	20.00
40	NAI	17	10	7	12	70.59	9	90.00	3	42.86	5	29.41	1	10.00	4	57.14
41	PATEL	4	2	2	4	100.00	2	100.00	2	100.00	—	—	—	—	—	—
42	PANIKA	9	2	7	7	77.78	1	50.00	6	85.71	2	22.22	1	50.00	1	14.29
43	PUNJABI	8	4	4	7	87.50	4	100.00	3	75.00	1	12.50	—	—	1	25.00
44	PAIK	2	1	1	1	50.00	1	100.00	—	—	1	50.00	—	—	1	—45
	PANARA	21	12	9	14	66.67	9	75.00	5	55.56	7	33.33	3	25.00	4	44.44
46	RAJPUT	117	61	56	108	92.31	59	96.70	49	87.50	9	7.69	2	3.38	7	12.50
47	ROUT	114	61	53	81	71.05	50	82.00	31	58.49	33	28.95	11	18.03	22	41.51
48	SINDHI	37	17	20	32	86.49	16	94.10	16	80.00	5	13.51	1	5.89	4	20.00
49	SETHIA	3	2	1	3	100.00	2	100.00	1	100.00	—	—	—	—	—	—
50	SIKH	14	6	8	13	92.86	6	100.00	1	87.50	1	7.14	—	—	1	12.50
51	TELUGU	60	29	31	55	91.67	28	96.55	27	87.10	5	8.33	1	3.45	4	12.90
52	TELI	8	4	2	6	100.00	4	100.00	2	100.00	—	—	—	—	—	—
53	VISHWAKARMA	21	9	12	12	57.14	5	55.56	7	58.33	9	42.86	4	44.44	5	41.7
54	VAISNAV	8	4	4	8	100.00	4	100.00	4	100.00	—	—	—	—	—	—
55	VAISVA	15	7	8	14	93.33	7	100.00	7	87.50	1	6.77	—	—	1	12.50
Total		2038	1036	1002	1753	86%	957	92%	796	79%	285	14%	79	8%	206	21%

The table number eight reveals the position of literates and illiterates in the sample communities on the basis of their sex. As per the table 86 per cent of total population are literates while the rest 14 per cent comes under illiterate group. When this percentage is analysed on the basis of sex, it is found that 92 per cent males and 79 per cent females are literates. This shows that the rate of literacy is substantially higher in male population than the female. On the contrary the number of illiterates among females are marginally higher, i.e., 20.60 per cent and substantially lesser in males, i.e., 8 per cent only.

Table – 9 : Distribution of literates percentage in different educational levels of the sample communities by sex

SL no.	Community	Literate		Primary		Middle		Secondary		Inter		U.G.		P.G.		Technical	
		M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
43	PUNJABI	4	3	50.00	100.00	25.00	-	25.00	-	-	-	-	-	-	-	-	-
44	PAIK	1	-	100.00	-	-	-	-	-	-	-	-	-	-	-	-	-
45	PANARA	9	5	55.55	60.00	33.33	40.00	11.11	-	-	-	-	-	-	-	-	-
46	RAJPUT	59	49	20.30	20.30	17.00	24.50	27.10	32.70	10.20	8.20	18.60	2.00	3.40	4.10	3.40	8.20
47	ROUT	50	31	30.00	38.70	16.00	12.90	22.00	19.40	14.00	12.90	12.00	12.90	4.00	3.20	2.00	-
48	SINDHI	16	16	37.40	43.70	25.00	18.80	18.80	37.50	18.80	-	-	-	-	-	-	-
49	SETHIA	2	1	-	100.00	100.00	-	-	-	-	-	-	-	-	-	-	-
50	SIKH	6	7	-	-	50.00	42.90	33.33	14.30	-	28.50	16.67	-	-	14.30	-	-
51	TELUGU	28	27	32.10	18.60	10.70	11.11	7.10	14.80	7.10	7.40	25.00	33.33	3.60	11.11	14.30	3.70
52	TELI	4	2	-	-	25.00	-	25.00	100.00	25.00	-	2500	-	-	-	-	-
53	VISHWAKARMA	5	7	-	57.10	100.00	42.90	-	-	-	-	-	-	-	-	-	-
54	VAISNAV	4	4	-	-	-	-	-	-	50.00	25.00	25.00	75.00	25.00	-	-	-
55	VAISVA	7	7	57.10	14.30	14.30	28.60	14.30	42.90	-	-	-	14.30	-	-	-	-
Total		957	796	26.80	27.30	20.70	22.10	20.50	32.50	10.10	8.70	14.90	11.20	4.30	6.10	2.70	1.10

The table number nine depicts the distribution of literates in different educational levels of the sample communities by sex. Here educational level has been categorize into eight categories namely literates, primary, middle, secondary, intermediate, UG PG and Technical degree. As per table the percentage of males are highest in the primary category which count 26.80 per cent while in case of females 27.30 per cent fall under this category. But there is variation in both the sexes in other educational levels. Among the males the second largest group of educational level, is middle class, while the third in the succession is secondary level. On the other hand among females after the primary level, the second and third groups in proportion are secondary class and middle class respectively. So in spite of lesser literacy rate, the females are found studying in higher classes than the males in terms of their percentage.

Table – 10 : Occupation structure by sex

SL no.	Community	Total No. of		Private Job		Govt. Job		Business		Retired		Any other Job	
		Male(%)	Female(%)	M(%)	F(%)	M(%)	F(%)	M(%)	F(%)	M(%)	F(%)	M(%)	F(%)
1	AGARWAL	7 (58.33)	-	-	-	-	-	100.00	-	-	-	-	-
2	BADHAI	4 (66.67)	-	-	-	50	-	50	-	-	-	-	-
3	BANIA	1 (11.11)	-	-	-	-	-	100.00	-	-	-	-	-
4	BHATRA	18 (60.00)	5 (16.13)	11.11	-	44.44	20.00	22.22	20.00	5.57	-	16.67	60.00
5	BANJARA	1 (33.33)	(N)	-	-	-	-	-	-	100.00	-	-	-
6	BNRAHMIN	100 (52.63)	10 (5.46)	7.00	-	44.00	-	26.00	20.00	8.00	-	15.00	19.30
7	CHRISTIAN	43 (58.90)	26 (35.14)	6.98	11.50	25.58	80.00	11.63	11.50	6.98	7.70	43.83	50.00
8	DHOBI	7 (46.67)	2 (13.33)	28.60	-	-	50.00	42.80	50.00	-	-	28.60	100.00
9	DHURWA	7 (36.84)	1 (7.70)	-	-	57.10	-	-	-	-	-	42.90	-
10	DHAKAD	9 (64.29)	(N)	22.3	-	11.10	-	11.1	-	11.10	-	44.40	-
11	DEVANGAN	27 (54.00)	(N)	29.6	-	14.80	-	29.6	-	7.40	-	18.60	100.00
12	GHADWA	7 (35.00)	(N)	28.60	-	-	-	-	-	-	-	71.40	-
13	GUJRATI	1 (25.00)	(N)	-	-	-	-	100.00	-	-	-	-	42.90

SL no.	Community	Total No. of		Private Job		Govt. Job		Business		Retired		Any other Job	
		Male(%)	Female(%)	M(%)	F(%)	M(%)	F(%)	M(%)	F(%)	M(%)	F(%)	M(%)	F(%)
14	GOND	18 (46.15)	7 (13.73)	5.60	-	66.60	42.90	5.60	14.20	5.60	-	16.50	-
15	HALWAI	1 (50.00)	(N)	-	-	-	-	100.00	-	-	-	-	-
16	HALBA	3 (30.00)	1 (12.50)	-	-	33.30	100.00	33.30	-	-	-	33.30	66.70
17	HARUAN	12 (40.00)	3 (8.33)	16.70	-	16.70	33.30	8.30	-	-	-	58.30	-
18	JAIN	5 (38.46)	(N)	-	-	-	-	100.00	-	-	-	-	-
19	KARAN	2 (66.67)	(N)	-	-	50.00	-	50.00	-	-	-	-	-
20	KHATRI	3 (75.00)	(N)	-	-	-	-	10.00	-	-	-	-	-
21	KERALIAN	2 (50.00)	1 (33.33)	-	-	-	100.00	50.00	-	50.00	-	-	-
22	KURMI	6 (42.86)	1 (8.33)	-	-	16.67	100.00	83.30	-	-	-	10.00	-
23	KAYASTHA	20 (64.52)	1 (4.76)	15.00	-	35.00	100.00	35.00	-	50.00	-	-	-
24	KAWAR	1 (33.33)	(N)	-	-	100.00	-	-	-	-	-	-	-
25	KALER	2 (28.57)	1 (33.33)	-	-	100.00	100.00	-	-	-	-	-	-
26	KEWAT	4 (40.00)	(N)	-	-	50.00	-	50.00	-	-	-	33.30	-
27	KORI	2 (66.67)	(N)	50.00	-	50.00	-	-	-	-	-	-	-
28	KUMHAR	3 (50.00)	(N)	33.30	-	-	-	33.30	-	-	-	-	-
29	KAHAR	8 (72.73)	(N)	12.50	-	37.50	-	37.50	-	12.50	-	20.00	-
30	LODHI	1 (100.00)	(N)	-	-	100.00	-	-	-	-	-	42.90	75.00
31	LOHER	5 (55.56)	(N)	60	-	20.00	-	-	-	-	-	33.30	-
32	MAHARA	14 (41.18)	4 (9.76)	-	-	7.10	25.00	42.90	-	7.10	-	14.90	-
33	MURIA	6 (37.50)	3 (27.27)	16.70	-	-	-	50.00	33.30	-	-	-	-
34	MUSLIM	47 (41.96)	6 (4.80)	8.50	16.70	40.40	66.60	29.80	16.70	6.40	-	-	-
35	MARAR	4 (40.00)	(N)	-	-	100.00	-	-	-	-	-	-	-
36	MAHAWAR	1 (33.33)	(N)	-	-	-	-	100.00	-	-	-	-	-
37	MANJHI	1 (50.00)	(N)	-	-	-	-	-	100.00	-	-	-	-
38	MAHARASTRIAN	2 (40.00)	(N)	-	-	100.00	-	-	-	-	-	-	-
39	NAMSUDRA	7 (33.33)	(N)	-	-	28.60	-	57.10	-	-	-	-	-
40	NAI	3 (30.00)	(N)	33.30	-	-	-	33.33	-	33.33	-	500.00	-
41	PATEL	1 (50.00)	(N)	-	-	-	-	100.00	-	-	-	-	-
42	PANIKA	2 (66.67)	(N)	-	-	-	-	50.00	-	-	-	100.00	-
43	PUNJABI	3 (60.00)	(N)	-	-	-	-	100.00	-	-	-	33.30	50.00
44	PAIK	1 (100.00)	(N)	-	-	-	-	-	-	-	-	10.70	-
45	PANARA	3 (20.00)	2 (20.00)	-	-	-	-	33.30	50.00	33.30	-	27.80	-
46	RAJPUT	28 (42.42)	3 (5.08)	10.70	-	35.70	100.00	39.30	-	3.60	-	-	-
47	ROUT	36 (55.38)	(N)	25.00	-	22.20	-	19.40	-	5.60	-	-	-
48	SINDHI	10 (52.63)	1 (4.55)	20.00	-	10.00	-	70.00	10.00	-	-	-	-
49	SETHIA	1 (50.00)	(N)	-	-	-	-	100.00	-	-	-	12.50	-
50	SIKH	5 (83.33)	(N)	-	-	-	-	100.00	-	-	-	-	-
51	TELUGU	16 (50.00)	4 (12.90)	12.50	50.00	37.50	50.00	37.50	-	-	-	-	-
52	TELI	2 (50.00)	(N)	-	-	100.00	-	-	-	-	-	-	-
53	VISHWAKARMA	7 (63.64)	1 (7.69)	14.29	-	14.29	-	71.43	-	-	-	-	100.00
54	VAISNAV	3 (75.00)	1 (25.00)	-	-	33.33	100.00	33.33	-	33.33	-	-	-
55	VAISVA	4 (50.00)	(N)	-	-	25.00	-	75.00	-	-	-	-	-
Total		537 (48.77)	85 (7.98)	11.40	7.10	31.10	49.40	32.00	14.10	5.40	2.40	20.10	27.10

This table ten describes the occupational status of different sample communities. The occupations have been divided into five distinct groups namely private job, government job, business, retired and any other job. Here any other job includes mainly casual labourer, contractor, skilled labourer, rickshaw puller, load carrier, etc. As per the table out of total population under the study only 537 males, i.e., 48.70 per cent are found engaged in different occupations while in case of females only 7.98 per cent, i.e., only eighty five females have been reported engaged in different occupations. Here again among males maximum per centage of males, i.e., 32 per cent are engaged in business and slightly less than this, i.e., 31.10 per cent of males are employed in different government jobs while a sizeable proportion, i.e., 20.10 per cent males are in any other job category. However, the percentage of males engaged in private job and retired are quite marginal. On the other hand among females about half population are engaged in the government services, which count 49.40 per cent. While 27.10 per cent of them are in the any other job category working as maidservant, casual labour, etc. and a sizeable population of them are in different business as well which is 14.10 per cent of total female population involved in occupations. Apart from it 7.10 per cent females are reported to be engaged in private job while just 2.40 per cent of them are in retired category. Thus this table clearly shows that in spite of lesser population engaged in different occupations, a large variation is seen among them.

Economic Base

It has been stated above that Jagdalpur has grown up in manifold direction. The population which was 4762 in 1901 went up to 66154 in the year 1991 and the projected population for 2001 is about one lakh. A question arises in mind that what this population is doing and how they are being absorbed in the town economy? This can be answered by looking into the occupation categories of the census of India. These categories indicate that how the population are being absorbed in gainful occupation of the town. In other words the economic base of a town must be in a position to sustain the population living in it. For this purpose five tables have been prepared representing 5 different periods, viz., 1951, 1961, 1971, 1981 and 1991 showing the occupational categories of the period.

Table – 11 : Occupational Structure : 1951

Sl. No.	Occupational Categories	Persons	percentage
1	Total Population	13793	—
2	Cultivators	1373	10.42
3	Production	1997	14.47
4	Commerce	3423	24.81
5	Transport	1045	7.57
6	Other services	5955	43.17

(Source : Census of India, 1951)

The following considerations appear to emerge :

1. The column other services ranks first with 43.17 per cent populatin in its fold. Jagdalpur, being the capital of Bastar Riyasat, absorbed a sizeable population in various jobs of the Riyasat. As the Census was held just after the independence the category should have the maximum number. In fact Jagdalpur remained a town of government employees even today.
2. The category other services is followed by commerce which has 24.18 per cent of its total population in its fold. Jagdalpur, being the major town of the surrounding region, discharged its duty as a commercial centre.
3. In the production category namely 14.47 per cent of the population were engaged specially in making of cotton and silk cloth, iron smithy and saw mills.
4. The category cultivators had also a good percentage. 9.71 per cent and other caste people do used to have their land in the nearby village and used to live in the town.
5. The category transport was not having any population because transport was not developed at that time.

Table – 12 : Occupational Structure : 1961

Sl. No.	Occupational Categories	Persons	percentage
1.	Total Population	20412	-29.21
2.	Total workers	7764	-29.21
3.	Cultivators	723	9.31
4.	Agricultural labourers	97	1.24
5.	Mining	394	5.07
6.	Household industry	322	4.14
7.	Manufacturing other than household	690	9.88
8	Construction	110	1.41
9	Trade and Commerce	1157	14.90
10	Transport, storage and communication	467	6.01
11	In other services	3804	48.09
12	Non workers	12648	61.96

(Source : *Census of India, 1961*)

While computing the percentage it may be noted that the categories 'total worker' and 'non-worker' have been computed in relation to the total population. But for the occupational categories the percentage has been computed in relation to total workers. The following considerations appear to emerge by examining table no.12

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While computing the percentage it may be noted that the categories 'total worker' and 'non-worker' have been computed in relation to the total population. But for the occupational categories the percentage has been computed in relation to total workers. The following considerations appear to emerge by examining table no.12

1. Jagdalpur has the highest percentage (48.99) under 'other service' category which reflects the basic economic character of the town. Jagdalpur, after Independence, became the district headquarter of the newly formed district Bastar and due to this may state as well central offices were established in the town.
2. The percentage of trade and commerce declined (14.90 per cent) in comparison to its 1951 frequency. However, it has retained its second position in the occupational structure hierarchy showing that it is trying to serve the town as well as the region with central services, trade and commerce.
3. The category trade and commerce is followed by cultivators (9.31) which has registered a slight decline in the per centage.
4. Manufacturing other than household industry has 9.88 per cent of the total workers under its category which indicates that industry had started coming up at Jagdalpur.
5. With the increase in population transport, storage and communication could not develop and for Jagdalpur remained isolated to this a great extent.
6. Other categories like mining, household industry, etc. have lesser per centage.
7. The category non workers formed the bulk population with 61.96 per cent of the total population of Jagdalpur.

Table - 13 : Occupational structure : 1971

SI. No.	Occupational Categories	Persons	percentage
1.	Total Population	31344	—
2.	Total workers	8944	28.54
3.	Cultivators	498	28.54
4.	Agricultural Labourers	396	4.42
5.	Livestock Forestry, etc.	524	5.95
6.	Mining Quarrying	55	0.61
7.	Household industry	316	3.53
8.	Other than household industry	816	9.50
9.	Construction	417	4.60
10.	Trade and Commerce	1877	20.98
11.	Transport, Storage and communication	559	6.25
12.	Other services	3492	34.04
13.	Non Workers	22400	71.40

(Source : *Census of India, 1971*)

In table no. thirteen total workers and non workers per centage has been shown in relation to total population of the town. The following considerations appear to emerge from the examination of this table.

1. The per centage of non workers count 71.40 which is nearby 10 per cent higher than the previous record of 1961 where as the per centage under total workers remains more or lets the same.
2. People engaged in other services has the highest percentage (34.04) which clearly shows that Jagdalpur has retained its character as a town for the service class.
3. The category other service is followed by trade and commerce occupation where the per centage is nearly 20.98 of the total workers. This category has shown an increase of nearly 6 per cent. By this time more and more commercial establishments have been set up to cater to the need of the people.
4. If the per centage of population working in manufacturing sector both household and other then household is added then the per centage is nearly 12 per cent. Jagdalpur started the supporting the population with steel fabrication, wooden, etc.
5. The per centage under Transport, storage and commercial has not shown much change than its share in 1961. The per centage is nearly 6.25 per cent of the total workers.
6. Livestock and forestry was added as a new occupation and Jagdalpur being situated in the midst of forest areas has nearly 5.85 per cent of its total work force engaged in this occupation. New offices of the forest department were set up in the Kumar Para area of the town.
7. In other categories cultivators have nearby 5.56 per cent of the total workers, which is little lower than it had in the pervious dacade.
8. Construction has gained importance during this period and the per centage of workers in this category has gone upto 4.66 per cent from its previous share of 1.45 per cent in 1961.

Table - 14 : Occupational Structure 1981

Sl. No.	Occupational Categories	Persons	percentage
1.	Total Population	51286	—
2.	Total workers	15968	31.13
3.	Cultivators	846	5.29
4.	Agricultural labour	1090	6.82
5.	Household Industry	324	2.02
6.	Other Workers	13542	84.80
7.	Marginal workers	166	1.03
8.	Non workers	35318	68.68

(Source : 1981 Census)

The following observations emerge out from the above table.

1. The per centage of non workers population remained high (68.86 per cent) but it has gone down by nearly 2.72 percentage.
2. As usual the highest per centage is of the other workers category (84.80 per cent). The high per centage is mainly due to fact that size categories of occupations have and DH amalgamated together these are manufacturing (H.M. Construction, Trade and Commerce, Transport and Storage) and other sources. However, it is believed that maximum per centage of population was engaged in other services category.
3. If we add the agricultural occupations like Agricultural labour and cultivators then the percentage goes up 12.11 per cent of the total workforce. This indicates that in Jagdalpur town still there are population who are engaged in agriculture specially in the areas of Panara Para in Ward No. 1 Pathra Guda in Ward No. 5, Amnaguda in Ward No. 6 Panjiyar Guda and Ganga Munda and Meth Guda in Ward No. 23 and 25 respectively.

Table - 15 : Occupational Structure : 1991

Sl. No.	Occupational Categories	Persons	percentage
1.	Total Population	66154	—
2.	Total Main workers	19112	28.89
3.	Cultivators	647	3.38
4.	Agricultural labour	763	3.99
5.	Livestock and Forestry	1114	5.82
6.	Mining Etc.	73	0.33
7.	Manufacturing and Processing	307	1.60
8.	Manufacturing other than Household Industry	1909	9.98
9.	Construction	1217	6.36
10.	Trade and commerce	4421	23.13
11.	Transport and Storage	2071	10.83
12.	Other services	6496	33.89
13.	Marginal Workers	833	1.25
14.	Non workers	4209	69.85

(Source : Census of India, 1991)

In respect to other census occupational categories 1991 census has a detailed occupational classification. However, non workers remain as high as 69.85 per cent of the total population whereas main workers are 28.89 per cent of the total population which show not much change as was in 1981. However, the following conclusion may be drawn.

1. Other service occupation ranks first with nearly 33.89 per cent of the total workers. But it has shown a trend of decline if we compare the figures for 1961, 1971, and 1981. This indicates that service opportunities are coming down in government sector.
2. There has been a substantial increase in the per centage under trade and commerce. In Jagdalpur, commerce and trade have come out from the Goal Bazar and trying to upgrade its services through establishment of shopping complex and shopping centers at Sadar Road, School Road, Palace Road and Collectorate Road.
3. The share of workers engaged in transport and storage has also gone up and the percentage is 10.83 percent. Better means of transport and establishment of linkages with surrounding towns have helped Jagdalpur to become a centre of serving the region.
4. Manufacturing other than household industry has also registered an increase. After setting up of the Planning Authorities at Jagdalpur, new areas have been developed as an industrial area such as Frazerpur and in the Naya Munda Para. Food and food products, oil mill, fabrication are the major industries which have come up.
5. To meet the growing population, construction of houses have gone up and this has helped construction as occupation to a great extent.
6. Apart from livestock and forestry which have 5.82 per cent of the workers under its fold other occupation like cultivators and agricultural labourer have nearly 3.38 per cent and 3.99 per cent workers respectively.

Thus it is clear from the analysis of occupational structure of different decades that Jagdalpur has remained dominant as a town of service class.

Other source of economy

Apart from occupational structure which is dealt in detail as an indicator of the economy of Jagdalpur, trade, commerce and industry are also a good source by which one can get an idea of the nature of economic base of the town.

These indicators will be dealt in brief in the foregoing discussion.

(i) Trade and Commerce

Trading has been one of main functions of a town from the early days of its existence. To what extent town is developed was judged by the business it performed. Jagdalpur, as the seat of Bastar kingdom had marked Goal Bazar an urban space as the centre of trade and commerce. Situated on the southern side of the palace. Goal Bazar developed

as a full fledged bazaar for food grains, vegetables and other essential items of daily need like cloth, etc. Food grains used to arrive from different parts of Bastar specially from the north and eastern part like Bajawand, Tanapur, Nagarwar, Netnar, Keshloor, all being located on the east and south of Jagdalpur, on the north of Indravati. Before the invention of motor vehicles, bullock carts were the only means of transport. But today with the development of better transport system Goal Bazar has lost its importance as a trading centre of food grains. In fact the northern portion of Pardeshi Para in Pratapdeo Ward and Sadar Ward have become whole sale trading centre of various goods. Today Jagdalpur one of the biggest mandi of tamarind. After eighties when Jagdalpur started developing, vegetable whole sale centre of Goal Bazar was shifted to Sanjay Market. Today Sanjay Market as well as Itwari Bazar have become the centre of trade of food grains, vegetables, fruits and other stationery items. A big shade for mandi has been developed in Maharani Ward to facilitate trade for various agricultural and forest produce like rice, corn, tendupatta, sal seed, hara, gondh, jalau chatta, amla, tamarind, kosa and sal dhup. Recently whole trade of dry red chilli has been picked up. Traders collecting their consignment from the Godavari delta region and export to north India through Jagdalpur. The Telugu speaking traders are dominating this trade.

Like trade and commerce, industry specially food processing, fabrication, leather goods, automobile, wooden furniture and jewellery are important items where people of the town are getting job. But even today Jagdalpur is still to become an industrial town. Environmental consideration is a major constrain here. However, the following table gives us a picture of the industries in Jagdalpur town.

Table – 16 : Industries in Jagdalpur town

Sl. no.	Type of Industry	No.
1.	Oil Mill	10
2.	Flour Mill	34
3.	Rice Mill	22
4.	Saw Mill	17
5.	Spice Mill	8

(Source : Jagdalpur Municipal Office)

At present due to an Order of the Supreme Court Saw Mills are closed. But various other industries are developing at a faster rate and it is hoped that the rate will continue.

Land use Pattern

Land use pattern of a town is the result of a large number of operative forces which act upon from the day when a nucleus start changing and takes a shape of a town. In the land use of a town the basic interest is to look at it as a distributed feature or as an aspect of difference of the various types of land use. Thus land use of a town describes the spatial format of urbanization.

The term land use is used to mean those activities which are directly related to the land. It could also be called human use of land or human activities on land involving that this idea concerns as much with people as with land (Gowda, 1972 : 43).

Towns have developed in response to our social and economic needs. The quantum of land utilized by specific activities and their special distribution reflect the requirements of this system. In Jagdalpur, however, the existing arrangement of land use, though essentially functional, is not the product of a recent design. The pattern is to a large extent, a legacy or a product of past growth and activities. Thus the land use pattern which has evolved in the town of Jagdalpur is in response to the contemporary functional needs of the people living there.

Jagdalpur has undergone changes in its physical and cultural landscape. Developed due to the feudal demand or by setting up the capital of Bastar Riyasath, Jagdalpur has changed its character from nearly cluster of huts to a planned town during the period. After independence the town was unable to hold on the land use plan due to the lack of any urban planning and it started developing in a haphazard way when migrants started coming to the town in a big way after 1961. We don't have much data on the land use pattern prior to the setting up of the urban planning in the year 1973. Jagdalpur Urban Development Agency has collected data on the land use for the period, 1984 and very recently it has released the data for 2000-01.

Table – 17 : Urban land use Pattern : 1984 (Area in Hectare)

Sl.no.	Land use categories	Area	percentage
1.	Residential	13.10	1.78
2.	Commercial	12.56	1.71
3.	Industrial	18.14	2.47
4.	Public and Semi Public Uses	46.32	6.32
5.	General Utility uses	16.29	2.22
6.	Transport and Communication	80.32	10.97
7.	Recreation	2.98	0.40
8.	Vacant land	283.40	38.71
9.	Agricultural land	76.45	10.44
10.	Water bodies	182.44	24.92
Total		732	99.94

The table no. seventeen reflects the land use pattern which existed during 1984. Though the data were released in 1984 but the survey was taken just after setting up of the Urban Development Agency in the year 1973. The following considerations appear to emerge.

- 1. Vacant land :** It occupies the maximum land, i.e., 283.40 hectare under its occupation with nearly 38.71 per cent of the total area of Jagdalpi Municipality. The high percentage of vacant land may be due to the fact that vast areas like Frazerpar, Naya Munda, Kavera Munda, Met Guda were brought under the municipal area. All the areas are located on the southern side of Jagdalpur. A look at the land use map and also the history of urban development reveal the fact that the area beyond Naya Para was full of jungle and even Frazerpur was known as Jungle Para though the church was set up along with vast tract of land commonly known as Muslim area. At present this forms Shanti Nagar Ward. The areas of Ganga Munda, Naya Munda, Kevara Munda all were like village on the eastern side of Jagdalpur town. Pathra Guda was again like village and a considerable quantum of land were vacant between Pathra Guda and Amnia Guda on the north of Lai Bagh. On the northern side of Dhokri Ghat the area was like a village dominated by the Panara community. The area was known as Panara Para. Along the old Raipur Road from Dhobi Para to Kharag Ghat the area was mostly lying vacant due to low land and was prone to flood. At present the whole area falls in ward no. 1 under Prabir Ward of Jagdalpur Municipality. On the town side the vast area of Old Bhati Road was agricultural land specially the area near Baila Bazar. Today this area has become ward no. 20 and 21, i.e., Danteswari War' and Rajendra Ward respectively. The area between Kumar Para and Kevara Munda specially on the southern side and north of Cachora Para was completely vacant. Thus Jagdalpur in the early seventies was confined between Naya Para in the south. Kima Para in south east, Lalbagh in the north east, Dokright Para in the north and Itwari Bazar in the west.
- 2. Water bodies :** Vacant land is followed by water bodies which has 182.44 hectare of land or 24.92 per cent of the total land under its fold. If we look at the municipal map of Jagdalpur then we find that Dalpatsagar occupies a vast extent of land. Dalpat sagar was built by the Bastar King Dalpat Dev to provide better water supply to the people of Jagdalpur. Apart from Dalpat Sagar the other big water bodies were Ganga Munda, Naya Munda, Kavera Munda. In the local parlance munda means tank. In older days these tanks were connected to river Indrawati which flows across the northern boundary of Jagdalpur. At present Naya Munda and Kavera Munda have been encroached upon and so is the condition of Ganga Munda, and Dalpat Sagar.
- 3. Residential Area :** Jagdalpur during this period was mainly confined between Naya Para in the south, Kumar Para and Lalbagh in the east, Dhokri Ghat Para in the north and Moti talab Para/Hikmi Para in the west. The palace, though located on the northern side of Jagdalpur town, remained the main centre of attraction. It was during this period when Jagdalpur started extending on all the direction though the rate of extension was more towards south. Barring the central portion Jagdalpur residential landscape was marked by kutcha houses. Even the core areas of Jagdalpur in the Dhargah Road, Pardeshi Para, Oriya Brahman Para, Balajee Para, Kumar Para, etc. were dominated by typical Chhattishgarh house with khapra

roof. The government quarters of Civil Lines and Lalbagh were also of khapra roof. On the fringe areas the houses were mainly made of mud wall with stone roof. Residential area had nearly 1.78 per cent of the total land of Jagdalpur municipality.

4. **Transport and Communication :** Jagdalpur, by this time, emerged as a regional town having connection with neighbouring towns specially Raipur in the north. Hence, nearly 10.97 per cent of the land is under transport and communication. The old bus stand near the State Bank Chowk and the Geedam Road were the main areas under its occupation. The old Raipur Road near Dhakright Para was also under its ambit this. The well extended road layout had also increased the area under this head1. Transport and communication is followed by area under agricultural land which had nearly 10.44 per cent of the total area of Jagdalpur town under its occupation. Agricultural land are mainly distributed on the northern and southern side of Dalpat Sagar. On the northern side the area agricultural crops were grown where as on the southern side the agricultural lands were having mixed crops of food grains and vegetables. Other agricultural areas were near the Baila Bazar.
5. **Public and Semi Public uses :** It has nearly 6.32 per cent of the total geographical area of Jagdalpur, town. This is mainly due to the fact that Jagdalpur as a district headquarter of Bastar district, has many offices along with schools and other educational institutions. Industry also occupies nearly 2.47 per cent of the total area of Jagdalpur town. Forest has helped the sawmills to grow in Jagdalpur. Till this period commerce/trade could not develop to a great extent as the region remained dominated by tribal population. But this situation changed fastly after eighties and at present Jagdalpur has developed into a big town with well defined Sarara/commercial establishments and other government and semi government offices as depicted in the data of existing land use of Jagdalpur.

Table - 18 : Existing Urban Land use Pattern : 2000

SI. no.	Land use Categories	Area	percentage
1.	Residential	329.44	39.50
2.	Commercial	16.51	1.97
3.	Industrial	18.14	2.17
4.	Public and Semi Public Uses	46.32	5.55
5.	General Utility uses	16.29	1.95
6.	Transport	108.50	13.01
7.	Recreation	56.30	6.75
8.	Vacant	53.32	6.39
9.	Agricultural	6.65	0.79
10.	Water Bodies	182.44	21.87
Total		833.91 Hectares	99.95

The existing land use data have been derived by Block level survey verified with the incomplete survey sheets of Urban and Rural Planning Office located at Jagdalpur. The existing land use pattern reflects the urban character of Jagdalpur which has remained basically a residential town. The following considerations appear to emerge.

Residential: Jagdalpur developed as an residential town of the government employees, primarily the employees of the forest department who used to come to Jagdalpur. Apart from government employees, other workers, petty business men have also made their home at Jagdalpur. This situation got a boost after the period 1961-71 when a lot of incentives were given for the development of small and medium industries in and around Jagdalpur. Today Jagdalpur has nearly 39.50 per cent of the total geographical area under residential category of land use pattern. If one looks at the residential pattern of Jagdalpur one finds that at the initial stage there was a marked pattern of residence of the various communities who were brought or came to settle. The first to come were the Oriya Brahman followed by the Rajputs, Muslims, Dewangan and other trading communities including south Indian population. But at present specially the new settled areas are Dalpat Sagar Ward, Danteswari Ward, Rajendra Ward, Ganganagar Ward, Gandhi Nagar Ward, JawaharNagar Ward, Naya Munda, Shantinagar Ward, Ambedkar Ward, Kaveramunda Ward, Santoshi Wa: ' and Vivekananda Ward. These are the new residential areas being dominated by the migrant population from Bihar and Madhya Pradesh who have come to Jagdalpur as an industrial worker, small contractor and petty businessman. The houses have mixed look with kin elm and pucca built structure. The old areas like Naya Para, Moti Lal Nehru Ward, Pratapdeo Ward, Sader Ward, Maharani Ward, Balajee Ward, Bhairamdeo Ward, Sheomandir Ward, Vijay Ward, Indira Ward and Ramayya Ward became more and more congested.

During this period Jagdalpur mainly developed as an unplanned town. Haphazard growth resulted into the emergence of slums. According to the survey report nearly 18 per cent of the residential area is occupied by slums. Slums of Jagdalpur are as follows : 1. *Ganga Munda* 2. *Kumar Para* 3. *Naya Munda* 4. *Met Guda* 5. *Bahadur Guda* 6. *Baila Bazar* 7. *Konda Bhatta* 8. *Hatchora* and 9 *Aimma Guda*.

According to the land use survey the highest density areas of Jagdalpur are south eastern portion of Dalpat Sagar (Moti talab Para and the Hikmi Para), north of palace - the area of Dhokri Ghat Para and Panara Para, north of Lal Bag - the area of Pathra Guda and the areas of Rajendra nagar, Ganga nagar and Moti Lai Nehru W'ard. Here the density is more than 651 persons per hectare. The central zone of Ramayya Ward, Indira Ward, Itwari W'ard, Naya Para and Rajendra Ward comes second with 501- 650 persons per hectare. The third category with 351-500 persons per hectare comprises the area of Civil Line, Pathra Guda, Balajee Ward, some portion of Shanti nagar and Kumar Para. The other two categories (201-350 and below 200) areas are located on the fringe areas of Jagdalpur like Santoshi Ward, Shaket colony, Brindavan colony and so on. The projected population of Jagdalpur for the year 2001 is around 1 lakh. But it is felt that houses are not coming up with the pace of population. This will result in shortage of residential houses and increase of slum areas.

2. Water bodies : Water bodies are ecologically important for the survival of any urban centre. It acts in many ways, such as an cooling effect, source of water supply, collection centre of water of the town and some time as a drainage line. The feudal heads of Jagdalpur had paid much attention towards having water bodies. The important water body built by the feudal head is Dalpat Sagar which was built by Dalpat Deo. Subsequent rulers have built Ganga Munda, Naya Munda and Kavera Munda. All these three are located on the southern side of Jagdalpur. Dalpat Sagar which is also called as the *samud* by the local inhabitants of Jagdalpur had served as a main source of water supply till the British, who introduced pipeline water supply and Indravati River became the source of water lifting. However, Dalpat Sagar remained the main centre of fresh water supply of Jagdalpur. At present it is being developed as recreation centre with boating facilities to attract tourists. But it is being encroached by the advancing settlements of Moti Talab Para and Hikrni Para in east as well as Dharam Pura in the south. The another important water body of Jagdalpur is Ganga Munda. Located on the south western portions of the municipal boundary Ganga Munda served as the main source of water supply to the neighbouring settlements like Frazerpur, Met Guda, Panjiyar Guda and lastly Sargipal village. Sargipal village is situated outside the municipal boundary. At present Ganga Munda is being encroached upon from all sides but the encroachment is severe on the north eastern side where Jawahar Nagar is expanding. Apart from this encroachment the pollution level is going up because it is being utilized as a drainage discharge of the surrounding region. Naya Munda and Kavera Munda were good water body in : past but now the name exists only. It is being reduced by new settlements. Apart from these water bodies there are two small tanks situated in Pathara Guda and the other near one Baila Bazar in Rajendra Ward.

The town of Ponds

There was a time when Jagdalpur was also known as the town of ponds. The ponds are termed as Munda or Tarai. During the feudal period, the then ruler Dalpat Deo constructed a big pond called Dalpat *Sagar* or *Samud*, by joining three small ponds namely *Shivna Tarai*, *Bodan Tarai*, and *Jhar Tarai*. *Shivna*, *Bodan* and *Jhar* are the names of local bush like plants or bush. These ponds were named because of the abundance of these plants in that area. Apart from it other important ponds of the city include Naya Munda, Moti Talab, Kavera Munda, Ganga Munda and Balai Tarai. Similarly there were a few more ponds also located near Krishna temple in front of the palace near Jail bari and behind the Kama Kotin temple. Most of these ponds were well maintained, and were used for drinking and other purposes. Likewise X\ . water of Ganga Munda is believed to be as holy as that of the River Ganges. Pandit Raghunath Mahapatra, a folk artist, had referred its importance through one of his songs in the following manner.

*"Dalpat Sagar Dal Kamal
Ganga Munda Ganga Jal
Mor Magni Moti"*

Due to the ruler's personal attention there was strict vigilance on the maintenance of these ponds. The dwellers of nearby areas were not allowed to discharge or defecate near it, and the infringement was treated as punishable offence. But this situation did not remain for long.

Presently the Scwwj^Dalpat Sagar), once the life line of water in the city, is virtually dying out due to lack of proper maintenance. Its supply channel is no more functional. About one fourth of its total area is alive in the most diplated shape with dirty water and is exposed to all sorts of pollution. Almost similar situation is prevailing in the Ganga Munda too, where washing of cloth, and cattle, bath and discharge of human waste have destroyed the sanctity and purity of the water. The condition of other ponds are not different. Due to rapid pace of urbanization most of the ponds have been replaced by colony, market complex, government building, etc. Here special mention may be made of *Bala Tarai*, a pond located near Balaji temple, where a colony has been built. The estate library, located near the palace was originally a pond. Similarly, the Sanjay market complex near Jail Bari has been built over a pond, filled up just a few years back. Like wise Naya Munda was the name of a pond, where many government buildings including the Collector's office have come up. Still that area is known as *Naya Munda*. The story of *Kavera Munda* is not different. Now there is no trace of that pond, except the name, which is used for the locality of the settlement.

In this way the town of ponds, has lost its charm of ponds. Most of the ponds have been replaced by concrete constructions while a few still existing are at the verge of extinction due to lack of proper care and maintenance.

4. Transport : Transport in which comes road, railway and other communication link occupies nearly 108.50 hectares of land and it ranks third in the land use pattern. Transport is vital link line of any town and the development of the town to a great extent depends on the better transport system. Jagdalpur, located in the midst of natural resources, have well developed road pattern in the town and radiates from the town connecting other important towns of the surrounding region. Railvay line passes from the southern part of Jagdalpur on way from Vishakapatnam to Bailadela Iron Ore mine. Only one passenger train Vishakapatnam - Kirandul passenger runs on this line. However Jagdalpur is located on National Highway 43 which crosses the town from the north eastern side and connects Jagdalpur with other important towns of other districts and states like Raipur, Koraput(Orissa), Sonabera and Vishakapatnam(A.P). The other important roads are Jagdalpur - Bhopalpatnam and then up to Hyderabad. At present a bypass road has been constructed to avoid traffic congestions at Jagdalpur. Apart from these highways there are nearly 43 main roads in the town itself which connect the core town area to the rest of the town. Important points from w'here different roads originate in different directions are: Sirasar Chowk, Gurunanak Chowk, Goal Bazar Chowk, State Bank Chowk, Maharani Hospital Chowk, Anupama Talkies Chowk and Krishna Petrol Pump Chowk. With the increase of population Jagdalpur is becoming more and more crowded and traffic flow is becoming difficult specially in the Bazar areas.

Public and Semi Public Uses : Under this category Jagdalpur has nearly 46.32 hectares of land which makes 5.55 per cent space of the total geographical area. Being the headquarters of Bastar district and Bastar commisionery Jagdalpur has larger number of government offices (both state and central) located in its urban jurisdiction. If we look at the land use map of Jagdalpur than it can be observed that a vast area of Pratapdeo Ward, Motilal Nehru Ward, Maharani Ward, Civil Line Ward, Lalbagh and northern

portion of Shantinagar ward has the main concentration of Government offices. In the Subhash Ward also some government offices are located in the southern portion of the Palace. Another major location of government offices is Santoshi Ward, mainly in Kumar Para, where forest department has occupied a huge space. Apart from government offices there are some other offices of local self government and banks too. The following government and semi government offic there are located in Jagdalpur.

Table - 19 : Number of Government and Semi-Government Offices

SI No.	Type	Total no.
1.	Central Government Offices	9
2.	State Government Offices	58
3.	Local self Government Offices	19
4.	Banks	20
Total		106

(Source : Planning Office, Jagdalpur)

Jagdalpur has also a good number of schools and colleges and due to this the area under this category of land use has gone up. The number of primary School are 20 and nursery school are 6. The condition of the primary school is not good and most of the schools have no playground. There are 6 middle schools and 5 high school Apart from these schools, Jagdalpur has two degree colleges, one for men and the other for women.

Jagdalpur lack the facility of a big hall auditorium where cultural function can be organized. However, at present MaitriSangha, a cultural organization of the Bengali community, and Gujarat Samaj have two small halls where cultural programmes are organized. These two halls are situated on the eastern part of the town in Kumar Para.

Recreation : Recreation facilities are not developed in Jagdalpur. However, Sahid Park, situated on the eastern part very near to Kumar Para, is spread on 3 acres of land and serves as the only park for the citizen of Jagdalpur. Apart from various sports facilities for children it houses a mini zoo also. The only open ground in Jagdalpur is La! bagh which is being used for holding big meeting. Keeping in view the future requirement of the people of Jagdalpur Dalpatsagar can be developed. For religious purposes the area surrounding Mahadeo Ghat and Danteswari Mai Temple area can be developed. Apart from these recreational facilities Jagdalpur has four cinema halls, namely, Jhankar, Old and New Narendra and Anupama talkies.

5. Jagdalpur : the town of crossroads

Jagdalpur, the capital of Bastar estate, was build by Maharaja Dalpat Deo in the year 1770. Later in the period of Maharaja Rudra Pratap Deo (1891-1921) his Diwan Pandit Raibahadur Baidyanath Panda had planned the settlement of the town in the year 1910

in consonance with the London town on the Iron grid pattern. There are more than fifty cross roads (Chauraha or Chowk) and similar number of trilane (Tiraha) and one radial road, i.e., Pancha Path in the town. As a result, this place is known as the town of cross roads (Chauraho Ka Sahar).

There is no written records of these cross roads, trilane, etc. The present research team tried to collect these names by visiting the respective areas. Due to rapid pace of urbanization and construction of buildings, etc. the existence of many such cross roads and trilane have been lost. The names of different cross roads and trilane, etc. are as follows :

Chauraha (Chowk):

1. Krishna Mandir Chowk
2. Power House Chowk
3. Rani Gadiya (By pass)
4. Power House Road Goal Bazar Road
5. Sirasar Chowk
6. Gol Bazar Chowk
7. Jain Mandir Chowk
8. Bastar H.S. Chowk
9. Rest House Road near Narendra Mahapatra's residence Chowk.
10. Circuit House Chowk
11. Central Jail Chowk
12. Bhanga Ram Chowk
13. Pathraguda (Danti wood Stall Road).
14. Mata Mandir Road (by pass)
15. Chandni Chowk
16. Old Hinssat newspaper's office Chowk
17. Sitaram Shivalaya Chowk
18. State Bank Chowk
19. Mahabir store Chowk
20. Purohit Lodge Chowk
21. PC. Jain Chowk
22. Kerala Hotel Chowk
23. Chowk near the residence of Narang Ji
24. Lukkad Tax Chowk
25. Pancham Kosta Chowk

26. Rathi Tax Chowk
27. Novelty Store Chowk
28. Mittali Store Chowk (old name) Now Gurunanak Chowk
29. Post Office Chowk
30. Vir Damodar Petrol Pump Chowk
31. Kureshi Garage Road
32. Anupama Talkies Chowk
33. Chowk near the residence of Jagdish Rai
34. Krishna Petrol Pump Chowk (Old Guru Govind Singh Chowk)
35. Place Road Chowk
36. Guru Dwara Chowk
37. Chowk infront of the residence of Vdaikant Jha
38. Chowk near the residence of Gupta Ganja Contractor
39. Mahadeo Ghat Chowk
40. Chowk near the residence of Ramchandra Rath
41. Chowk near the residence of Dr. Rizvi
42. Satya Sai Typing Chowk
43. Maa Durga Chowk
44. State Bank of Indoor Chowk

Trilane (Tiraha)

1. Road near Navketan Lodge (Tiraha)
2. Near Manorama Photo Copier Tiraha
3. Near Kapoor Baker Tiraha
4. Near Union Bank Tiraha
5. Mahapatra Lane
6. Lai Bag Tiraha
7. Rest House Tiraha
8. Old Bus Stand Tiraha
9. Kothari Market Tiraha
10. Police Station Tiraha
11. Jhankar Talkies Tiraha
12. Shaheed Parak Tiraha
13. Maitri Sangh Tiraha

14. Jamal Mill Tiraha
15. Income Tax Office Tiraha
16. Santoshi Mandir Tiraha
17. Kumar Para Tiraha
18. Animal Husbandary Hospital Tiraha
19. Badhera Complex Tiraha
20. Danteswari Masala Tiraha
21. Soni Typing Tiraha
22. Danteswari Medical Tiraha
23. New Narendra Theater Tiraha
24. Vishal Tent Tiraha
25. Near the house of Shankar Lai Gupta Tiraha
26. Near the house of Rajpurla Tiraha
27. Jama Masjid Tiraha
28. Post Office Tiraha
29. Rani Gadia Tiraha
30. Old Nalghar Tiraha
31. Near the residence of Ayub Patwari Tiraha
32. Near Ganesh Trading Company Tiraha
33. Narendra Talkies Tiraha
34. Near the residence of Rajkumar Jha Tiraha
35. Raut Para Tiraha
36. Old Baila Bazar Tiraha
37. Behind Krishna Patrol Pump Tiraha
38. Infront of District Session Judge Tiraha
39. Church Tiraha
40. Collector Office Tiraha
41. Forest Office Tiraha
42. Old Narendra Talkies Road Tiraha
43. Sanjay Market Road Tiraha
44. Kabristhan Tiraha
45. Infront of Dau Mill Tiraha
46. Near the residence of Dr. Lagu Tiraha
47. Infront of the residence of Dr. Lagu Tiraha
48. Tiwari Building Tiraha
49. Infront of M.L. Soni Tiraha

50. PED Office Tiraha
51. Apsara Lodge Tiraha
52. Jameel Auto Tiraha
53. State Bank Lane Tiraha
54. Rajmahal Tiraha

The Ward of Jagdalpur Municipality

The Jagdalpur municipality was formed in the year 1952. Prior to that the town committee worked as a civic body of the town which was constituted by the selected members and the officials. With the formation of municipality, members were selected from different wards. At that time the municipality area was divided into altogether sixteen (16) wards namely :

1. Praveer Ward
2. Bhalram Deo Ward
3. Pathraguda Ward
4. Lai bagh Ward
5. Kewda Munda Ward
6. Naya Munda Ward
7. Ganga Nagar Ward
8. Naya Param Ward
9. Etwari Ward
10. Dalpat Sagar Ward
11. Sadar Ward
12. Danteswari Ward
13. Pratap deo Ward
14. Ramaiya Ward
15. Mahatma Gandhi Ward
16. Kumar Para Ward

The first chairman of the municipal body was Sri Kunwar Ganesh Singh, who had presided over the proceedings of the municipal committee for the first time on 25.9.1954. The number of wards for the first time increased from sixteen to twenty two in the year 1973 when six new wards were formed from old ones namely: (16+6).

1. Maharani ward
2. Netaji Subhas Ward
3. Santoshi Ward
4. Rajendra Nagar ward
5. Jawahar Nagar ward
6. Shanti Nagar ward

These wards, i.e., twenty two in number, remained for more than a decade. Afterward in the year 1986, the ward areas were further demarcated and seven more wards came into existence, which made the total number of wards twenty nine (22+7). The new added wards were :

1. Shiv Mandir ward
2. Bhagat Singh ward
3. Civil line ward
4. Balaji ward
5. Motilal ward
6. Indira ward
7. Bhairam Deo ward

The old twenty nine wards were further revised in the year 1994, when two new wards were created namely (29+2):

1. Ambedkar ward
2. Vivekanand ward

Presently the entire municipality area is divided into thirty one wards. There is provision of reservation also as per municipality act, which rotates from one ward to other, i.e., a ward now reserved for Scheduled Tribe candidate will not be the same in the next election. In that election reservation will be given to a ST candidate in other wards, same is applicable for other groups of reservations. The detail of names, and reservation, etc. is as below :

Ward no.	Nature of reservation	Name of wards
1. ST Woman	Praveer Chand Ward	
2. OBC Woman	Vijay Ward	
3. Unreserved	Shiv Mandir ward	
4. S.C. Woman	Bhalram Deo ward	
5. SC		Bhagat Singh Ward
6. Unreserved	Patharaguda ward	
7. OBC Woman	Civil Line Ward	
8. SC		Lai Bagh Ward
9. Unreserved	Netaji Subhash ward	
10. Unreserved Woman	Sadar Ward	
11. Un reserved	Pratap Deo ward	
12. Unreserved	Kewda Munda ward	

Ward no.	Nature of reservation	Name of wards
13	Unreserved Woman	Balaji Ward
14	OBC	Maharani Ward
15	OBC	Motilal ward
16	OBC Woman	Indira Ward
17	Unreserved	Rammiya ward
18	OBC	Dalpat Sagar ward
19	Unreserved	Etwari ward
20	ST	Danteswari Ward
21	Unreserved	Rajendra nagar ward
22	ST woman	Gandhi Nagar ward
23	Unreserved woman	Ganganagar ward
24	Unreserved	Naya Para ward
25	Unreserved	Jawahar nagar ward
26	Unreserved woman	Shanti nagar ward
27	ST	Naya Munda ward
28	OBC	Mata Santoshi Ward
29	SC	Kumar Para ward
30	OBC	Ambedkar ward
31	ST	Vivekanand ward

Vacant Land : 6.39 per cent of the total geographical area fall under this category which are located on the southern portion of the town specially in Ward 27 and 12.

Industrial Area : Jagdalpur has 18.14 hectares of land under its occupation which comes to nearly 2.17 per cent of the total geographical area of the town. Situated in the midst of natural resources Jagdalpur failed to develop as an industrial centre due to various constraints. However, agrobased industries were there to cater to the needs of the people of Jagdalpur specially rice and oil mill to the rice and oil mills, Jamal Oil and Rice Mill are very important though at present only one oil mill is working. However, there are nine small rice and oil mills situated in the town area. The another important industry was saw mills which had developed in Jagdalpur during the time of Bastar Riyasat but at present all the saw mills are closed down due to the ban by the order of Supreme Court in 1994 that no tree felling will be allowed. However, wood based Bastar art work is allowed and Kumar Para has became the big centre of wood based work. Apart from the industrial area some small scale industries have come up in Naya Munda area dealing with food, fabrication and small iron works, etc. However, some industries have come up in the surrounding region of Jagdalpur which are as follows :

Table – 20 : Main Industries

SI. no.	Name of the Industry	Location	No. or Workers
1.	Bastar Food Products	Kurundi	300
2.	Bastar Oil Mill	Kurundi	100
3.	Rudra Cement Products	Pandripani	100
4.	Taj Bajrang Cement Products	Pandripani	105
5.	Dolamaita Products	Metch Kot	1040
6.	Rasayan Udyog	Frazerpur	41
7.	Tambaku Products	Thakur Road	27

(Source : District Industrial Office, .Jagdalpur)

Commercial Area : Commerce and trade could not develop in Jagdalpur due to its isolation and feudal regulation and hence commerce was to a greater extent confined to the Goal Bazar situated on the southern portion of Rajwara (palace) which dealt with wholesale trade of all goods like : food grain, vegetables, cloth and other agricultural products and implements. But after independence when Jagdalpur started developing the whole sale trade came out of *Goal Bazar* and started developing around Hospital Road, School Road located in Pratap Deo Ward. Even today this ward acts as a wholesale trading centre for all goods ranging from food grains to forest products, spices, cloth and stationery etc. Goal Bazar remained a centre of retail trade of food grains and vegetables. But at present with the development of Sanjay Market, Goal Bazar has lost its glory and importance. Sanjay Market is more spacious and has been developed on a planned way to a great extent with fixed rows of different commodities. But the main commercial plaza remains concentrated around Sadar Road with shops dealing with all types of goods of daily needs like cloth, medicine, stationery, cycle, jewellery, etc. Sadar Road right from Goal Bazar in the west to State Bank Chowk in the east can be termed as Central Business Zone of Jagdalpur. Apart from Sadar Road, School Road is also changing very fast. The shops on this road deals with stationary, electronic goods, books, hotels, herbal medicines, etc. But the road which has changed very fast is the Palace Road from Goat Bazar to Sanjay Market and in the coming future it will remain as the main commercial centre of Jagdalpur. Opening up of the New Narendra Cinema Hall on Hospital Road has brought in some more shops and eating establishments on this road such as Binaka restaurant and its adjoining shopping complex. However the eastern portion of Hospital Road is dominated by medicine shops because Maharani Hospital is located on this road. The other roads which have commercial establishments are Kumar Para Road, Geedam Road, etc. Kumar Para Road deals with grocery and wooden furniture, wood craft, etc. whereas Geedam Road mainly deals with automobile parts.

Apart from the above stated land use pattern Jagdalpur has negligible area under general utility and agriculture. Jagdalpur has changed very fast after the seventies when it started shading its rural character to a modern urban centre with well developed commercial centers, means of entertainment and recreation and planned roads specially in the central area. The pattern of population growth as well as space indicates that Jagdalpur will further develop in future.

Jagdalpur : Relation with the surrounding regions

It is believed that the essence of urban character is service to the tributary/ surrounding regions in which it is located. The nature, pattern and size of services vary from town to town depending on the size of the population of the urban centre itself. Thus it is believed that bigger the town in population size bigger is the service region or even larger is the nature and pattern of services it renders. But it is difficult to establish the exact region on which the services of a town is spread. However, to understand the nature and pattern of relationship, which the town Jagdalpur has developed with its surrounding region a number of indicators have been selected :

- A. Zones of Services:
 - 1. Transport service zone
 - a. Bus service zone
 - b. Railway service zone
 - 2. The wholesale trade zone
 - 3. The retail sale trade zone
 - 4. Educational service zone
 - 5. Medical service zone
 - 6. Administrative zone
- B. Zones of supply
 - 1. Vegetables supply zone
 - 2. Mill supply zone
- A. Zones of services
 - 1. Transport service zone
 - a). Transport system specially the private bus service has developed at a faster rate in the recent years. Buses are regularly plying between Jagdalpur and Raipur, Jagdalpur and Vishakapatnam, Jagdalpur and Hyderabad. These buses have no permanent permit but they provide good services. State Transport is also plying its buses but the condition of State Transport is very bad. The table no. twenty one gives the details of the bus routes, which originates from Jagdalpur.

Table-21 : Bus Routes

Sl. no.	Bus Route	No. of trip	No. of Seats
1.	Jagdalpur- Orcha	1.	50
2	Jagdalpur- Bandi	1	50
3.	Jagdalpur-Bhanupratappuri	1	50
4.	Jagdalpur-Nalpawan	3	20
5.	Jagdalpur-Karpawan	3	20

Sl. no.	Bus Route	No. of trip	No. of Seats
6.	Jagdalpur-Jayadgiri	3	20
7.	Jagdalpur-Chitrokot-Mardung	1	46
8.	Jagdalpur-Ghotiyang	2	50
9.	Jagdalpur-Jebail	1	50
10.	Jagdalpur-Garda	1	20
11.	Jagdalpur-Netnar	1	50
12.	Jagdalpur-Anjer	1	50
13.	Jagdalpur-Binta	2	27
14.	Jagdalpur-Karmari	1	20

(Source • District Transport Office, 1999)

The table no. 21 reveals the fact that buses of Jagdalpur - Nalpawan, Jagdalpur – Karpawan and Jagdalpur - Jayadgiri routes more trips. Apart from bus, taxi/trekker (which runs in the form of taxi) is also an important mode of transport in Jagdalpur. The table no. 14 presents the flow index of taxi from Jagdalpur to different places:

Table – 22 : Taxi flow

Sl.no.	Route	No. of Taxi
1.	Jagdalpur-Geedam	37
2.	Jagdalpur-Barsur	04
3.	Jagdalpur-Kondagaon	20
4.	Jagdalpur-Kukanar	11
5.	Jagdalpur-Dhanpunji	07
6.	Jagdalpur-Pushpal	024

(Source : District Transport Office, 1999)

Each and every taxi carries 9 passengers with one driver. From the table no. 22 it is clearly understood that on Jagdalpur - Geedam route maximum number of taxi - operate. This region is industrially developed as well as connected to Bailadila iron ore mines. The next route where the maximum number of taxis are plying is Jagdalpur - Kondagaon situated on the National highway 43 which connects Jagdalpur to northern portion of Bastar and also the most agriculturally developed regions. Kondagaon became important due to Dhandakaranya project. It is also a junction point from where road goes to Abhujmarh via Narayanpur. Jagdalpur - Kundogaon route is followed by Jagdalpur - Kukanar route on which nearly 11 taxis operate. Kukanar is situated on the southern side

of Jagdalpur connecting Jagdalpur to Sukma and then to Konta. The other important routes are Jagdalpur Dhanpunga and Jagdalpur - Barsur.

b. Railway service zone : Though Jagdalpur has been connected with Vishakhapatnam by Vishakhapatnam - Kirandul Railway line but as a passenger route it has not been very popular and economically viable one. This railway line was constructed to carry iron ore to Vishakhapatnam from famous Bailadela iron ore mine on way to Japan. Only one passenger train runs on this route.

2. The wholesale trade zone

Jagdalpur from the early period of its development had serving the surrounding region as a centre for wholesale trade specially in the field of agricultural product, forest produce, vegetables and cloth. The surrounding region of Jagdalpur along the Indravati river has a fertile plain land though situated on the plateau, grow sufficient amount of rice helping Jagdalpur to emerge as a main mandi of rice. The wholesale agricultural produce areas are Goal Bazar, Sanjay Market, Jain Temple Road, Hospital Road etc. Godown facilities are available in the locality of Pratap Deo Ward and Motilal Nehru Ward. Apart from rice, vegetable is also very important. Vegetables used to arrive at Goal Bazar and Sanjay Market from the areas of Karpawand, Jaltgiri, Sonpur all located on the north eastern portion of Jagdalpur, on the northern side farmers use to bring their vegetables from Bastar, Ratawand and Nandpura, in the west upto Tokapal and in the south upto Kukhar. However, vegetables also arrive from far away places like Raipur, Dhamtari, Konta, etc. Jagdalpur is doing good wholesale trade. The shops are located on Sadar Road, Hospital Road and School Road.

Retail Sale trade zone

Retail sale trade zone of Jagdalpur remains a small centre as people do not want to travel far to meet their shopping needs. This willingness to travel, however, depends upon the frequency of demand, nature of demand and bulk of commodity required. The retail sale zone of Jagdalpur revolves around Goal Bazar area, Sierhasar Chowk, Sadar Road, Jain Temple Road and Palace Road. This can be called as the Central Business area of Jagdalpur in the urban life of Jagdalpur these areas play a dominant role. People of Jagdalpur go to Sadar Road shops dealing with grocery, utensils etc. and Hospital Road for medicine and books. Apart from this Central Business Zone Jagdalpur has three important ribbon like commercial strips : Kumar Para Road in the east, Old Raipur Road in the north and Geedam Road in the south-west. Kumar Para Road deals with variety of commodities but specializes in wooden furniture. Geedam Road and Old Raipur Road specialize in motor parts and automobiles while dealing with other types of commodities. State Bank Road deals with Kosa saris.

Education Service Zone : Jagdalpur is providing educational service to its surrounding region since the Bastar Riyatis. At present students come from far places like Kodagaon in the north, Kukhar and Sukbh in the south for college education. There is a Post Graduate College and a Degree College for girls known as Darteswari Mahilla College. But for

engineering and other specialized education students of Jagdalpur have to depend on facilities available at Raipur, Jeypore and Vishakhapatnam.

Medical Service Zone

The essential character of an urban centre is to provide essential services needed by its surrounding regions. Among the essential services, medical service is supposed to be of utmost importance specially in a region like Bastar where the rural areas lack medical facilities and care. Jagdalpur has no good medical service to offer to its surrounding region.

Table - 23 : Hospitals at Jagdalpur

Sl. no.	Name of the Hospital	No. of Beds
1.	Maharani Government Hospital	187
2.	Government Ayurved Hospital	30
Total Beds		217

(Source : District Statistics Book, 1997)

Maharani Government Hospital has 187 beds T.B. Clinic, V.D. Clinic and Maternity centre but the service is very bad. People with whom we talked about medical services are very unhappy. So for specialized treatment people of Jagdalpur go to Vishakhapatnam. Journey to Vishakhapatnam has become easier due to the train link. Apart from Maharani Hospital, Government runs one Ayurved Hospital. People depend much on private clinic and Nursing homes for their treatment. As there is no hospital in whole of Bastar Commissionary people use to come from far away places for treatment.

Administrative zone

The importance of administrative boundaries, like the executive, judicial, revenue and postal in determining the linkages of an urban centre is obvious particularly if such boundaries exist for a fairly long period and enforce the people to relies and subsequently to entertain and feel their specific entity.

Jagdalpur, as the capital of Bastar Riyasat has a marked boundary on the whole of present Bastar district except Kankar kingdom. Bastar Riyasat had Zamindaries namely Bhapatpatnam, Kutru, Sukma, Dantewara, Chitlanar, Tokpal, Photkel and Paralkot. After independence it became a district with 8 tahsils : Kanker, Bhanupratappur, Narayanpur, Kondagoan, Bijapur, Jagdalpur, Dantewara and Kont with the district headquarter at Jagdalpur. At present Bastar district has been divided into 3 districts : Kanker, Bastar and Dantewara. At present there are 106 State and Central Government offices at Jagdalpur

rightly acquiring the name of town of government employees. Apart from the general administration Jagdalpur has a Judicial Court/District Magistrate, which looks after the legal problem of Bastar district.

Zones of supply

Vegetable supply zone : Jagdalpur, the biggest town of Bastar is at present well connected by roads with the surrounding region : Jagdalpur - Raipur, Jagdalpur – Jeypore, Jagdalpur - Sukma-Konta and Jagdalpur - Bhopalpatnam. With the help of these roads rural areas of the surrounding are well connected with Jagdalpur; thus helping the farmers to bring their vegetables to Jagdalpur market specially at Itwari Bazar which is held on every Sunday. The main supply zone are the villages situated on north and north-east of Jagdalpur. The area is dominated by Panara community who are expert farmers. From Itwari Bazar and to a small extent Goal Bazar, vegetables are supplied to all the nodal centers like Bijapur, Dantewara, Geedam and Barsur in the west, Kundagoan in the north, Jeypore in the east and Sukna in the south. However, a good amount of vegetables also reaches to Jagdalpur from other areas of Chhattisgarh region.

Milk Supply zone

Jagdalpur has no marked milk supply zone as milk is not produced in the surrounding regions. The demand of milk is met with the local supply.

The relationship that Jagdalpur had developed with the region by has been examined taking into consideration different services. Due to lack of industrialization or such impetus Jagdalpur failed to establish a strong bondage with the neighbouring regions though the feudal system had given enormous power in the past.

Social Profile

Jagdalpur, like any other urban centre is multiethnic in social composition. It is located amidst tribal periphery with sizeable indigenous population including Dhurwa, Gond, Halba, Mahara, Muria etc. Other than these almost all the major communities of the country are living in complete cohesion with one other. It is observed that people from almost all the states of India including Jammu & Kashmir reside here. It is why this town is often termed as Mini India. These communities are of diverse type with distinct cultural affiliation. These, together symbolise composite fabric of cultural assimilation, which is also called as Bastaria culture. This distinction signifies the cultural uniqueness of the town.

Initially it was a very small village with limited population mainly of the bastaer tribes. Afterwards the then kings became instrumental in facilitating settlement of different ethnic communities for various purposes. Here special mention may be made of some such events. The founder king of present Kaktiya dynast of Bastar Annam Deo himself belonged to Warangal (south India), who was being accompanied by group of different souh Indian communities. When he arrived here and established his kingdom in 1325 AD. Another king Purushottam Deo while returning from the pilgrimage of Jagarnath

Puri (Orissa) had brought some Brahmin families in the year 1408 AD to perform religious rites and rituals. Similarly there is reference of one muslim family, who was entrusted to collect revenue had brought some members of Sao and Behna ethnic communities to this place. There are some more such incidents; which denote gradual expansion and settlement of diverse communities leading to emergence of a developed urban centre.

As already referred, the town comprised of various communities, in which altogether fifty five communities were reported on the basis of sampling covering the entire town area. These are only representative, which are not even in terms of their population, distribution and other socio-cultural considerations. Out of all these ethnic groups some important communities have been discussed to know their settlement pattern, history, life style, mechanism of ethnic boundary maintenance and other distinction in the multi-ethnic setting of Jagdalpur town

Kosta

The Kosta are the weaver community of Bastar, who were also known by other terms like Kori, Bunkar, Devangan and so on. Earlier they had one specific area of habitation called Kosta Para. Later they scattered in many other areas with the expansion of family. The Kosta of the town are broadly divided into two major groups, namely Deshi Kosta and Halbi Kosta based on their way of living and other socio-religious observances.

The Deshi Kosta or Devangan originally belong to this region, who are also called Kosta of Bastar because of their concentration in different villages of Bastar. They are mainly found in outskirt localities like Pathraguda and Ganga Munda, with scanty habitation in other areas as well. They have still retained their traditional occupation of weaving though many of them have shifted towards other occupations including service, contractorship, business, etc. They are more akin to the tribal culture in their socio-religious observances like sacrifice of animals to appease deities, offering of Tapawan (country made liquor), use of animal flesh in community feast, etc. They believe themselves to be different from other group of Kosta and abstain from sharing food and making marriage alliances. Most of their marriages take place within the region.

On the other hand the Halbi Kosta or Sao Kosta are migrated community, who were brought here by the Muslim. They are settled here in the core area of the city mainly in Balaji and Pratap ward. Due to it they are called Kosta of Chhattisgarh. They too are the traditional weavers but now most of them have left this traditional occupation. Presently they are found to be engaged in different kinds of occupations like grocery, purchase of local products from weekly markets, other kinds of shops and petty business. Similarly some are involved in other profession also, such as services in government and private organizations, legal practices, etc. Due to occupational change the Kosta of Jagdalpur are commonly known by the term Sao community. They are basically influenced by the Hindu culture. The community members have built a temple of Sitaram Shivalaya, which is managed by them with little participation of other community members including the Devangan. Most of their socio-religious celebrations are observed here which is performed by the Brahman priest. The Sao consider themselves to be superior to the local Kosta, and maintain distance with them in their socio-religious celebrations. Most of their

marriage alliances take place outside Bastar in Chhattisgarh, Calcutta and other places. In this way it is obvious that the Kosta community of Jagdalpur, inspite of common occupation and other similarities, have separated themselves indicating one group to be different from other.

Sikh

The Sikh are one of the early migrant communities of the town. As per one estimate there are 450 to 500 families settled here specially in Ganganagar, Gandhinagar and Shantinagar wards. First of all in 1932-33, a few Sikhs including Sardar Man Mohan Singh had come to this place in connection with some transport work. Later in 1934-35 some Sikh were duly appointed as drivers by the estate authority. Sardar Hakim Singh, Sardar Bhajan Singh and others got appointment letter by Mr. Hide with the salary of Rupees thirty-three per month with an accommodation in the estate *garage*. After wards many more Sikh came and gradually settled in the post independence period. Most of them have migrated from Ludhiana, Amritsar and Bhattala districts of Punjab. They belong to different castes groups which includes Jat, Chuda, Chamar and Ramgaria having different titles like Jhajj, Bal, Ojal, Johal, Singh, etc.

Presently, most of the Sikh have their own house and business establishments while a few are engaged in jobs and other activities. At the community level they have constructed *Gurudwara*, *Singh Sabha*, etc. There are two Gurudwara in the town, one is smaller which is located at Motitalab Para while the bigger one is built at Shantinagar. All major festivals, social programmes and other religious functions are commonly held in the big Gurudwara. They mainly observe four major festivals here namely :

- I) Vaisakhi
- II) Guru Nanak Birth Day
- III) Guru Govind Singh's Birth Day
- IV) Prakash Parab

In these programmes mainly recitation of Guru Granth Sahib, Guru Ka langar, *Prabhat Pheri*, Procession, etc. are organized where the members participate with great enthusiasm. During the period of festivals every day *Prabhat Feri*, i.e., morning procession is held where most of the elder persons and even minors participate chanting religious songs. After the procession the members assemble at one particular house of the community, where *Kirtan*, i.e., religious songs are sung. At the end of it, the house owner offers tea, snacks, etc. to all the assemble, members. The same rituals are repeated next day in next house. In this way it moves from one house to another during all their festivals covering quite a large number of houses. This practice of social gathering not only provides a platform for group interaction of the community members, but also it equally facilitates in strengthening their bondage.

They are involved in many socio-cultural and humanitarian activities as well, which is guided and controlled through different organizations and institutions. Similarly they have an elected religious body called Guru Singh Sabha which regulates different socio-

religious activities of the community. This body is constituted of a president, a vice president, a cashier and other executive members. This body is elected annually on the Vaisakhi day. There is a recognized english medium primary school governed by the community for the schooling of their children upto class III standard. The Sikh children learn their traditional language Gurumukhi in the classes held at Gurudwara. Here comic books, story books, literature, etc. in Gurumukhi script are distributed by the elders free of cost to develop interest in it.

Many humanitarian and social welfare works are also done by them. One charitable homeopathic dispensary functions in the Guruchvara. Two important chowks namely Guru Nanak Chowk and Guru Govind Singh Chowk have been built. Similarly a sum of Rs. Two lakh have been donated by them for the construction of unity gate also called Guru Nanak Ekta Duar, which is located on the Palace Road. Owing to all these welfare activities the Sikh are highly honoured here. Moreover, they have established good inter personal relationship with other communities as well. This very fact of good rapport can be realized with one event only. During 1984 'Operation Blue Star,' when the Sikh were being targeted in the entire country not a single case of burning or looting took place here.

The Sikh generally prefer to marry within the community but inter caste marriage is also prevalent. Most of their marriage alliances take place locally or in the surrounding regions, which is solemnised in the Gurudwara or sometimes in their respective houses. Dowry is not practised. During child birth specially in case of male baby, sweets are distributed among the families of the community.

Most of the Sikh are involved in business especially automobile business like transport, truck ownership, workshop, two wheeler's shop, garage and driver while some are actively associated with politics as well. Among them Sardar Hakim Singh became councillor in 1957 Nagar Palika election. Presently Sardar Bhajan Singh, a senior Congress leader of the town is active. During 1999 Nagar Palika (Municipality) election he was found actively participating and campaigning for the Congress candidates. Along with it he is associated with Bastar parivahan Sangh as well, where he worked as president for pretty long time. This Sangh is a big transport owner's organization, which controls entire transportation activities of local forest and other minor products of the region to other places.

The Sikh and the Punjabi, having common language and culture, used to share common religious platform but after 1984 episode some differences emerged resulting into division among themselves. Yet their relationship remained intact as usual.

Maithili Brahman

There are about 300 families of Maithili (people of Mithila) living at Jagdalpur, who belong to different castes especially Brahman, Nai, Thakur (Rajput), Badhai, Kurmi and Yadav. Here Brahman and Rajput families are comparatively more in number than the other groups. As per one estimate about 50-60 families of Rajput and Brahmins, 10-15 families of Badhai, 10-12 families of Kurmi and 15-20 families of Yadav are settled in different wards of the town including Etwari ward, Dalpat Sagar Ward, Danteswari Ward, Ganga Munda Ward, Rajendra Nagar Ward, Jawahar Nagar ward, Gandhi Nagar ward and Patharaguda ward.

The Maithili are not old settler. First of all in the year 1959-60, a Maithili Brahman (grand father of Bhola Nath Jha) had visited this place in connection with some contractorship. Having found ample scope of employment, he brought some of his close relatives. Gradually many more people came either through his link or other sources resulting into settlement of sizeable Maithili population. Presently most of them are engaged in different types of business like Betel shop, Kirana shop, Furniture, Dairy, etc. while a few are found in forest and other government services, private job and contractorship. Likewise some members are found actively associated with politics as well. Here mention may be made of some such persons like Surendra Jha, President, Rural Youth (BJP), Raj Kumar Jha (ward councillor), K.K. Jha (senior member of Congress), Bhola Jha, District Executive Member (BJP) and Brij Bihari Jha, Special Advisor (BJP) and so on.

The Maithili have their distinct identity, who have established their registered organization known as *Maithili Samaj*. Different socio-religious activities and other functions are organized under this banner, which is being controlled and managed by an executive body having president and a group of members. The president is nominated by voice vote while members are opted from major Maithili families. The executive body not only cater to the requirement of society but also they equally co operate in case of any national calamity. Recently in 1999, a sum of rupees eleven thousand was donated by the *Samaj* to the victims of Orissa cyclone. Here money is collected at the rate of eleven rupees per family per month to be used for various works. Similarly the *Samaj* come forward in rendering financial help to poor families in performing marriage and other social obligations. This *Samaj* has constructed one temple, one water post (*pyau*) to provide drinking water to the people and one big hall for performing marriage and other socio-religious activities.

The *Maithili Samaj* of Jagdalpur is linked with the ethnic members of the surrounding areas as well. In fact, there is one broad spectrum of organization called *Chhattisgarh Maithili Samaj*, which interact with the members of this community living in different parts of Chhattisgarh including Jagdalpur. This body organises many annual programmes like *Vidyapati Samaroh* and other cultural programmes, where many members from Jagdalpur also participate with equal zeal.

Apart from this group of *Maithili Samaj*, who had migrated and settled here in post independence period, there is another group of old inhabitants of this place, who had been attached with the Royal family as *Raj Guru* since long. They prefer to marry' among old settlers of the region. Similarly these new comers used to settle their marriage relations mostly in Darbhanga (Bihar). Gradually both these groups have come closer. Now many marriage alliances have been made between them. Not only that both groups have begun to participate jointly in different socio-religious activities organized by the *Maithili Samaj*. In spite of less number and scattered distribution this ethnic group has maintained good interaction and relationship with other communities. Likewise they have played effective role in the different developmental and other activities of the town.

Bhunjwa : There are about 60-70 families of Bhunjwa here, who have migrated from Uttar Pradesh mainly from Sultanpur and Allahabad districts of the state. Indranath Gupta,

a member of the community migrated from village Pratapgarh, district Sultanpur, told that prior to 1980 there were just three to four *La Ki Dukan* (*Blunja* shops) here but the number of shops have substantially increased in the last two decades. Presently there are about 25 shops on the Chitrakot road, some 15 shops in the Ganga Munda area while not less than 5 shops in the Kumar Para. Earlier they themselves used to prepare all *Bhunja* items like *chana* (gram), *matar* (dry pea) and *lai*, etc. in the *Bhatti* (kiln). But now it has been banned in the town for the sake of pollution and fire risk. Owing to it they have to purchase it from outside. Commonly it is being brought from Andawal, where it is produced and sold in bulk quantity while some of them prepare such things in small quantity in small kiln within the town.

Apart from a sizeable number of *Bhunja* shops in different parts of the town, some of them also visit weekly markets for selling their products. Here such markets are held almost every day at one place or the other in the vicinity, within a radius of 50 kms. Here mention may be made of some such markets, i.e., on Monday it is *Bajawand*, *Muli*, and *Sirisauda* while on Tuesday weekly market is at *Singanpur* (Chitrakot road), *Kachnar* and *Taraput*, etc. Similarly on Wednesday it is held at *Bakawand* and *Alnar*, on Thursday at Bastar, on Friday *Lohandiguda* and *Nangur*, on Saturday it is at *Sivanaguda*, *Devda* and *Mado* while on Sunday this weekly market is held locally at *Elwari* Bazar. In these markets the rural people especially the tribals prefer to eat *Bhunja*, which is available to them at comparatively cheaper rate.

As noted earlier there are about 70 families of this community living in different areas of the town who are mainly engaged in *Bhunja* business. They have a very sizeable population, who migrated from one particular area and have one common business. Yet the members are not duly organized. Similarly in spite of commonality the members could not develop any social platform or institution for their socioreligious activities or consolidation of the members. The community members normally meet each other on some social occasions like birth, marriage or death, etc. otherwise most of the time they remain delimited to their business or family affairs. Even after all these short comings this community has the honour to introduce a new kind of food to the tribals of the region, who have developed special liking for this *Bhunja*.

Telugu

The Telugu community are one of the oldest settlers of Jagdalpur. It is said that some Telugu members had accompanied the then king of Warangal who left that place and established his new kingdom at Bastar. Some Telugu fellows served the kings court as Diwan, priest, etc. Afterwards many more Telugu people migrated to this region due to proximity and politico-geographical reasons. Presently there are more than 300 families of them settled in different wards with major concentration in railway colony and Balaji ward. They speak in their traditional language, i.e., Telugu. But due to long stay in new setting most of them especially the new generation have forgotten their traditional language to a great extent. Though they may speak Telugu but can not read or write in Telugu. There is one Telugu medium school in the Railway colony meant for the children of railway employees where some Telugu children of the town are also getting education.

In spite of that local Telugu people are not very enthusiastic to train their wards in the mother tongue. They belong to different caste like goldsmith (Saravuwallu), washermen (Chakali), Barber (Mangalir), Vaisya (Kumti), Naidu Brahman and so on. Here Mangalir, Chakali, Saravuwallu and Naid" families are comparatively more in number. Among the different Telugu communities, some caste groups like barber, washermen and goldsmith still retain their traditional occupation. Similarly a sizeable population of Telugu communities are engaged in different kinds of business, such as poultry, timber, transport, chilli, etc. while about 40 per cent of them are employed in private and government services. Earlier timber was very promising trade of this region where many Telugu people were also involved. Then most of the logs were being transported through river Godavari. The Timber merchant had separate Association called Godawari Timber association with major participation of Telugu people. Since timber business has been almost stopped, many of them have either migrated to other region or have switched over to other kind of business. Chilli business is one such field, where Telugu people of the town are quite dominant. They have an edge over others due to various factors. The chilli is widely grown by the Telugu people of Bhadrachallam and some other districts of Karnataka while it has great demand in the Hindi speaking zone. The Telugu of Jagdalpur very effectively manage both the situation due to their being conversant in both the languages. As a result they have become very successful in this business with very strong association, which not only protect their interest but equally show concern for social and welfare needs of the society.

Presently contribution is being made by them for the community cause on the basis of the sale of Chilli. Here one rupee per bag of chilli is collected for it. Due to heavy transaction, this one rupee becomes a huge amount. This money is being spent in the construction of Balaji temple, which is located in the SBI Colony just beyond the municipal boundary.

The Telugu are very religious minded people. *Ugadi* festival, i.e., New Year celebration is one of the important festivals observed by them. During this festival the Telugu, irrespective of their caste participate in the different socio-religious performances with great enthusiasm. Some cultural programmes are also organized. Other than this, *Ganesh Puja*, *Durga Puja* and other Hindu festivals are also celebrated by them. These occasions not only provide platform for community gathering but equally help them in strengthening their social bondage. Here the *Andhra Samaj*, a social organization, is active in the organization and execution of such programmes. It is believed that the temple of Balaji is going to be another such centre, which will facilitate better interaction and unity among the Telugu people. In the town, it is found that some poor and down trodden Hindu families belonging to Dalit groups have accepted Christianity in the recent past. Though they visit Church and follow Christian ideology yet they have not fully forgotten their Hindu traits like using bangles, sindur and observing Hindu festivals, etc. Though the Telugu are engaged in diverse occupation but on the political field they are less active. Gupteswar Soni, a business man was an independent candidate for the post of president in the 1999 municipal election. Other than him no one is found holding rank and file in the political parties. In this way the Telugu community has played a great role in the development of the town.

Jain

The Jain of both the sects (*Digambar* and *Swetambar*), another influential group of the town, are mainly settled in main road, *Gol Bazar* and *Pratapganj* ward with some families living in other areas also beyond the municipal limit. They originally belong to Rajasthan specially Lohawat locality of Jodhpur district. Afterwards some of them migrated to Saugar and other adjacent areas of Bundelkhand and then to this place. Among the Jain, Karodimalji was the first man, who had come to this place in the year 1900 in connection with his job. He worked as a teacher in the town for pretty long time. After sometime he visualised the ample possibility of business, and so he brought some of his relatives to start with. Afterwards many more members of this community migrated for business. There are about 300 families of this community living here. Out of it about 100 families belong to *Digamber* sect while the rest all belong to *Swetamber* sect. Most of them are engaged in different kinds of business mainly of cloth, grocery and medicine, while a few are having business of jewellery, press and stationary.

The Jain mostly have nuclear families and practise monogamy. They observe clan restrictions. Earlier they used to consider four clans, i.e., of grand father, maternal grand father, mother and father within which marriage was not permissible but now due to socio-geographical compulsions only two clans of father and mother are considered for it. The Jain living in the town though belong to different clan groups yet they prefer to marry among clan like *luma*, *Parikh*, *kochar*, *KagodLuda*, *Bafna*, *Bothra* and *Chopra*. Earlier they had their marriage alliances either in Rajasthan or other distant places. But now they prefer local marriage or within the surrounding areas of Chhattisgarh.

They are basically business community with little involvement in active politics. The Jain have their respective social organization, which is a non political, non registered body that controls their entire gamut of socio religious activities. This body comprises a president, a vice president and a group of executive members, which normally functions for five years. Only the president is elected by the member of the community. This president later forms a group of executive body. This president later selects the members of executive body. At present Sri Prakash Chandra Lunia is the president of *Swetamber* sect called as *Jctin Swetamber Oswal Samaj* while *Digamber Samaj* is being presided by Sri Narendra Kumar Jain. These general executive body meet normally twice in a month, the number may be increased if needed while general meeting of all the community members are held quarterly once or twice.

They are religious minded people. In the beginning, they used to perform their religious ritual in the house of late Karodimal Jain. Later in 1932 a temple of *Parswanath Digambar Jain* was built. Afterwards some more community buildings were made. Mahabir Bhavan came up in 1970 for performing social functions. Similarly the member of *Swetamber* sect have also built their temple in 1971 called *Sri Dharamnath Zinalaya* and one big community hall called *Oswal Bhavan* for the observance of different socio-cultural functions. The temple was constructed with the donation of all community members, while *Oswal Bhavan* was built by one man named Sri Bodhmal Lukkad also so it is called *Lukkad Bhavan* also.

The Jain observe their socio-religion performances in their respective temples separately. Here it is worth to mention that one particular festival, i.e., *Prayusan* is though observed by both the sect members but on different dates. In spite of some differences and variations within themselves, some major festivals like *Mahabir Jayanli* are observed jointly with common procession. Hence, in spite of, some ideological and spiritual differences they consider themselves to be of one ethnic group and follower of one common religious faith.

The Jain are peace loving people, who have fully adjusted themselves to this environment having very amicable and cordial relations with the Bastar people in particular and other communities in general. They have given new dimension to the city through their business shops and other kind of professional involvements.

Christian

The Christian are one of the important ethnic groups of the town. They are settled mainly in Frazerpur, Shantinagar and Nayamunda areas. Out of it, Frazerpur is also known as *Christian Para*. Earlier this place was termed *Jangal Para* as it was thickly forested area with less human settlement. Later on when British missionaries came to this place, they developed this area for the rehabilitation of migrated and newly converted Christians. Frazerpur, in the year 1911. was slowly developing and had a population of 112 Christian families who were encouraged to settle on plots of land and cultivate (Thouthang 1992). Afterwards some more new converts of the surrounding areas were allowed to build their houses. Gradually this area became dominated by the Christian population. In recent past their dominance has been diluted because some families have been replaced by the outsiders belonging to different ethnic groups like the Sikh, Rajput, Telugu and Raut. This happened because many poor Christians were rather compelled to sell out their land for subsistence while a few did so to start pretty business out of surplus money and preferred to settle on the outskirt of the town. Most of the Christian families living here are poor or of low income group. They are mostly engaged as skilled/unskilled labour in private job. rickshaw puller or in pretty business while some are working in different offices as well.

The history of Christianity in Jagdalpur is more than a century old. It is said that two missionaries Reverend Ernest Pohl and Reverend. Herman Bothmann of the Schleswing Holstein Lutheran missionary society of Germany had come to Bastar as a mission field, who reached Jagdalpur on April 10, 1882 to establish a mission but failed to initiate. “Due to much resistance from the Rajah and his people and havin waited for more than four weeks without acquiring permission from the Rajah to commence their work, they left Jagdalpur and went to Koraput’-(Touthang 1992). In the same year missionaries of Methodist Chruch Reverend. C.B.Ward also made entry here. Afterwards he along with Dr. W.H. Batstone, a medical missionary, approached the authority to manage a large area for their work. “With the help of the superintendent of the Bastar State Shri Ram Krishna Rao who was in charge of the state, the Rajah Bhairam Deo having died in 1891 and the successor still a minor, Ward and Batstone selected a finely located place to the south of the plain reserved for the extension of the rapidly growing town. The whole town front 1900 feet by 1200 feet back was selected for mission building site. Adjoining

the mission site was a fine waste land area one and a half miles west to east and about one mile north to south. The village land measuring nearly 1300 acres (Touthang1992). But even after so much of resources and endeavour, their mission work could not attain desired result. Here the King's influence and tribals' apathy towards new religious were some important factors, which has been honestly admitted by the then missionaries too. "it was also unfortunate that the Bastar work which had from the beginning commanded a certain amount of interest in parts of America because of its concern for the aboriginal people of the state hardly had converts from the tribes when the pioneer missionary died in 1908, after 16 years of dedicated labour. It is probable that no mission worker of any grade was ever developed from among them" (ibid). Later many more missionaries came to this place, established schools, institutions and health centers, etc. to bring more and more people in their fold. But after all these efforts the church membership could not grow to the desired expectation. They believed that unfortunately not much has been done to fulfill the wishes of the pioneer missionary and in fact whatever growth is there at present it seemed to be only biological growth and not by conversion. This situation prevailed almost till the king of Bastar was in the throne, who was against the conversion. At that time church activities were very limited and conversion could not be done smoothly. Here too the participation of the tribals were very less. However, in the post independence era this town has witnessed phenomenal growth in missionaries activities, presently more than nine (9) denomination of church are functioning here with their missionary activities. Out of them Catholic Church, Chaindaiya Methodist Church, Church's of God, Lutheran Church, Brethren Assembly, etc. are quite active with various plans and programmes to render their services to the people in general and Christian community in particular, through various schools, hostels, health centres and other institutions. Owing to all these efforts the number of Christians have increased substantially. Here one more point worth to be mentioned is that the conversion has been reported not only among the tribals but among non-tribals also who mainly belong to scheduled caste and other backward communities. Here proportion of Telugu speaking families and Oriya speaking families are comparatively more than others, on the otherhand opposition forces like *Vishwa Hindu Paris had and Rashtriya Swayam Sevak Sangh* have also intensified their activities to check the conversion. Yet no any case of direct confrontation has been reported so far.

The Christian of Jagdalpur irrespective of their caste or denominations claim themselves to be Christian only. There is no any kind of feeling or differences among them. Though they have affiliation to their own Churches yet there is no restriction in marriage and other social interactions among different denominations. Likewise they jointly participate in procession and celebrate their important festivals like Christmas, etc. with equal zeal and gaiety.

Muslim

The Muslim are one of the important communities of the town. Presently they have a sizeable population, who are settled mainly in Sadar ward, Motitalab Para, Ganga Munda and Pathragauda ward. Though there are some Muslim pockets here, yet they are found mostly living along with others in mixed population. Initially the Muslim arrived here around 1825 History narrates that first of all three Muslims namely Mohammad Salam

Malgujar, Khudayar Khan and Din Mohammad had come here from Katangi, a village near Jabalpur. They were business-men who once offered an extra ordinary gift, i.e., a shoe fitted with gems and jewels to the then ruler of Bastar. This gift made the king highly pleased, who in turn gifted some villages to them. Afterwards one of them Md. Salam was appointed *Malgujar* with an authority to collect revenue from altogether 484 villages.

They built their house in the year 1885 which is engraved in the house. The locality, where they settled, became known as *Malgujar Para*. Gradually they became instrumental in bringing many more families of their social link. Here it is worth to mention that some members of other communities, i.e., Sao community of Hindus and Behna community of Muslim were also brought by them from their original, Katangi village. Afterwards many more Muslim migrated to this place during the regime of king and later in the post independence period. Most of them have built their houses. Here the old families have maintained their legacy and are mainly dependant on agriculture and income out of real estate while late settlers are engaged in different kind of occupations like mechanic, driver, business, transporter, etc. Some of them are employed in Government service as well. Similarly a few are found working as advocate, agent and some other kind of jobs for their livelihood.

The Muslim are very religious minded people, who visit different mosques for prayer. Presently there are three mosque namely Sadar Masjid, located at the Main Road, which is oldest one built in the year 1898. The second mosque is Jama Masjid which is also located in the heart of the town. While the third one has been built recently in 1999 at Vrindavan colony. Apart from it there is one Idgah at Geedam Road and one burial place just behind the forest office. Apart from it there are ten *madarsas*, one English medium convent school with Urdu as a subject and one *Anjuman Hindu Urdu* primary school managed by the Muslim society called as *Anjuman Islamia committee*. Similarly they have developed some property as well out of contribution and donation of the members that includes four shops in the main road, some shops around *Jama Masjid* shopping complex in front of Idgah and *Kabristhan*. At present Rs. 65,000 is collected from it as rent which is duly utilized in maintaining expenses of school, mosques etc. The entire property is of *wakf* board but it is managed by the committee, which comprises a group of members elected after every three years. Here the community members elect president, vice-president, secretary, joint secretary, treasurer and six members which looks after entire management of mosques, and other socio religious functions of the society'. At present Md. Hafiz Khan Sufi alias *Gore Janabjee* is the *Sadar* (president) of the committee, who belong to the group of late settlers. While members of old families who were very active in the past have been sidelined from the executive body due to age and the socio-economic factors. Presently the newly rich persons and economically better families of late settlement are dominating in the different socio-religious organizations and other activities.

The Muslim are politically very conscious. Its members are found active in different political parties. Mention may be made of Sakil Ahmed of BJP, Wahid Qureshi of the CPI, Abdul Gani Bhai and Hafiz Hanif of Congress. Similarly another Muslim fellow though not attached with any political party formed a group and fought hard for the pensioners.

He was Ahmed Ibrahim, a retired police official, who remained active even after retirement and served the employees for their betterment. In the recently held municipal election some Muslim candidates also fought for the post of president and councillor as well. It is observed that Muslim are not favoured in the local bodies. Even the political parties discourage them for one simple reasons that in spite of sizeable population they are not thickly concentrated in any particular area and such parties suspect of being victimized by the majority people of the locality for favouring a minority.

The Muslim are living here quite peacefully and have maintained very cordial relations with members of different communities. It is reported that not a single case of communal riot has occurred here so far. Muslims and Hindus participate in each other's fairs and festivals with great zeal. During *Tajia*, when Muslims take out procession, the Hindu ladies use to clean the road with water. Sao families (who were being brought here by them) also take their religious offerings in the Muslim families during Bhujli festival. This denotes their healthy relations and interaction among them. But things are changing and some difference are coming up with the influx of people and development of town. Which is affecting the age old social fabrics of the society as well.

Aranayak Brahman

The Aranayak Brahman are one of the oldest settlers of Jagdalpur town in particular and Bastar in general, who came to this region some 800 years ago. It is said that some Oriya Brahmans on being oppressed by one Muslim ruler were compelled to leave his kingdom and took shelter in a forest. Due to their abode in the forest region they were also termed as *Aranayak* (forest dwellers). Once the ruler of Bastar came across these Brahmans while passing through that forested area. He brought them in his kingdom and facilitated their settlement by offering land and other help. Afterwards some more Aranayak Brahmans also migrated to this region. The first batch of Brahmans included three people having three different surnames namely Joshi, Padhi and Acharya. Gradually they grew in number and settled in altogether eighty different villages of Bastar district including the Jagdalpur town. Such villages include Binta, Bastar, Asna, Dongaghat, Jagdalpur, Koritgaon, Malgaon, Gumdel, Parhuguda, Pithapur, Magnor, Matnar, Kavargi, Talur, Baida, Sovra, Jaibeal, Aawrabatta, Jirakhal, Mertha, Baniagaon, Kongra, Bhanpuri, Kondagaon, Sukrupal, etc. In addition some of them are also settled in some villages of adjoining Orissa state also. These Brahmans are also called as *Tinsao Gharia* (of three hundred houses). While second batch of Brahmans settled later are called *Sath Gharia* (of sixty houses). They are mainly settled in and around the Jagdalpur town. Here it is worth to mention that both these groups claim to be the earlier settler by giving their distinct explanation. But majority of people believe that *Tinsao Gharia* are the older ones. There are certain explanation for it like their distribution in the entire region even before shifting of a capital from Bastar to Jagdalpur. the impact of different socio-religious behaviour of the local people and above all difference in their respective temples. Both these groups have their own temples. The *Tinsai Gharia* Brahman use to perform their rituals in Jagannath temple also called as *Badigudi* (big temple) while other group had their performances in *Amayat* temple also called as *Choti gucii* (small temple). Similarly the big temple is known as main temple having separate priest while small temple is known as associated temple where rituals are performed by assistant priest.

The *Tin Sao Gharia* and *Sath Gharia* had differences in their socio-religious performances. Likewise they used to maintain some differences in their marriage, death and other rituals also. This caused some rift among themselves. Afterwards some elders and social activists came forward to unite these groups and a common social organization *Aryanayak Brahman Samaj* was formed in the year 1986 duly registered by the state Government of Madhya Pradesh. This organization is being controlled by an executive body which includes president, secretary, vice president, treasurer and Joint secretary along with thirty one members, thirty four village representatives and fourteen regional controllers. This body is duly elected for two year only. This society is devoted to eliminate social evils, like dowry, child marriage, prevalence of meat, fish during marriage and other social functions, and promote constructive social activities like organizing collective marriages, collectives thread ceremony, consolidation of society, etc. Apart from these this body is playing vital role in regulating the social practices as well. Here mention may be made of one instance. Once a man of Jaibel village was married to a girl but the husband left her and remarried another girl. This case was placed before this body and it settled the dispute amicably facilitating the abandoned girl to join her husband.

The Aryanayak Brahman are quite sizeable in the town mainly settled in Brahman Para, Mahadeo ghat and some other localities. Many of them are engaged in their traditional occupation of performing religious rituals. While some of them are attache with important temples of the town like Danteswari temple and Jaganath temple. Likewise many are found engaged in government services including post office, hospital, municipality and a few in other occupations like legal practice, business etc. These Arayanak Brahmans observe many festivals but their most important festival is *Goncha* (cart festival) which is being participated by all of them. These Brahman have consolidated their social position and are living together in perfect harmony with other populations of the town.

Ethnic Boundary Maintenance and Inter Relationship

Jagdalpur, the capital of Bastar estate, has been a land locked area without proper road and communication facilities. The entire area was almost covered with thick forest isolating the place like an island. Here the inhabitants were very poor, less educated and entirely cut off from the main stream with little scope of interaction with the outside world. The erst while rulers realized that the development of the people and the region is possible only through contact with the more developed people of other region. Taking this fact in to account he invited able people to settle here. They were granted free land and other amenities. Afterwards these settled people also brought people of different ethnic groups leading to substantial increase in the immigrant population.

The migration to this region is not a new phenomenon. As already referred to, this place was selected as new capital by the ruler of Bastar, Dalpat Deo, who shifted his capital from Bastar to Jagdalpur in the year 1772. At that time it had very sparse population where Jagdu, a man of Mahara community, was the headman (Jagdalpur is named after him). The strategic location, river Indrawati in one side and fertile land were major factors behind this shift. Moreover, a myth is also referred to that once a female rabbit had compelled the ruler's wild dog to retreat, when he came to this place while chasing a deer, the ruler was amazed to witness this peculiar event. Later the king was advised to

make this place his capital as this land is of different nature. When the capital was shifted many associates of the king also came along with him. Then the area of habitation was located within a small jurisdiction. Glassford's report (1862) states that then the palace of the ruler king was also a big hut with number of smaller huts for the king's men and other people. Subsequently during the British period the area further expanded with the increase of people. Here some *para* (localities) also developed based on ethnic line like Brahman Para, Rout Para, Kosta Para, Muslim Para, etc. where members of one particular ethnic community mainly inhabited. Similarly the Britishers made many buildings and did other construction work in the region to accommodate government officials and other employees for smooth functioning of their administration. Afterwards the intensity of migration gained further momentum in the post independence era after the vesting of kingdom, when the Government of India facilitated rehabilitation of refugees of East Bengal and Pakistan. The region witnessed influx of business community also, who migrated with a view to exploit the local resources and establish their business here. These factors together caused abrupt rise in the population belonging to different regions and different ethnic groups with diversity in the socio-religious practices and way of living. This led to the emergence of new ethnic situation.

As per our household census there are more than fifty five different ethnic groups, out of which only ten ethnic groups namely Bhatra, Dhurwa, Ghadwa, Gond, Mahara, Muria, Panara, Panika, Rout, Devangan and others are aboriginal population, who immigrated here from the surrounding regions. Earlier they were comparatively more in number but their number decreased substantially with the growth of the town. Here the Maria, Dhurwa, Gond, Bhatra, Ghadwa, are scheduled tribe while Mahara, Panara, Rout, Devangan belonged to backward community. Most of their settlement areas fall in the peripheral wards like Ganga Munda, Patharaguda, 'Lalbag, Dalpat Sagar, etc. while some families are found living in centrally located wards as well. These people are mainly found engaged in different kinds of work for their livelihood like rickshaw puller, *hamuli* (load carrier), daily wage labour and pretty business like fruit vendor, vegetable vendor, tea stall, etc. Apart from it some members of these aboriginal communities are serving in police department, government offices and other services also in different capacities. Though these people belonged to this region but the lesser number, their scanty distribution and variation in the socio-religious practices of different aboriginal groups are some such odds which deny their close association with each other. Moreover, member of one ethnic group belong to different regions with differences in their socio-economic status which restrict their closeness.¹ In spite of all these odds some loose social bondage exists within them who interact with one another during special occasions, socio cultural celebrations and festivals, etc.

Excluding the above stated ten communities, rest all counting more than forty communities are the migrant groups namely Brahman, Dhobi, Gujrati, Jain, Kurmi, Kumhar, Muslim, Telugu, Sikh, Vaishnav, Patel and others. The period of migration of each of these groups vary from less than five years to more than fifty years. The maximum number of families about 56.5 per cent migrated between 6 years to 40 years while such people who migrated

in the early phase of independence or even before that are 32.8 per cent of total household covered. On the other hand 10.7 per cent of families migrated in recent years between zero year to 5 years. The old settlers, who are also deemed as original settler, had migrated to this place long ago. Most of them were either invited here or were brought by the ruler of Bastar. Such old settlers include Aryanak Brahman of Orissa, Telugu Brahman and others from Andhra Pradesh, Rajguru from Mithila, etc. Presently fifth and sixth generation (or even more) descendants of such people are living in this town. Here special mention may be made of Rajguru family, whose ancestor Sri Pandit Mesh Thakur was made first Rajguru in the year 1585. Now after 12 generations Sri Arun Kumar Thakur is serving as the Rajguru of Bastar estate. Apart from these old settlers many other people were also brought by the ruler to serve different purposes. These together constitute sizeable population of old settlers, who have adopted many cultural traits and the language of the region. They had developed very cordial relationship among them. Similarly they used to participate in the fairs and festivals of other communities with equal zeal and enthusiasm, without any feeling. Now such old people or their descendants are only counted in number. Here mention may be made of some such persons namely Pandit Sundar Lal Tripathi, Pyare Lai Vishwakarma, Lala Jagdalpuri, Dr. K.K. Jha, Vishal Bharat, Sri Hari Joshi, Md. Abdul Salam etc. Though most of them have lost their old status and legacy yet they are still honoured and respected by all.

As already stated high intensity of migration was witnessed here in the post independence period when many business communities immigrated. This was the period when many refugees of East Bengal and Pakistan were being rehabilitated. Moreover, some people of other adjoining states like Andhra Pradesh, Orissa, Madhya Pradesh, Maharashtra and Bihar, etc. also came either through social link or in search of job. Owing to all these factors Jagdalpur has became such a place where people of almost all states including Jammu and Kashmir, Himachal Pradesh and Kerala can be found living together in perfect harmony amidst different communities. It is why sometimes this place is referred to as “India in Bastar” rather than “Bastar in India”.

Among the aboriginal communities Bhatra, Dhurwa, Ghadwa, Muria and Gond, and others, are important tribes of the town, who maintained their ethnic identity and social boundary to a great extent through languages, commensality and connubium inspite of odds like lesser number, and variation in their socio-economic status. Here each group speaks in its traditional language but this trend is gradually diminishing. Such persons, who are better educated and employed in different services have almost left speaking in their own dialect. Likewise due to education of children in english medium school, they do not know or even understand properly their traditional language. Another striking fact witnessed in the urban centre is apathy toward it. It is observed that relatives of such elite person, when visit them, they are discouraged or rather checked from speaking in their own dialect. This attitude is adversely affecting the preservation of cultural traits. Similarly commonsality another major marker of ethnic maintenance is also at loose end due to various factors. Here food is shared among all tribal communities but they too observe certain restrictions. Here one instance may be cited. Panara Para is one of the oldest settlement area of the town where many ethnic groups live together. This, includes 200 families of Mahara, 150 families of Dhobi, 25 families of Rout, 40 families of Panara,

10 families of Praza, 5 families of Halba, 80 families of Bhatra, etc. Among them Halba, Bhatra, Praza, Raut and Panara interdine together but maintain food distance with Dhobi and Mahara because they consider them to be inferior in social status. They visit houses of each other during birth, death and other community celebrations as well. Regarding connubiality, each tribe prefers to marry within their own community. Here the influence of modernity, urbanization and sometimes problem of getting suitable match facilitate marriages outside one's group as well. Most of their marriages have taken place within the group but some cases of inter caste or love marriages with other tribe; community or in general caste groups have also been reported,

Christians are other major ethnic group in the town, who originally belonged to different tribal community of the region. They are distributed in different areas with major concentration in Frazerpur, Shantinagar and Naya Munda areas. The inception of Christianity here is quite old but it failed to attain desired expectation due to tribal's apathy and the restriction by the royal authority'. This situation prevailed during the royal period. However in the post independence era this town witnessed phenomenal growth in church's activities. Presently more than nine denominations of churches are functioning here with various plans and programmes to render their services to the Christian population. The Christian, irrespective of their church, claim themselves to be of one group; who interact and interdine with one another without any feeling. Ideologically they stick to their distinct church but maintains no restriction in making marriage alliances with any other denomination. Likewise they participate in the community procession together and observe their different festivals including the Christmas unitedly with equal zeal and gaiety. In this way they try to maintain their solidarity and ethnic boundary' through common participation and observation of different socio-religious celebrations.

The Telugu community are also very old settler of the town. There are about 300 Telugu families, who belong to different caste groups namely Saravuwalli (Goldsmith), Chakali (Washerman), Mangalir (Barber), Kumti (Vaisya). Naidu. Brahman and so on. Here some caste groups like goldsmith, washermen, barber etc still retain their traditional occupation while many other are engaged in poultry, timber, transport and chilli business. Similarly a sizeable population of them are working in government and private services, "t hey speak in traditional language, i.e., Telugu but due to long habitation in new social environment, most of them especially younger generation people have forgotten their native language. Such people can speak Telugu but they can't read or write it due to lack of orientation. The Telugu are divided into different ethnic groups, who prefer to marry within one's own group but exhibit regional identity in their socio-religious celebrations. They are very religious people who celebrate their most important community festival *Ugadi* with great enthusiasm under one common platform. Similarly other celebration are also observed together. The Telugu irrespective of their caste affiliation participate in different performances with equal dedication. Such occasions provide opportunity of community gathering, which strengthens their social bondage as well. Presently one big temple of Balaji is being constructed by the Telugu people. It is believed by them that this religious centre will facilitate greater interaction and solidarity within different ethnic groups of the community.

Among the late settlers of the town the Jain and the Gujarati are very important communities, who have developed various institutions and organizations for themselves which regulates their entire socio-religious activities. These things facilitate better cohesion among the members of one ethnic group. The Jain is another influential group settled mainly in the main road, *Gol bazaar* and *Pratapganj* ward of the town. As per estimation there are about 300 families of this community, out of which 100 families belong to *Digamber* sect and rest are *Swetamber*. Most of them are engaged in different kinds of business mainly of cloth, grocery, and medicines while a few are having business of jewellery, press and stationary, etc. They have nuclear families and observe clan restrictions. Though they belonged to different clans yet preference of marriage is more among clans like Lunia, Parikh, Kochhar, Kagod, Luda, Bafna, Bothra and Chopra, etc. Earlier they had their marriage alliances either in Rajasthan or other distant places but now they prefer local marriages or in the surrounding areas within their community. They have their social organizations also comprised of president and a group of executive members, which looks after their socio-religious celebrations and other social affairs. The Jain community observe their religious rituals in their respective temples. In spite of such variation some festivals like *Mahabir Jayanti* is celebrated unitedly where a joint procession is organized by them. Thus in spite of some differences they consider themselves to be the follower of one religion and of one ethnic group.

The Gujarati are another important community of the town. Two families migrated to this region in the late thirties. Later on many more Gujaratis migrated in early fifties and involved themselves in many kind of business. Here *Kadwa Patel* dominated in the wood business. They had their Saw mills but afterwards they had to leave this place with the introduction of Forest Preservation Act (1980) and ban on the tree falling. Tobacco is another field of their dominance. Here many big tobacco shops belonged to them, Tobacco is being brought from Gujarat and sold in the local market. They are attached with other business too which includes jewellery shop, petrol pump, press, etc. Similarly they have cassette shops, sanitary shops, hardware shops and some other kinds of business also. Presently they are about 200 families of Gujarati settled in different parts of the town. They are basically business community. Who normally did not think of doing any government service. But in the changed situation with business environment not very encouraging, many of them have preferred for it. Now some of them are working in post offices, schools and in different government offices for their livelihood. The Gujarati are divided within themselves based on occupation and caste; who prefer to marry within own group though some cases of inter-religious, inter-caste marriage have also been reported. At social level no feeling of distance is noticed. They observe their festivals like *Jala Ram Bapa* and *Diirga Paja* together at community level, where all the members participate. They have built one community Hall for celebration of their socio-religious performance¹ Likewise they have one community school also called *Bed Bihar Vidyalaya* which renders education to the community student in particular and others in general. They have strong sense of oneness who claims to be member of *Gujrati Samaj*. In this respect regionalism becomes a binding factor in maintenance of their ethnic boundary.

Inter Ethnic Relationship

In the town there are about 55 different ethnic communities who are in contact with one another to satisfy their various needs and requirement. But among them there are some specific communities who have played effective role in maintaining the age old traditions and healthy social environment of the town through inter-ethnic relations. The Muslim, for example, are one such community, who have their distinct ethnic identity yet have maintained good interactions with other communities. They are credited for bringing other Hindu community here, who still have sense of gratitude towards them, which find manifestation in their religious celebrations, where the Muslim are given equal honour. It is said that the Sao family (a weaver community)! were brought at Jagdalpur by the Muslim. The Sao still send their religious offerings to the Muslim houses during Bhujli festival. The Muslim have maintained very co-ordial relation with different communities. It is reported that not a single case of communal riot has been reported here till date. During partition period when most of the cities were burning, it remained trouble free area due to close relations with one another. Here both the communities (Hindu and Muslim) have active participation in their festivals. At the time of *Tajia*, when Muslim take out procession, the Hindu ladies use to clean the road with holy water. It clearly denotes their healthy relations but things have changed a lot with the influx of people and development of the town. Such changes are witnessed at community level also, where people of common ideology have separated themselves due to their differences and some narrow perception. The reference of the Sikh and the Punjabi is worth mentioning here, who migrated in the post independence period. In the early part of their settlement, the Sikh and the Mona Punjabi were lesser in number and had very cordial inter relationship. Most of their socio-religious programmes were organized in the Gurudwara, where they had equal involvement. Gradually their number grew so were their business establishments. Presently there are about 4000 Sikhs and 1500 members of Punjabi communities. The Sikh with better ethnic unity further consolidated their position and dominance in the Gurduwara affairs, while the Punjabi keeping equal involvement in the Gurudwara also built one religious centre called *Geeta Bhavan* in year 1962 for observation of certain Hindu rituals. In spite of this minor variation, both the groups maintained their relations and participated in different celebration without any odd feelings. But this relation felt sever jolt after the famous 1984 episode. Now the participation of Punjabi in the gurudwara began to be looked critically by a section of them and in between some internal social differences also emerged. These factors led to the inclination of Punjabi community towards *Sanatan Dharam* (Hindu religion). A temple was built by them in 1994 called “Punjabi Bhavan” for performing their socio-religious rituals. They are now called as Sanatan Punjabi. These people still use *Gurmukhi* as their script and observe major Sikh festivals like Vaishakhi, Guru Parab etc. At the same time many Hindu festivals like Krishna Janmastmi, Ganesh Puja, Bhagwat Path, Mata ki Chuki and Navratri are also observed by them with equal devotion. Many new things have also been introduced by the *Punjabi Santhan Dharam Sabha* in recent years to ensure larger participation of community members in the socio-religious performances. Here special mention may be made of *Sneha Bhojan* (community feast) in stead of *Langar* (a community meal of the Sikh). Here each family of this ethnic group is requested to bring some quantity of vegetables and *chapattis* (bread) from their houses. This food is mixed together and served

to the participants in the community feast. The Punjabi have tried to maintain their age old Sikh Punjabi relations in spite of their inclination towards *Sanatan Dharam*. The Granthi, Ragi and others who visit *Gurudwara* of the town are also duly invited by these Punjabis for performing *SabadKirtan* in the Punjabi Bhavan, where the members participate in large number.

The Sindhis are another group associated with this religion. There are about 165 families of them, who have settled here in the post independence period. They have their own *Gurudwara* built in the year 1965. Here different celebrations like Guru Nanak Jayanti, Recitation of Holy Book *Guru Grcmth Sahib, Bhog and Guru Ka Langar* are observed. The other celebrations include *Jule Lai Jayanti Sant Kabar Ram Jayanti*, etc. The Sindhis are the follower of Sikhism but in recent past almost all of them have inclined towards Hindu religion. Now they have become follower of Radha Swami Vyas and profess his ideology. The reason behind this change is not clear but presently they are making balanced approach. Here they follow the ideology of *Swaniv Ji* but have retained their traditional religious identity as well. In this way though they claim to be follower of Sikh religion like Sikh and Punjabi but have distinguished themselves like the Punjabi by following one distinct religious path. Changing Ethnic Situation

This town is widely reputed for maintaining its communal harmony and peaceful living of different people together. During the ruler's period population of the town was small who were living in different localities based on ethnic line like Kosta Para, Rout Para, etc. But now with the urban influence and other factors new settlements like colony, complex, etc. have come up in the town where people of different ethnic group live together. Earlier old people or members were duly recognized by the name of their families like Thakur family, Kunwar family, Rajguru family, Sukma Jamindar family, Dubey family, Salam Malgujar family and others. They used to introduce and describe about themselves by referring their family name,, But now in the changed situation such things have become almost irrelevant. During the royal period, people had better co-ordination among themselves and with the ruler's family as well. In most of the festivals the ruler himself used to take interest and interacted with people irrespective of their caste and creed. In *Holi* celebration the first *Holi* was performed in the palace itself where ruler personally used to play colour with the people assembled there. Similarly it was obligatory on the part of Muslim to bring their *Tajia* in the ruler's palace where he himself used to receive it. The famous *Dussehra* was another such occasion, which was celebrated by the tribals as well as the general people with equal enthusiasm where the ruler had also very close participation from the inception to the closing of the ceremony. These things clearly indicate the cordial relations, that existed between different communities living in the town.

But the ethnic situation changed gradually in the post independence period when this place witnessed many distinct happenings. Here many business communities came from different regions to exploit the natural resource and other avenues available During this period Bengali refugees of the then East Bengal, some Sindhis and others of northern India and Pakistan, etc., were also rehabilitated. Now the ruler's power were seized and a new administrative set up emerged when many people of different ethnic groups came to settle here. These development had great influence on the ethnic composition of the

town as well. The newly arrived people had to struggle hard in the beginning but soon they consolidated their position by earning enough money and establishing their distinct organisations to safe guard their interest. On the other hand the local people stuck to their traditional culture and retained their old occupation like agriculture, etc. for their livelihood. Such people were satisfied with their honour, who didn't resort to any false practices to gain extra money. As a result such people who had high status in the society found themselves neglected in the new ethnic situation with little income and lesser social value. Here mention may be made of one such instance. The family of Salam Malgujar is known for his legacy and high social status. The member of this family Md. Sammat Malgujar was elected president of *Anjuman Islamia* thrice. He was never challenged by any one for this past. But now with the arrival of new rich families, this family has been almost neglected. Presently most of the organizations of the community are regulated by the new comers with very' little role left for the old settlers. This difference in attitude has affected the social fabric of the society as well.

In the new situation tribal people are worst effected group. In the changed situation many tribals have sold their land located in the centre of the town and settled in the outskirt area, while a few sold their land for money and became landless. Here it is worth to mention one instance of Shantipur area which was largely inhabited by the tribal population and the Christians, had hardly any houses belonging to the non tribals. This situation was maintained till 1960's. Now the ethnic composition has entirely changed with the settlement of many outsiders belonging to different ethnic groups. The tribal people were mainly engaged in agriculture and other traditional occupations. But now many of them are engaged as daily wage labour, rickshaw puller and other such pretty jobs for their livelihood. These people with diverse ethnic divisions and variation in socio-economic condition perceive that the urban development has not benefited much to them. Here there is general feeling that exploitation by the outsides is major factor of their backwardness. It has equally polluted the social environment of this place.

As already mentioned earlier people living here had good social network. They used to refer themselves as *Bastariya*, i.e., people of Bastar. But now two distinct groups have emerged, i.e., *Bastariya* and non *Bastariya*. Here non *Bastariya* are considered those people who have immigrated during last thirty years mostly belonging to business community. Presently no any organized effort of victimization has been reported from the *Bastariya* towards them. Despite that stray cases of assault and some events of destructive activities have been reported. Apart from *Bastariya* non- *Bastariyi* feelings which distinguishes local general population including the tribal groups with the late immigrated business and other communities, one another feeling of *Nani Karu* (tribal; non tribal) is also coming up gradually. The proposed introduction of Vth schedule has further warned up this issue. Here the business communities under the banner of Bastar Chamber of Commerce had organized one big rally against the introduction of this bill. On the other hand tribal people under the leadership of their representatives are also uniting themselves for early implementation of it. These activities have badly damaged the social environment of this town, which is further likely to deteriorate in the coming days.

Literary activities

Jagdalpur had been a centre of literary activities since the royal period, due to royal patronage and emergence of many noted scholars here, who focused their writing mainly on Bastar's land and people. Even otherwise this region had been a fascinating subject for the scholars for its uniqueness and other qualities. In the early 50's and 60's some scholars like Thakur Puran Singh, a linguist, and Pandit Gangadhar Samant earned names nation wide for their writing on this region. Later Sanu, a noted novelist of famous *Kalajal* television serial, and Dhananjay Varva, a noted critic of this city, brought this area in the limelight through their various books, novels and other writings. Presently there are many such personalities like Pandit Sunderlal Tripathi, Luxmi Narayan Pyodhi, Lala Jagadalpuri, Kavi Gopal Sinha, Dr. K.K. Jha, Rauf Parwez, Yakub Nascent, who are still active in this field and have given a new dimension to the literature through their various literary activities. Apart from it, this place has organized national seminars on literature on many occasions, when many note[^] personalities from all over India came to this town. Here special mention may be made of *Madhya Pradesh Hindi Sahitya Sammelan* which was held in 1950 under the patronage of the then king Praveer Bhanj Deo, when many eminent personalities like Sunti Kumar Chatterjee, Acharya Kshiti Mohan Sen, Bhavani Pd. Mishra and others had come to this place. Afterwards in recent past a seminar was organized by the young literary organization known as *Sutra* to discuss on the *Dalit Sahitya*. Here many local and regional scholars and poets attended the seminar to express their views and thought on this issue.

In addition to it this place has reputation of publishing many small magazines also. In the early seventies, a noted writer Lala Jagdalpuri brought one such magazine under his editorship but it could not continue for long. After sometime another such magazine called *Samikaran* was published under the editorship of Dhananjay Devangan, but it stopped after publishing a few issues. It was followed by another little magazine *Yavat*, which was edited by Ashok Sah, a civil administrative officer. It came out regularly from Jagdalpur till he was posted here. Now this magazine is being published from Raison, near Bhopal, where the editor is presently posted. Apart from all these, another noted magazine of the town is *Sutra*, which is edited by Vijay Singh. The publication of this magazine started in 1996. Since then it is regularly published half yearly. In addition to publishing this magazine, this *Sutra* is also attributed for honouring literary personalities of the region. By 1999, they had given this honour to three personalities of the region.

Local newspaper is another landmark of literary activities, which is also a very old tradition of the town. In the pre independence era the first newspaper *Bastar Samachar* was published here in the royal period by the estate press under the patronage of the ruler. Sri M.N. Deo was the first editor of this newspaper. Here one noted poet of the town Pandit Gangadhar Sammant used to write poem, essays, etc. under the column *Panchamrita*. Later in the post independence period, some other people also took keen interest in this field. One Bengali gentlemen Sri Tusr Kanti Bose took initiative and published a weekly newspaper *Dandakaranya Samachar* in the year 1959. Later in 1985 it was made daily newspaper. This paper has created a history of rendering unbreakable services to the region. His wife Smt. Mani Kuntlata Bose also published weekly paper named *Bastaraiya* which contains news on regional languages like

Bhotri, Halbi and so on along with Hindi and English news. The other important newspapers of the town includes *Danik Bastar Kiran* (editor Sadhu Ram Dulhani) *Hindsat* (editor D.S. Niyazi) and Highway Channel. Here *Bastar Kiran* and *Hindsat* are published in the morning while Highway Channel is a newspaper of evening edition. This Highway channel is being published under the editorship of Sri Pawan Dubey. This newspaper is a branch of *Desbandhu* Newspaper group, one of the important and widely circulated newspaper of the region. Apart from all these, many other regional and national newspapers are also brought and circulated here.

Language

When the ruler established his new kingdom at Jagdalpur, he invited people from different walk of life for serving various requirements of the royal family in particular and the region in general. Here Brahmins (*Aryanyak*) were brought for performing religious rites and rituals. The Muslim and the Thakur were brought to be deployed as warrior. Similarly many more people of different caste, creed and of different region also came to serve as weaver, driver, skilled worker and other occupations. Similarly some people came to serve the kingdom as Diwan, Manager, Treasurer and Rajguru. In this way sizeable number of people having different linguistic affiliation migrated and settled here. Afterwards when this place came under the influence of the Britishers, they brought many people with them for smooth functioning of their administration. Likewise some people were being brought for the development of infrastructure, buildings, offices, etc. They also made adequate arrangement for the exploitation of forest resources. Here people were also engaged for cleaning, felling tree, transportation and other related works. Later the migration of people further intensified here after the independence, when many more service class people, business communities and others came in search of job, employment and other occupations. These factors together facilitated assemblance of quite sizeable population having different linguistic affinities. Presently this place has became a nodel town where people from almost all the regions of the country like Telugu, Keralian, Kashmiri, Gujarati, Sindhi, Punjabi, Biharis, Upians, etc. are living. These communities together have facilitated the emergence of cosmopolitan culture with diversed linguistic characteristics.

Different communities and the very geographical location of the town have also attributed to the language of the people. In the eastern side, the Orissa boundary touches the region. So the effect of Oriya Language is quite likely. In this part *Bhatri* dialect is used where Oriya influence is quite vivid. In the western side, it is the Maharashtra state in the proximity so the impact of Marathi is quite obviously seen in *Halbi* language prevalent in that part while towards southern side the commonly used dialect is *Dorli* which is also influenced with other languages. Similarly just beyond the town towards Kankar, Chhattisgarhi is widely prevalent. In this way existence of different languages in the surroundings and its inflow in the town by those people has wider impact as well. Here there are many languages spoken by the people in terms of their region and the communities. It is why the town is, believed to be the melting pot of different languages.

Here the commonly used language is Hindi. While the Lingua-franlea is Halbi. The dialect Halbi is widely spoken by the old settlers, the tribals and the visitors cf weekly markets.

Even the business communities deal with the local people in this dialect. This dialect is widely used by the people. Many books have been written by the old town dwellers in Halbi. Here special mention may be made of "Halbi Bhasa Bodh and Halbi Dictionary" by Thakur Puran Singh, Ramayan in Halbi by Dr. Ramesh Singh, Halbi Panchatantra by Lala Jagdalpuri, Folk songs of Pandit Raghunath Panigrahi and his son Yogendra Panigrahi, etc. After independence the prevalence of Halbi has lowered down. Now it is being replaced by Hindi, which is more widely and commonly used by the people. The tribals of the town are also well versed in Habli but due to lack of orientation most of the new generation people are forgetting this traditional language. The opening of new formal schools, educational institutions and teaching in Hindi and English medium have also damaged their knowledge of traditional language. Lala Jagdalpuri, a famous poet and writer, has very pathetically remarked about the language problem being faced by them. The new education pattern has detached them from their traditional language while they did not understand fully this new language. As a result they can neither understand their own language nor this alien language. They have become *adkachara*. This impact has perplexed them how to cope up in the new emergent situation.

Apart from Halbi and Hindi the town has witnessed another dialect called *Bastariya*, which, in fact, developed in the royal family. Here the queens, brought in marriages from different places like Andhra Pradesh, Orissa, Chhattisgarh and Rewa estate had their different linguistic affinities. Here one common dialect *Bastariya* developed to express their views. Gradually this dialect spread to their close relatives like Kunwar and among the old settlers. Now this dialect has become almost dead yet some old people have kept it alive. The typical *Bastariya* is considered very sweet and old fellows and others knowing this feel very comfortable in using this dialect. Here mention may be made of some such sentences like :

*Aap kahan ja rahe hail Apart kalian jat rahlenl Apne khana kha liyal Apart ke
jyona hoyish rail*
(Where are you going). Have you taken your meal)

The language of the town became further diversified in the post independence period with the arrival of many communities, who in course of time opened separate institutions to train their children in traditional languages. Here mention may be made of Sikh, Muslim, Telugu and others. Here there is one Telugu medium school in the Railway colony, where the Telugu boys of the town get education in their traditional language. The Muslim have opened madarsas, maintained and managed by Anjuman Islamia, where Urdu, the traditional language, is taught. Similarly the Sikhs have their own arrangement to acquaint the children with their mother tongue. Likewise many other communities like Gujarati, Sindhi and others have their separate institutions managed by the community members, where due attention is given to make the young people well versed with their traditional culture and language.

Thus it is quite obvious that from linguistic point of view this town has many characteristics, which have witnessed many languages which are existing in quite harmony with its own language and traditions.

Temples, fairs and festivals

Jagdalpur, the capital of Bastar kingdom is known, for historical temples and other religious activities. Most of the temples have been built or rebuilt by different kings and queens during the feudal period. Raja Rudra Pratap Deo is considered to be the main personality, who not only rebuilt some old temples but facilitated construction of new temples also. Afterwards queen Suvarna Kumari Deo also took interest in constructing temples. Krishna Mandir and Ram Mandir were built by her effort. Most of the old temples (altogether fifteen temples) are located within the palace premises and nearby areas within a radius of less than a kilometre. (Table number 24).

During the ruler's period the temples were kept well maintained, where religious and other activities were duly performed by priest and his associates. At that time the king was considered to be the supreme religious head called *Mali Pujari*, the priest of all the temple priests. Then entire arrangement of temple including appointment of *pujari* (priest), supply of man and materials for religious acts, etc. were properly executed by the order of the king. Due to the patronage and attention of the royal family the temples had become important centres of people's participation. In every festive occasions the temples were nicely decorated where people used to assemble in large number to participate in religious and other related activities. The king too was very keen to participate in major religious festivals of this place like *Goncha* (cart procession), *Dusserapijji*. etc. but now it is not in practice.

Initially each temple had a priest with some persons to assist him in the maintenance of the temple and performing rituals. The persons attached to the temple were granted certain area of land for their livelihood. Similarly necessary arrangement were done to maintain the tradition of the temple, i.e., in case of death of any person attached to the temple he was replaced by the member of the same family in the line of inheritance. So the system remained intact and entire functioning was maintained smoothly without any complication. But when the kingdom became powerless, a new arrangement emerged in the post independence period which regulated the functioning and management of the temple affairs.

Temple Estate

After the independence when the king and the kingdom did not exist, a new administrative system began to function. As a result the temples which were under the patronage of the king were given to the government with local administrative body becoming the controlling authority under this system. One administrative officer was deployed to work as the manager of temple estate. He was entrusted with the responsibility to maintain the functioning of temples and control its resources as well. Presently the *Tahsildar*, a state government officer, functions as the manager of the temple establishment and his office looks after the entire temple affairs like maintenance of temple, arrangement and distribution of salary to the priest and others, supply of materials and execution of major festival, etc. Similarly collection of rent, etc. from the property of temple estate, appointment of priest, settlement of disputes, etc. are also done by him.

I) Payment to employee

In the beginning temple's priest and other associates used to get very meager amount, which increased in due course of time. Yet, it is considered too little when one thinks of Lupteswar Panigrahi, a priest of Danteswari temple since 1945 who used to get Rupees twenty one only per month as salary. Afterwards it was enhanced to Rupees twenty nine. Recently the Collector of Bastar has made it Rupees two hundred fifty per month, which is paid flatly to each and every employee of the temple, who have been duly appointed by the authority.

II) Materials supplied

During the King's regime, the priest and other workers were quite happy as they were getting sufficient materials for the *Bhog* (offering), religious performances and had enough quantity of *Ghee* for burning *Akhand deep*. Now these practices have been minimised due to the lack of adequate supply of materials from the temple estate. Now each temple of the town barring Dantewari temple get rice of 14 kg., *Bhog Dal* -5 kg. *Ghee*- 1 kg., flour-1 kg., Lamp burning oil - 1 Kg., Mollases - 1 kg., Chilli 100 grm and salt - 1 kg., while a little more quantity of materials are supplied every month in the Danteswari temple, which includes rice 28 kg., *Bhog Dal* 8 Kg., *Ghee* 3 kg. Flour - 4 kg. Lamp burning oil 2 kg., Mollases - 1 kg. In addition to this some other things like *Maithi*, *Garlic*, *Laligram*, *Zira* and *Tamaric* powder are also supplied though in very little quantity, which are not supplied to other temples. Due to lack of sufficient quantity of materials, the things used in offering and burning of lamps, etc have been minimized. Even all these materials which are supplied by a supplier, Messers Kishore Kr. Kewlani, are not provided timely. Delay in sanctioning amount by the Tahsildar and delay in the payment also create hindrance in the functioning of religious programmes of the temple.

Income and Expenditure of Temple Estate

The entire management of the temple estate and organization of two major festivals of this place namely, *Goncha* and *Dussera* are being performed by the manager of the temple estate with the cooperation of local authorities. Here the main heads of income incurred includes income from agricultural land (some temples are having landed property, which is auctioned for three years) allotment from Government and other agencies, monthly rent from town hall (*Sirnsar - Bhavan*) and shops built in the temple premises, disposal of unused items, etc. On the other hand expenses are of varied nature, which includes mainly establishment cost (like salary of employees, pleader's fee, stationary, electric bill, water tax, construction and repairing cost, etc.) and the cost of materials being supplied every month to the temples. Here total cost in the year 1998-99 came around Rs. 1.161580/- only. Apart from all these expenditure the heavy amounting is spent on the celebration of *Dussera* (Table No.25) and *Goncha* (Table No.25). Here separate allotment from government fund and some other sources like payment from elected leaders and officials are also made to meet the expenditure. In this way the temple estate is playing important role after the lapse of kingdom in the maintenance of the temple,

disputes and socio-religious practices of the region by organising festivals, etc despite all odds.

Goncha

Goncha festival of Bastar, though influenced by the Utkal culture, has become a symbol of cultural harmony, where people irrespective of their caste affiliation participate with great enthusiasm. The festival of *Goncha* began here during the period of King Purushotam Deo. It is said that once the king decided to visit Puri, prostrating in the name of Lord Jaganath. He completed this painful journey quite successfully. Being seen king's devotion the king of Puri became highly pleased. He honoured the king with the title *Rathpali* by offering him twelve wheeled cart. When the king, returned to the palace the people became very happy. Afterwards it was decided to celebrate the same festival here also. Since then this is celebrated in the month of *Asarh* (July-August). In this festival, the idols of Jagannath temple namely Lord Jagannath, Balbhadra and Subhadra are placed in the well decorated cart. This cart is pulled by the people in the town and is carried near Sirasar, where Jagannath remains for about a week in the *Masts* (mother's sister) house. This festival is sponsored by the Government where entire cost is born by the temple committee. Earlier when the king was in the throne it used to be a grand occasion where entire expenditure were duly managed by the royal family. This celebration comes to an end with the return of Lord Jagannath in the Jagannath temple.

Dussera Festival

The grand *Dussera* festival of Jagdalpur is unique in its nature. It has become a symbol of religious co-existence with nice blending of Hindu and tribal culture. At the *Rath Yatra* (cart procession) active participation of different communities including the Harijan, Backwards and the tribal groups further distinguishes it with the *Dussera* festival observed elsewhere. The entire celebration moves around the Goddess Danteswari, the clan deity of royal family and the presiding deity of the people of Bastar. The major performances of this place includes *Kachin gadi*, *Jogi Bidai*, *Maidi Pargav*, Cart procession, *Bhitri Raini*, *Bahari Raini*, *Muria Darbar* and departure of invited deities. Here most of the works have been prescribed traditionally, which are duly performed by respective people of distinct villages such as the carpenter and iron smith of *Jhar Umergaon* and *Beda Umergaon* villages make the wooden cart, the villagers belonging to *Karangi*, *Sonawal* and *Kesarpal* villages prepare ropes for pulling the cart, the people of *Kadeya* village prepares steps of the cart. During the festival two carts of eight wheels and four wheels respectively are used, where the deity's *mukut* (Ornament cap) is kept and moved in and around the town. Here the four wheeled cart also called as *Phool Rath* is pulled especially by the people of *Kachara pati* and *Agarwara Pargana* while eight wheeled cart is pulled by the Maria of *Kilepal* village. Similarly men for traditional *Jogi Bidai* ceremony comes from some specific houses of *Aamabal* and *Parali* villages belonging to Halba community. Likewise the most important programme of *Dussera* "*Kachin Gadi*" is performed by a girl of Harijan community. The celebration of Dussera starts with the blessings of *Kachin Gadi*. Here the king himself used to visit the temple to get her approval. It is followed by initiation of rituals of Nav Ratri when holy books are recited at *Danteswari*, *Mawli* and *Kankalin* temples. Similarly *Jogi Bidai* is performed at Sirasar after necessary sacrifice,

etc. when a man sits in a newly digged ditch for nine days for the proper completion of the celebration. After this cart procession starts. Here first of all four wheeled rath is pulled and moved around the town. Later eight wheeled cart is put into movement. *Mawli parghav* is another important performance. Here the deity, brought from *Dantewada* is duly received and brought in the temple by the king. After it *Bhitar Raini* and *Bahar Raini* are two other important celebrations of *Dussera*. The pulling of eight wheeled cart within the town is called *Bhitar Raini* while taking away the cart to *Kumara Kot* and the bringing back of it to the *Sirasar* after certain rituals and offering of new grains by the king on the tenth day is called *Bahar Raini*. This celebration is also called *Dussera*. During the entire celebration people from almost all surrounding areas come in large number to participate and enjoy the festival. Here elaborate arrangement are done for the stay of villagers catering to their other needs.

Before the conclusion of *Dussera* festival certain rituals are performed in the *Jatra puja* to express gratitude towards *Kanchin Gadi* for the successful completion of celebration. Afterwards the invited deities are duly bid farewell from *Ganga Munda* after performing sacrifice etc. It is followed by *Muria Darbar* in the evening; when the ruler and the subjects who have arrived from different villages sit together to discuss different issues, inter-village disputes and other grievances. In the post independence India the administrators, officials and elected representative of the region sit and try to settle the problems.

In this way this cultural festival of Jagdalpur symbolizes cultural harmony, coordination between the ruler and the subject, true spirit of co-existence and due honour to the different caste and creed of the region without any biasness.

Village deity of Jagdalpur

In the northern side of Jagdalpur near the Khadag Ghat there is one important seat of village deity commonly called *Maa Khameshwari* or *Dhurkhuta*. It is also termed as *Baba Dhurkhuta Deo*. Some people consider this deity to be the incarnation of Lord Shiva. This is the village deity, which protects the people of this place. Though this deity is the clan deity of Mahara community but it is revered by all including the royal family. One very popular legend is linked with this place.

Once the king of Bastar went for hunting in the forest along with a group of hunters and wild dogs. While chasing a hunt the king came near the bank of the river Indravati. Here he saw that one female rabbit has frightened his wild dog and compelled it to retreat. The king could not believe that such unexpected thing can happen. Later he discussed this event with his councillors, who together decided that such thing can not happen in normal situation. There must be some speciality in this soil, which they termed it *virbhumi* (land of warriors). Being impressed with it, he decided to shift his capital here. It is said that this is the place, i.e., the seat of deity where rabbit had made the wild dog flee.

At this place there is simple construction of two small elongated trunk made of *Mahua* tree with one flag on the top of one pole. The entire structure is placed over an elevated square shaped platform. Here the bigger deity is of the *Maa Khamveshwari* while, another one is called as *Bhairam Deo*. A priest of Mahara community performs rituals of this place on Saturday and Tuesday. The offering of this place include eggs, blood of

chicken/goat, *tapawan* (mahua made country liquor) bangles, acchat (sacred rice) flower and fruits, etc. agarbati or dia are also lit by the worshipper. There are certain restrictions strictly observed by the devotees like the *prasad* served is to be taken here only as it is not permitted to take it at home or elsewhere. The female are neither allowed to come over the alter nor can eat the *prasad*. It is also believed that deity comes out of it to move around in the night wearing white dress. During her movement if any one falls on her way instant effect is seen. Here women in her menstruation period become more susceptible to serious accident. This place is open and uncovered; people believe that here roof or wall construction is not possible.

The members of royal family have maintained close link with this holy place since their arrival at Jagdalpur. Whenever any member proceed to any other place or return from outside, he/she will stop for a while at this place to offer floral tribute. This tradition was in practice till recently. After the lapse of kingdom and with the construction of new road away from this place, they seldom visit this place. The deity of this place is believed to be *Jagrit Devi*.

Apart from *Maa Khamveshwari* (village deity) there are many more deities of the royal family and other places duly worshipped here. The deities belonging to the royal family, i.e., *Rajwada Deo* are of different nature. Here special mention may be made of a) *Gaddi Pardesin*, b) *Danteswari*, c) *Mawli*, d) *Bhairam*, e) *Rannaha Kashan*, f) *Purwani*, etc. Likewise the name of deities found in the same locality includes a) *Murli Mata*, b) *Dhanpuja Maharaj*, c) *Jhargain*, etc. Similarly the deities of other areas related with this place are many, like, *Kankalin Mata* of Dhogahat, *Firanta Mata* of Kumar Para, *Mata* of Kachora, *Dular Dei Mata* of Adawal and *Kankalin Mata* of Hatguda, etc. These deities of other places are being invited during Dussera and other celebration. The process of bringing deities from one place to other is termed as *Lat Aaana*.

In addition to these deities, one more deity widely revered is known as *Sitala Mata*. This deity is also called as *Bastari Mata*, i.e., presiding mother deity of Bastar people.

Table - 24

Sl. No.	Name of Temple	Employees, Priest and others	Salary (Pay)	Sanctioned posts	Working Employee	Location
1.	Sri, Sri Danteswari Mandir	1. Lallu Pd. Pujari 2. Lupteswar Pujari 3. Samo Rawat 4. Ghanshyam Rawat 5. Mahadeo Karnarchi 6. Sukhchand Moharia 7. Manshu Taswal 8. Jhitru Chamukwala 9. Chaitan Karnarchi	Rs. 250.00 – do – – do –	09	09	Palace Premises
2.	Sri Jagamath Mandir	Rengadhar Pujari	Rs. 250.00	01	01	Sirasar Chaw'
3.	Sri Ayamat Mandir	Venudhar Pujari	Rs. 250.00	01		– do –
4.	Sri Rainchandra Mandir	1. Yogesh Mandal (Pujari) 2. Srimati Kamla Rawat	Rs. 250.00 —	01	01	– do –
5.	Sri Mawli Mandir	1. Lingraj Pujari 2. Smi Domin Bai Rawat	Rs. 250.00 —	01	01+ 01	– do –
6.	Sri Balaji (Bihar Ma(h)	Sri Nirajan Das Rawat	Rs. 250.00	01	01	Vi jay Ward

Sl. No.	Name of Temple	Employees, Priest and others	Salary (Pay)	Sanctioned posts	Working Employee	Location
7.	Sri Balaji (Bahar Math)	1. Shankar Lai Pujari 2. Smt Mira Bai Rawat	Rs. 250.00 Rs. 250.00	01	01+ 01	Palace Premises
8.	Sri Ram Mandir	1. Smt. Radha Bai Rawat 2. Sri Anant Kr. Pujari	Rs. 250.00 Rs. 250.00	01	01+01	
9.	Sri Krishna Mandir	Brahma Kr. Tripathi	Rs. 250.00	01	01	Vijay Ward
10.	Sri Kama Kotin Mandir	Luxmi Narayan Rawat	Rs. 250.00	01	01	Vi jay Ward
11.	Sri Kankalin Mandir	Baliyar Singh Pujari	Rs. 250.00	01	01	Palace Premises
12.	Sri Kali Kankalin Mandir	Mohan'Pujari	Rs. 250.00	01	01	Vijay Ward
13.	Mahadeo Mandir	—	—	01	—	Khadag Ghat

Table - 25 : Statement of Goncha Festival

Sl. No.	Expenditure (item wise)	Amount Paid
1.	Cart repairing	Rs. 7990.00
2.	Wood Cutting	Rs. 2740.00
3.	Sirasar Bhavcm (Lock and Key)	Rs. 65.00
4.	Hardware items	Rs. 1111.00
5.	Ornaments purchased	Rs. 3100.00
6.	Tube light	Rs. 225.00
7.	Drum Beater	Rs. 60.00
8.	Flower Decoration	Rs. 590.00
9.	Oiling/Painting	Rs. 1560.00
10.	Cloth (Banner/Cart)	Rs. 5760.00
13.	Diesel for vehicle	Rs. 230.00
12.	Generator	Rs. 4125.00
13,	Offering {bhog) materials	Rs. 5205.00
14.	Cloths, etc. for the priest	Rs. 5443.00
Total		Rs. 39000.00
(A) Money Sanctioned for the festival		Rs. 50000.00
(B) Money spent in festival		Rs. 39000.0.
BALANCE		Rs. 11000.00

(Source : Office of the temple estate, Jagdalpur, 1999)

Table No. 26 : STATEMENT OF DUSSEERA FESTIVAL (1998)

<i>Income</i>		
(i)	Govt. Allotment	Rs. 4,00,000.00
(ii)	C.M. Fund	Rs. 3,00,000.00
(iii)	Balance Amount of 1997 Dussera Festival	Rs. 48,616.00
(iv)	Auction of Old Cart	Rs. 57,000.00
(v)	Assistant Commissioner Tribal Welfare (advance)	Rs. 1,00,000.00
TOTAL		Rs. 9,05,616.00
<i>Expenditure</i>		
1.	Rice	Rs. 1,13,355.00
2.	Kirana (Grocery)	Rs. 96,560.00
3.	Rusuni (Dakshina)	Rs. 10,454.00
4.	<i>Vidai Rusum</i>	Rs. 4,457.00
5.	Electric decoration of Cart	Rs. 67,427.00
6.	Chairs and other tent items	Rs. 19,949.00
7.	Vehicle repair	Rs. 1,527.00
8.	Goats/pigs for sacrifice	Rs. 42,885.00
9.	Diesel	Rs. 20,161.00
10.	<i>HamalU</i> Rikshaw	Rs. 2,197.00
11.	Crackers	Rs. 32,449.00
12.	Baza	Rs. 80.00
13.	Liquor (<i>sarab</i>) for offerings	Rs. 10,010.00
14.	Hardware items	Rs. 10,289.00
15.	Fruits/Flowers/Sweets	Rs. 12,641.00
16.	Cloth Stiching/Cart rope, etc.	Rs. 16,814.00
17.	Cloth	Rs. 60,208.00
18.	Cart cloths	Rs. 45,440.00
19.	Stiching of cart cloths	Rs. 25,000.00
20.	Expenditure against 1997 advance of <i>Dussera</i> festival	Rs. 1,55,506.00
21.	Repairing and white washing of <i>Kachin Devi</i> Temple	Rs. 13,000.00
22.	Miscellaneous	Rs. 81,252.00
TOTAL		Rs. 9,01,661.00
Total Income		Rs. 9,05,616.00
Total Expenditure		Rs. 9,01,661.00
Balance		Rs. 3,855.00

(Source : *Office of the Temples Estate, 1999, Jagdalpur*)

Conclusion

Situated in the tribal area of Bastar, Jagdalpur, the historical town of the Warangal Kings, is the district and Commissionery's headquarters. Located on the fertile Bastar plateau and on the southern bank of the Indravati River, the lifeline of Bastar, Jagdalpur was developed as a modern town by the erstwhile Kings of Bastar with the help of British administrators. The huts of Jagtu Mahara and Dalpat Deo were transformed into a grid pattern town in the year 1910 when the Dewan of Bastar estate, Rai Bahadur Panda Bajnath introduced this plan. The focal point of the urban plan of Jagdalpur was the Palace and various other services were developed accordingly. Though the palace was situated on the north-western corner of the settlement, the road were planned in such a way that it radiated to the Palace *Parisha*. The area between the Palace in the north-west of Lalbagh in the east and the Circuit House in the north to Hospital Road in the south can be called the most planned portion of Jagdalpur where the roads are broad, well laid and cross each other on the grid pattern. Jagdalpur became famous as the town of *chowks* and at present it has nearly 200 *chowks*.

The early advantage, which Jagdalpur had due to a planned development could not be sustained further after independence when there was huge influx of population from the surrounding regions. Hence, the areas beyond Maharani Hospital to the south and south-east developed in a haphazard way. However, there is only one deviation and that is Brindavan Colony, which is located on the western portion of Jagdalpur. Jagdalpur transformed into a normal town of Madhya Pradesh with a lot of urban problems and disturbance. Today from planning point of view, Jagdalpur is completely at lot. Apart from this development plan, Jagdalpur also experienced a massive population growth after 1961. If one looks population per centage and population curve of Jagdalpur town it can be easily noticed that after 1961, the curv. went up in vertical way. The year 1961, is also very important because lot of offices in the Government and Private sector came up in Jagdalpur, resulting in population growth. The original population of Jagdalpur had unique settlement plan when most of the settlement were governed by the Bastar *Rivasat*. Without the permission of the king it was not possible for anybody to construct a house. Hence, if one looks at the settlement map of Jagdalpur, one may find different settlement areas of the different communities, like the Oriya Brahmans, Muslims, Chhattisgarhs' Rajput, the Beharies and so on and so forth. All of them have a very definite special occupation on the settlement map of Jagdalpur. But in the new areas, specially on the southern portion of Nayapara and Shantinagar, the settlement pattern has grown up in a haphazard way. Wherever land was available, people from different parts of M.P., U.P., Bihar and Orissa came and settled in search of livelihood. The old idea of a fellow feeling between the residents of Jagdalpur has completely disappeared. Today Jagdalpur presents a picture of dismissal among the various communities, whether it is statewise or castewise. Each and every group is struggling hard to maintain their separate identity in a given locality.

From the very beginning of urban development, Jagdalpur never presented a picture of a tribal town, though even today it is located in the midst of tribal population. The *Itwari Bazar* which is the only place in Jagdalpur gives a picture of a tribal situation, specially on Sunday, when tribal people from the surrounding regions come in a large number with

their agricultural produce. Apart from *Itwari Bazar*, one may get little experience of the tribal situation in Amaguda, Pathragudda and Nayamunda area where few settlements of tribal population are present.

Jagdalpur, in the eyes of these tribal population, was and is a town of *Pardesies* (outsiders). These *Pardesies* were brought in by the king of Bastar and settled in near by localities to provide various types of services to the palace. The *Pardesies* are mainly from Chhattisgarh region. Apart from these *pardesies*, Oriya population also came and settled in the northern part of Jagdalpur. These Oriya population used to provide different types of temple services to the king of Bastar. The Muslim came in the form of traders and also settled in Jagdalpur. There is common saying in Jagdalpur that Salam Mai Guzar presented a pair of shoe to the then king of Bastar and in lieu of that the king of Bastar gave him 144 villages. The residence of Salam Mai Guzar still stands on the Sadar Road of Jagdalpur. Apart from these populations, the Government also brought other population from Gujarat and Sind during the time of partition and settled them in Jagdalpur. These population are mostly settled on the southern portion of Lai Bagh. During this period, Bengali population the then East Pakistan also came as refugees under the Dandakaranya Project and settled in Jagdalpur, specially in the Kumar Para area. The last who came were the Bihari population of northern Bihar, who came to Jagdalpur as labourers working in different small and medium scale industries, but later on, they also became traders, specially in groceries and stationary. Even today most of the grocery shops are owned by these Bihari population.

If one looks at Jagdalpur from the socio-economic point of view, Jagdalpur presents a mixed feeling where every population is living and trying to earn their own livelihood. As the forest are reducing and forest produce are becoming meager, the trade and commerce of Jagdalpur is also facing a lot of problems due to non-availability of timber produce and hence the saw mills which are quite in number in Jagdalpur are lying ideal. However, the population of Jagdalpur is growing and it is believed that in the coming years, Jagdalpur will cross one lakh population mark.

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During the 9th Five Year Plan, urban anthropology was one of the important research project undertaken to study the growth and development of urban centre in general and ethnic boundary maintenance among the various ethnic groups living in that town in particular. Emphasis was also given to understand the linkages which an urban centre used to establish with its surrounding regions. The 1st urban centre which was studied was Baruipur – a town located in the metropolitan area of Kolkata. In this chain, Jagdalpur was selected as an urban centre located in a tribal setting of Bastar district. While conducting the study we would like to offer our gratitude to the then Director, Dr. R. K. Bhattacharya for taking deep interest in the whole research project. Thanks are also to Shri Deepak Tyagi and Dr. J. K. Sarkar for their support. We are also thankful to our present Director-in-Charge, Dr. V. R. Rao for his keen interest in the project and he has been constantly requesting us to update the data wherever possible so that it becomes fit for publication. While undertaking this research project along with my team member,

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Cultural Genocide : A necessary concept in Anthropology Today?

Felix Padel¹ and Magdalena Krysinska-Kaluzna²

ABSTRACT

Throughout the continent of America and in many other countries, a pattern of genocide among indigenous, tribal populations was laid out by European invaders from the 16th century and before. Two levels can be distinguished: physical extermination and cultural genocide. Both are still on-going: tribes in the Amazon rainforest who managed to stay ‘invisible’ to mainstream society over centuries often face complete collapse within 20 years of first contacts. India’s tribal societies, who always existed on the edges of ‘civilisation’, escaped this extreme level of extermination. But dispossession from their land started during colonial times, and has accelerated since Independence. Displacement by dams and other ‘development’ projects, and invasion of their territories by large-scale mining projects, involve an immensely painful process of Cultural Genocide, that needs better acknowledgement by anthropologists and the wider society. Cultural Genocide often accompanies Ecocide, a destruction of ecosystems that tribal societies had maintained intact over centuries.

Tribal people in 2012 are on a ‘final frontier’ of invasion and takeover of their land and territories, as resources get scarcer in a capitalist system whose growth expands beyond what the earth seems able to sustain (*New Internationalist* October 2011, Gaia Foundation 2012). This is the situation in India, and in most other countries where tribal peoples still survive: a multitude of very tough situations indeed, as the quest for resources by mainstream societies - especially by corporations and banks - grows relentlessly.

In many ways, a paradigm of genocide was laid out during the 15th-19th centuries in North and South America, Australia, parts of Africa (including the ‘Hottentot’ civilisation in South Africa, and many tribes exterminated through the slave trade), and other places penetrated by European traders and colonists.

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² Anthropologist, Karlowicza-2/6, 62-510 Konin, Poland.

India escaped this type of violent, polarised confrontation of invaders and invaded, since tribal societies had always existed on the periphery of mainstream kingdoms, with no attempt to convert them. Quite the reverse: Hindu kings adapted to tribal cults in the sense that they patronised and identified their power with these cults as a means of legitimising their rule (Padel 2010, chapter 5). It was only when the East India Company tried to rapidly increase revenue from land, pressurising Rajas to bring in cultivators who would make land more ‘profitable’, that widespread dispossession of Adivasis began and exploitation rapidly increased, causing a succession of tribal rebellions from the late eighteenth to early twentieth centuries (Padel 2011).

But a second wave of dispossession opened up when India started on a path of rapid industrialisation at Independence. Dams, mines and metal factories have displaced large numbers of tribal communities: at least 10-20 million Adivasis (forming approximately 40 per cent of the total number of displaced people). Out of India’s total estimated tribal population of about 85 million, this means that about a quarter or fifth have been displaced from their original land and/or communities (Fernandes, 2006, Mathur 2006, Padel and Das 2008).

Displacement brings about a drastic drop in the standard of living for most Adivasis and many non-tribals in communities whose area is ‘invaded’ by mines or metal factories. This is evident from *Rich Lands, Poor People* (Report by Centre for Science and Communities, CSE 2008), which shows how India’s mining areas are essentially its poorest - the paradox of the resource curse, which applies to resource-regions regions.

Displaced Adivasis have regularly been made lavish promises that are almost never kept (B.D. Sharma 2011). A ‘reality gap’ exists between reasonable-seeming policies and grassroots realities, some of which are virtually absent from the literature on R & R (Resettlement and Rehabilitation), such as systemic corruption, violent repression and structural violence, goondas, illegal liquor shops, and prostitution. In addition, uprooting communities that have always lived close to nature in a high degree of self-sufficiency causes profound trauma and cultural change. This is where ‘cultural genocide’ seems the appropriate and necessary concept (Padel and Das 2008, 2011).

These ground realities are also aspects that need to be considered in assessing social impacts of displacing projects, in addition to the otherwise well-articulated ground-work on Social Impact Assessments (SIAs) presented in the previous issue of *Journal of the Anthropological Survey of India* (JASI 2011). At the start, it needs to be adequately appreciated how shoddy has been the standard of a large number of Environmental Impact Assessments (EIAs), basically due to heavy pressures imposed on researchers to give reports seriously underestimating environmental impacts (CSE 2011). While Jairam Ramesh was Environment Minister, many serious irregularities involving faulty EIAs were highlighted, while highly coercive and misrepresented Public Hearings have become a regular feature of how clearance is obtained for contentious projects (CSE 2008 *passim*).

How can social scientists ensure that a higher standard is maintained for Social Impact Assessments, and avoid succumbing to pressures? The fact is that neither ecology nor sociology form part of the training of the otherwise highly skilled engineers, economists and company executives who design mines, factories and dams - let alone of their financial investors. After a talk that Felix Padel gave at the Indian Statistical Institute in Kolkata on the subject of 'Aluminium Economics', highlighting social and environmental costs, a professor commented that engineers and economists understood 'approximately 2 per cent' of the impact of their projects on ecosystems and communities.

Appreciation of both sets of impacts tends to be blocked out by the customary technocratic approach. This is the theme of the article published by Jairam Ramesh while he was Environment Minister: the world of economists and corporations, and the world of environmental and social activists represent 'Two Cultures' that barely communicate with each other (Ramesh 2010).

Environmental costs are at times fairly well articulated in the media, where journals such as *Down to Earth* (published by the CSE) often carry in-depth analysis. An anthropological understanding of the impacts of displacement is much less visible in the public domain. How to ensure that the intangible, unmeasurable impacts of uprooting tribal communities and invading their space are adequately assessed?

The irony is that long-term sustainability is the essence of many of the communities who are being dispossessed from land they have lived from over generations. Mainstream stereotypes perceive tribal societies as relics from the past. On the contrary, could it be that these societies still have much to teach the mainstream, about how to live more sustainably, taking from nature with restraint, and sharing it equally? Could they point the way towards a more sustainable future for human societies? (*New Internationalist* 2010, Corry 2011)

Two Levels of Genocide

The pattern of genocidal invasion goes back at least 2,000 years. Boodicca (Boadicea), as queen of the Iceni tribe in eastern England (approximately present-day Norfolk), rebelled against Roman rule in 60AD when tax demands became unbearable through enslavement of people who could not pay. She managed to unite several tribes, and wipe out a Roman legion, but after more legions defeated her, her Iceni were enslaved and exterminated *en masse*. In India, three centuries earlier, Ashoka's invasion of the Kalinga people in Odisha caused a comparable massive loss of life and liberty - by his own calculation, 100,000 killed, 150,000 enslaved, and many more dying of disease and famine afterwards (Padel & Das 2010).

Similarly, when invaders from Spain conquered the Canary Islands, after a century of contact, they exterminated and/or enslaved the entire population of the native people living there, known as Guanches, whose previous population is estimated at 80,000, and whose culture, which was highly sophisticated though characterised as 'hunter-gatherer', was completely erased during and shortly after the final conquest between the 1480s and 1540s.¹

This became the paradigm throughout the Americas, with many variations. *Red Gold* (Hemming 1978) and *Bury my Heart at Wounded Knee* (Brown 1970/1975) give the main history for Brazil and the USA respectively, *Ishi Between Two Worlds: A Biography of the Last Wild Indian* (Theodora Kroeber 1961/1975) tells the poignant story of the last survivor of the Yahi or Yana tribe in California, native to the area around the 1849 gold rush. Ishi "came in" in 1911 after decades of 'Indian-hunting' had exterminated his people, followed by solitary existence. He lived his final years in an ethnographical museum, sharing his knowledge with researchers about his extinct tribe's culture.

The word 'genocide' was first used in 1944 during the Second World War to refer to the treatment of Jews by Nazis. Soon it was also being used for the treatment of Armenians in Turkey, and for the history of native tribes in America. Literally the word means killing a *genos*, Greek and Latin for a people or culture. One can differentiate two distinct meanings: the literal, physical extermination of a people - a meaning that applies all too accurately to many tribes in America - and the killing of a culture.

When tribes were defeated in North America for example, survivors were confined to reservations, where, over the next century, systematic attempts were made to eradicate their culture by various means. These included the now notorious technique, which missionaries of different denominations colluded in throughout North America and Australia, of separating children from their families and sending them to boarding schools. As described by Lame Deer, a Lakota medicine man who lived through this system and came out the other side:

In those days the Indian schools were like jails and run along military lines, with roll calls four times a day.... We were forbidden to talk our own language or to sing our own songs.... To the Indian kid the white boarding school comes as a terrific shock. He is taken from the warm womb [of his family] to this cold, strange place.... [Even now,] in these fine new buildings Indian children still commit suicide, because they are lonely in all that noise and activity. I know of a ten-year-old who hanged herself. Those schools are just boxes filled with homesick children. The schools leave a scar.... (John Fire & Richard Erdoes 1972/1980: 33-37)

'Killing the Indian in them to save the Man' was seen as a proper, humanitarian policy by missionaries convinced of the superiority of European culture - a policy defined as 'culturicide' by American anthropologist James Fenelon in his book about genocidal impacts on the Lakota, and Lakota resistance.

'Genocide' has a strong emotive force compared with 'culturicide' or 'ethnocide', which are likely to remain fairly academic concepts. This emotive force is why some wish to use the G- word, while others dislike it. The Armenian genocide remains a banned concept in Turkey for instance, while the Sudanese government resists calling treatment of the Nuba or Darfur tribes 'genocide' for obvious political reasons.

We would suggest that this emotional force is one reason why the term 'cultural genocide' is strictly correct and appropriate for processes going on now among tribal peoples in

many countries, including India. Cultures and communities that have sustained themselves and existed over centuries are now disintegrating fast due to imposed changes, including large-scale involuntary displacement. This destruction is almost invisible presently in the mainstream media, and therefore passes almost unnoticed by most members of mainstream society. Even at the grass-roots, so derogatory are mainstream attitudes towards tribal cultures in Orissa and neighbouring states that, for example, the majority of non-tribals employed as school-teachers in Adivasi schools tend to show little or no interest in learning about Adivasi culture. The learning process - even when it becomes more sensitive by e.g. introducing textbooks in tribal languages into tribal primary school classes - tends to be uni-directional, with little reciprocity.

The history of the cultural as well as physical genocide in America needs to be much better known. When Darwin visited South America for example, he stayed at a military camp in Argentina whose soldiers were systematically exterminating the native tribes. The hunter-gather tribes whom Darwin met in Tierra Fuega survived only another 30-60 years before cowboys invaded their land and started killing them off. So many cultures have faced obliteration in the continent of America - some through physical extermination of the population, others by undermining the cultures, especially their knowledge and value systems. As Wallerstein shows in *European Universalism: The Rhetoric of Power* (2006), the world capitalist system justifies its hegemony over other cultural forms through a value system that claims to be universal but is actually partial and often extremely biased.

The universalist claim goes back to Christian apologists for the conquistadors' slaughter of the native Indians in America, such as Juan Gines de Sepulveda's text, the 'Just Causes of the War Against the Indians'. Bartolome de Las Casas argued persuasively in 1550 against Sepulveda's view that mass extermination of indigenous peoples was justified and compatible with Christian theology. Missionaries saved lives, where European soldiers, settlers, plantation owners and slave-traders brought total genocide. Even in Las Casas' system though, conversion was the norm, and the native peoples of Brazil were brought into huge mission stations, Reductiones, where they were converted and 'civilised' - and where large numbers died of disease. Ultimately, the Reductiones were abandoned as one after another, native cultures ceased to exist in the face of invasion, dispossession and extreme forms of exploitation.

Some hundreds of tribes survived longer by fleeing to the 'interior', becoming 'invisible peoples', or taking on a warrior ethic to fight off invaders - until the late twentieth century, when the 'last frontiers' began to be penetrated by settlers, loggers, gold miners and missionaries - especially those of the Summer Institute of Linguistics and New Tribes Mission, who formed the programme of evangelising and translating the Bible into every tongue - a history exposed in *Is God cm American?* (Soren and Aaby 1981)

Cultural Genocide - what does it mean now?

But can a culture be killed? After all it is an inherent feature of human societies. The answer to the question of the death of a culture is also associated with the problem of our

inability to define what exactly culture is. There are reportedly well over 200 scientific definitions of this concept. Some believe that culture is external to us and you can read and interpret it like a text, others understand it as a symbolic system that exists only in our heads. This lack of clear criteria defining culture is such that even when we speak the same language and use the same terms, we can operate with completely different assumptions about the essence of culture. For some, the core of culture is religion and myth, for others language, while for others it refers to a way of life. Now, as in the past, many anthropologists resist the idea that a culture is dying, seeing what some call 'genocide' as a form of social change.

William Merrifield, Anthropology Coordinator at the Summer Institute of Linguistics (SIL), stated in 1976 that 'ethnocide is a myth. People die, but cultures do not; they change' (Hvalkof and Aaby 1981: 175). Thomas N. Headland - another SIL Anthropology Coordinator - asked 24 years later, in 2000, by Magdalena Krysinska-Kaluzna, if he agreed with Merrifield's statement, said:

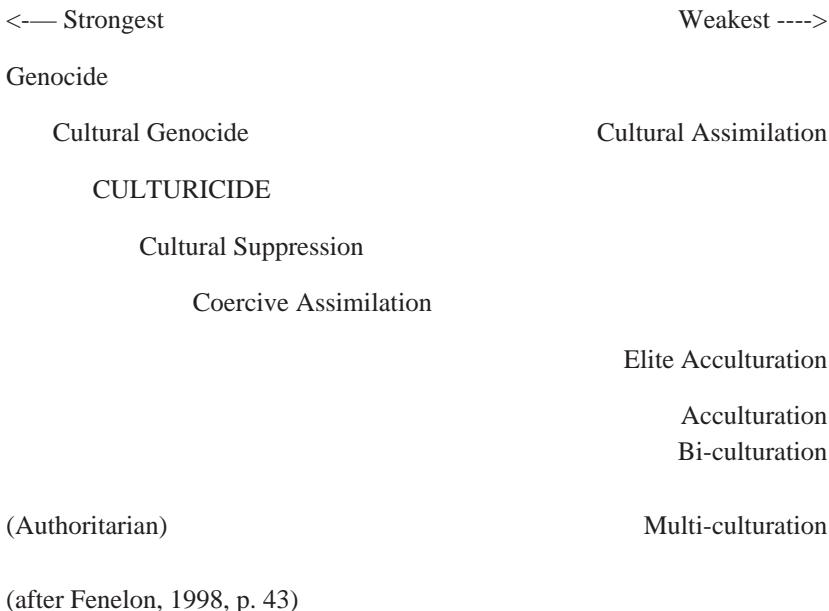
I do remember Merrifield's argument there. He has a good point because the term 'ethnocide' is a figure of speech. He is right, one cannot literally kill a culture, because a culture is an abstract concept anyway, and not a biological organism. The main problem with accusing someone of ethnocide is that this metaphorical term is impossible to define to both sides' satisfaction. If I introduce literacy to a preliterate society, and the people accept it as a new community value, I cause culture change. Is that ethnocide? When anthropologist Napoleon Chagnon distributed hundreds of steel machetes to the 'stone-age' Yanomamo during his 20 years of fieldwork with them in order to gain their help, was that ethnocide? I would say no to both examples. But when some missionaries [not SIL] kidnapped children from their Indian parents in Colombian families in the 1930s, and put them in their boarding schools where they could teach them Christianity and Spanish, and where they punished them if they caught them speaking their Indian language, was that 'ethnocide'? Well, yes. But Merrifield was responding to anthropologists who accuse missionaries of ethnocide if they introduce anything to an Indian. Strange, because the same anthropologists were going out and living with newly contacted Indians, too, and paying the Indians in trinkets and blankets themselves. Were anthropologists not also committing ethnocide ?²

The case appears to be complex conceptually and terminologically, with questions over distinctions between ethnocide, cultural genocide and genocide. Each of these terms describes efforts to destroy a social group. While genocide refers to physical extermination, ethnocide and cultural genocide refer to destruction of group identity and/or culture without killing people physically. Ethnocide means the destruction of the group ethnic identity, as in a programme of total assimilation of individuals into the dominant society. Although the group as such disappears, cultural elements can, of course, survive.¹ In the case of cultural genocide, we deal with the destruction of cultural practices and a social system, regardless of whether members of that culture will survive, and with what identity. A named identity may survive, while its cultural context is eliminated (Hall and Fenelon

2004: 164-165). Fenelon advocates the term 'culturicide' (1998: 20), showing its relationship with other terms and processes as follows:

Social Systems Continuum of Domination

Culturicide: Parameters and Modeling in Continuum of Domination



The opposite of cultural genocide is the survival of a culture, meaning the cultural continuity of a group, and thus the cultural distinctiveness and continuity of cultural transmission, which allows the free reproduction of culture. To enable it to survive, there can be no full and destructive acculturation relevant to the core values of the cultural system.

The most important and most difficult question in this context is: where does 'normal' cultural change end and cultural destruction begin? If each transformation and each new 'state' is simply a form of social change, how to refer to the fact of vanishing of cultures, discernible throughout history and prehistory? Shifting relationships between dominant and subordinate cultures is clearly a vital element here.

Cultural dominance refers to a certain type of social relationship that can be defined as exerting pressure or imposing change, by members of a stronger or larger culture, over a subordinate population. The dominant culture can be seen as aiming to subdue, absorb, or isolate the subordinate culture(s) (Mucha 1999: 26): 'The dominant culture is like the complex "basic cultural pattern", regarded as the only legally valid in a given society, which occurs in human activities. Transmission of the dominant culture is mainly through the education system' (*ibid.* p.29).

In James Fenelon's definition, cultural domination is 'action, structure or ideology resulting from dominant cultural groups or nation-states, utilizing any coercion, direct suppression, or strategic elimination of cultural practices over dominated cultural groups' (1998: 37). Dominant cultures impose their cultural patterns over 'weaker' ones, requiring them to accept the dominant culture's vision of the world, values and norms (*ibid.* pp.25-87). A particular aspect of this phenomenon is how the dominant culture tries to impose its conceptual categories onto others groups (Said 1991).

Dominant cultures tend to impose forced changes in societies with different cultures, at times eliminating these societies altogether. The aim is to ensure that subordinated cultures take over certain dominant cultural patterns, or patterns beneficial to the dominant group. 'Antagonistic collectivities lead a continuous struggle for the possibility of imposing a view of the world which would be the most compatible with their particular interests' (Wacquant 2001: 19).

Cultural Destruction is often done in the context of cultural domination. When a subordinate group is forced to accept ready-made patterns of the dominant culture, the survival of their culture is threatened. The greater the threat, the greater the degree of changes related to the sphere of symbols and values (Krysiriska-Kaluzna 2008).

In both Americas, domination processes have involved imposing western culture onto indigenous cultures, using various kinds of destruction, including cultural genocide. These processes began over 500 years ago. The basic history of the conquest and fall of the indigenous Inca and Aztec civilisations, and the desperate struggles for survival and freedom by several North American indigenous peoples is widely known. Less so the fate of indigenous tribes in the Amazon region.

The conquest of the region by Spanish and Portuguese conquerors began in the late sixteenth century. By the 1650s, many Amazon tribes were affected by demographic collapse, associated with the rapid spread of smallpox and other diseases coming from Europe. Outbreaks of infectious diseases - then as now - often preceded direct contact with the invaders, which increased in violence as European colonisation spread. In Brazil, groups of *bandeirantes* (standard-bearers) began to go into the interior during the seventeenth century, searching for slaves and precious metals. *Bandeirantes* defied the Jesuits, who tried to protect indigenous groups by settling them in villages and teaching them 'the arts of civilisation' (Rabben 1998: 26). Portuguese slaving expeditions reached a peak during 1737-1755 (Ferguson 1995: 79-80, Rabben 1998: 26), and although Indian slavery was officially abolished in 1755, it actually existed well into the nineteenth century.

The situation was similar in other countries of South America. One of the bloodiest periods in recent history of some groups inhabiting the Amazon was the rubber boom which began around 1860 (e.g. Taussig 1984, 1987). Whole indigenous groups (often with the help of acculturated indigenous groups) were taken into slavery and forced into an extraordinarily cruel form of slave labour to collect rubber. Some groups who managed to escape to distant areas were able to survive by living in seclusion, away from whites and other indigenous groups. It is likely that many if not all of the approximately one

hundred isolated groups still living now in the Amazon and Gran Chaco, are the descendants of these communities, which during the rubber boom decided to escape to places ‘in the interior’, as far as possible from all mainstream routes.

As a result of the rubber boom, several entire tribes became extinct, such as the Inapari (Huertas Castillo 2002). Those groups that did not already live in isolation soon became all too familiar with the dominant society. Vast concessions were given by the government to ruthless rubber barons who systematically used one group of natives to subjugate other groups. Enslavement, exploitation, liquidation, death through disease and forced movement: together these processes caused dislocation and depopulation on a vast scale, swiftly reducing the indigenous population of affected regions by as much as 90%. To survive, individuals of wholly different ethnicity would often congregate as groups, forming ‘new tribes’ of survivors (Cloudsley 1992: 36).

The most obvious reason for Brazil’s ‘march to the West’ was settlers’ attempt to gain new — meaning native people’s - lands. This was often accompanied by deliberate extermination. In the south of Brazil, in Santa Catarina and Rio Grande do Sul, there were specialised killers, called *bugreiros* or ‘savage-hunters’, who were involved in ‘removing’ Indians from land which settlers wanted to use. A striking example is the actions of one of *bugreiro* who in 1888 killed two thousand of the Kaingang, poisoning pools of water with strychnine in the village of Paranapanema. He was never punished for this act (Hemming 2003: 26).

The history of the conquest of indigenous groups is, of course, not only the history of wars, battles, large-scale physical death and collapse, but also of cultural survival and rapid change. Processes of profound cultural change were experienced by all the groups who came into contact with the new, dominant, and so-different culture. According to anthropologists, ‘hostile’ groups, which either long-avoided contact, or - like the Brazilian Kayapo - protected their territory and their independence by cultivating a warrior ethic, were more fortunate, surviving destruction ‘in greater numbers and in better health than more pacific indigenous groups’ (Schmink and Wood 1992: 261, quoted in Rabben 1998: 44). Yet even as we write, in March 2012, Kayapo communities who have survived till now, face forced displacement by the vast Belo Monte dam on the Xingu river. Unfortunately, the achievement of indigenous groups’ cultural and physical survival until the second half of the twentieth century does not mean that threats from the dominant society ceased to exist. Direct, cultural and structural violence interweave every stage of the history of relations between indigenous groups and the mainstream in the Amazon region, forming an intrinsic element in the history of Brazil, Bolivia, Peru, Ecuador, Columbia and Venezuela.

An example of the tragic fate of Amazonian indigenous peoples, and its continuation today, is the situation of the Yora tribe in Peru. Until 1984, a group of about 400 Yora people had lived in isolation from the national society. Starting in 1981, and despite Yora warnings, prospectors and seismic researchers from the Shell oil company began to move into the territory of this contact-avoiding tribe. The Yora responded with attacks. In 1984, four Yora men were captured by loggers, bound and brought to the town of Sepahua on the Urubamba river (Shepard 1999). Given gifts by town residents, Catholic missionaries

and Shell employees, these four were then driven back to the Yora area. After four months, they returned to Sepahua with the hope of obtaining more gifts. Soon, epidemic respiratory infections broke out among the Yora: whooping cough, influenza, tuberculosis and malaria were diagnosed.

During their first visit to the Yora, Summer Institute of Linguistics doctors took 130 people away with them, of whom 40 to 60 died (Zarzar 1987). Wahl says that between April 1984 and July 1985 about three hundred Yora people died (Wahl ed. 2001). In the settlements located on the Manu river, mortality was probably even greater. Over the Manu Chico and the Alto Manu only empty plots were found - it is not known if their users died as a result of an epidemic, or fled before it reached them.

During the first years after making contact, the Yora suffered from completely new diseases, such as pneumonia. Some apparently died from hunger, becoming so weak that they could not acquire food by themselves. Some trekked down the Manu and the Mishagua rivers to seek for help from the Machigenga Indians and Meti settlers. The tribe's physical survival was threatened. Not a single child was born during 1985-1986 (Wahl ed. 2001).

In the late eighties the Yora moved to Sepahua. Many orphans were then taken away by the Metis, who made them into servants. The Yora finally decided to leave the town and settled on the river Mishagua. In 1986, Glenn Shepard witnessed a group of about fifty Yora who sailed down the Manu in canoes in search of help. All were sick. Here is how Shepard describes their stay in the village of Boca Manu:

The people of Boca Manu were generous with food, clothing and other gifts, but took it upon themselves to cut the hair of several of the Yora men. Men with long hair were teased by both mestizos and acculturated indigenous men, who would comment, 'You look like a pretty girl, I think I'll have you!' They grabbed the Yora men from behind and made lewd motions. I found it especially sad how quick the acculturated Indians used to ridicule the Yoras' nudity, hairstyle and exotic adornments. As the resident anthropologist, I preached to local people about the virtues of respect for cultural diversity, but to little avail. Eventually, a medical team came to take the group to a health post and later return them to their home village. In subsequent trips to the region, I have witnessed the cultural demise of the Yora group. Several orphans were taken on as servants by mestizo households, and remain there today, separated forever from their own ethnic group. (Shepard 1999:38-9)

Another example of indigenous groups at risk of losing their culture are the Nukak Indians. Traditionally, Nukak inhabited areas of the upper Papunaua and Inirida rivers in the southern Guaviare basin in Colombia. Before contact with Columbian national society, the Nukak, whose language belongs to the Maku-Puinave family, numbered about 1,200 people, divided into seven smaller groups. They were nomads - reportedly the last nomads in Colombia - so continuation of Nukak cultural patterns, both in technical, as well as in symbolic spheres, demanded setting aside a large area for their exclusive use. Around 1995, Nukakowie set up an estimated 68 camps annually, with an average distance between successive places of residence of seven kms.

First contact with part of the Nukak tribe was made by Protestant missionaries of SIL and the New Tribes Mission in the late 1960s-1970s.⁴ Significant changes in the life of this group started in the 1980s when coca growers arrived in the Guaviare region, attracted by the climate and distance from 'civilisation'. The presence of so many colonists growing coca interested the army, which arrived on site to destroy crops. Army penetration, in turn, attracted the leftist guerrillas of FARC (*Fuerzas Armadas Revolucionarias de Colombia - Colombian Armed Revolutionary Forces*). In this way the Nukak found themselves in an area affected by the Colombian civil war. Nukak were forced to flee their own land and seek refuge in the towns and villages of white people (Munoz Rojas and Zambrano, 1995; Mahecha Rubio, 2005; Politis, 2007; Henao 2008).

In the first five years after making contact, the Nukak faced demographic losses near 40% of the population, mainly as a consequence of a respiratory infection that started with tin. The age groups most vulnerable to decimation were people over forty and less than five years old, so there were many orphans in this population. In fact, nearly thirty children and adolescents were adopted by local peasants, and some women formed relationships with peasants. All of this at once led to the interruption of the transmission of technical knowledge and rituals, and loss of confidence in their own shamanic practices (Mahecha Rubio 2005: 104-5).

In 1997, it was estimated that there were approximately 500 Nukak left (Survival International 1997, Politis 2007). These still had little resistance to previously unknown diseases, whose recurrent outbreaks were still killing them. There was also a new threat: in May 1997, the Colombian army announced that it intended to use a group of Indian soldiers to be trained in the techniques of 'survival in the jungle'. Designated Nukak lived in a military base, despite the protests of the indigenous rights organisation ONIC, which feared that this policy could make Nukak targets for the guerrillas. After a number of international campaigns, the Colombian government signed an Act giving the Nukak title to their land in 1997-8.

During these years, Nukak had become dependent on settlers for access to metal tools and medical care. From time to time, they began to leave the forest and work on coca plantations in exchange for food and tools. Many colonists still 'adopted' indigenous children, taking them from their families, in effect as servants (Survival International 1991 and 1997, Politis 2007). It is estimated that within ten years after the establishment of permanent contact with the non- indigenous world, the Nukak lost about 65% of their population. Their mobility decreased significantly, but alcohol consumption among male adolescents increased. Changes in social structure - due for example to sexual liaisons with colonists while working on their farms - began a process of disintegration of social ties among local groups. Nukak began to be ashamed of their own culture, leading to a rapid loss of practices from the sphere of symbolic culture.⁵

In March 2006, after a long journey aimed at finding refuge in the forest, about 70 Nukaks arrived at the town of San Jose, joining fellow tribesmen who had previously settled there, and lived on the outskirts of town. The new group had fled violence inflicted by the Colombian army, right-wing paramilitary and leftist guerrillas. This was the third flight

since 2002: a total of 220 Nukak had now left their original territories - about half the tribe, who numbered an estimated 390-500 people. Indians arrived at San Jose in poor health and malnourished. In early April 2006, the Office of the UN High Commissioner for Refugees announced that Nukak were threatened with extermination. A similar message was issued on 5th May by the Office for the Coordination of Humanitarian Affairs (OCHA) (Krysinska-Kaluzna 2008).

So in the case of Yora and Nukak, the death of a significant part of the group highlights a risk of complete cultural extinction. Those who survive the initial process of forced contact face complex pressures from the dominant culture. Social structure, traditional values and world- vision are breaking down due to a wide range of influences, including diseases, and approach or invasion by several groups from mainstream society, including missionaries, colonists, security forces and guerillas. The technological and numerical superiority of the dominant society exerts pressures that force changes.

In the Amazon, like in many other places in the world, representatives of indigenous groups, subjected to pressures of 'education' and 'development', often begin to be ashamed of their 'savagery' and become 'civilised' in accordance with the standards of dominant national societies, whose 'final cultural pattern' often seeks to eliminate the cultural practices of dominated groups, seeing these as 'backward' and 'uncivilised'. Many aspects of indigenous knowledge are compatible with the latest ideas of the dominant culture, as is shown in *Blackfoot Physics* by quantum physicist F. David Peat (1996), or Fritjof Capra's *The Web of Life: a New Synthesis of Mind and Matter* (1996). For many indigenous cultures, it is already too late: by the time mainstream culture begins to appreciate them, they cease to exist.

Cultural Genocide in India today

The uncomfortable history of the onslaught upon tribal peoples worldwide is a highly neglected subject. America emerges as a continent of nation states, each founded on a process of genocide - especially the USA. There are obvious similarities to the situation in India today, as well as some major differences. For a start, because trade was actually continuous before the Portuguese and other Europeans came to India, culture contact here lacked the terrible element of completely new diseases that wiped out populations throughout America.

The fate of the various groups of Andaman Islanders shows a continuum of genocide and resistance - tribes who, unlike most tribes in mainland India were, and still essentially remain, hunter-gatherers. The Great Andamanese, who first came under British contact when the islands were settled as the 'Kala Pani' penal colony from 1858, have faced complete extinction. The Onge, who resisted and then accommodated, have undergone a drastic decline in their cultural vitality as well as in their population, involving a decline in women's fertility. The Jarawa, like tribes in the Amazon region, survived for over a century by resisting overtures with hostility, but are presently in a much-debated state of cultural flux or breakdown, with many lives apparently lost through introduced diseases due to recent contacts; and a major link road, banned by India's Supreme Court yet still taking tourists on Jarawa sightings (Mukerjee 2003).

Meanwhile, the Sentinel Islanders still resist all approaches by sea and air with bows and arrows. This is a unique situation in the world - inviting thoughtful comparison with the situation of the estimated 100 remaining 'uncontacted' tribes who have managed to remain invisible in the Amazon and wider forest of South America. Allowing the Sentinalese to maintain their independence, in knowledge of the fate of the other Andaman Islanders, does great credit to the Indian Government.

As for central India, British colonialists used military force to 'pacify' many 'jungle tribes'; and when these accepted 'subjugation', how did British administrators induce a more complete subordination? The dominant ideology in the 1830s as much as the 2010s, involves an almost fundamentalist belief in markets. The first high-level administrator who formulated a Kond policy immediately after their military subjugation, set up markets so as to promote their intercourse with us, and by giving them new tastes and new wants... [to] afford us the best hold we can have on their fidelity as subjects, by rendering them dependent upon us for what will, in time, become necessities of life.' (G.E. Russell, 1836, quoted in Padel 2010: 179)

Sure enough, many cultural changes are associated with trade and material culture. Many tribes used to either make their own cloth from bark fibre or had long-standing relationships with weaver castes who supplied them. Gradually, these products gave way among most tribes to factory-made cloth. The Juang tribe in north Odisha was unusual for refusing to wear cloth. Women wore skirts of leaves - until a British 'civilising' campaign of the 1860s-70s enforced mass burnings of these leaf-skirts, and 'donations' of cloth. Women of the Bonda tribe still maintain an extraordinarily distinctive dress, wearing a thin strip of loin-cloth and a mass of necklaces that part-cover their breasts. Several government 'clothe-the-Bondas' campaigns have brought mixed results.

Bondas and Juangs are among 75 tribes in India still classed as 'Primitive Tribal Groups' (PTGs) - a classification that is supposed to protect them from outsider penetration and exploitation - or is it actually meant to hasten the process of their 'advancement'?

The experience of two other PTGs in Odisha highlights this paradox. For over 20 years the Paudi Bhuiya Development Agency has been forcing Pauri Bhuiya down from the mountains, into resettlement villages where their economic misery and cultural decline is all too evident. This is a tribe of shifting cultivators, who have actually preserved outstanding forest in the Khandadharra and neighbouring mountain ranges in north Odisha. Paradoxically, the Forest Department has been pressurising them constantly to give up shifting cultivation on the spurious grounds that it destroys the forest - just as British administrators over many years tried to force the Baiga tribe (far to the west, in Chhattisgarh-Madhya Pradesh) to abandon shifting cultivation and take to the plough, which had been taboo in Baiga culture.

But is there another reason for this forced displacement of Pauri Bhuiya from the Khandadharra forest? The mountains are rich in iron and manganese ore, which leading iron and steel companies are after, including Posco. In fact, the Orissa Mining Corporation (OMC) has extensive leases in Khandadharra, where mining has expanded rapidly over the past 20 years, destroying large stands of forest (Pratap and Das 2008). Since 2008,

the OMC has leased the Kurmitar mine there to another entity, the Kalinga Commercial Corporation (KCC), which, according to its website, exceeded all targets to mine over a million tonnes of iron ore in 2010- 11. One of the 22 peaks of Khandadhar is now completely bare of forest and top-soil, and flow through the famous waterfall of Maa Kanteshwari - Odisha's highest waterfall at about 800 feet - has already diminished, while the KCC is already exporting large amounts of iron and manganese ore to China and other countries:

during the F.Y 2009-2010, the company has exported more than 2 lakhs MT of iron-ore fines. The company is also receiving encouraging enquiries from different overseas buyers and has materialized one consignment of Manganese ore to a Korean Company.⁶

In the case of the Dongria Konds, there has been no question of forbidding them to practice their traditional shifting cultivation. However, in line with Vedanta's contested bauxite-mine plans - strongly opposed by most Dongria - the Dongria Kondh Development Agency made Dongrias take part in construction work for new tarmac roads right into the heart of the Niyamgiri range, paid for the Prime Minister's Road Construction fund. It was remarked by many Dongria that the timber mafia were among the first new users of these roads during 2009-10. In 2011-12 Dongria villagers have reported frequent visits to their villages by armed police of the Central Reserved Police Force (CRPF), who accuse them of helping Maoists, and frequently enter their houses - whose entry is normally subject to strong cultural restrictions - taking away possessions by force. In early March 2012, three Dongria men reported being taken off a local train, taken to a CRPF camp, tied up and interrogated there for ten hours about Maoist presence in Niyamgiri.

Tourists have recently been banned from Dongria villages. It is true that 'tribal tours' are often culturally extremely insensitive. But is this insensitivity the real reason for banning tourists, or is it a tactic aimed at cultural subjugation in line with mining plans? It seems that the new roads, built on promises of 'development', are now being used to bring armed police to Dongria villages at least six times a month.⁷ Could anthropology play a role in ensuring a more sensitive, reciprocal model of tourism in tribal areas?

The situation among these 'PTGs' is typical of the situation in tribal India as a whole. Where dams and mining/metal factories have displaced Adivasis or penetrated their areas, promising prosperity, they have brought a poverty far worse than anything known before - the 'resource curse' pattern affecting some of India's resource-richest regions, brutally clear in *Rich Lands, Poor People: Is Sustainable Mining Possible* (CSE 2008).

And where Adivasis, and many non-tribal villagers also, continue to resist displacement and invasion, they often meet ferocious, sustained repression. Police firings on protesters in Maikanch (Kashipur) and Kalinganagar killed 3 and 14 people respectively in December 2000 and January 2006, while injuring many more. These visible deaths are taken by the community as a whole as symbolic of a much wider onslaught. A number of people are known to have died due to the police blockades in Kalinganagar and the Posco steel plant site villages. But if one investigates the situation of Adivasis already displaced, one finds an even more disturbing picture, involving a high death rate among especially the old and the young among oustee populations. Villagers displaced by the Upper Indravati

reservoir in southwest Odisha, for example, say that all their elders died within a few years of their forced removal, that none of the promises they were made have been kept, and that they live now in dire lack of basic substances, including food, water and medicines, sorely missing the relatively high standard of living they enjoyed before (Sahu 2009).

B.D. Sharma, ex-Commissioner of the Scheduled Tribes and Castes, characterizes the situation facing Adivasis in his latest book as an *Unbroken History of Broken Promises* (2010), drawing comparison with the situation in America, fleshed out by an-depth experience of India's legislation as well as grass-roots realities.

Another major cause of cultural genocide is the Maoist-Operation Greenhunt conflict, which promotes a serious polarisation or split among the ST population (those with the status of Scheduled Tribe). The policy of enlisting Adivasis as SPOs (Special Police Officers) on a monthly salary of about Rs.4,000/-, though banned by the Supreme Court with reference to Chhattisgarh, still exists there, and the Chhattisgarh model has been copied in Jharkhand, Odisha and other states, as a main means of fighting the Maoists, even though the Supreme Court banned it on the grounds that it is essentially a recipe for civil war⁸ - the centuries-old colonial technique of using one tribe or section of a tribe, to wipe out opposition from another, 'hostile' section. Alongside 'Security', today's Integrated Action Plan for dealing with the Maoists also funds 'Development', as a means of undermining the Maoists' appeal.

But this begs the question: what has been Adivasis' actual experience of development projects? 'Developments' on offer in South Chhattisgarh include displacement by Tata and Essar steel plants; a massive increase in iron-ore mining, when the Bailadila mines since the 1960s have presented a model of large-scale ecological collapse and cultural genocide; and the Bodghat dams on Indravati - a project defeated in the 1980s when 42 villages and a tribal population of 10,000 were to be displaced by a single dam, but revived in 2005 as a series of seven dams, and given environmental clearance in 2009 despite threatening to destroy the most biodiverse river ecosystem remaining in peninsular India, alongside a much larger number of communities. This is why an estimated 20,000 Adivasis came to Jagdalpur on 1 June 2009 to demonstrate their opposition to this project.⁹

Underlying this unfolding history in many regions is a basic conceptual or ideological problem. In a sense, the missionary impulse of converting people has morphed into a programme of 'improving' them or 'bringing them forward' through 'Development'. The very idea of 'conversion' is intimately connected with the idea of empire (Nock 1933), and the kinds of imposed change that cause cultural genocide.

So can we move *Beyond Developmentality*? (Deb 2009) Today's prevailing 'Social Construction of Reality' (Berger and Luckmann 1966) - promoted partly through *Manufacturing Consent* in the media (Chomsky and Herman 1999) - involves an extremely one-sided model of 'Development', and the belief system promulgated by colonial anthropology, sometimes referred to as 'social evolutionism'⁵: the idea - taken on by theorists of the Left (including Marx) as well as Right - that societies necessarily develop along one line, through set stages, from 'primitive communism', through 'feudalism', to capitalism.

Charles Darwin had shown how thousands of species evolved through the laws of nature. His work showed thousands of interdependent paths of development, not one superior path. It revealed mankind as part of nature, not separate from it, challenging the dominant Christian ideology on this issue.

By contrast, the application of evolutionist thinking to society imagines a single line of development from 'primitive' to 'modern', blocking out the grassroots details, including the enforced decline of hundreds of indigenous cultures. In line with this thinking, the concept of certain peoples or regions as 'Underdeveloped' was first presented by President Truman, in his inaugural speech as President in 1949: As Esteva puts this,

On that day, 2 billion people became underdeveloped...[The concept] took on an unsuspected colonizing virulence.....Since then, development has connoted at least one thing: to escape from the undignified condition called underdevelopment.....For those who make up two thirds of the world's population today, to think of development - any kind of development - requires first the perception of themselves as underdeveloped, with the whole burden of connotations that this carries. (Esteva 1992: 6-7)

Development and Underdevelopment are key concepts used to impose a uniform model of rapid growth, employing the World Bank's classification of countries into 'Developed', 'Developing' and 'Underdeveloped', and culminating in today's 'New World Order', characterised by extreme forms of exploitation and inequality.

As one example of social evolutionist thinking, the missionary term 'preliterate' presumes a 'civilising transition' from non-literacy to literacy. It negates many people's pride in non-literate, oral traditions - a prominent feature of every tribal culture unless or until this is undermined. In the words of Russell Means, an outspoken leader of the American Indian Movement:

I detest writing. The process itself epitomizes the European concept of 'legitimate' thinking; what is written has an importance that is denied the spoken. My culture, the Lakota culture, has an oral tradition, so ordinarily I reject writing. It is one of the white world's ways of destroying the cultures of non-European peoples, the imposing of an abstraction over the spoken relationship of a people, (from a speech in 1982, quoted in Padel 2010: 26) The dominant ideology still sees certain cultures as 'more developed' than others. Since negative stereotypes about tribal peoples are usually cast in evolutionist terms, is it possible that individually and/or collectively we could start to undo evolutionist ways of looking at tribal cultures?

For in many ways, tribal societies are extremely highly developed, in different directions from mainstream societies: in principles of sharing, in traditional restraints over resource use, in concepts of Law that stress reconciliation rather than winning and losing, in knowledge of plants and methods of healing, to name just a few areas. Do Adivasi cultures offer a model of long-term sustainability that could help humans survive?

These are societies that still maintain links between the various meanings derived from Latin *cultus*: *cultures* rooted in systems of *cultivation* and *cults* of nature spirits. Cultural Genocide takes place when these links are severed, and the traditional social structure breaks down.

Cultural Genocide goes hand in glove with another process, destructive to the essence of life on earth: the crime of Ecocide, presently in the process of gaining international recognition as a crime against humanity (Higgins 2010). For tribal societies' dispossession also involves a takeover of *resources* that these cultures have carefully preserved as *sources of life*, and destruction of ecosystems they sustained over centuries.

Put another way, the country's ecosystems, from the Himalayas to every area in peninsular India, are under threat from a multitude of takeovers, including rapid depletion of water sources, caused by dams and groundwater levels dropping rapidly due to 'water-mining'. A less-appreciated cause of water-depletion is the mining of mountains that acted for centuries as storehouses of water. As Adivasis often ask - what kind of development involves the destruction of ancient mountains? They know better than many scientists that when mountains are mined, many perennial streams, that feed the country's rivers, rapidly dry up. Gopinath Mohanty reported how a Census official said that many Konds answered his question about their religion with the single word: 'Mountains'. Considering mountains as sacred, based on an understanding of their physical role as sources of life, is not a superstition. In the words of a Dongria leader, 'Niyamgiri is not a pile of money standing there - it's our Maa-Baap.'¹⁰

What anthropologists can do in this situation is a lot actually. For a start, they can bring out people's voices, showing how these emerge from a coherent system of knowledge and values. They can also analyse the situation prevailing in tribal areas, and the power structures in place. Recognising the 'reality gap' that exists between what is supposed to happen and what actually happens is another starting point - the difference between what is meant to happen and what actually happens calls for analysis juxtaposing emic and etic dimensions: the imposing of a symbolic construction of resettlement as it is meant to happen, over the little-reported horror of 'Resettlement Realities' (Sahu 2009, Padel & Das 2011).

Many of today's threatened cultures can be characterised as 'Ecological peoples' or (as Russell Means calls them) 'Nature peoples'. This is why many representatives of indigenous cultures came together in Bolivia in April 2011, and made the Cochabamba Declaration asserting the Rights of Mother Earth, asking that these be recognised under UN legislation (EPW 2012).

We, the people and nations of Earth: considering that we are all part of Mother Earth, an indivisible, living community of interrelated and interdependent beings with a common destiny, gratefully acknowledging that Mother Earth is the source of life, nourishment and learning and provides everything we need to live well;

recognizing that the capitalist system and all forms of depredation, exploitation, abuse and contamination have caused great destruction, degradation and disruption of Mother Earth, putting life as we know it today at risk....

conscious of the urgency of taking decisive, collective action to transform structures and systems that cause climate change and other threats to Mother Earth: proclaim this Universal Declaration of the Rights of Mother Earth.... "

Notes

1. Mathilda's anthropology blog, 2008, at and John H. Bodley's *Cultural Anthropology': Tribes, States and the Global System* (3rd ed. 2000).
2. Correspondence by Magdalena Krysihska-Kaluzna, 2000.
3. An example might be the elements of Jewish culture functioning, where the Jewish community did not survive as such.
4. Munoz Rojas and Zambrano 1995: 148; Mahecha Rubio 2005: 104; Politis 2007: 148.
5. Munoz Rojas and Zambrano 1995, Mahecha Rubio 2005, Politis 2007, Henao 2008
6. KCC website at (version quoted as viewed February- March 2012).
7. KBK News 12th March 2012, 'Voice of Niyamgiri': interviews with Dongria Konds at
8. 'SPOs ban will apply only to Chhattisgarh: court'. *The Hindu*, 18 November 2011, at
9. On Bodhghat: Asha Rajvanshi, 'Assessed impacts of the proposed Bodhghat Hydroelectric project', UNEP EIA Training Manual (1996?), case study no.29, at ect.pdf; *Dams, Rivers and People*, January 2005, p.ll, at ; Gautam Navlakha and Asish Gupta, 28 August 2009, 'Bastar: The Real Divide behind the impending Dirty War7, *Radical Notes*, at 13/39/
10. Padel and Das 2010, chapter 21.
11. On the Declaration of the Rights of Mother Earth, see , nature-un/ and EPW 14.1.2012, 'If Mountains and Rivers could Speak'.

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Understanding Mental Health as a function of Social Vulnerabilities in a Disaster Situation: Evidence from recurrent flooding in Bharaich district, Uttar Pradesh

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ABSTRACT

It has been well documented that the impact of disasters on mental health is less differentiated by the type of disasters and more strongly affected by the pre-disaster characteristics of the individual and already existing social vulnerabilities determining the individual characteristic that qualifies to become the diathesis in the event of a stress inducing circumstances like floods or other extreme events

With this background, mental health impacts of flooding in the case of Bharaich district of Uttar Pradesh will be discussed. Bharaich is flooded every year due to heavy discharge of water in the river Ghaghra. This flooding leads to large scale damage to property in the form of land erosion, complete destruction of the household and damage to livelihood. Apart from constituting an extreme experience, the flood disrupts social functioning of both victims and their social networks. The combination of a collective extreme experience and the collapse of social networks predisposes the community to an increase of mental health problems and impaired functioning.

The study collected data from flood affected and non flood affected population of Bharaich. There was a vast negative impact of the recurrent floods in Bharaich district on mental health outcomes. There were large to very large differences between the flood affected

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group and the control group on anxiety, depression and total distress. These differences has been attributed to a group of stressors that act on the community due to their varying degrees of social vulnerabilities and differential coping based on differential resource allocation. The present paper tries to interpret the results of the mental health study in the light of qualitative data collected through Focus Group Discussion (FGD). Our study reveals that there is an interplay of basically three categories of stressors- proximal, distal and perpetual which leads to increased symptoms of anxiety, depression and distress due to the presence of a physical hazard or floods.

INTRODUCTION

If one looks into the background of mental health studies in disaster situations in India then one would find that the first ever disaster in which the mental health effects were described was the floods in Andhra Pradesh in the late 1970s (Murthy R.S., 2004). Since then, India has been struck by severe disastrous events like the, Orissa super-cyclone in 1999, Gujarat earthquake in 2001 and the Indian Ocean Tsunami in 2005. The mental health dimensions that were explored in the above mentioned events were focused on knowing the levels of psychological disturbances, as in the case of Gujarat earthquake (Vankar and Mehta, 2004) and PTSD, major depressive disorders or generalized anxiety disorders as in the case of Orissa super-cyclone (Sekar , 2004). It has been well documented however that the impact of disasters on mental health is less differentiated by the type of disasters and more strongly affected by the pre-disaster characteristics of the individual and already existing social vulnerabilities determining the individual characteristic that qualifies to become the diathesis in the event of a stress inducing circumstances like floods or other extreme events (Bourque et al, 2006). Taking lead from this argument the present paper tries to understand the issues that are involved in creating social vulnerability that leads to increased level of anxiety, depression and total distress in the event of a flood. The analysis is based on the Focused Group Discussions that were collected from the four severely flood affected villages of the district Bahraich in Uttar Pradesh, India. The Bahraich region in India is annually hit by floods, and in July and September 2008 the region was severely hit by floods. Within Bahraich, the four most flood affected Gram Panchayats (the local name for the smallest political unit in the region) were chosen on the basis of impact of the flood and their geographical location between the river and the embankment that made them most vulnerable upon discussions with the district officials and with several Non-Government Organizations (NGOs) in the region.

The increased levels of anxiety, depression and total distress among the flood affected population has been understood in this paper, within the framework of the diathesis-stress model. Diathesis is a relatively distal necessary or contributing cause and is understood as the vulnerability that predisposes a particular group or section of the community to anxiety and depression (Carson et al 2003). This kind of vulnerability is present in the society in the form of class, caste, gender and religion in the society and are engrained in the social fabric and structure of the society at large (Bolin, 2006) and in the presence of a stressful event like floods they tend to affect the levels of anxiety, depression and total distress in the community. This was found to be true in the present study as the

statistical analysis of the data collected showed a significantly higher level of anxiety, depression and total distress among the flood affected population than the non flood-affected population (Khattri et al. 2009). The central argument here is that, in the event of floods, people face an adjustive demand to cope with the situation and this leads to a higher level of anxiety, depression and distress, considering the pre-existing social vulnerabilities (diathesis) which are themselves sometimes highly potent stressors (Carson et al, 2003).

Methodology

Setting

The study was undertaken in Bahraich district of eastern Uttar Pradesh, India. This district is annually flooded due to heavy rainfall and discharge of water from the adjoining country, Nepal. The district is traversed by two main rivers- Ghaghara and Saryu that are tributaries of the mighty Ganga. The various focused group discussions were held at the Khadi Prashikshan Kendra, Fakhpur block (administrative division of the district) office and in the district hospital.

Participants

In all six focus groups were recorded. This included a focus group with men of the flood affected villages, marginalized women (minority and other backward caste groups), upper caste women of the flood affected villages, village pradhans of flood affected and non flood affected villages, doctors of the district hospital and NGO workers involved in the district flood relief and mitigation. The total number of participants in all the FGDs combined together was forty-five.

Process

The usual procedure of facilitating and recording the focus groups were followed in all the six FGDs. The recording was made on a video recorder, which later facilitated in writing the FGDs verbatim. FGDs started with a formal introduction of the purpose of the study, introduction of the researchers and the participants. The facilitator asked the questions one by one and gave chance to each of the participants to speak before moving on to the next participants. It was also instructed that if one of the participant is speaking then the other should not interrupt in between, however this was not followed for all the questions equally. There were questions that were emotional, which enquired about the loss and damage due to floods which saw people answering, sometimes together and sometimes starting without waiting for the others to finish. The facilitator in such situations acted patiently and requested people for better cooperation. Before starting few FGDs like with the village men and women, a Participatory Rural Appraisal (PRA) techniques was used as a warm-up exercise so that the participants can interact with each other and know each other well before starting the process. In the PRA, they were asked to tell the intensity of floods in the past five years by placing kidney beans on a chart paper that was divided into five sections with the help of *bindis* that were placed vertically, with the number of *bindis* indicating the years that has passed from the current year and going up-to five years back in time. Another PRA technique that was used before the FGD with

the *pradhans* (village headman) was to trace the course of the river Ghaghra on the district map with coloured chalks.

Categories of stressors:

The FGDs started with asking the participants about, how they define floods. What does flood mean to them?, was the question asked from the respondents. If one goes into the analysis of kind of answers that were provided on the question, then they can be grouped into two categories:

1. Problem oriented definition of floods and
2. Floods defined as a phenomenon/ as a natural calamity.

There was a difference in the source of the two definitions. The first kind of definition came from the victims (men, women and the village headman). On the other hand the second category of definitions came from the relief providers (NGOs). In the problem oriented definition of floods, problem is seen as ingrained into the phenomenon. Flood is defined as "*displacement from our house*", "*flood for us means moving to higher lands, as our houses collapse, there is no food left to eat.*" When flood is defined as a phenomenon or a natural calamity, the explanation revolves around defining floods as something which happens due to the fury of the nature, due to human intervention in the natural world and due to physical phenomenon of soil erosion. "*Floods are natural phenomenon, due to natural reasons, - it is not a new phenomenon, - it has been happening for long times. So I feel this is a natural phenomenon, but it is also a reaction to the human activities such as obstructive activities which stops the free flow of water..*"

Coping/relief is largely dependent upon the meaning that is given to the crisis (Boin and T'Hart, 2006). The NGOs in the village, with government facilitation provide relief, there are some NGOs that are well known in the area for distributing polyethene sheets during the floods, that can be used for making temporary houses or shelters and also carrying out other relief activities during the floods. However the argument here is that, having different genre of definitions for the same phenomenon (as in this case) dilutes the magnitude of the problem. There occurs a difference in the gravity of the situation and the problem viewed by the victims and by the relief agency. This can lead to a mismatch in the demand and supply of the relief during the crisis situation. This mismatch in defining the problem and providing relief on the basis of differential definitions can be the potential source of stress for the families (Edwards, 1998).

Adjustive demands or stressors, stem from sources that fall into three basic categories (Carson et al., 2003) of frustration, conflict and pressure. The qualitative data collected can be grouped into these categories based on the defining characteristics of each category.

Frustration can be seen as an obstacle which is either external or internal, that blocks progress towards a desired goal (Carson et al, 2003). One out of many sources of frustration which is relevant in the context of the data collected is related to the prejudice and discrimination that is directed and is felt by the minority community in the region. To quote few examples from the FGDs:

Lak (name of the participant in FGD with marginalized women): “*Floods for us means displacement from our homes, people who have their means stay under the polythene sheets (tirpal) while the unfortunate ones stay in the open (maidaan), floods for us is a calamity in all its forms(har cheez ka sankat), which rids us of our house, we have no food, no where to go.*”

A dichotomy exists in the statement in the form of “us” and “they”. There is a position of superiority and subjugation that emerges during the floods. The “us” that pertains to minorities is perceived as “unfortunates” who has to stay in the open when the flood arrives. They also perceive floods as a calamity in all its forms. This depicts the vulnerability of the minority community. During the floods they are rendered homeless and have no food. This situation places an adjustive demand which has to be met in order to survive.

Resh (name of the participant in FGD with marginalized women): “*There has been an obvious partiality in the distribution of the relief material. The material never reaches the poor and needy, it always finds itself in the hands of rich and financially well off people. We are always left out and ignored.*”

Jum (name of the participant in FGD with marginalized women): “*People with 100 “Beegha” (local measure of land) or more of land, always get the maximum benefit from the government, they always elbow out the already weak sections of the society. Government should always distribute the goods equally, but even in that case people tend to lie about the number of members in the family in order to get more material.*”

The above two statements here indicate that the act of discrimination on the basis of class and religion has been internalized. In other words, based on the discrimination and prejudiced attitude of the rich and the religious majority towards the poor and the minority has given rise to the formation of schemas about other people and the world around. This has led to an organized representation of the prior knowledge about the discriminatory attitude which in turn guides the processing of the current information (Alloy and Tabachnik, 1984; Fiske and Taylor, 1991).

Frustration as a category of stressor is also evident from the FGD with men of the villages. One of the participant goes by saying that- Ram (name of the participant): “*When floods come, we are helpless, we have to deal with it – we have no other option if we get some support then we take our children and go at higher places. We were not able to save our houses this time; was not able to get a tarpaulin, our mud houses collapsed and our crops were destroyed too; but we are surviving somehow.*”

Coming to the next category of stressors, that is pressure, it would be worth quoting people directly:

Kisa (name of the participant in FGD with men): “*All go out to lucknow and Punjab and Jalandhar for work. There is no govt. programme over here. Here the govt gives rice and pulses –but we get 10 kg of rice only, the rest is sold away. We did not get the rice provided by the govt. We do not have lands from the ancestral times, – we live on daily wages all the twelve months. In Boundi (name of the village) we have built a house, we stay in it. There are seven to eight persons in our house and I am a lone earner.*”

Jum (name of the participant in FGD with marginal women): “*We want land to live safely, there are times when there is just one member taking care of more than ten people in the family. There are families where maximum members are females and the male members are immature enough to endure the family’s financial needs.*”

The statements above reflect the amount of economic pressure that exists. Pressure acts as a stressor since it forces to speed up and intensify efforts to meet the needs.

Jum (name of the participant in FGD with marginal women): “*There are instances when the frustration reaches the apogee and the head of the family is forced to commit suicide for they cannot find a better solution. They either drown themselves in the flooded river or they hang themselves and sometimes even consume sulphas (name of the drug).*” Another example of pressure that leads to maladaptive behavior to commit suicide since the resources available are not sufficient to cope in the given situation of distress.

The third category of stressor is the category of conflict. In many instances stress results from the simultaneous occurrence of two or more incompatible needs or motives. On this basis there are many types of conflicts like the approach-avoidance, double-approach and double –avoidance types (Carson et al, 2003). The kind of conflict that emerged from the FGDs is the one with double-avoidance. Among the upper caste women, during the FGD it was revealed that caste becomes a source of the conflict. During the floods there is a dilemma in the minds of the men folk that compels them to avoid working in the area nearby on daily wages since they had to share the space with other lower caste people working in the same area. They also want to avoid going out of the area for work since it will take them away from their families. Thus a double-avoidance conflict is seen in this situation.

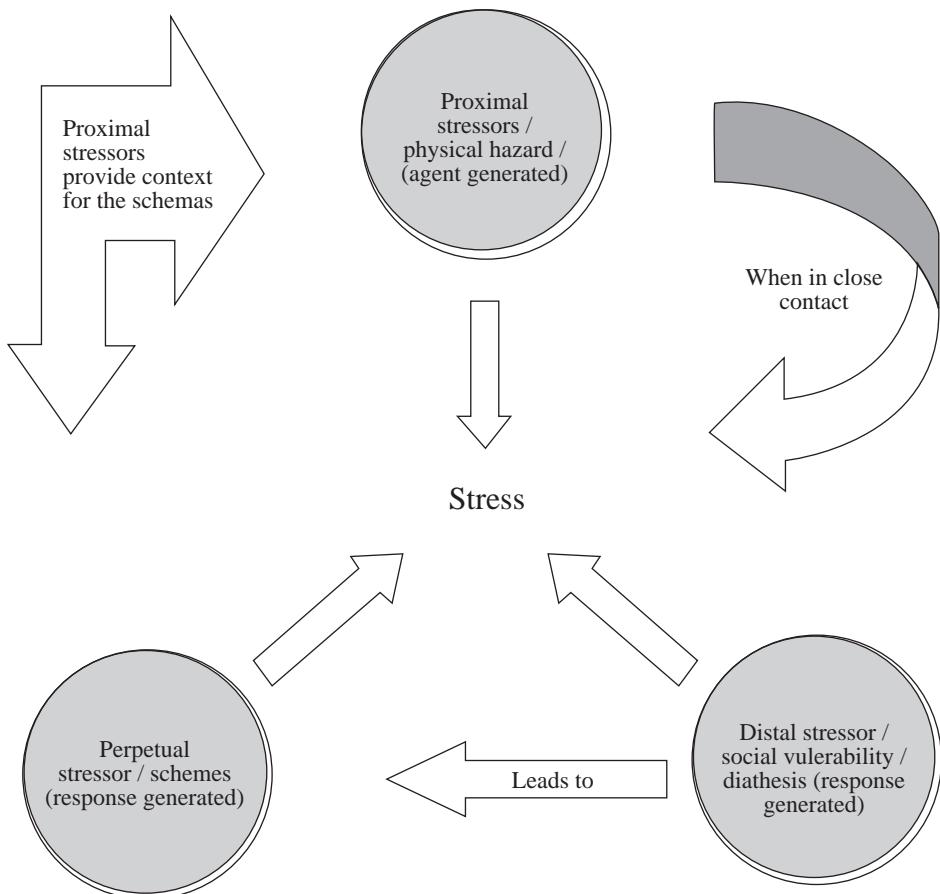
Based on the data available in the form of FGDs, the various stressors can be re-grouped to form more elaborate and inclusive categories of stressors that are more relevant to a disaster situation (Carson et al. 2003). Hereby we propose three categories of stressors into which the available data can be grouped and classified, namely- Proximal stressors, distal stressors and perpetual stressors.

Proximal stressors arise due to the occurrence of floods. They should be viewed as a natural/physical hazard that evoke response and place adjustive demand which had to be met with immediate effect. They act as a pressure on already existing distal stressors that can also be viewed as social vulnerabilities or diathesis. The categories of stressors that were earlier called as frustration and conflict can be grouped together into the distal stressors. In this context frustration finds its origin in social inequalities in the form of class, caste and gender inequalities that are based on stereotypes. These stereotypes and inequalities in turn give rise to perpetual stressors that are present over a generation in the form of schemas. These schemas are instrumental in perceiving the social vulnerabilities as stressors and hence a combined effect of the three give rise to stress in the form of symptoms of anxiety, depression and total distress.

Another way of looking at stressors can be to group them according to the stress that they generate- agent generated and response generated stress (Quarantelli, 1979). When the

stress is generated due to the event itself, it is termed as agent generated. From this perspective, disasters have been defined as “psychologically..... traumatic enough to induce distress in almost anyone” (Saylor, 1993:2). However when the stress is perceived as a function of, or a consequence of, how the government and communities organize and provide post disaster assistance (Bolin 1982 and Tierney, 1989), then it is termed as response generated (Quarantelli, 1987). Thus the feeling of frustration, pressure and conflict that victims report are defined as reasonable responses for people trying to meet their daily needs with limited, disorganized and differentially distributed resources (Edward, 1998).

PDP-Stressor Model



Difficulties in coping:

It is argued that stress is a by-product of poor or inadequate coping (Neufeld, 1990). This in turn emanates from lack of resources and economic constraints in the wake of abject

poverty and discrimination. As in one of the FGDs with marginalized women of the community it was stated that- “*Jum (name of the participant): what management should we do when we have no money in hand? There is no opportunity for us as labourers, when we don't even have money for food what should we do to prepare our self for the floods even though we have full knowledge of them. Every individual helps only their near and dear ones, people like us are always ignored.*” It is evident here that in the absence of opportunity to earn their livelihood leads to economic constraints in dealing with the flood situation. Also in the statement it is evident that there is a sense of prejudice and discrimination that is felt among the minority community of the area, considering the fact that the respondent here is a Muslim. In the event of floods, poor economic condition, lack of resources and the feeling of being discriminated against, is an obstacle that places adjustive demands and forces a person or a group to do something about the situation. This brings in the dimension of coping. To an extent coping is affected by the uncertainty and unpredictability of the disaster. It has been argued that recurrent floods are predictable as compared to the sudden flash floods. This is true as far as we are talking in terms of flood as an event, owing to its seasonal nature. But looking into the magnitude and degree and extent of spread of the flood waters makes this event as unpredictable and uncertain. This fact is reflected in the FGD to quote as an example in this context. Rams (name of the FGD, upper caste women participant): “*we were never prepared for this kind of flood, flood did happen in the past also but the water would recede in some three to four days, hence movement was easier, but this time the river cause a havoc on the villages situated near it since it was very slowly eroding the banks and nobody got an inkling of it.*” It was also revealed in the PRA technique that this year (2008), floods were unprecedented.

The kind of economic difficulties that people face affect their coping capabilities. When a flood strikes the region, people living on the banks of the river face the problem of their houses and lands getting washed away with the flood water. This affects their livelihood. The immediate need of making a new dwelling emerges. Problem is however further aggravated due to shortage of money that can buy resources in difficult times. Sit, one of the participants in the FGD with men points out to this dilemma in the minds of most of the people in the event of floods, he says- “*We have lot of difficulties. But how can we go out immediately for work? We need to put our houses – which have collapsed in order before leaving. Otherwise animals – will enter our houses. This time, we had sowed some paddy – all of which is washed away in the floods, we have problems.*” To minimize this economic burden, people take loans. This however further increase their difficulties as taking loan from money lender remains the only feasible option at the time of floods, since there is water all over and this makes movement restricted. Also people say that there is lot of paper work involved if they take loan from other sources like banks. However, taking loan from moneylender ensures their exploitation since the rate of interest is extremely high, rupees 20 on every 100 rupees per month. The same point is illustrated in the words of people in an FGD.

Chot: “*What can we do, we have no money? Our main difficulty is lack of money and we take loans to make up for the lack. For example, when we get guests we have to borrow from different people – we tell them that we will return the money when we earn.*”

Sohna: “*When you have no money, and no food, then what can you do? We borrow money and give 20 rupees on every hundred rupee taken as interests on monthly basis.*”

Flood has an effect on the important resources that people possess in the form of land and house. This loss of resources is considered to be stressful and has an impact on the psychological well being of the people (Hobfoll, 1988). According to the ‘conservation of resources’ stress model, people possess resources, which are important for their existence and are also valued since it provides them with secondary status in the form of enhancing their socio-economic positions. When people perceive that there exists a threat to their resources, they try and protect that, and this give rise to stress. The stress model also explains the behavior of people when there is no threat to the existing resources. It states that in such conditions of no-threat people try and strive to develop resource surplus in order to offset the possibility of future loss (Schlenker, 1987; Thibaut and Kelley, 1959). However, when individuals or groups are ill equipped to gain resources, then they are likely to be vulnerable (Rappaport, 1981). From the FGDs stated in the above paragraph, it is evident that in the absence of resource surplus, people are bound to take loans at higher rates from money lenders in order to sustain themselves. Floods are instrumental in depleting their resources, but in the absence of any surplus resource, they are forced to replenish their resources at the cost which demands further depletion of resources in the form of higher interest rates on loans. This is described by Hobfoll as a ‘*loss spiral*’.

Loss of resources or a threat of the loss in the form of house, which are washed away in flood waters, puts people in the phase of transition, which demands a physical shift from the present location to another safer location. Transition has been seen as stressful (Hobfoll, 1988). However, it has been argued that transitions are linked events, which entails multiple losses and hence become stressful (Wilcox, 1986). In the present context, loss of house is linked to the economic loss and loss of the sense of a shared space, loss of land is linked to the loss of livelihood that in turn is economic in nature and this force people to take loan from money lenders at higher rates that becomes a loss spiral for people. Thus, this situation fits to be stressful.

There has been growing focus on the concept of “protective factors”, which are influences that modify a person’s or groups response to an environmental stressor, making it less likely that the person will experience the adverse consequences of the stressor (Masten and Coatsworth, 1995, 1998; Rofl et al., 1990; Rutter, 1985). An attempt to understand the protective factors in the case of floods leads us to analyze the kind of help that is present and generated at the time of floods. It has been found that there are organizations at the village level, that look after the needs of the people before, during and after the floods. However, people are of the view that these organizations are made of people belonging to different villages, which makes it difficult for them to extend help at the time of crisis. People want that these organizations should be functional at the individual village level. Jai Singh points out this issue in an FGD when he says- “*Yes, there are organizations – which are supposed to do disaster management and preparedness work in the villages. But there are problems. The organization has members from different villages. Now how can a person from Silota (name of the village) help somebody from Atodar (name of the village) if there is a crisis in Atodar? By that time the help from*

Silota arrives, the person in Atoka would have drowned in the floods. You need organizations at village level – where members live in close connectivity with each other. For example, if there is fire, can the person from the next village come and help?” These protective factors in the form of village organizations help to induce core values of security under conditions of uncertainty (Boin and ‘T Hart, 2006).

An important agency that can augment protective factors is that of the government. But data from FGD indicate that the people are not satisfied with the help they receive from them. As Ram points out- “*NO we have not received any help from the government. The government official go and get the people on embankments – that is the only help we receive.*” Here also, a condition of uncertainty prevails, that they may or may not get the help from the government, as Situ says- “*There is no certainty – you may or may not get any help from the government.*” It has been found out that exposure to multiple uncontrollable and unpredictable events are likely to leave a person vulnerable to anxiety (Barlow, 1988 and Mineka, 1985). It is however understood that most protective factors are probably contributory rather than necessary or sufficient to produce resilience (Carson et al., 2003). On the contrary, our attempts to cope with existing problems increasingly seem to create new problems that are as bad or worse. The resulting despair, demoralization and sense of helplessness are well-established predisposing conditions for symptoms of anxiety, depression and distress (Dohrenwend et al., 1980; Seligman 1990, 1998).

Gender specific vulnerability as a distal stressor:

Vulnerability to disaster is a social dynamic rooted in gender, class, caste and other power relationships (Enarson et al., 2006). The political-ecology approach to disaster research understands that disasters are fundamentally human constructs and there are conflicts, competition and inequalities in the social system, rejecting the notion that a community is a single, autonomous social system and conceptualizing community as an ecological network of interacting social systems (Peacock and Ragsdale, 1997). From this perspective social systems are no more gender neutral than they are race neutral or caste neutral (Enarson and Morrow, 1997; Yelvington, 1997). Thus there is a presence of stressors in the form of social position of women that predisposes them to anxiety and distress. This has been found true in the study that revealed a difference in the level of anxiety and distress between male and female members of the society in the flood affected area (Khattri et al, 2009). Males scored significantly less on the scale of anxiety and total distress than the females. The reason for this difference is rooted in the social dynamics and gender politics. However, there was no difference found in the level of anxiety and distress for the control group. This draws our attention to the fact that vulnerabilities or diathesis is not sufficient alone to cause a difference in the level of anxiety and distress. It needs stressors which are more proximal in the form of floods that are necessary to be able to manifest the difference.

Looking from a feminist political ecological perspective, women are seen as primary resource users and managers, and in terms of the responsibilities they have towards the dependents in the household and community (Rocheleau, Thomas-Slayter and Wangarai, 1996). This argument finds basis in the light of data collected from FGDs among the women of flood affected area. Jum explains (name of the participant): “*Men go out in*

order to feel some change but the mothers are the ones to whom children demand. As a man and a father, no one ever goes to the extent of seeking help at the cost of his self respect but women will not be able to withstand the hunger and plight of her children hence she would even beg for them in spite of being abused and ridiculed. Her only aim is to feed her children at the cost of her self esteem." To this Sama, another participant in the FGD further adds: "*There are times when the troubles of the women are more than that of men because men do not have to look after the basic needs of the children like where to feed them, what to feed them, where to make them sleep.*"

Conclusion

In the light of the above discussions, it can be stated that: distal stressors in the form of vulnerability, when comes in close contact with more proximal stressors in the form of physical hazards in the backdrop of perpetual stressors that are persistent in the form of schemas, produce a situation which can be labeled as a threat to mental health that should be perceived as a crisis in order to resolve the issue. Crisis induces a sense of urgency (Boin and 'T Hart, 2006).

This sense of urgency is also evident in the definition provided to floods by the victim. A mismatch is observed in the definition of floods given by the NGOs and the victim. This mismatch is manifested at the level of support that the community should provide to these agencies and trust which is missing for most of the relief agencies except for some. One of the NGO worker reveals- "*The reality is that there is not enough support of the community – both to the NGOs as well as government.*" This lack of support is due to the differential understanding of demand and distribution of relief material and support. It is an example where the need for support to the community in the form of allocating and distributing resources has exceeded its availability, and this difference is due to a differential understanding of the flood situation. This mismatch between the demand and availability of relief material is also documented in the study on Kentucky floods (Kaniasty and Norris, 1995). This acts as a stressor for the community in crisis. People have been demanding that they should be provided with the houses to live in, proper places where they can keep their belongings safe, shelter at the time of floods that can protect them, they want measures that can prevent them from evacuating their houses, each time the flood comes. Perceived social support from external aid agencies is a function of congruent understanding of the problems of flood and not just describing floods as a phenomenon. The deterioration of perceived social support exert their adverse effects on the psychological well being (Kaniasty and Norris, 1995). The perceived social support is dependent on the initial level of received social support in a disaster situation, which in turn is dependent upon the allocation of relief material and other resources based on the proper analysis of the problem that people face during an event of flood (Kaniasty and Norris, 1995).

Whatever relief material is distributed at the time of floods goes to people who are powerful, both economically and socially. At this level also there is a differential understanding of the needs of the people who are socially and economically vulnerable, thus fitting in the PDP stressor (Proximal, Distal and Perpetual) model of interacting stressors.

Ethics

Ethical clearance was obtained from the Department of Anthropology, University of Delhi, India. Apart from this, participants were given food packets after the FGDs. The village pradhans (headman) were also provided with some monetary compensation as travelling allowance and dearness allowance, complying with the procedure for an elected representative of the people. Also the names of the participants that are used in this paper have been changed to preserve the anonymity.

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Conflict of interest

The authors declare that they have no conflict of interest.

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The Traditional Knowledge System: Some Issues among the Lepchas of Dzongu, North Sikkim

Ratna Dhar¹ Krishna Basu²

ABSTRACT

The debates on traditional knowledge are continuously making rooms for non-formal areas of knowledge and experiences. The approach brings out the connections between local and tribal peoples' understanding, their practices and the development interventions. The present article discusses the different areas of knowledge systems and the policy interventions in the management of land associated with culturally constructed sacred landscape of Dzongu among the Lepcha tribals of lower Dzongu valley of North Sikkim. The article notes that the Lepcha tribals had to change their occupational strategy with the changes in the policies of the land management in different periods of rule and in turn lost their traditional resources and related knowledge spheres.

The document on Traditional Knowledge (TK) by World Intellectual Property Organization puts forth that the "... local communities justly cherish traditional knowledge (TK) as a part of their very cultural identities. Maintaining the distinct knowledge systems that give rise to TK can be vital for their future well-being and sustainable development and for their intellectual and cultural vitality. For many communities, TK forms part of a holistic world-view, and is inseparable from their very ways of life and their cultural values, spiritual beliefs and customary legal systems. This means that it is vital to sustain not merely the knowledge but the social and physical environment of which it forms an integral part ... No single definition would fully do justice to the diverse forms of knowledge that are held by traditional communities; and no form of legal protection system can replace the complex social and legal systems that sustain TK within the original communities".

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The Traditional Knowledge (TK) is a broad term referring to knowledge systems, encompassing a wide variety of areas, held by traditional groups or communities or collectively acquired in a non-systemic way from experience and transmitted inter-generationally. These knowledge systems are said to have significance and relevance not only to its holders but to the rest of the humanity.

Two debatable questions are often put before. The first question is that where the traditional knowledge and where the contemporary knowledge begins? Is there any demarcating line? The scholars are coming across with few concerns on which the scholars are debating or acknowledging the concerns on traditional knowledge.

It is accepted that much of the traditional knowledge is contained in oral knowledge traditions passed from generation to generation. With the effect of globalization and modernization these systems of knowledge are increasingly under the threat. It has been increasingly acknowledged by the global world that the local or tribal people have their own effective “science” and resource –use and practices and the western mode of thinking needs to understand something about their knowledge and management systems (Sillitoe 1998:223) and thus make room for other types of knowledge and experience (Agarwal 1996:474). This approach regards that traditional knowledge is a “valuable and underutilized resource” and sets out to make connections between local/tribal peoples’ understanding and practices and the development intervention through Rapid Rural Appraisal (RRA), Participatory Rural Appraisal (PRA), and Gender Analysis (Chambers, Pacey & Thrupp, 1989). It considers that the outsiders are primarily catalysts and facilitators of open exchange of ideas and information between various stakeholders.

A more recent approach has been the actor-oriented approach, which centers on the interfaces between different social worlds and has been enthusiastically taken up in agricultural and communication studies, participatory rural appraisal and stakeholder analysis. Another initiative has been in acknowledging the environmental knowledge of the tribal/local people. The traditional ecological knowledge (TEK) has enabled these people to utilize the natural resources of their local environment in an ecologically sustainable manner for thousands of years. This has led to consider TEK as ‘cultural knowledge’ which produces and reproduces mutual understanding and identity among the members of a community.

Many scholars acknowledge the role of culture and religion in determining attitudes and behaviour towards the environment (Dwivedi and Tiwari1987; Banwari 1992; Gottlieb 1997). Any developmental policy taken by the state requires an understanding to the religious and politico-economic aspects represented by the culturally constructed landscape. Scholars argue that ‘a natural space always appears as a cultural landscape because it is culturally constructed” (Seeland1997:1). A landscape embodies peoples’ experiences, social memory and their practices (Bourdieu1990). Arora (2004) says that the embodiment of knowledge, identity and authority in sacred landscape is not only

unique to Sikkim but common in the Himalayan region and South Asia. It is a land where almost every water body, small or big, is treated as sacred. The sacredness begins at species level and reaches up to the landscape level with the Mountain Khangchendzonga acting as guardian deity.

Under the background of the above approaches and concerns, the present exercise examines the nature of knowledge with particular reference to the traditional knowledge and its treatment within development interventions. It highlights the different areas of knowledge systems among the Lepchas of Sikkim with particular reference to Dzongu Reserve area. The article begins by discussing the ethnographic context of Sikkim with reference to Lepchas of Sikkim. It then discusses the policy interventions in management of land in different periods, role of forest ecology, environment and comprehension of knowledge associated with culturally constructed sacred landscape of Dzongu. The third section deals with the developmental interventions and its confrontation with tradition, traditional knowledge and the sacred landscape.

Objectives

The study was conducted within the framework of environmental and cultural conditions of the Lepcha society. Thus the main objective of the study was to understand traditional knowledge in its social and cultural context, to look into the official proclamation of Dzongu as a reserve area, to understand the livelihood strategies and the indigenous environmental knowledge in respect of traditional knowledge system, the cosmological attitudes of the people towards the livelihood strategies along with the associated healing properties and the concept of sacred landscape versus concept of development.

Methodology

The fieldwork was conducted in two phases. In the beginning, a reconnoiter survey was conducted in August 2008 to get the baseline information of the Dzongu Reserve Area by visiting the villages of Dzongu hills of North Sikkim. Discussions were carried out with the officials and learned people of the area. The baseline information as well as the secondary information revealed that Dzongu Reserve Area has two eco-zones based on the vegetation and altitudes, i.e., Upper Dzongu and Lower Dzongu of which the Upper Dzongu is much visited and well documented (Gorer 1938, Morris 1938) where as the Lower Dzongu area has remained less attended by the researchers. Thus the study was concentrated in Sangsong-Gnon village in Hee Gyathang gram panchayat of Lower Dzongu during Nov 08-Jan 09 for in depth micro level study. The empirical data was collected through household census, participatory observation, group discussions, interviews, case studies using schedules and questionnaires. A number of interviews were taken from the Lepcha respondents especially from the traditional medicine man, religious leader, and people from both sexes of different age groups. Information's were collected through interviews, through both structured and open-ended questions.

Ethnographic Context of Sikkim

Geographically Sikkim encompasses the lesser Himalaya, Central Himalaya and Tethys Himalaya. The elevation ranges from 1250 meter to 8558 meter. The climatic conditions vary from place to place due to great altitudinal variation. It is scorching summer at the foothills during April-May and freezing cold in winters at high mountain regions. The weather is pleasant during the spring i.e.; March to May and in autumn i.e. September to November. The rainy season experiences a wide range of humidity which rises up to 95 per cent (Maity et al 2001:2585-87). Monsoon sets in month of June and continues till September with 200-500 cm rainfall. The lower hills enjoy a subtropical climate whereas in the interior part the climate becomes gradually more temperate with cool winters and hot summers. Teesta and Rangeet are the two life line river of the state. Sikkim hills comprise the main catchment areas of Teesta river which is fed by numerous springs, streams and tributaries.

The vegetation changes from tropical pine forest, tropical broad-leaved forest, subtropical forests, temperate broad leaved and coniferous forest, sub-alpine scrubs, alpine meadows and swamps. The faunal species consists of endangered species like Bhral, clouded leopard, snow leopard, Leopard cat, Red Panda, Musk deer, Tibetan antelope, Himalayan black bear etc. The floral richness includes varieties of orchids, rhododendron, bamboo groves and cardamom.

The major ethnic boundary is between the Lepcha (the autochtones of Sikkim)-Bhutia (descendants of Tibetan and Bhutanese immigrants who came to Sikkim in the 16th and 17th centuries) groups and the migrant Nepali groups who constitute numerical and political majority of Sikkim. The Lepchas have been influenced largely by the Bhutias, who ruled Sikkim for about 300 years, and the Nepalis who migrated to Sikkim and Darjeeling district from Nepal in the late 18th and 19th centuries. The Tibetans as rulers were powerful while the Nepalis who migrated to this area in large numbers became socially dominant in many ways. In addition, there were the influences of the Christian missionaries, who arrived from the nearby British-ruled Darjeeling area. There were other groups came to Sikkim as businessmen, traders, service providers and labourers. The Lepchas and Bhutias were the ruling elites during the rule of the Namgyal dynasty who are presently marginalized by the socio-economic and political mobility of the Nepalis in contemporary Sikkim.

The population of Sikkim is predominantly Hindu (68 per cent), the Buddhist comprises a large majority (27 per cent), while the Christians comprise a small component of the population (3 per cent) and Muslims are in insignificant numbers (Lama 2001:7). Out of the total population of 540493 about 20.6 per cent are scheduled tribes while the scheduled castes (exclusively of Nepali origin) comprise about 5 per cent of the total population (Census of India 2001).

Very little information is available on ancient history of Sikkim, except the fact that the first inhabitants were the Lepchas or *Rong* (ravine folk). However, along with myths, the environment, ecology, rivers and tropical forests have played important role in shaping the history of Sikkim. According to the lore, the Lepchas were food gathering people who claim to have came from Mayel, a legendary kingdom on the slopes of Khangchendzonga and lived in close harmony with nature—the flesh of animals, fruits, medicinal herbs, honey and fibres.

History reveals that Lepcha kings ruled the area before 1641. A Namgyal prince of Minyak dynasty of Kham region of eastern Tibet went on a sojourn cum pilgrimage towards west along with his five sons during the first half of the fifteenth century. The *Chogyal*, along with the three lamas proselytised the Lepcha tribes into Buddhism and annexed the Chumbi Valley, the present day Darjeeling district and parts of eastern Nepal. This place became the nucleus of kingdom of Namgyal dynasty in Sikkim in the first decade of the 16th century which continued before its inclusion in India in 1975. During the rule of Namgyal dynasty, the lamas and shamans (*mun*) played a significant role in legitimizing the authority of *Chogyal*. After the 1975, though the political role and dominance of the religious functionaries lessened but still they had some dominance in the political field. Under the special provision of Indian Constitution, the Buddhist lamas elect a Buddhist monk to the Sikkim Legislative Assembly. No non-Buddhist or a non-Sikkimese can contest elections for this reserve seat. The state regularly faces ethnic tensions over the resource allocation and thus while implementing development projects and modernizing Sikkim's economy the balancing of the aspirations of different ethnic groups is the real challenge.

Agriculture is the mainstay of the region and 80 per cent of the people depend on it. Most farmers are small farm holders as per capita availability of land has been declining rapidly due to population pressure. The climate and seasons are favorable to the growth of a large number of high-value cash crops like cardamom, ginger, potatoes and horticultural crops.

The Tribe and Dzongu Reserve Area

The Lepchas are mainly concentrated in the extremely restricted access area of Dzongu Reserve Area in North Sikkim and scattered in all the districts of Sikkim, the Darjeeling Hills of West Bengal, Illam district of Nepal and in parts of west Bhutan. In 1958, Tashi Namgyal, the then *Chogyal* of independent Sikkim reserved the Dzongu area was for the Lepcha community through a royal proclamation. The Lepchas of Dzongu hills were thus given protection by restricting the entry into the area by all non-Lepcha, including the Lepchas from other parts of Sikkim. After the merger of Sikkim into the Indian Union in 1975, the Indian Constitution was amended to provide the protection to Dzongu's special status.

The literatures do not contain any history of migration of the Lepchas. They believe that they originated from the divine peaks of Mount Kanchenjunga and the valleys around them. They identify themselves as ‘Rongkup’. The word has come from *rong*, which means hill, and *kup* means the children, thus identify themselves as children of hill.

Linguistically they belong to the Tibeto-Burman group and have their own distinctive language, script and literature and were accorded Scheduled Tribe status in 1978. Most of the Lepchas believe that Lepcha script was invented by Thekong Mensalong, a legendary Lepcha figure who is believed to have lived towards the beginning of the 17th century. But it is accepted by many that it was invented by the third king of the Namgyal dynasty, Chador Namgyal, in the eighteenth century. Another version claims that the script came to Sikkim via Tibet along with Buddhism. Tibetan scholars have recorded that the Lepchas were given their script by Lhatsun Chhembo, one of the three monks who consecrated the first Chogyal at Yuksom.

There are several hypotheses regarding their place of origin. Some claim Tibet, while others have cited possible links to the Kirats of east Nepal (Fonning 1987). They classify themselves regionally according to the old administrative jurisdictions under the Sikkim kings.

Renjyong-mu—The Lepchas living within the present state of Sikkim and the present Darjeeling and Kurseong subdivisions of the District of Darjeeling in state of West Bengal.

Ilam-mu—The Lepcha people residing in Ilam, the easternmost district of Nepal.

Tamsang-mu or Dalim-mu—The Lepcha people inhabiting in southeastern lands, which lie to the east of river Rong-Nyu or Teesta, along with the Kalimpong subdivision of Darjeeling district of West Bengal including the Ha province, the western most part of present day Bhutan, along with some portions of the Duars plains of the south.

Dzongu -The Landscape

Dzongu Reserve Area is situated between the Mt Kanchenjunga and Mt Siniolchu at the close proximity to the Kanchendzonga Biosphere Reserve, about 70 km north of Gangtok. The area lies from 88.17 E 88.31 E and 27.22 N to 27.34 N. Dzongu is a Tibetan word a combination of two syllables, i.e., *Dzon*, meaning hillock and *gu* meaning nine which means that Dzongu is a concentration of nine hillocks. It is somewhat triangular mountainous land with approximately 60 kms. on each side, and bounded on the south-east by the river Teesta, on the north-east by the river Talung and on the third side by the mountain peaks of Khangchendzonga(Gorer 1938).

There are two entry points to Dzongu hills. People mostly use the Sungklong Bridge to enter from Mangan, the district headquarters. After crossing the bridge, the road bifurcates and one way goes directly to the villages of Upper Dzongu hills and the other to Lower Dzongu hills. Another entry point is through Phidang checkpost via Dikchu town. Through this point one goes directly to Lower Dzongu hills. Entry to the Dzongu requires a special permit from the government. Presently due to the agitation surrounding the Hydroelectric Power project on Teesta river, the entry measures have been stringent. For the entry into the area, the tourist party requires the permit through the travel agency, but for research work *Mutanchi Lom Aal Shezum* (MLAS), the NGO of the area works as facilitator.

The Dzongu reserve area comprises of the whole of Talung Valley and western part of the Teesta River. The elevation of the area ranges between 800m and 6,000 m above the sea, therefore the regions belong to different ecological zone with steep sided valleys and gorges with well-drained flanking slopes. Due to the altitudinal variation, the flora and vegetation varies from warm sub tropical forests, temperate deciduous forests, and alpine zones in the higher ridges.

The floral wealth of the area is rich and diverse. The forest represents a wide variety of woody tree species, shrubs, lichens, epiphytes and mosses. Among the woody trees, *Quercus* (Oak) and *Castanopsis* (Chestnut) are among the dominant species of temperate region whereas *Abies densa* (Silver Fir) and Rhododendrons are the dominant species in the sub-alpine zones. The area is equally rich in other flowering plants such as variety of *Primula*, *Meconopsis*, *Aconitum* (Bikh, Bikhma), *Potentilla*, *Bistorta* and *Gentiana* which provide an additional charm to the alpine meadows. Many species of Bamboos (*Dendrocalamus* sp and *Arundanaria* sp) are used by the communities for house construction and local handicrafts. A number of wild plants such as *Rhus semialata* (Bhalayo), *Litsae citrate*, *Juglans regia* (Okhar), *Machilus edulis* (Kaula), *M. odoratissima*, *Bassia butyraea* (Chiuari), *Girardinia palmate* (Allo Sisnu), *Laportea terminalis* (Patle Sisnu) and *Tupistra nutans* are used as food items in different ways by the villagers. Many edible varieties of mushrooms, numerous *Diplazium* sp. (Ningro) and *Dioscorea* (Ban Tarul) are also found in the area. Lantana is a major weed in this region. The medicinal plants include *Artemesia vulgaris* (Titepate), *Eupatorium adenophorum* (Banmara), *Hydrocotyle asiatica* and widely used for different purposes but not marketed. On the other hand, *Aconitum* spp (Bikh, Bikhma), *Berginia liglata* (Pakhan bhed), *Heracleum nepalense* (Chimphing), *Litsae citrate* (Siltimbur), *Oroxylum indicum* (Totala) are openly extensively marketed in the local markets.

The forests are home to several endangered species of birds like the Rufous-necked Hornbill, Great Indian Hornbill, Chestnut-breasted Partridge, Black-breasted Parrotbill, Grey-crowned Prinia and Ward's Tropic bird. Other fauna includes the Peafowl, Python, Geckos, Porcupine, Assamese Macaque and Barking Deer; a host of butterflies and other invertebrates, riverine fish, frogs and toads.

The Teesta (*Rongnyu*) and Tolung (*Rongyong Kyoung*), the two important rivers flow through the area. The river Renkyoung divides the area into two main ecozones, the Upper Dzongu and the Lower Dzongu based on the altitudinal variation. The settlement area of the upper Dzongu extends from 1219-2000 m and lower Dzongu from 914-2000 m. The harsh ecological condition has immense impact on the socio-economic, cultural, religious, art and crafts and the belief system of the people where as the forest, hill and river resources fulfill the basic need of the Lepcha.

Villages and Settlements

Many forest villages are situated in the Dzongu hills where the Lepcha tribals are living for generations. Administratively Dzongu forms the block with its headquarter at Passingdong village in Upper Dzongu. The settlement pattern and cultivated land are situated between 3,500ft and 7,500 ft above sea level. Above the cultivated land is the forest from which wild produce is gathered, and was used as hunting place and grazing land for cattle.

Dzongu has eight gram panchyat units. The upper Dzongu Gram Panchayat falls under the Kanchendzonga Biosphere Reserve and comprises six gram panchyat, i.e *Tingvoong G.P., Bey-linzah Sakyong- Pentong G.P, Lingthem- LingdemG.P., Safo-Passingdong G.P., Barfok- Lingdong G.P. and Ship-Gyer G.P.* The Lower Dzongu area comprises of two G.P units i.e. *Lum-Gor Shangtok* and *Hee-Gyathang G.P.*

The villages are mostly uniethnic though few Bhutia, Nepali and Rai families are living in many villages either as service group or through marriage. Few Gurung families ritually connected to Tholung Monastery live in Lingzya village. The Lepcha villages are situated in the hilly forests in the midst of large huge trees, orchids, bamboo shrubs, springs and numerous creepers. From the road, one may not get an idea of a nearby village. Several footpaths naturally made by treading over the bushes, shrubs and small plants are used by the villagers for movement. They are followers of Buddhism along with their traditional belief in nature worship. There are three Gumphas in Dzongu the Talung monastery, Lingthem monastery and Gyathang monastery which come directly under the jurisdiction of Pemiongchi monastery belonging to subsect of the Nyengma pa. There are smaller Gumphas in different villages which come under the jurisdiction of these monasteries.

Study Village—Sangdong-Gnon Village

Though administratively Sangdong and Gnon are two different village but while conducting the study it was found that in many socio-cultural aspects these two villages act as one entity. These villages can be approached from Mangan the district town via Sungklong bridge check post and another through Phiadang Checkpost via Dikchu. Apart from any official work for which a villager has to go to Mangan, the villagers of Lower Dzongu prefer to go to Singtam town for marketing, as it is much cheaper than Mangan.

The total population of the Sangdong-Gnon villages is only 377 in number. The Sangdong village has only 42 families having total population of 280. The total number of males is 149 and families are 131 in number. The Gnon village has only 15 families of which the total population is 97. The male population comprises of 53 heads and females are 44 in number. Both the villagers have government primary school which is attended by the children of the village. The attendance of the primary school is very high. Almost every house sends its children to the primary school for education. The middle school is situated at Sangdong village and is also well attended but it has been observed that the students often drop out after class IX or X. The High School and Higher Secondary School is situated at Gyathang village. The primary health centre and gram panchayat office is situated at a distance of 7 kms from Sangdong village and 10 kms from Gnon village. The villagers are forced to walk a long distance to visit the doctor. They even prefer to go there to see specialist doctor in Mangan or Singtam, if Bongthing asks them to do so. The villagers regularly go to Dumpling Gumpa under the jurisdiction of Gyathang monastery at Sangdong village to pay the religious obescience.

Creation Myth and Derivation of Knowledge

To the Lepcha tribals his creation myth binds him to the land he lives, it helps him to connect with his ancestors, his beliefs, the ideas of the land and daily necessities for his livelihood. It helps him to derive his understanding on the concept on year, the twelve year cycle, concept of week and day and the origin of clan.

Itbu Rum, the man and Kumsiting, the woman (the creators) are believed have created the progerior of Lepcha from the two peaks of Khangchendzonga. Itbu Rum created a boy from his right hand and a girl from the left hand. The boy was named Phudongthing and the girl was named Narzong Nyu. They were brought up as siblings and resided in the higher reaches of Himalayas. Time passed on and these two children became young. With the coming of age they stepped on incest relations and had children. As it was a tabooed relation each time a child was born, the couple killed it and threw in the jungles around. After sometime several demons and witches (*moong*) appeared from different areas of the earth and began creating disturbance in the surroundings. A dog named Hulboi always accompanied Narzong Nyu. He knew every thing about the two erring couple. When the creator came to know about the sin, the couples were thrown down to the earth to live a sinful life surrounded by their devil children (*moong*). Eventually they gave birth to a child which was not a demon and named of Ril Bu Shing. As it was their first real child and the mother treated it tenderly and suckled it with loving care. When the demon children saw this they were very angry and killed Ril Bu Shing and buried him near a small peak on the right bank of Talung river. The parents were very upset and found that life was painful and divided their property and separated. Phudongthing moved towards Tibet and his wife Narzong Nyu towards Sikkim. It is a belief among the Lepcha that those living on the Tibet side are more prosperous, on the other handthose living towards the Sikkim side they are showered with curse. Prior to this, the grandmother Kumsiting called all her demon grandchildren together and addressed them.

All came with the exception of Dom Mung, the demon of Leprosy who did not hear the summons. She told them that in future there would be no objection to their eating the souls of human beings and causing diseases but when the offerings would be made to them on behalf of these same humans by Boongthing or Mun, they must accept them and leave the human beings alone. This is believed to be the origin of making sacrifices to the various demons during any illness. But since Dom Mung was not present at the meeting and as he did not receive this instruction, there is no cure for persons with leprosy. The rituals observed during the healing processes by the Mun/Bongthing connect the Lepchas with this aspect of myth.

The origin story informs also how the Lepchas derive their concept of year, the conception of twelve-year cycle, the concept of week and day and origin of clan. It is believed that the first demon child of Phudongthing and Narzong Nyu was Lasso Moong who lived in a tree called Neolkung. As he was disturbing the mankind on the earth, killing people and causing disease, people planned that he should be killed. An insect was summoned to cut the tree from inside so that no one would come to know about it before falling. The insect was instructed that the tree should be felled in the direction from where the dead men come at every to disturb the people. Time came and the tree blocked the way for dead man. From that day, the dead and living persons are unable to meet. From here began the ritual of paying respects to the dead ancestors. But the Lasso Moong ran away from the tree and few brave soldiers followed him from place to place. They reached the foothills of Khangchendzonga in search of him. Lasso Moong changed into disguise several times to save himself and fought with the soldiers for twelve years. Accordingly these disguises later on became the 12 year animal cycle of Lepcha /Buddhist year which are as follows:

12 Year Animal Cycle

Year	Lepcha year	Animal cycle
1	Kulok	Rat
2	Long	Ox
3	Suthong	Tiger
4	Kunthyong	Eagle
5	Sider	Thunder
6	Boo	Snake
7	Un	Horse
8	Lukh	Sheep
9	Suhu	Monkey
10	Heank	Hen
11	Kujyu	Dog
12	Mon	Pig

By this time Lasso Moong was tired and returned back to his normal shape and the soldiers were able to kill him. The day in which he was slain was the first day of 11th month of Tibetan calendar and known as black day and falls on dark moon night (*amabasya*). The Lepcha New year begins from this day. But people were not sure whether he was dead. They waited for seven days to be sure of this. People collected at the place where he was slain. They threw stones, pellets on him on the first day, the day of stone-*long sayek*. Next day they threw wood on him, the day of wood or tree-*Kung sayek*. On third day they threw iron on him, the day of iron-*punjeng sayek*, fourth day they dropped loads of mud on him-day of mud/earth- *fat sayek*, fifth day the body on put on fire-*mee sayek*, sixth day they threw the ashes in wind, the day of wind-*sugmut sayek* and on seventh day they pored water on the remaining, the day of water- *ung sayek*. These became the days of the week.

Concept of Lepcha Week

English name	Lepcha name
Sunday	Punjeng Sayek
Monday	Fat Sayek
Tuesday	Mee Sayek
Wednesday	Sugmut Sayek
Thursday	Ung Sayek
Friday	Kung Sayek
Saturday	Long Sayek

The Lepchas were very happy on his death; they assembled together and arranged a picnic celebrating the victorious event. Ten groups were formed and each group brought some food items or raw materials for cooking in the picnic. One group brought vegetables, another brought cooked food, some brought wood from jungles, and some brought utensils and so on. These ten groups are believed to be the original clan groups of Lepchas. Later many more clans evolved.

The Lepcha New Year Celebration known as Namsoong begins from the day on which Lasso Moong was slain which continues for seven days. The seventh day is observed as Ngenpa Guzom, an inauspicious day for most activities but a good day for picnic.

Resource Management and Forest Ecology

The hills and forests surrounding the villages play a vital role in Lepcha life. The close link with nature associated them with every fern, bush, moss and mushroom. The Lepcha language has names for most of the plants, birds, insects, butterflies, trees, shrubs, etc.

in their natural surroundings. They have their own mechanisms for utilization and conservation of the natural resources available in these hills and forests and take the refuge of the religious performances to save themselves from the different odd situations while in forests.

The land was a common property belonging to the clan and the Lepchas had absolutely no conception of private property and every thing belonged to the chief and community. After the introduction of monarchy through the office of Chogyal in 1641, the control of the entire land in this area belonged to the king and the basic stature remained the same (Kundu 1983). But the feudal structure of the society gradually came into play. With time the Sikkim kingdom was divided into twelve parts and each part was governed by a Kazi who used to assess the revenue payable, collect ‘keep a portion for himself’ and pay a certain fixed contribution to the Raja.

Hunting

In olden days the forest were the places for hunting games for the Lepcha men. Presently the villagers rarely go for hunting the wild animals as it consumes a larger part of the time for agricultural work. There are also restrictions of the government to hunt the animals. The older generations of the village recall happenings of such event during their childhood, but the younger generations do not have such experience. Morris (1938:192) in his account informs that the forests of Dzongu was well stocked with Deer and pheasants and thus by hunting people were able to supplement and make variations in their regular diet.

A boy would never ask his father to for a bow and arrows unless he happens to be a farmer because “hunting is merely play, and a father will want his son to work in the fields.” Presently the male members resort to hunting for food only during the plantation or harvesting of cardamom in the *Illanji nyot* in the higher altitudes far distant from the village.

Worship of Forest God

Though hunting of animals are stopped but every year all the males of the village in the month of November make a sacrifice to god Mut Rum who is the master of forest and the animals. The observance of this ritual is known as *mut rum faat* and it is absolute necessary for all the male members of the village to observe it as the male is considered to be a hunter. Every year the all male of the village collectively assemble in a part of deep forest to observe the ritual. Rice, *chi*, fish, wild bird’s flesh, ginger, sugarcane, banana etc are offered to the god Mut Rum. Some times only the clan members organize the worship together which reflects the clan solidarity. The clan solidarity is also reflected in the clan worship of the Lepcha people. It was observed that a major part of clan deity worship, which also includes the ancestor worship, takes part outside the homestead area in a distance surrounding a jungle ambience. The Lepcha woman does not take any part in the preparation nor they are informed of the place and time of the observance. Usually

one elderly person makes sacrifices on behalf of all, as it is absolutely necessary for the hunter to first learn the process of sacrifice.

Presently some houses have few hunting implements which are hung in the walls but with time the use have become obsolete. The common weapons used by people were the bow, arrow, and small pellet bow. The pellet bow has mud pellets about the size of a marble is principally used to kill small birds and also to scare them away from the crops and still used by young boys. Thus hunting as an age old tradition and knowledge is lost from them, only the ritual part is carried over and retained generations together.

Collection and Use of Forest Resource

Forest serves as an important natural resource for the Lepchas in all the sphere of life activities. It provides food, shelter, firewood, foddars, medicines, raw materials for house, agricultural items etc for the livelihood. The tough work and collection in deep forest is mainly done by the men but the bulk of the work is done by the women.

Use of Bamboo

Presence of bamboo bushes is a common feature in a Lepcha homestead. It has both ritual as well domestic utility. Few species of bamboo were also collected from forest for use in floor, ceiling, walls and balcony. Presently use of bamboo in house construction is replaced by woods from jungles. Only walls are made of bamboo strips with mud plaster. The following chart shows few bamboo species used by them in the village. In recent period the use of hats, rains hats, cane baskets have become limited.

Basketry and Bamboo works

Local Name of Bamboo species	Use
<i>Po</i>	Used by the Boongthing for ritual purpose, Taluyong (winnowing fan), small box, Tukshare are made from this species.
<i>Malo</i>	Tall and thick in growth, the bamboo shoot is used in various purpose; as stand for prayer flag (<i>Manidum</i> and <i>Lungtodum</i>), fence, for construction of walls and tree sheds.
<i>Padang</i>	Used for preparation of containers, mainly <i>puthyut</i> (<i>chi</i> container), and ghee container (<i>kyunkdung</i>) and water conduit.
<i>Bok (Padayang)</i>	Used in basketry work (<i>tungar</i>) and in preparing of structure of thatch.

Local Name of Bamboo species	Use
<i>Purfok</i>	For fencing and structure of thatch.
<i>Puyong</i>	Used in basketry work, <i>Pepsing /Puhip</i> (<i>chi</i> straw), arrow head, hats of different types
<i>Purmum</i>	For making fence, basket and thatch
<i>Fuyung</i>	For making basketry works and thatch
<i>Revit</i>	The shoot sprout is eaten raw
<i>Gesi</i>	Used in house construction, thatch, Shoot sprout is eaten.

House Construction and the Knowledge of Forest Resource

A Lepcha house and its surroundings are the miniature form of a forest. The way to any house is a long grassy and undulating path. There are no gates to enter but one finds a sort of fencing around the kitchen garden (*leesing*). The fencing is mainly done by bamboo splits to avoid animals and fowls from entering it. All the houses have a cow shed (*bik byong*), goat shed (*saar byong*), hen shed (*higlee byong*), and pigsty (*monlee byong*) which are found on the backside of the main house.

One can have an idea of the nature's availability from his surroundings. When a Lepcha constructs a hut in any area of the village he makes it sure to have few plants, shrubs and trees his homestead land which may be used as food items or used in ritual purpose or serve as fodder for his domestic animals. They mainly grow *famkum* (palm tree), *kundong kung* (a type of tree, the leaves are used as fodder), *sitkung* (grassy tree), *sungtungkung* (grassy tree), *suntongkung* (thorny grass), along with *chindenkung* (pine tree), *chalungkung* (orange tree), *ambakkung* (guava) and *leerung* (pear tree). Pine tree (*chindenkung*) has a ritual significance in very every aspects of a householder's life.

A traditional Lepcha house (*lee*) has four rooms. One enters the house through kitchen (*thop*) which serves as cooking cum entertainment place for guests. *Leebek* is the store room for keeping year long grains and food items for the family, *buchung*, a tiny room is used for sleeping and *diyong* is the place for worship and sleeping. Every Lepcha house has a Lamaist altar known as *tukchom* where each portion of every day food cooked for the family is offered and in evening *chimi* (brass lamp) is lighted.

Over years many changes have come in construction of a house either in the layout or in construction material through external forces. Almost every house in the village has

one or two children either studying in Gangtok or in service and they act as catalyst or forces in changing the layout of the house or the use of raw materials or in bringing new ideas of life and world. Presently almost all the families have replaced the thatched roof to corrugated roof. It has become economical in long run because bamboo thatched roof with maize and paddy had to be replaced every year. But there are few things which continue to exist till day. Most of the materials for house construction are still brought from jungle. The following chart shows the use of trees and plants for construction of the house.

Knowledge of Trees used in House Construction

Tree	Use in Construction of House
<i>Pande Kung</i>	Good quality wood for house construction.
<i>Sambrmkung</i> (Chiloni)	Used for making pillars (posts) of the house
<i>Sangrukung</i> (Utis)	Plank for the house to be used as floor.
<i>Kushyotarol Kung</i>	Beam
<i>Kusu Kung</i> (Kotus)	Construction Beam
<i>Dom Kung</i>	Used as support for creeper plants like Tungbit (Beans), Maursium (Pulses), Tomato
<i>Naklumkung</i>	Beam of cow shed
<i>Sinobukung</i>	Fence
<i>Padayang</i>	Structure of roof

Apart from the above trees, there are many more trees and plants used in construction work. They are *Tunthung Kung*, *Dung Shing Kung*, *Rikkushyeo Kung*, *Dur Kung*, *Sunlok Kung* and *Polon Kung*. It is found that most of the household materials of daily use and agricultural implements are made from the forest resources like different kinds of wood, bamboo, cane, barks, flowers etc. The *chi* container (*puthyut*), straw (*puhip*), mortar (*khogdung*), pestal (*khukfat*), salt container (*vom chadung*), table for serving food (*chunte*), *tungset* (winnowing fan), ladder etc are made of wood or bamboo.

It is interesting to note that each and every area and plot of the land has a name throughout the whole village and the villagers can identify the area through the name. Every piece of land is meaningful to them. A part of the dry land forms the homestead

and in which the house (*lee*) is constructed. Every house and its homestead or a group of house has a particular name based on the landmark or on any specialty of the land. The Sangdong-Gnon village shows the following names:

Knowledge of the Resources through Names of Houses

Name of House	Meaning
<i>Sungcheuwang</i>	It is the name of a tree or small jungle of the particular tree. It means that house is surrounded by small jungle.
<i>Choten</i>	Mane, the house situated near the mane.
<i>Lomu</i>	Lu means area of snakes; at one time the place was full of snakes.
<i>Damseok</i>	Muddy land, the way to the house is always filled with water, low land
<i>Mandang</i>	The house situated nearer to plain land area
<i>Daraghar</i>	House situated at the turning point
<i>Rungvel</i>	House situated at the origin of two streams from one cave
<i>Chotara</i>	The house near the common sitting and chatting place for the villagers
<i>Amllobong</i>	House nearer the tree of Amla
<i>Nungjung</i>	A particular hill, the house on Nungjung hill
<i>Keongthat</i>	Topmost cornered house
<i>Ringik</i>	House near Ringikyun stream
<i>Tukcherbong</i>	House situated nearer to <i>tukcherbong</i> tree
<i>Chindenbong</i>	House nearer the groves of Pine tree
<i>Fatyordun</i>	Yellow soil, House having yellow coloured soil
<i>Padangbong</i>	House situated near the grove of this particular species of Bamboo family
<i>Chamburram</i>	House nearer the <i>chamburram</i> spring
<i>Sangkungbong</i>	House situated near the <i>sangkungbong</i> tree. The leaves are used as fodder
<i>Rinjibong</i>	House situated near the <i>rinjibong</i> tree. Sap comes out the stem of the tree. Leaves are used as fodder
<i>Phambong</i>	House situated near the Palm tree
<i>Yangthong</i>	House situated near the <i>yangthong</i> , grassy tree of plain land
<i>Longbong</i>	House situated near the big stone (Boulder)
<i>Leebong</i>	House situated near the Pear tree
<i>Sunungbong/Sunugkung</i>	House situated near the <i>Sunungbong</i> tree
<i>Leeal</i>	New House
<i>Noth</i>	House nearer the viewpoint
<i>Chalumbong</i>	House nearer the orange garden
<i>Arinyot</i>	House in paddy field
<i>Pugong</i>	House nearer the this species of edible bamboo groves
<i>Ruvongbong/Ruvonkyung</i>	House nearer the <i>Ruvongbong</i> spring
<i>Sunung</i>	House nearer the dark surrounding area

The above table shows that they identify the area with some name, whether that physical identity is still present or not. For example, it is well known to any villager that paddy field is known as *arinyot* in Lepcha language. But at present when we go that house we find that it is surrounded by forest. But at one time it used to be the paddy field. This gets clearer when we find that near by there is a paddy field, which belongs to the brother of the house owner.

Collection of Firewoods

One may note that the Lepcha people maintain a discipline in acquiring the large forest trees for construction as they are very valuable and has cash value. Each family has some area of land in the forest for cultivation where they grow trees for their use in future. A family mainly lops up those trees for his use. It is taken care that there should not be any misuse of any forest property in his land, otherwise it is a loss in the family.

The collection of firewoods (*syang*) and grasses are one of the chief daily work which is mainly done by the teen-aged boys, women and aged men who go to the near by forest area for collection. The extended form of family is helpful in completion of the daily household chores. A family requires the service of young boys and girls who mainly go twice a day for collection. The first one begins in early morning after the morning tea. By the time they return from collection, it is time for lunch. They take meal twice a day; first meal is usually taken by 10 AM. Then the people remain busy in other works. Again in the afternoon, another set of collection begins which continues till dusk. It is expected that the male members of the family would collect the heavy firewoods, but in the family where male members are unable to support the family in collection because of other engagements, women take the lead role in collection of the firewoods, roots and tubers and grasses and leaves for the domestic animals. The trees available in the forests for use as firewood are *Sirikung*, *Sompang kung*, *Sambramkung*, *Khemu kung*, *Khejuk kung*, *Rung kung*, *Samal kung*, *Keletum bonkung*, *Nambiyong kung*, *Tunglukung*, *Sankar kung*, *Subeok kung*, *Sindeoyong kung*, *Takcher kung*, *Sungchong kung* and *Nambru kung*.

For any particular occasion either in marriage or religious work or festival they go deep in the forest along with few villagers who help in firewood collection. Otherwise individual family collects the firewood for their own consumption. When the villagers join together for any work in a particular family, after returning to the village food is served to them for the help and never counted as remuneration. The relation is based on reciprocity.

Resources Used as Foddar

The forest provides ample resource of grass as foddars for the animals. Some grasses collected by them are *Sitkung*, *Elekung*, *Leekung*, *Leekpe*, *Santung kung*, *Sankung*, *Ranjeekung*, *Lafa kung*, *Yeokkung*, *Tangjee kung*, *Seeyekung*, *Seyhet kung* and *Polonkung*.

Resources for Foddar

Domestic Animal	Resource Used as Foddar
Cow or Ox	Banana stalk, Maize stalk, Paddy, Mustard skin(<i>pina</i>), Grass, salt water
Pig	<i>Sunol</i> grass(found in summer), Quash, Pumkin, remains of <i>chi</i> , <i>chekla</i>
Goat	Banana stalk, Maize stalk, Paddy, Mustard skin(<i>pina</i>), Grass, salt water, remains of <i>chi</i> .
Fowl	Maize, paddy grains, <i>kodo</i>

They take two meals a day, the bigger one in the morning before going to work and the second one in the evening. Rice is supplemented with vegetables. Some times a light vegetable soup or pulse is also added in the meal. They are very fond of pickles; the ingredients are mostly brought from jungles. The availability of vegetables depends on the season of year. Winter is full of seasonal vegetable but during summer and rainy season the choice is little. Some fast food items have penetrated in village through the villagers or students but the regular food is the same as available in the village. Seasonal vegetables, roots and tubers are raised in the kitchen garden (*leesing*) of every house.

Season wise availability of Vegetables in Leesing

Season	Availability of Vegetables in Leesing for Human Consumption
Summer	<i>Tungbit</i> (Beans), <i>Potat bukh</i> (Potato), <i>Mator</i> , <i>Dulom</i> (Brinjal), <i>Beetim</i> (Bitter gourd), Chilli
Rain	Same as Summer season
Winter	<i>Kundang bee</i> , <i>Marsium</i> , <i>Tungbit</i> (Beans), <i>Beetim</i> (Bitter gourd), <i>Dulom</i> (Brinjal), <i>Bulbee</i> (Snake gourd), <i>Khaktikpat</i> (Quash) <i>Chatela</i> , <i>Beriupat</i> (Small sized tomato), <i>Beriu</i> (Tree tomato)

They are fond of non-vegetarian food. Chicken, beef and pork form the part of their diet. They collect the fish in the river and streams through use of small nets. Beside this they also use forest products like roots and tubers in their daily and ceremonial use. But the availability of root and tuber depend on the season. Barring one or two tubers, all the roots and tubers are available during winter season. The following table shows the roots and tubers taken by the Lepcha people as food.

Roots and Tubers used

Roots & Tubers	Availability and Use
<i>Pishen</i>	Available in rainy season. Boiled and water is drained. Used in <i>chi</i> , the powdered form is used for making bread. It is available in jungle and has to be consumed within fifteen days.
<i>Pakjeek</i>	Available throughout the year. The tuber is boiled in water, and then dried for two nights to make bread.
<i>Punjokbur</i>	Roots are boiled as vegetable, used in <i>cho</i> (food offerings to god), smoked and eaten
<i>Suumbuk</i>	Roots are boiled, eaten as vegetable, used in <i>cho</i> , smoked and eaten.
<i>Kusok</i>	Boiled and eaten
<i>Kaching</i>	To make it edible, first it is washed and kept in water for 2-4 days, then boiled and eaten.
<i>Finel</i>	It is grinded in morter and pestal and some citric fruit is added and then eaten.
<i>Singti</i>	White coloured tuber, leaves are given to pig, tuber is boiled and eaten, used in <i>cho</i> .
<i>Tunglobuk</i>	Tuber is boiled and eaten, used in <i>cho</i>
<i>Booku buk</i>	Purple coloured tuber. Boiled and eaten.
<i>Mungur Buk</i>	Boiled and eaten

Weaving

The weaving and weave patterns were famous at one time but now it is almost extinct. The traditional dress of male, *thakro* represents the finely woven, striped pattern over a plain or a patterned background. Even Gorer about a hundred back informs us that the art is lost by these people. There are one or two families in the villages of Dzongu who occasionally weave. The government is trying to revive the art by introducing a training centre in Lingdong village of Lower Dzongu where young trainees learnt the art. But now during the marriage ceremony the bridegroom wears it for the occasion or during festivities in a dance sequence. It is observed that the anti dam protestors in the villages

are also encouraging the traditional dress as a part of revival of traditionality, the knowledge and identity.

Knowledge of Use of Medicinal plants

As defined earlier; the Lepchas relate their disease and illness to their creation myth. To them Khangchendzonga is the protector and the forest, hills and hillocks, trees, springs and streams all are part of it. The deep deep forests of Khangchendzonga provide them various kinds of herbs, plants and tubers which have medicinal value. According to them the source of the disease are the demons (*moong*) who live in the hills, streams and springs of Khangchendzonga. Psychologically they go back to their origin myth to figure out the disease as well as for its remedy. The remedy of the disease is perceived psychoanalytically as well as clinically. The psychological aspect of illness is treated through the propitiation of deities (*rum*) and appeasement of different spirits and demons (*moong*) living in the streams and hills. They believe that the displeasure of guardian deity and other spirits brings disease, different calamity, landslide, flood or even a bad crop produce in the village.

For cure they resort to the tribal shaman and medicine man (*Mun/Bongthing*) and to Lama (Buddhist religious priest) psychologically as well as to the herbal medicines given by them based on local herbs, shrubs, roots, tubers, flowers and bark of different plants and trees available in the area.. Both the Bongthing and Lama have their own role in treatment of disease and in appeasing the god and devils. The offerings (*serkhem*) are made during any appeasement to the *rums* as well as to the *moongs* by the Bongthing and Lama as dictated by the mother creator Kumsiting. According to Lepcha tradition the *Mun* and *Bongthing* are the media for communion with the god (*rum*) and the devils or demons (*moong*). They believe that the *Bongthing* are able to communicate with all the devils / demons (*Moongs*) except the ‘Dom *moong*’, who brings Leprosy to the people. There is the belief that any disrespect shown to the *rum* or *moong* can bring harm to the community or individual. For this there is community/village level appeasement and individual appeasement based on the disease.

In Sangdong-Gnon village, it was observed that along with the traditional Bongthing/Lama there has come up few specialists for the treatment of disease. There are few specialist persons in the village who have the knowledge of curing fractures through use of medicinal plants. There are two persons who have the knowledge of curing from snakebite. The villagers go to these specialists for the treatment but after the cure they come back to Boogthing for appeasing the *rum* or *moong* which has done the harm.

Medicinal plants used by the Lepchas for different diseases

Sl.No.	Local Name	Parts of the plant used	Method	Disease
1.	<i>Anjo Anji muuk</i>	Bark	Bark is pasted and mixed with luke warm water and given to patient.	Spleen, liver and abdominal complaints.
		Seed	The seeds are pasted and given to the patients by adding cold water to it.	The seed cures ulcers, eye ailments and lessens the muscular pain.
2.	<i>Mongjing Sungtuk</i>	Tuber	Tuber along with grass	Given to cattle for removal of worms.
3.	<i>Tuknil Titepati</i>	Seed	Seeds are pasted, mixed with water.	Used as appetizer and aphrodisiac.
4.	<i>Khursinglo</i>	Roots	Roots are pasted and mixed with milk.	Cures Leucorrhoea and diarrhea.
		Bark	Bark is boiled in water and hot compress is given.	Relieving fractures.
5.	<i>Breng Guwa Muuk</i>	Rhizome	Extract of rhizome is mixed with hot water.	To prevent bleeding during childbirth. Relieves pain during menstrual disorders and in dysentery.
6.	<i>Cheetkung</i>	Seed	Seed is mixed with water.	Has a tonic and aphrodisiac property.
		Root, Bark, Flower	Juice of root, bark and flower	Controls the ill effects of diarrhea and animal bite.
7.	<i>Rhar Kung</i>	Root	Decoction of roots are made.	Cures Dyspepsia and Flatulence.
		Bud	Decoction of bud	Cures cough, piles, diarrhea and dysentery.
8.	<i>Chuli Kung</i>	Roots, Bark	Paste of roots and bark is made	Used to cure diabetes and rheumatic pains. A useful uterine tonic and regularizes the menstrual disorders.
9	<i>Jyang Mung Rip</i>	Flower	Juice is mixed with ginger	Fever
		Leaves	Juice of leaves are mixed with black pepper	Used for curing rheumatism.
10	<i>Kanthey Pam</i>	Roots, Leaves	Paste of roots and leaves	Applied on boils and skin disorders.
		Bulb of root	Bulb of root is used a container for drinking water to poultry.	Keeps the poultry free from epidemics.
		Root	A paste is made.	Used in stomach pains.

Sl.No.	Local Name	Parts of the plant used	Method	Disease
11	<i>Rung Kyen Kung</i>	Whole plant (<i>Chiretta</i>)	Decoction of whole plant	A remedy for fever, cough and malarial fever. Cures acidity and lever function.
12	<i>Kufer buuk</i>	Rhizomes	A paste is made	Diuretic property and cures fever.
		Root	Decoction	Cures fever and Leprosy
		Flower	Boiled in water and water when applied	Cures eye disorders
13	<i>Sungen Kung</i>	Pods	As tablets	Purgative
14	<i>Samal Kung</i>	Bark	Mixed with lukewarm water and paste is made	Clears bowels, useful in ulcers and cures fevers
15	<i>Phirupat</i>	Leaf	Extract of the leaves	Useful in gastritis, increases memory power.
16	<i>Ari Nom Muuk (shrub)</i>	Bark	Made a paste using water	Helpful in curing ulcers and sores, diuretic properties.
17	<i>Kurmu Kung (Cinchona)</i>	Bark	Paste of the bark or the extract made by boiling the bark	Used in different types of fever especially the malarial fever.
18	<i>Sumsor Kung (Tejpata)</i>	Leaves	Leaves are boiled in water	Used in relieving pains after delivery.
19	<i>Bongnok Monrik</i>	Whole plant	Extract of whole plant	Used in Diarrhea,
20	<i>Kachi Kung</i>	Fruit	Decoction of fruit	Effective in curing vomiting.
		Fruit and Seed	Whole fruit and paste of seed	Helpful in cardiac ailment and relieves palpitation.
21	<i>Tungkrang Rip</i>	Root	Fresh roots are crushed and tied in cotton cloth and heated in oven for few minutes.	Strong fume produced is inhaled to remove sinus.
22	<i>Purbong Kung</i>	Bark	Juice of bark	Useful in urinary complaints and fever and mild skin disease.
23	<i>Manimuuk</i>	Leaves	Extract of leaves are made by boiling in water	Relieves Diarrhea
24	<i>Roo Paong</i>	Rhizome	As vegetable or boiled in water	Used for urinary disorders and food poisoning
25	<i>Kaol Kung (Walnut)</i>	Nuts	Boiled in water and fried	When consumed helps in relieving rheumatic pains.
		Bark , Nut	Paste of bark and whole nut	Destroys intestinal worms

Sl.No.	Local Name	Parts of the plant used	Method	Disease
26	<i>Phirupat</i>	Fruit	Direct consumption	Helpful for health for post natal mothers.
27	<i>Sumbram Kung</i>	Fruit	Dried fruit paste	When applied removes dandruff
28	<i>Pushore (Broom grass)</i>	Root	Boiled and made paste and applied. Juice of root	Cures boils, sores Helps in gastric problem
29	<i>Tung Kung</i>	Root, Stem Root, Stem, Seed	Paste of root and stem All are boiled together	A first aid medicine for snake bite Cures food poisoning, Rheumatic pains.
30	<i>Tuk Gnyel</i>	Whole plant	Juice of whole plant when taken	Cures asthma, itching. Has an antibacterial and antifungal property.
31	<i>Sunlen Kung</i>	Fruit Whole plant	Directly eaten Juice is made by boiling in water	Improves appetite and eye ailments. Cures spleen disorders, fractures, removes tapeworm
32	<i>Suntung Kung</i>	Root, Bark, Branch, Fruit	Paste of all the ingredients when eaten or applied	Cures diarrhea, jaundices, eye infection and skin disease. Extract of root has anti cancerous properties.
33	<i>Nambro Kung</i>	Leaves	Juice of the leaves	Used in curing hysteria, spasmodic cough, diarrhea, Helpful in diabetes and hypertension.
34	<i>Karhyo</i>	Fruit Root	Directly taken Juice of the roots	Helps in curing tumors, leucoderms, ulcers, jaundice. Relives joint pains
35	<i>Chalum (Orange)</i>	Fruit Flower	Dried skin of the fruit Juice of flower	Used for curing dyspepsia Has antispasmodic and sedative property
36	<i>Kashyum Kung</i>	Root, Stem	Boiled and juice is made	Cures colic pains and stomach worms.
37	<i>Kamki Kung</i>	Bark	Paste of the Bark	Applied for healing the fractured bone
38	<i>Kunthem Pat</i>	Fruit	Juice of the fruit	Cures asthma, cough and relieves rheumatic pains

Sl.No.	Local Name	Parts of the plant used	Method	Disease
39	<i>Khadao Rip</i>	Petal	Paste of petals	Applied in cut to stop bleeding
		Bud, Root	Paste of bud and root are mixed with water or tablet is made	For curing tuberculosis
40	<i>Gey Bukhnaok</i>	Root	Decoction of root	Cures fever, a useful medicine for malaria and other fevers.
41	<i>Tukcher Kung</i>	Root, Bark	Powdered	Applied to give strength to the gums
		Leaves	Juice of new leaves	Helps in curing night blindness
42	<i>Tumbaar Rip</i>	Flower	Paste of flower	Given to cure cough and asthma.
		Root	Juice of root	Cures jaundice
		Paste of root		Cures skin eruption and ulcers.
43	<i>Tung Loo Kung</i>	Sap	Diluted with water	Cures dysentery
		Root	Juice of root	Gonorrhea
44	<i>Durbihyur</i> (Mushroom)	Mushroom	Dried and powdered and soaked in luke warm water	Applied in ear to cure ear pains.
45	<i>Pong Mukh</i> (a type of grass)	Root	Decoction of roots	Stops bleeding of piles
		Crushed root		Cures chronic gonorrhea
		Whole plant	Juice of plant	Cures cuts and wounds
46	<i>Vum Rik</i>	Root, Fruit	Pasted and juice is made	Cures skin ailments and acts as cleaning agent after delivery
47	<i>Safok Jyu</i>	Fruit	Directly taken	Cures bed wetting
		Leaves	Juice of leaves	Helpful in cleaning menstrual discharges
48	<i>Kasimji</i>	Leaves	Tender leaves mixed with cold boiled water and the sap is extracted	When taken gives a relief to tonsillitis
49	<i>Sahaor Pat</i>	Fruit	Powdered fruit Cooked fruit	Cures severe head ache Acts as stimulant of the heart in case of heart failure.
50	<i>Saong Kung</i>	Leaves	Juice of the leaves mixed with ginger, cardamom, clove, sugar Extracted oil from leaves	Gives relief to asthma and bronchitis Heals up internal haemorrhages and tuberculosis.

Sl.No.	Local Name	Parts of the plant used	Method	Disease
51	<i>Payezo Kung</i>	Bark	Boiled in water	Cures diabetes
52	<i>Rungtheon Kung</i>	Bark	Boiled in water	Paste when applied gives relief to bone fracture
53	<i>Tungsher Kung</i>	Fruit	Boiled and juice is prepared	Juice with water cures diarrhea
54	<i>Fujinyok</i> (Shrub)	Stem	Cooked as curry	Relieves throat pain
55	<i>Ringken</i>	Whole shrub	Cooked as curry	Relieves cold and cough
56	<i>Pungu</i> (Shrub)	Leaves	Leaves are boiled in water and mixed.	Relieves stomach ache and gives relief to tuberculosis patients.
57	<i>Tobdokmon</i>	Stem, Leaves	Boiled in water	Relieves stomach pain and diarrhea
58	<i>Sunthatmu</i>	Bark, Leaves	Bark and leaves are pasted	Applied to fractured part of body or administered as tablet.
59	<i>Kulhan Pey</i>	Sap	Sap is extracted	Used a medicine or used as ointment
60	<i>Feugndisurong Tarhambru Pushyore</i>	All the three plants	Three plants are mixed together	Given as paste to stunted and rickety child for growth.
61	<i>Tarhimbru</i>	Leaves, Stem	Boiled and juice is extracted	Juice is applied to teeth or gum to relieve tooth ache.
62	<i>Silique</i>	Ginger like Tuber	Mixed with cardamom	Used in cough, cold, stomach pain, diarrhea and dysentery
63	<i>Yerkeokung</i>	Bark	Boiled	Given compress with this water relieves fracture pain
64	<i>Yeok Kung</i>	Grass	Crushed and pasted	Applied in fracture
65	<i>Tingshrel</i>	Seed	Seed are directly taken	Relieves Diarrhea and Dysentery in human and animals.

Though the villagers and medicinemen are able to give the information about the herbal medicines used in the cure and prevention but it is difficult to ascertain that which of the informations are passed to them by the old generation. It may be noted here that Lepcha tribals are directly connected to the outside knowledge through the market of towns they visit. Any new knowledge is thus passed on from one area to another area.

Shifting Cultivation- a foregone knowledge and pursuit

The literature of early writers show that the Lepcha were shifting cultivators. The males used to dig the earth with pointed rod while the female followed them by inserting paddy seed inside the loose earth. The writings of H.H. Maharaja and Maharani Dolma of Sikkim in 1908, inform that a new patch of jungle was cleared every year and dried and then fire was set on it. On the cleared space, paddy, *kodo* and maize as well as various grains were grown. On the next year, another patch of jungle was cleared. The process yielded a good crop. The cultivation of rice was quite old in the area and this gets established as the staple food of Lepchas is rice.

Introduction of Terrace form of Cultivation

During the British period, the Lepcha of Sikkim were forced to adopt settled cultivation. According to O'Malley (1907) the Lepcha had to give up their old nomadic cultivation and lost much of their dependence on jungle with the introduction of settled cultivation and the reservation of forest. In consequence they had to learn to make terraces for rice fields and the methods of agriculture practiced by Nepalese. As use of forest resource was restricted, they were compelled to depend entirely on terraced based cultivation. Due to the agriculture based subsistence they started producing the crops needed for their consumption which included rice, maize, millet, buckwheat, barley and vegetables. They started using small tools, domestic manure, domestic seeds, rainwater and household labour. The concept of wage labour was totally absent and the entire operation was carried out with family labour. The Nepali immigrants also brought the technique of cardamom plantation in Sikkim which is again a new introduction of knowledge and the idea of sharecropping.

Presently in Dzongu the lands are classified into three categories as per settlement pattern. They are dry land (*fatnyot/fatsoun*), wet land (*arinyot*) and cardamom land (*lingjeenyot*). All the lands are scattered all over the village area. Every family has more than seven or eight strips of land spread all over the village. In Sangdong village, three types all lands are found in three different altitudes. The paddy fields are situated nearer to the Teesta river bed at a lower altitude as the paddy lands require perennial water the territory of which falls in Gnon village, where as the dry lands are situated in an altitude surrounding the settlement areas of the villages. The cardamom fields are mostly situated far from the village. It takes about three hours climb from the village top. Some may be nearer to the village, or in the village and most are in quite a distance from the village.

Dry Cultivation

The dry lands of the Lepcha families are scattered all over the village. They mainly grow maize, buckwheat, millet, *kodo*, wheat and soyabean. The villagers are busy in agricultural

work from end of March to end of September; the next few months are lean period. From October to January it is the festive period for the people. By this time after the harvest, there is money in the house. It is also the period when annual worships are done including the harvest worship i.e., Lee Rum fat, Leengjifat, and Fa-lo (clan worship). Marriages are held during this period.

Introduction of Cardamom field

According to Gorer, the introduction of Cardamum (*Ammomum subulatum Roxburgh*) cultivation by the Nepali immigrants also brought some associated beliefs in cultivation which was not present earlier among the Lepchas. Later the Lepchas absorbed few of the rituals with their own. The Lepcha had no such idea before nor do they have such taboo in other kinds of cultivation. The cultivation of cardamom also brought the idea of sharecropping (*adhia*). The cardamom fields are mostly leased out on *adhia* system to the Nepali seasonal labourers who are the main workers in the cardamom gardens and constitute the prominent sharecropper class. The produce is divided into equal halves between the landlord and the tenant whereas the former contributes only the half of the seeds required for the next season. These Nepali labourers have also given rise to the group of agricultural labourers and *gathalas* or cowherds in the villages that basically do almost all works from cultivation to the household works.

Cardamom is grown in all over the hills of Dzongu, the field is known locally as *lingjeenyot* though upper Dzongu villages show a large presence of cardamom plantation than the villages of lower Dzongu because of the altitudinal advantage. The cultivation process is tabooed for women in Dzongu though in other areas of the Sikkim the women are the main cultivator. It is a perennial plant and reaches its full bearing within three years. The plant starts declining at the end of ten years and new planting are made in the same land as the plant does not exhaust the soil. The plants need a good deal of care and weeding is done thrice a year as the buds and fruit grow close to the ground. When the fruit is collected the old growth is cut down and burned. They follow a long process of traditional method of drying the cardamom. The traditional modified oven used for drying the cardamom is made with locally available construction materials viz. mountain rock/ stone, bamboo or wire mesh mat and wooden frame etc. The oven has thick stone walled structure on three sides and a wide opening on the front wall for feeding of large size wood logs for burning. The average size of a oven is 10' x 10' with 5' height. Its top opening is covered with a bamboo / wire mesh mat. Fresh cardamom capsules are spread in 8 inch to 12 inch thick bed over the bamboo / wire mesh mat for drying. Usually the cultivators cut the nearby trees into logs for drying of cardamom. So burning of the wet wood generates a thick smoke and the cardamom bed is exposed to the smoke during drying.

At present, cardamom is not giving a good return, not even an average. Earlier the plantation was found all over the village, but now some grow only in the higher reaches, but also is not giving a good return. But now a blight infection causing fungal infection is destroying the cardamom crop. As result the Nepali labourers who used to come during the cultivation have stopped coming to the villages as sharecropper.

Introduction of Wet Cultivation

In Dzongu villages wet rice cultivation had began only a century back. Gorer in 1938 writes that in Lingthem village, the wet rice was introduced only twenty years back on an experimental basis. Later on other areas near the water sources came under wet cultivation.

The whole process of cultivation begins some times in June and completes by early November. The wet terraced lands of Sangdong village are mostly situated in Gnon village in terraces situated in the low altitude Teesta riverbed. During the rainy season the water level increases and the small streams get filled with water. During the month of June two or three members of the family go to the field and clean and clear the land with *kodali* and *kata* for preparing the seed bed. The land is levelled and is watered for two nights with spring water. Paddy seeds are germinated by mixing of paddy seed and cow dung by covering with a sac for two nights. After that the germinated seeds are ready for sowing in seedbed. This process requires two or three family members. Before sowing the seedbed cleared with *kodali* and *kata*. The land is again levelled (*feuri*) and watered for two nights. During July and August the family members remain busy in clearing of the field. Ploughing is done only once. The terrace wall is cleared and the land is watered for 3-4 days. By this time the saplings get ready for transplantation. Sowing of paddy requires the help of more number of women. With sowing of paddy black pulse is broadcasted on the ridges of the agricultural field. In Lepcha village the agricultural work is community work. The Lepchas do not engage any wage labourers for agricultural work. From each family one or two members come for cooperation and in few hours the job of sowing for one family is over. The next day another villager's field is fixed for sowing. The field is watered from time to time by the family members. By Sept and October the weeding (*zo bukset*) is done for a week. By end of October-November the paddy is ready for harvest. Harvesting is again a community work, which takes one full day for the family field and requires a clear division of labour. The women folk cut the paddy with sickle and men collectively do the thrashing with hands. After that paddy is kept in sacs for transportation to the village. The villagers who bring the paddy sacs from field are invited to have dinner with the family. The harvested paddy is dried in the sun and cleaned. After that the sac is kept in *phalong* (ceiling) for the consumption.

The following agricultural calendar shows the year long agricultural work in the dry field through out the year.

Agricultural Calendar

Month	Agricultural Activity
January	Sowing of sweet and bitter buckwheat (<i>kurhu/khurhat</i>)
February	Land is cleared for the next produce and completion of sowing of buckwheat.
March	Land and grasses are burnt; fertilizers are given to the land. Ploughing of field. Maize is broadcasted with digging stick. Stick for growth of <i>Simble</i> is fixed. Weeding is done in cardamom field.
April	Harvest of wheat, clearing of ground for millet. Weeding is done in cardamom field.
May	Harvest of buckwheat. Mud is cleared in maize field. Sowing of <i>Kodo</i> (millet)
June	Weeding is done. Mud is cleared in maize field. Preparation of paddy field and seed bed(wet cultivation).
July	Soil is given to maize when cobs start growing. Weeding is done in <i>Kodo</i> (millet) field. Clearing and ploughing of paddy field. Sowing of paddy and broadcasting of black pulse on the ridges of the agricultural field
August	Weeding is done in cardamom field. Clearing and ploughing of paddy field. Sowing of paddy and broadcasting of black pulse on the ridges of the agricultural field.
September	Harvest of <i>Kodo</i> and cardamom. Weeding in wet land.
October	Harvest of <i>Kodo</i> and cardamom. Weeding in wet land and harvesting the paddy.
November	Harvest of <i>Kodo</i> . Clearing the ground for next <i>kodo</i> crop
December	Clearing the ground for next <i>kodo</i> crop

Emergence of Ginger as Cash Crop- Recent Phenomena

In recent years, ginger has come up as important cash crop as it gives the return twice a year, first by selling the mother seed and second by selling the final crop. Many villagers are turning towards ginger cultivation in place of cardamom as cardamom is giving a good return.

Traditionally the Lepchas give priority in cultivating the crop as it is required in all their religious rituals and also for curing diseases. All Lepcha households cultivate ginger as ritually, they are not allowed to take ginger from others for rituals. The Lepchas observe a religious ritual before using, eating or even bringing the new ginger crop into the house. In this ritual the spirit from the river Teesta is evoked and ritually brought to the field and offered paddy, a red cock and some local wine along with ginger. Once the offerings are made and the chanting completed, the spirit is guided back to its original place. It is believed that if this ritual is not observed, bad omen would occur to the family and household. For instance, people will fall sick, cattle will die, or crop production will be poor.

It is cultivated through traditional production methods and rhizomes can be harvested twice a year—the main rhizome halfway through the growing cycle and new rhizomes when the crop is fully grown. The tuber can be grown economically on small plots in a wide range of environments and thus the smallholders and marginal farmers grow ginger and sell or consume the crop without any processing.

Discussion

The preceding pages give an idea of the landscape, which lies at the heart of people and shaped their attitudes to the ecology, environment and the spirit. The Lepcha people take the help of their creation myth to legitimize their position in the sacred landscape of Dzongu. The sacred space of Dzongu symbolizes the sacred hills, its forest, the residence of the guardian deities of the area, a source of wisdom and knowledge. It is also a place where they connect themselves with their ancestors and take important decisions. The sacredness has diverse meanings and simultaneously reflects the changes in the community and its relations with the world.

We come to know the various upheavals through which the community had to pass in different periods. The chart below shows at a glance, the changes and interventions the community had to undergo with different land policies of the state.

Interventions in Land and Resource Management

Year/Period (Published Records)	Rule	Interventions	Notion & Utilization of Land	Associated Material culture	Associated Religious Belief
Before 1641 Sen (1983)	–	–	Land-Common property of Lepchas Gathering and God, Clan god collection Hunting. Shifting Cultivation- Based on aged old knowledge. Cultivation of dry rice.	Cave dwellers Weaving, Basketry	Worship of Khangchendzonga Mt.
Morris (1938)					Worship of Forest God, Clan god Bongthing as priest.
After 1641 Sen (1983)	Rule of Chogyal	Control of land by King. Taxes imposed on land through Kaji.	No concept of private property. Nomadic habits. Dependence on forest produce. Hunting Shifting cultivation.	Primitive agricultural implements. Digging tools. Weaving, Cane and Bamboo basketry. Thatched huts- raw materials from forests. Herbal medicines	Worship of Khangchendzonga Mt. Worship of Forest God, Clan god Introduction of Buddhism Bongthing and Lama as priest
British Period	Chogyal Rule under the British pressure	Forest. Reservation Lepcha tribals forced to adopt Settled cultivation. Introduction of new knowledge by Nepali immi- grants— From Shifting to Terrace Cultivation Nepali Immigrants brought another knowledge----- Cardamom cultivation.	No concept of wage labour. Forest resources started shrinking. Terrace cultivation. Use of small tools, Domestic manure, labour more used in terrace cultivation,	Weaving and Cane & Bamboo basketry still continued. Thatched huts- raw materials from forests. Herbal medicines	Worship of Khangchendzonga Mt. Worship of Forest God, Clan god. Bongthing and Lama as priest
1938 Literatures based on Gorer & Morris' Field study in Lingthem village	British Period	Introduction wet cultivation- new knowledge	Collection of fruits, roots and tubers. Hunting stopped. Shifting cultivation in very few patches	Weaving forgotten. Traces of weaving here and there (Loss of traditional knowledge) Hunting considered	Worship of Khangchendzonga Mt. Worship of Forest God, Clan god. Bongthing and Lama as priest

Year/Period (Published Records)	Rule	Interventions	Notion & Utilization of Land	Associated Material culture	Associated Religious Belief
			Terrace cultivation Cardamom cultivation by Nepali labourers on sharecropping. Rice cultivation in few villages. Cardamom as cash crop.	a past time because farmer "hunting is merely play, and a father will want his son to work in the fields." Presence of basketry Thatched huts- raw materials for construction from forests Herbal medicines	
1958	Chogyal Rule	Through a royal royal proclamation Tashi Namgyal, the then Chogyal of Sikkim reserved the Dzongu area for the Lepcha community. Restriction of the entry into the area by all non-Lepcha, including the Lepchas from other parts of Sikkim.	Same as earlier	As earlier	Worship of Khangchendzonga Mt. Worship of Forest God, Clan god Bongthing and Lama as priest.
1975	Merger of Sikkim state to Indian Union	Indian Constitution amended to provide protection to Dzongu's special status.	Same as earlier	Same as earlier	Bongthing and Lama as priest.
Field Study August 2008 Nov 2009-Jan 2009	Sikkim – an independent State	–	Hunting stopped. Shifting cultivation stopped completely. Terrace cultivation— Presence of Dry field, Wet field & Cardamom field. Cardamom not yielding as good produce. Ginger emerging as cash crop.	Raw material in house construction remains same. The thatched roof replaced by corroborated sheets The base pillars or posts on which main house was built is replaced by different sizes of stones and boulders. The room utilization has changed. The kitchen separated from other rooms in many families.	Worship of Khangchendzonga Mt. Worship of Forest God, Clan god. Bongthing and Lama as priest.

The table makes it clear that almost under each rule, the Lepchas tribals had to make sacrifices their land. They were able to use the land for the subsistence when it was a common property. They lived on shifting cultivation and collection of forest products and

learnt the use of herbal medicines. It was a collective knowledge. The ancestor and nature worship through the priest and Bongthing helped them to fight against the nature's rage.

The Chogyal rule brought a new religion Buddhism and a new priest Lama. Though they continued with their livelihood pursuits, the land was now under the king's rule. They now had to pay taxes for their own land. Historical records and field based study informs that the British pressure on Chogyal rule brought many changes. They reserved the forest, the consequence of which was that the Lepchas were forced to shift from the age-old pursuit of slash and burn cultivation and adopt and learn settled cultivation in form of terrace cultivation from the Nepali immigrants. They continued the collection of firewood, roots and tuber, and foddars and still depended on herbal medicines. But in the long run, they lost the knowledge of weaving and to some extent the basketry. The knowledge process was now slowly moving its path from a collective learning to individual or specialized learning.

The Nepali immigrants also made a great impact on their material culture and especially on their language. The basketry which was a regular activity in every house for their own use is now in hands of a very few. The traditional hat has now become a symbol to show the past heritage and tradition. The Lepcha villagers still use bamboo baskets of Bhutia origin, which is known as *doka*. The original *tungaar* is rarely found. Similarly the traditional hearth is replaced with Bhutia hearth.

About a hundred years back, again a new knowledge in form of wet rice cultivation entered the area and spread in all the villages. Hunting now became a past time and not resorted for necessity. The cardamom cultivation continued with the help of Nepali labourers as cash crop who worked on *adhia* basis (share cropping). The condition remained almost same even after proclamation of the Dzongu as reserved area and after the merger of Sikkim state in India in 1975.

By this time much of the earlier pursuit is lost. We find that every time the Lepcha tribals had to shift their occupational strategy with the change in the policies of the land management. In return they lost their traditional resources and knowledge and learnt to adopt a new knowledge; the impact of this intervention is directly felt in the management of lands and in subsequent knowledge spheres.

The present agitation and the associated cultural revival emphasizing their cosmological attitudes affirm their cultural roots in forests and their connection with the sacred land. His creation myth identifies him with his knowledge of environment and his healing traditions. His fight for the traditional land is a protest process. Though this, the Lepchas as a community

are trying to negotiate for an alternate development strategy, their traditional rights and their traditional knowledge for their lands and the future generation.

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Indian Anthropological Museums: Social Awareness and Educational Role

Amit Soni¹

ABSTRACT

Anthropological Museums in India have emerged as vibrant institutions providing a link between the present and past. Now, museums are trying more and more for providing such kind of quality services which gives quality of experience in every aspect to the users (visitors). Nowadays, in every type of museum education with amusement has become the main objective along with other activities. Now the museums are developing as a supplementary educational institution. The museums are coming up with better facilities, display, dissemination of knowledge or education and entertainment. The details regarding the history and role of Anthropological Museums, especially various aspects and modes of dissemination of knowledge and its significance as per preservation, education and awareness point of view are discussed here keeping in mind the changing perspective and vision of Indian museums today in the present age of professionalism.

In the present age of professionalism the museums are gaining more and more importance as great source of knowledge with amusement. Now the museums are developing as a supplementary informal educational institution. The preservation of the past information and experience and providing relevant quality services to the visitors are prime concern of the present day museums. Thus, Museums can be simply defined as, “**The institutions basically fall under the service sector which provides services to the public for grater social benefit and transforms knowledge from present generation to future generation. The basic services provided by museums are the preservation of the past through collection and related information for future generations and spreading awareness and informal education with amusement.**”

India is a land of diverse socio-cultural settings having many religions, languages and cultural traditions. Museums in our country have an important role to play in making the people aware of this richness and diversity. Dr. C. Rangarajan had very well quoted in his keynote address delivered in the eighth convocation of the National Museum Institute on 28th April, 2004, the very same year I received my degree in Museology, that “even

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countries with a short history are taking great pains to exhibit their historical roots. How much more relevant are museums in a country like ours that has a long and rich historical past. There is so much to tell and so much to know and absorb". Museums come under the overall umbrella of heritage protection. Museum collections comprise of tangible and intangible heritage. Indian Council of Monuments and Sites (ICOMAS) has declared 18th April every year to be celebrated as "World Heritage Day".

Museums of Anthropology occupy a special place among the museums of the world. Having their origins in the early fascination of the West with the exotic cultures of the societies, they have become, for the general public, centers of information on those cultures, some of which, of course, no longer exist, while almost all have changed dramatically as a result of Western industrial influences (Renolds, 1989:111). Fenton (1974:29) has estimated that the total anthropological holdings of museums throughout the world comprise some 4.5 million artifacts. Of these it would be reasonable to surmise that less than 50 percent is used for exhibitions, educational, research or other purposes; the rest remains permanently in reserve storage.

Museums have moved far away from the 'store house' phase. A museum is not an assemblage of scattered isolated objects; its purpose is to collect and present objects against the background of the cultural and social settings. A museum, in effect, is one medium of reproduction of history. World over museums have seen four kinds of transition:

1. From a simple repository of objects to that of an educational medium.
2. From an emphasis on isolated objects to an integrated presentation of objects.
3. From the privilege of the few to the service of many, and
4. From passive to an active participant in the social and cultural life.

Since the starting of 20th century the importance of educational function of museums developed considerably. In 1952, UNESCO seminar was held in Brooklyn on the educational role of museums. It enhanced the emphasis on museum education all over the world. The museums started looking towards their existing and possible resources and their educational potential which resulted in the increase in museum educational activities. The clear cut need for non-formal education in India has been emphasized by the New Educational Policy of 1986. It is observed that in the 19th century, the museums were very much object-oriented, but the view-point altogether changed in the 20th century and still growing in the 21st century. The visitors became the main target for all the museums. Documentation part developed considerably and the museums started functioning as centres of recreation, learning and dissemination of knowledge. Outreach programmes also increased with enriching of the internal and open display, hands on experience and participatory programmes in the museums. The museums have now started fund-raising for their own survival and sustenance. This shows a vital change in the perception, outlook, approach and functioning of the museums today in order to facilitate more and more to their visitors.

Museums like all social institutions have changed over time; they have changed in form, in function and in the basic approach. Museums have thus emerged as vibrant institutions providing a link between the present and past. Now, museums are trying more and more for providing such kind of quality services which gives quality of experience in every aspect to the users (visitors). Generating awareness, dissemination of knowledge or education is the prime focus of all the museums today.

In some way of another the main core aim of all the Anthropological Museums in India is “**To make the collection representative of the Indian / regional culture, history, life style, knowledge and technology, status, changes and development in its totality and diversity and to maintain and conserve the collection with adequate information (interpretation); so that it can be utilized with its full potential to generate awareness and harmony among the people and to preserve and promote the bio-cultural traits, especially the diminishing ones**”. The core objectives of all the anthropological museums in India are netted around this basic aim. But, the other objectives of various anthropological museums may vary as per the scope, status, preferences and ground circumstances.

Scope, Type and Nature of Anthropological Collection

Scope of the collection should be according to the aim and scope of the museum. The object / collection should be appropriate and worthy according to the aim and objectives of the respective anthropological museums. Etymologically anthropology (anthropos=man and logos=science or study) means science of man. It strives to understand man, his actions and works in totality. The subject matter of anthropology is only limited to man in time and space. Mainly, the discipline is concerned with what is biological in men and what is socio-cultural in them and how the two are interrelated. Anthropological collection can be of different type depending on the different branches of Anthropology, i.e., Physical or biological anthropology, Social-Cultural Anthropology, Archaeological/ Palaeo-Anthropology, Linguistic Anthropology, Forensic Anthropology, Medical Anthropology, etc.

Collections related to Physical or biological anthropology, Forensic Anthropology and Medical Anthropology includes objects and information related to human body parts (preserved as well as models / dioramas) specially anatomical parts, models showing physical characteristics and racial spread, models / pictorial display regarding disease, health and hygiene textual and graphical information / display, literature, audio-visual material, etc.

The collection related to Archaeological / Palaeo-Anthropology mainly includes the fossil remains, stone tools, Paleolithic cave paintings, textual and graphical information / display, literature, photographs, audio-visual material, etc.

The ethnographic collection related to the Socio-Cultural Anthropology includes the material culture of all the regions / ethnic groups of India. Typologically, they can be broadly classified in the following major types :-

- i) Agricultural implements
- ii) Domestic Implements
- iii) Fishing implements
- iv) Hunting implements
- v) Arms and Weapons
- vi) Dress and Head Gears
- vii) Ornaments
- viii) Pottery
- ix) Basketry
- x) Narcotics
- xi) Travel and Transport
- xii) Machine and tools
- xiii) Mask and effigy
- xiv) Magico – Religious Articles
- xv) Toys
- xvi) Art objects
- xvii) Indigenous medicinal objects
- xviii) Musical Instruments
- xix) Folklore
- xx) Miscellaneous

Along with the tangible specimens the non-tangible collections are also made, such as, the Folklore including folksongs and folk-tunes are collected through audio and video recordings along with codified documental support. Collections related to the Linguistic Anthropology can also be developed in similar fashion. This sort of information may be communicated through various enjoyable ways in the form of graphical and textual display, literature, kiosk, audio-visual show, etc.

The collection material of the Anthropological museum includes the material culture of all the ethnic groups of India. Anthropological specimens are mainly made up of composite (both organic and non-organic) materials. For example, fishing implements of different varieties are mainly made of bamboo and cane stripes, sometime bones and iron pieces can also be found to be used. Arms and weapons are mainly made of wood and iron. We find raw jute, cotton, silk, feather and cane, leather, etc. have been used for making dress and headgear. Ornaments are mainly made of iron, bel-metal, brass, lead, Ivory lac, cane etc. Domestic implements are mainly made of bel-metal, brass, wood, bamboo, leafs of the tree, cocoanut shell, iron, etc. Agricultural implements are mainly made of wood and iron, basketry and narcotic implements and implements under the category of travel and

transport, machine and tools are mainly made of wood, iron and bamboo. So considering the various types of materials mentioned above, it can be said that the anthropological specimens are mainly composite in nature.

The scope of collection of Anthropological section is to – collect the objects related to all the ethnic group(s) of the respective region / India, especially of those cultures that are going to be extinct and fading trails of various cultures. Tribal and folk cultures are changing so fast in India that there is only one proposition left “Record it now or never”. But one thing must be kept always in notice that the collection should be built up in accordance with the aim, collection policy and collection maintenance facilities available in the museum, such as, storage, preservation, conservation, etc.

Role and significance of anthropological museums

Museums are the true custodians of our heritage and are a way to recourse of education and culture. Many of the artistic creations have already been destroyed by human vandalism, natural disaster, fire and war. What remains had to be preserved at all cost by the anthropological museums, so that the future generations may have access to the past archaeological and ethnological works. It is a well recognized fact that the development of the science of anthropology has been facilitated by the growth of ethnographical, ethnological and culture-history museums (Gautam, 1969; Urry, 1972). Ethnographical museums are established by ethnographic collections and these collections are not mere collection of the artifacts, but they are the life-history of those ethnic groups or communities from where the collections have been made. Through ethnographic collections, a community may be perceived in its totality (Soni, 1995). These ethnographic collections do not give the descriptive account of the community, but they throw light on the aesthetics, technology, material culture, occupational and religious pursuits, and arts and crafts of a community. The ethnographic museums are not only the repositories of cultural materials, but also a dynamic centre for dissemination of knowledge (Morley, 1976). Various ways are employed by Anthropological Museums in India for generating awareness and dissemination of knowledge for greater social benefit. Which are as follows :

1. Exhibition (permanent, temporary of open and closed display type)
2. Kiosk
3. Activity corner / discovery room
4. Museum Guide
5. Gallery talk
6. Film shows
7. Reserve collection – visual storage
8. Archive
9. Audio – visual section

10. Library
11. Lecturers
12. Demonstrations
13. Workshops
14. Conferences / Seminars
15. Social awareness programs
16. Museum Outreach programs
17. Training programs
18. Museum visits by students
19. School loan kits
20. Supplementary educational institution
21. Events / programs
22. Publication
23. Special educational programs / facilities for differentially abled visitors
24. Eco-Tourism and Eco-museum related activities
25. Collaboration

Exhibition is the face of every museum. Museums usually exhibits collections in **permanent** and **temporary** exhibitions of **open and closed display type**. The first and foremost task of museums is to arouse feeling of wonder and curiosity about its collection among the mass and simultaneously the curiosity of visitors must be met with best possible answers. Museum collections are the central point around which all museum educational activities revolve. All sorts of sensory experiences form the basis of museum education and thus museums are highly capable of imparting mass education. Learning directory from the objects provide a first hand experience to the learners. Display in anthropological museums provides vast knowledge regarding human evolution and history, health and hygiene, physical characteristics, life cycle, cultural patterns, material culture of various communities, socio-economic aspects, etc. **Text panels and labels** provide necessary associated information. **Maps, charts, diagrams and figures** works as means of supplementary information. Interactive display makes this learning experience more effective, curious and enjoyable. “I hear, I forget, I see, I remember, I do, I understand”, underlies the concept of **participatory exhibits** in museums. It enhances the quality and efficiency of communication. Visitors can be seen enjoying gaining knowledge through **working models** which can be activated by the visitors and **exhibits** that are to be manipulated to find answers to questions, quiz, and discovery boxes, etc. by just pressing buttons or switches of the participatory devices which are the real means of entertaining educational experience in many museums. It must be ensured that participatory exhibits in museums are self-explanatory in simple manner with audio-visual support or audio

recordings / e-guides to explain the process or information in common / local language for the greater benefit of the visitors, specially rural and illiterate visitors. **Live size reproductions or walk through and dioramas including interactive moving dioramas** provides recreation or imitations of real scenario and utilized in various anthropological museums to provide sensory experience regarding ancient cave life culture, physical characteristics / features of different communities, ecological settings, dress patterns, life style, occupation, etc. Such type of dioramas and interactive moving dioramas are utilized in many anthropological museums such as Indian Museum, Kolkata, Tribal Museum, BAJSS, New Delhi, Indira Gandhi Rastriya Manav Sangrihalaya (IGRMS), Bhopal and Zonal Anthropological Museums of Anthropological Survey of India. It is of great educational value and gives an idea of what things are actually like. Now, few museums are also looking forward to utilize hi-tech interactive display (walls, windows, floors, tables, etc.). These make the gallery more useful, self explanatory and exciting. Thematic and conceptual displays are better communicated by the use of electronic media and provide multisensory experience that stimulates active response in the museum visitors. Such exhibits provide both fun and education. **Live size Open displays** gives really enjoyable experience to the all sorts of visitors. Such type of open display in smaller or larger forms can be viewed in many anthropological museums such as, IGRMS, Bhopal, Dakshina Chitra, Muttukadu, Tamilnadu, and Zonal Anthropological Museum, Jagdalpur and Port Blair of Anthropological Survey of India.

Kiosk is a computer device usually touch screen to retrieve desired feeded information by the visitors. These are placed in galleries and used to provide huge information at one place in the form of text, maps, graphic, animation and real audio-visual recordings. In anthropological museums, these are used now a days to provide different sort of information related to different branches of anthropology, such as, stone age, human evolution, community spread, culture, socio-economic population status, folklore, etc.

Activity corner / discovery room is the place which gives hands on experience to handle and examine specimens and participate in several educative activities to all sorts of visitors specially children. Puzzles, making pottery, wearing ethnic dress, technique related activates, detail information through computer, educational activities, etc. may make part of these areas in anthropological museums. More information through facility of personal computers (computer room) provides interactive and participatory learning experience along with information to the interested visitors. Such types of facilities are found only in few anthropological museums in India.

Museum Guide is the most common way of communicating information to all sorts of visitors in simpler form. A museum guide can be a guide lecturer, museum education officer, museum staff or even museum incharge depending on the organizational structure in various anthropological museums in India. Museum guide is of much use in anthropological museum in India which has a multicultural and multi-linguistic background.

Museum guides explain facts in easily understandable common language and even in symbolic form which overcomes language barrier up to some extent and found especially effective in case of illiterate persons. With the use of more and more hi-tech technology in museums, now-days **electronic audio-guides** are also seen in use in few museums in India, such as, loop aerial system, static speech-reproducing box, miniature portable machine (guide a phone), etc.

Gallery talk is specially organized on specific theme on fixed days, with advance information to the public through the newspapers or any other media, are also found very useful. Here, the visitors get opportunity to get detailed information, solve their quires, and discuss their experiences with the guide lecturer and other visitors. This sort of activity is rarely seen in Indian anthropological museums.

Film shows are organized more or less in many anthropological museums in India depending on the facilities available with them. Films on museum collection, human evolution, health and hygiene awareness, rural / girl / adult education, art and craft and ethnographic community based films, etc. are mostly shown in anthropological museums which are found very effective in generating social awareness and dissemination of knowledge in entertaining way for every type of visitors.

Reserve collection along with the collection on display is great source of knowledge and related information / data in anthropological museums. In many anthropological museums reserve collection is kept in form of **visual storage**. Special permission is granted to access the reserve collection and library on request by the professionals, scholars and other interested visitors and this provides a great opportunity to see collection related to various aspects and communities, at one place. Since, museum provides direct access to the collection and associated information to the staff and research scholars and thus, becomes basis for serious authentic research work. Museum must work for saving these anthropological records as a disciplinary priority.

Archive section of anthropological museums play significant role in keeping in its safe custody **Manuscripts, Research Reports / written materials, museum documentation records, unpublished anthropological records, etc.** These are very useful for formulating display and educational programs and also form the basis for research and publication. As a result in every sense these are utilized for dissemination of knowledge and education. Few anthropological museums have separate archive section where as in others it is associated with museum library or documentation section. Many museums also accept documentary collection related to museum collection and research from outside individuals / researchers.

Audio – visual section is witnessed in all the anthropological museums in India in smaller or bigger form which is build up through **visual anthropological collection of photographs, audio and video recordings**. In few museums, having big collection of such material,

it is established as separate section and in others it is found associated with museum library or archive. It forms a great resource data for making of documentary films, research work, preservation of the past for future especially non-tangible fast vanishing traits and related information. It is utilized as a self-explanatory easily grasping great medium of generating awareness and providing information and knowledge to general mass when used in form of film shows and museum display and forms raw authentic research material for research scholars.

Library in every sort of museum is a great source of providing knowledge in the form of books. Proper facilities of reading in library and library membership in anthropological museums in India become a good source of public awareness and dissemination of knowledge. It also helps in increasing the number of museum users and fund rising.

Lecturers or guest talks by eminent scholars are specially organized on various aspects associated with museum collection and activities by different anthropological museums from time to time. Pre information to museum users or publicity of such events is done in advance for maximum benefit of the interested general mass and research scholars.

Demonstrations of different sort of art and craft forms and works with the help of artists and docents is also arranged by anthropological museums as a means of social awareness and dissemination of knowledge as well as to give patronage and promotion to the art / craft and artists / craftsmen in their respective fields. It is very useful in preserving traditional knowledge for future generation.

Workshops are organized on various themes from time to time by different anthropological museums in India for preservation and promotion of indigenous knowledge, social awareness, education and training.

Conferences / Seminars are organized on various themes from time to time by different anthropological museums in India of regional, national and international level for the sake of sharing and dissemination of knowledge. Sometimes, it is also found useful in making firm strategy regarding various aspects.

Museum Outreach programs are organized by various anthropological museums to reach out to the public especially far away general mass or for the people due to some reasons not coming to the museum. **Mobile exhibitions** are prepared from time to time on specific themes for display in different museums and public places to reach out to the far away mass and attract visitors through museum publicity and to generate awareness and cultural harmony. **Mobile van** is also used by few museums for this purpose. Due to lack of awareness and transport facilities a large number of people could not able to see even the near by museum. To overcome this problem, museum should organize mobile exhibitions on bus, truck or special vehicles. Replicas, facsimiles and few original objects, film units, lectures illustrated with slides are arranged in this van, which moves form

place to place. This may cover art, culture, health, hygiene, agriculture, etc. **Help is also provided by few big anthropological museums** in development of small museums in remote area to reach out to the far away population for generating awareness, education and preservation of culture and cultural property. **Big museums can also establish their extension or small branches as school and university museums or they can provide help in establishment of these sorts of museums.** Every school, collage and university should aim at developing a small museum by taking aid and advice from the museum professionals. It should contain collection relevant to the curriculum, such as, collection of specimens made by students, picture, charts and models along with the gifted collection by different institutions and museums. The museums should supply selected replicas, objects and supporting materials for development of their near by educational institutional museums / branches. It will take the message of museums to doorsteps of educational institutions. **Field trips** are organized by few Anthropological museums out side the museums in rural and urban areas including school and colleges based on specific themes to contribute in the area of social awareness, adult education, talent promotion and school and college education. Such visits followed by observation, feedback, memory test, quiz and on-spot contest will prove more fruitful in making the event successful in its impact and assessment. **Social awareness programs** are organized by few anthropological museums on different issues to prosper socio-cultural awareness regarding blind-faith (superstitions) and witchcraft, preservation and promotion of art and craft forms, cultural traits and social values, knowledge regarding new techniques, agriculture, health and hygiene, adult and child education, etc. **Museum camps** are also organized with the help of the professional and NGOs for similar purposes. Mobile exhibitions / van can be very well utilized for visual thematic display of facts during such type of social welfare and awareness programs.

Training programs are organized by many anthropological museums with the help of their staff and outside experts for the sake of providing specialized expertise and dissemination of knowledge. **Art and craft training** is organized for the promotion of fast vanishing art and craft forms, and social awareness. Training related to use of modern techniques and government plans and programs are sometimes also organized. **Short term special teachers training** are also organized by few museums from time to time so that they can make full use of the museum material in teaching. These include special lecture-demonstration and mutual discussion and can be of very short term such as of one or two days. It is also necessary before visit of students to the museum. **Short term in service training courses** are organized on display, conservation, museology, modeling, photography and are found very successful for dissemination of professional knowledge and providing expertise. Few museums have already started their **educational setup** through establishment of their educational section / institute and **degree / diploma courses** on specific topics. The National Museum Institute, set up in 1989 provides post graduate

courses in History of Art, Museology and Conservation. It also holds short term courses for the general public in Art Appreciation, Indian Art and Culture, and Bharatiya Kala NIdhi. The N.M.I. should be taken as a large effort on part of the National museum to impart professional teaching and. This is the first Museum University of the Country. Being an integral part of the National Museum, it utilizes the entire infrastructure of the museum- its library, workshops, auditorium, Modeling section, photo section and of course its art collections. The technical personnel of the museum are closely affiliated with the institute in all its functioning – teaching, research, practical and demonstrations. The primary objective of combining theory with practical is very well achieved.

Museum visits by students organized by their respective educational institutions (schools and colleges) is a direct medium and ideal mix of education and recreation. There are several exhibits in the museums, some are found relevant to the school curriculum, whereas some are not. Educational experiences obtainable in museum for school children may fall into two categories, experiences directly relevant to the school curriculum and experiences that provide a border perspective for improving the general knowledge of students in different areas of humanities and sciences. There may be several objects and exhibits in many anthropological museums which are related to the subjects taught in the school, such as exhibitions depicting human evolution, body parts, cultural patterns, art forms, indigenous techniques, etc. Since the school groups constitute a good percentage among the museum visitors, museum should take a lead in preparing exhibits relevant to the school education. Where museums do not make any specific effort to cater directly to the school children, teachers have to find ways and means of using those resources determining relevance to the class room teaching. Museum visits by school groups are often unplanned resulting in a number of children rushing through the galleries without an opportunity for observation and discovery. This can be avoided and the visits could be made productive only when teachers plan the visit well in advance in consultation with the museum authorities. The museum authorities should examine the school curriculum and identify themes and topics that could be presented in the galleries and specially shown to the students while their visit. Educational materials relevant to the subject, such as work sheets, information leaflets, etc. should be used while school visits to the museum.

School loan kits are boxes containing information in respect of specific themes. Each loan kit generally contains copies (reproductions and models) of original objects, information leaflets, maps, charts, pictures, teacher guide, etc. It acts as a medium for spreading non-formal education in clear way with in short time. Close cooperation between school teachers and museum education officers is needed for making these kits and its proper utilization. These kits can give real time experience to the students while classroom lectures. This facility is not reported to the author till date in anthropological museums in India.

Supplementary educational institution – Along with collection and its preservation, education has become the major purpose and important perspective of every museum. The educational value of museums is well understood. Visits to museums are incorporated in the school system. The museums also, on their own part, try to enhance the educative value by organizing thematic exhibitions and lectures linked to the exhibits in the museums. Now, gradually museums must come up as **supplementary educational institutions** for the students of schools, colleges and universities. They can be provided a better opportunity of practical experiences and lab facilities in museums along with the studies in the classrooms and the labs of their respective institutions. This approach has already been started in the form of university museums and the museums of various educational and research institutions. Better opportunities could be made available to the students by different museums through services of special programs and lectures with practical experiences and research and experimental facilities or lab facilities in the respective specialized field of knowledge of various museums to supplement classroom teaching of students in their respective educational institutions. If this approach could be adopted by the museums, specially the big ones, it will start a new era in the history of museums. It will be a milestone step for museums and lead the museums towards new heights. The museum professionals and the educationists, who are responsible for the educational activities, should use their knowledge in the framework of these sorts of the educational programs and facilities in museums.

Events / Programs are organized by anthropological museums from time to time on various occasions and themes. These may be **educational, cultural, promotional, informative and awareness** programs. Many **cultural programs** such as of dance, drama, music, puppet and mask shows, etc. are organized by various anthropological museums on regular basis. These are well utilized for mass awareness, education and enjoyment. Many educational programs especially for children, such as, quiz contest, children festival, etc. are regularly organized for the betterment of the future generation. **Summer classes** are organized by various museums with the help of professionals in summer vacation period on painting, crafts, modeling, etc. for development of hidden talent among children. Similar programs are also organized by few museums on specific themes for housewives, youth and other possible target groups. **Art and Craft promotional programs and Fairs** are also organized for generating awareness and promotion of the art and craft forms and respective artists / craftsmen, such as teaching creative craft work, painting, pottery, sculpture, carving, basketry, toy making, carpet weaving, net weaving, etc. for both children and adult and specially as rural vocational occupation. Fairs in the form of Mela and Haat are also organized by few anthropological museums, such as crafts museum, Delhi, IGRMS, Bhopal, etc. In this way, museums can come to the light by providing sources of livelihood to the common people.

Publications of various sorts are done by many museums as major source of spreading awareness, information and knowledge. The **introductory leaflets, pamphlets, picture**

post-cards, guidebooks, etc. are used to familiarize the people with the museum and its collection and activities. **Annual program calendar and news letter** are distributed to inform the public regarding forthcoming and past events and activities of the museum. **Posters, pamphlets and books**, published by the museum, related to new gallery, special exhibition, mobile exhibition and events organized by the museum from time to time are great source of information and popularity. Many anthropological museums and related organizations publish journals, **catalogues, brochures and books** on various aspects which are of use for scholars and interested people and contribute in the field of serious research work. **Museum journal** are used as a strong means for increasing public awareness about the various aspects related to the museums, collections and their respective activities. The calendar of schedule of the museum activities can also be published in the journal. Articles can also be published about the museum activities and achievements in the journal and newsletter. **Museum catalogues and brochures** can be very well utilized to popularize and give detailed information regarding museum collection. Proceeding of conferences, seminars and workshops organized on specific themes are published in the form of **books or edited volumes** by the museums. Since, museum provide direct access to the collection and associated information to the staff and researchers, **reports and Monographs** are also published by many museums as a result of serious authentic research work from time to time.

Special educational programs / facilities for differentially abled visitors are also arranged by various anthropological museums from time to time. Anthropological museums in India have more collections of contemporary objects and many of them can be touched, specially the big ones. Many museums have objects in display open for touch and feel experience for physically challenged persons. Even open display in anthropological museums provides them real experience, better understanding and unrestricted access to objects / display up to some extent in comparison to other museums.

Collaboration and proper coordination among anthropological museums and also with various educational institutions, government organizations, NGOs and even private sector is must to achieve the ultimate goal of preservation of the past, social awareness and dissemination of knowledge successfully, effectively and efficiently. Various events and educational programs are organized in collaboration with other organization due to financial reasons, manpower and resource support, etc. which also results in social awareness and action for good cause.

Eco-Tourism and Eco-museum activities getting popularize these days and hence getting promotion in India. This is bringing crucial changes in thought and action of anthropological museums. Which is resulting in new concepts and development of collaborative activates and facilities directly or indirectly by anthropological museums in India, such as, special guided tours in and around museum, rural tourism, ethnic home stay, village art and craft in the form of notified Shilp Grams, etc. The necessary interaction between cultural

heritage protection and cultural development can be achieved through the key role of museums of preserving and conserving the heritage itself and of fostering cultural diversity and mutual understanding. Thus, museums act as a link between living cultural heritage and tourism. Museums can play a significant role in the tourism of a country and in a culturally rich country like India its role cannot be overlooked. and mutual understanding. Thus, museums act as a link between living cultural heritage and tourism. Museums can play a significant role in the tourism of a country and in a culturally rich country like India its role cannot be overlooked.

Conclusion

Thus, we see that the museums basically fall under the service sector. The services provided by the museums fall under the category of merit goods provide social benefits to a greater extent and the benefits accrue not only to the present generation but also to succeeding generations. The basic services provided by museums are the preservation of the past through collection and related information for future generations and spreading awareness and education with amusement. It cannot be denied that knowledge is as good as any sort of asset to everybody. Education of the masses is an imperative issue and museums are the best non-formal agencies for imparting education through recreation. The museums are serving as an instrument of education, cultural development and awareness for the people of all the class and creed. A museum philosophy and museum ethics have to be established so that an awareness and sensitivity is created and more and more people can be attracted to museums. Therefore, museums have to stretch out their helpful hands towards all sorts of population groups specially the deprived ones to implement mass education for a better future. Anthropological museums enable its regional / national bio-cultural heritage to be recognized, significantly in culturally and naturally vulnerable regions and communities. In a developing country like ours, the educational potential of anthropological museums are to be very well exploited for all-round growth and understanding of the people. The museum provides a quick, effective and economical way of building of a nation, its background, resources, history, culture, crafts and arts. It is a fact that education is the potent instrument for human development, on which depends the level of all round national development. It is also agreed by all the countries and international organization like UNESCO and ICOM that people of all age groups and intellectual background can meet this gap in the field of communication through the effective use of museums and their collections, exhibitions and activities. But, it would also need adequate resources, trained man power, and keen interest of the authorities responsible for the development of museum educational programs. At last, it can be said that generating awareness, dissemination of knowledge or education is the prime focus of all the museums today. A vital change is coming today in the perception, outlook, approach and functioning of the Anthropological museums in India in order to facilitate more and more to their visitors.

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Mitochondrial DNA Single Nucleotide Position 16189 Polymorphism and Type 2 Diabetes in Central Indian Population

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ABSTRACT

The study investigated the role of mitochondrial DNA mutation for the development of type 2 diabetes through a case control study of Indian population in Central India. We have attempted to estimate the extent of involvement of mitochondrial DNA mutation (16189) from T>C and in and around poly c tract (nucleotide position 16180 to 16194 of non coding region) and its association with coding region (nucleotide position 3169 – 6031) for the prognosis of type 2 diabetes in Central Indian Population.

INTRODUCTION

Type 2 Diabetes is a complex heterogeneous group of condition characterized by elevated level of plasma glucose. The recent global epidemic of type 2 diabetes is an indicative of environmental triggers. Multiple lines of evidence support the view that genetic components play a crucial role in the prognosis of type 2 diabetes in which polymorphism in mt DNA might have played a role both through genetic and environmental mutagens. According to the recent projection, India already leads the world with the largest number of diabetic subjects and predicted that by 2030 there will be 80 million(Wild et al .2004) . Insulin has been shown to enhance muscle mitochondrial biogenesis in human. In people with type 2 diabetes, increasing insulin from the post absorptive to post-prandial level does not increase ATP production unlike in non-diabetic people (Muoio and Kovacs. 2007). The uncoupling of beta oxidation of fatty acids and the TCA cycle, which is induced by chronic inactivity and a high fat diet, cause both insulin resistance as

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well as intra-myocyte accumulation of partially oxidized lipids from skeletal muscle (Stump et. al.2003).

India is facing an epidemic of type 2 diabetes with high prevalence in urban area. Various epidemiological studies in India have shown that the increasing prevalence of diabetes could be attributed to a high genetic risk, both from nuclear and mitochondrial DNA and lower risk thresholds for acquired risk factors such as age, obesity, abdominal adiposity (Ramachandran et al.2004 and Ramachandran et al. 2006). Mitochondrial dysfunction has been reported to be crucial to the pathogenesis of non alcoholic fatty liver disease (Wei et al. 2008). Non-alcoholic fatty liver disease has been found to be more in Asian Indian men (Peterson et al. 2006).

The recent study (Nair et al .2008) among non-resident Asian Indian diabetic, Asian Indian non diabetic and northern European American non diabetic, for mitochondrial dysfunction, insulin sensitivity, intramuscular triglyceride, lipid profile, proinflamatory markers like interleukin 6 (IL-6), C – reactive protein and Tumor Necrosis Factor – alpha, concluded that Indian diabetic males have more insulin resistance, higher mitochondrial copy number, higher ATP production rate compared to Northern European non diabetic individuals. Thus, it was concluded that among the Asian Indian, insulin resistance and mitochondrial dysfunction may be unrelated and intra muscular triglyceride (IMTG) were higher in non diabetic Indians compared to the non diabetic Northern European Americans.

Multiple pathogenic pathways are able to deregulate glucose homeostasis leading to diabetes variants in mitochondrial DNA (mt DNA) may contribute to the pathophysiology of type 2 diabetes (Liou et al. 2007). The mutation 3243A>G leads to the development of diabetes due to an inappropriate storage of triglycerides with in adipocytes and inappropriate scavenging of fatty acids by _oxidation (Maassen et al. 2006). A transition of T>C at nt position 16189 in mitochondrial DNA has attracted bio-medical researchers for its probable role with the development of diabetes mellitus in the adult life (Liou et al. 2007).Notably the variant at 16189 T>C was more prevalent with left ventricular hypertrophy (LVH) than without LVH in diabetic patients (Momiyama et al. 2003).

The role of mitochondria in causing disease is largely attributed to its reactive oxygen species (ROS) production. The suggestive role of mt DNA variants in increasing ROS production and the impaired response to oxidative stress due to T 16189 C variant is worth addressing as genetic susceptibility factors in type 2 diabetes mellitus (Wallac1992, Lin et al.1994 and Bhat et al. 2007) Mitochondrial DNA mutations are an important cause of many diseases including diabetes (Wallace1992 and Chinnery et al.1997). Patients harboring mt DNA mutation usually have a mixture of mutated and wild type

(normal) mt DNA (heteroplasmy). In vitro studies have shown that heteroplasmic mt DNA defects are only expressed when the percentage level exceeds a critical threshold level (Larsson and Clayton 1995). The level of mutated DNA and mt DNA (mutation load) varies both between and within individuals with mt DNA disease (Lightowlers et al. 1997). This variability, coupled with tissue specific differences in the threshold of expression, partly explains the diverse clinical phenotypes, which are seen in patients harboring the same mt DNA defect (Wallace 1992).

The T>C substitution at nt position 16189 of the human mitochondrial genome has been associated with the development of heteroplasmic length variation in the control region of the mitochondrial DNA. This defect may be due to pathogenic mt DNA mutation including the diabetogenic A>G mutation in the t RNA (Marchington et al. 1996). 16189 mt variants have also been associated with insulin resistance in British adult men. Mt DNA – NDI gene mutations at nt 3243 (A>G), nt 3316 (G>A), nt 3318, nt 3394 (T>C) and nt 3426 (A>G) may contribute to the pathogenic environmental factors (McCarthy et al. 1996, Odawara et al. 1996, Maassen et al. 2004 and Hattori et al. 2003). Early age at onset and maternal inheritance are risk factors for diabetes mellitus caused by mitochondrial DNA – NDI gene dysfunction (Pei et al. 2004). The mt DNA 16189 variant can influence the development of type 2 diabetes mellitus. The association between the 16189 variant and increased BMI exemplify an additive effect of genetic and environmental factors on the pathogenesis of type 2 diabetes mellitus. The prevalence of the 16189 variant is higher in type 2 diabetes mellitus patients than in the age and sex matched non-diabetic subjects (Weng et al. 2005).

A transition of T>C at nt position 16189 in the hyper variable D-loop region of mt DNA has attracted research interest for its probable correlation with increasing insulin resistance and development of diabetes mellitus in adult life (Liou et al. 2004). The 16189 variant arises when a T16189C transition results in a poly-c tract in the large non-coding region of mt DNA, near to control sequences for replication and transcription. The majority of UK Caucasian with the variants is homoplasmic for the T16189C transition with a length of 10C residues. This may generate a heteroplasmic length variation, each individual having a range of tract length including a majority of mt DNA with tract length of 9 and 11. Heteroplasmic length variation of homo polymeric tract becomes more pronounced with tracts whose model length is over 10C (Poulton et al. 2002). The genetic variation of the 16184 – 16193 poly C tract is unlikely to have a major role in the cause of type 2 diabetes (Chinnery et al. 2005). A multinational population based case control study confirmed the association between the 16189 variants and type 2 diabetes among Chinese, Japanese and Koreans (Park et al. 2008).

In the present communication, we have attempted to estimate the extent of involvement of mitochondrial genetic factors (16189 T > C mutation, poly C tract 16180 – 16194) involvement in non coding region, its association with coding region (3169 – 6031) for the prognosis of type 2 diabetes in central Indian population. The study investigated the role of mt DNA mutation for the development of type 2 diabetes through a case control study.

MATERIAL AND METHOD

The study was performed in accordance with the declaration of Helsinki and formally approved by the institutional ethics committee of Anthropological Survey of India, Kolkata, India. Informed consent was obtained from all subjects. According to World Health Organization diagnostic criteria of diabetes mellitus (1999), we have enrolled 226 persons out of which 60.4% were diabetic and the rest were non diabetic 39.6%. Data from the subjects include gender, age, age at onset of diabetes, height, weight, circumference at hip and abdomen, systolic and diastolic blood pressure were recorded in a structure schedule from a polyclinic, Nagpur, Maharashtra (India) for the diabetic patients and home visit for the controlled subjects. Diabetic complications along with other relevant information were carefully recorded from the record of the patients and through personal interview. 2ml blood samples were collected in BD vacutainer by vein puncture and 4 ml of blood was collected from each subject for the extraction of DNA in BD vacutainer containing K2 EDTA 7.2 mg (B. D. Franklin, NU, USA). Fasting blood sugar was recorded by strips method using a glucometer (one touch, Ultratech). The levels of total cholesterol and triglyceride were estimated by semi-automated photo analyzer mini technol SE SRL, Roma, Italy) from serum samples.

The DNA was extracted from the blood by salt precipitation followed by Proteinase K treatment. OD was determined by vis-UV Spectrophotometer (UV 1601 Shimadzu Corporation, Japan).The mitochondrial DNA was amplified by long polymerase chain reaction (PCR) using specific primer for particular region of mitochondrial DNA (Table-1). The reaction mixture (10 μ l) containing 14 p Mol of each of primer, 0.4 μ l of 0.2 M each of de oxy nucleotide triphosphate, 2.5 M M Magnesium chloride and 0.6 unit of Taq DNA polymerase, 1 μ l of PCR buffer (10 X PCR buffer). The final volume was made up to 10 μ l with pre-sterilized mille-Q-water. The amplification protocol consisted of an initial denaturation at 94°C for two minutes followed by 35 cycles of denaturation at 95°C for one minute. Annealing at 60 C for 45 seconds and extension at 72 °C for 3.20 minutes with a final extension at 72°C for 7 minutes using gene Amp PCR System 9700 (Applied Bio system). The sequencing of the sample was done in 3700 Genetic Analyzer of Applied Bio system using Big dye (R) Terminator V 3.1 cycle sequencing kit (Applied

Bio system, Foster City, CA 94404, USA), following the suppliers instructions with certain modifications.

Table : Primer sequence for different position of mt DNA

Sl. No	Primer	Position	5' Sequence 3'
01.	3169F	3136 – 3189	TACTTCACAAAGCGCCTTCC
02.	3961R	3961 – 3941	ATGAAGAATAGGGCGAAGGG
03.	3796F	3769 – 3816	TGGCTCCTTTAACCTCTCCA
04.	4654R	4654 – 4634	AAGGATTATGGATGCGGTTG
05.	4485F	4485 – 4505	ACTAATTAATCCCCTGGCCC
06.	5420R	5420 – 5400	AATGGGGTGGGTTTGATG
07.	5255F	5255 – 5275	CTAACCGGCTTTGCC
08.	6031R	6031 – 6011	ACCTCGAAGGTTGCCTGGCT
09.	15811F	15811 – 15831	TCATTGGACAAGTAGCATCC
10.	16536R	16536 – 16516	GAGTGGTTAATAGGGTGATAG

RESULTS

Out of total sample of 226, 138 were diabetic and rests were non diabetic without any observable complications reported. There were 54 samples whose in and around poly C tract (G>A), i.e. 16180 – 16194, changed nucleotides sequence were noticed in any of the position as determined by direct sequencing. Out of 54 samples, 30 samples were with the transition from T>C in nt position 16189. Fifty percent of the nt 16189 mutated samples out of 36 were diabetic. The mean age is 45 years for controls and 55 years for diabetic. The average age at onset of diabetes is 49 years. The polymorphism of around poly-C tract has been depicted for 226 readable sequences out of which 76.11% are of wild type i.e. matched with the revised sequence of Cambridge and 13 polymorphism were observed in the sequence. Among 7.52% samples, T > C has been observed only at position 16189, 23.89% samples were found with changed sequence of in and around poly-C tract. Out of 15.93% samples, where nt 16189 T>C variation occurred, 50% were diabetic samples, whereas among the poly c tract disturbed samples, 55% samples were diabetic. Considering the total samples of 226, among 60.55 diabetic samples, 13.27% resulted from poly-C tract disturbance and 8% from nt 16189 T>C mutated samples. In the wild type sequence, there were 47.79% diabetic and 28.32% non diabetic. Out of 16189 mutated samples, 50% were diabetic (18/36) and in the poly-C tract mutated samples, 55.56% (30/54) were diabetic.

The samples were classified in three categories i.e. (1) 16189 (C>T) mutated, (2) Poly-C tract mutated and (3) wild type where no mutation occurred in 16189 (C>T). The poly-C tract mutated samples include 16189 (C>T) mutated samples and two groups i.e. Diabetic and control.

Table : Relative frequencies of polymorphic mt DNA sequences between nucleotide position 16180 to 16194

Type	Nucleotide position from 16180 – 16194														Frequency	Percentage	
	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94		
Wild	A	A	A	A	C	C	C	C	T	C	C	C	C	C	A	172	76.106
Mutated	A	A	A	A	C	C	C	C	C	C	C	C	C	C	A	17	7.522
Mutated	A	A	A	C	C	C	C	C	C	C	C	C	C	C	A	7	3.097
Mutated	A	A	C	C	C	C	C	C	C	C	C	C	C	C	A	6	2.654
Mutated	A	A	A	A	T	T	C	C	C	C	C	C	C	C	A	1	0.442
Mutated	A	A	A	A	C	C	C	C	C	C	C	C	T	C	A	3	1.327
Mutated	A	A	A	A	C	C	C	C	T	T	C	C	C	C	A	5	2.212
Mutated	A	A	A	A	C	C	C	C	C	T	C	C	T	C	A	7	3.097
Mutated	A	A	A	A	C	T	C	C	C	T	C	C	C	C	A	3	1.327
Mutated	A	A	A	A	C	C	C	T	C	T	C	C	C	C	A	1	0.442
Mutated	A	A	A	A	C	C	C	C	C	T/C	C	C	C	C	A	2	0.884
Mutated	A	A	A	A	T	C	T	C	C	C	C	C	C	C	A	1	0.442
Mutated	A	A	C/A	C/A	C	C	C	C	C	T/C	C	C	C	C	A	1	0.442
TOTAL															226	100.00	

Table : Characteristics, prevalence of mutation at different nucleotide position groups

Condition	Position (Shift)	Risk Ratio	95% Confidence Internal	Odds Ratio	95% Confidence Internal	t Value
16189 (C-T) Poly C Tract Mutated Wild type	3316 (G>A)	1	0.068 – 14.787	1	0.058 – 17.326	0.757
		1.6	0.154 – 16.605	1.643	0.140 – 19.288	0.585
		0.594	0.086 – 4.132	0.589	0.081 – 4.283	0.479
		0	0	0	0	0
16189 (C-T) Poly C Tract Mutated W	3531 (G>A)	0	0	0	0	0
		0	0	0	0	0
		2.982	0.356 – 24.965	3.077	0.352 – 26.936	0.272
		0	0	0	0	0
16189 (C-T) Poly C Tract Mutated Wild type	3630 (C-T)	1	0.231 – 4.310	1	0.173 – 5.772	0.671
		3.2	0.382 – 26.782	3.539	0.369 – 33.978	0.253
		0	0	0	0	0
		0	0	0	0	0
16189 (C-T) Poly C Tract Mutated Wild type	3741 (C-T)	0	0	0	0	0
		0.8	0.053 – 12.137	0.793	0.047 – 13.377	0.696
		0.596	0.179 – 1.982	0.577	0.161 – 2.074	0.298
		0	0	0	0	0
16189 (C-T) Poly C Tract Mutated Wild type	3921 (C-T)	0	0	0	0	0
		0.8	0.053 – 12.137	0.793	0.047 – 13.377	0.696
		2.982	0.674 – 13.188	3.182	0.675 – 15.002	0.107
		0	0	0	0	0

Condition	Position (Shift)	Risk Ratio	95% Confidence Internal	Odds Ratio	95% Confidence Internal	t Value
16189 (C-T) Poly C Tract Mutated Wild type	3954 (C-T)	0	0	0	0	0
		0.8	0.053 – 12.137	0.793	0.047 – 13.377	0.696
		2.385	0.272 – 20.885	2.438	0.267 – 22.298	0.381
16189 (C-T) Poly C Tract Mutated Wild type	4216 (C-T)	0	0	0	0	0
		0.8	0.053 – 12.137	0.793	0.047 – 13.377	0.696
		0.994	0.246 – 4.023	0.996	0.230 – 4.302	0.631
16189 (C-T) Poly C Tract Mutated Wild type	4796 (C-T)	0	0	0	0	0
		3.2	0.382 – 26.782	3.539	0.369 – 33.978	0.253
		0	0	0	0	0
16189 (C-T) Poly C Tract Mutated Wild type	4916 (G-A)	0	0	0	0	0
		1.6	0.154 – 16.605	1.643	0.140 – 19.288	0.585
		1.193	0.225 – 6.332	1.2	0.214 – 6.741	0.60
16189 (C-T) Poly C Tract Mutated Wild type	4917 (A-G)	0	0	0	0	0
		0	0	0	0	0
		2.385	0.272 – 20.885	2.438	0.267 – 22.298	0.381
16189 (C-T) Poly C Tract Mutated Wild type	5252 (A-G)	0	0	0	0	0
		0	0	0	0	0
		0.149	0.017 – 13.305	0.141	0.015 – 1.292	0.065
16189 (C-T) Poly C Tract Mutated Wild type	5360 (A-G)	0	0	0	0	0
		0.8	0.053 – 12.137	0.793	0.047 – 13.377	0.696
		0.795	0.184 – 3.441	0.787	0.171 – 3.634	0.523
16189 (C-T) Poly C Tract Mutated Wild type	5460 (G-A)	0	0	0	0	0
		0	0	0	0	0
		0.239	0.048 – 1.194	0.224	0.042 – 1.192	0.069
16189 (C-T) Poly C Tract Mutated Wild type	5744 (G-A)	0.50	0.284 – 7.934	1.6	0.234 – 10.945	0.5
		1.60	0.320 – 8.007	1.692	0.283 – 10.135	0.448
		0	0	0	0	0
16189 (C-T) Poly C Tract Mutated Wild type	5790 (C-A)	0	0	0	0	0
		0	0	0	0	0
		0.596	0.124 – 2.868	0.585	0.115 – 2.988	0.4

Sequencing of mitochondrial DNA samples from nucleotide position 3169 to 6031 in the coding region and 15811 to 16536 in non-coding region was done. We have observed fifteen point mutations within this region of mitochondrial DNA where more than 2 percent samples were mutated from the Cambridge sequence of reference. Among the nucleotide 16189 (C>T) mutated samples at nt position 3316 (G>A), 3630 (C>T) and 5744 (G>A), mutations were observed with odds ratio one between diabetic and control subject (Table -3). Among the poly C tract mutated samples on nucleotide position 3630 (C>T), 4797 (C>T), 4916 (G>A) and 5744(G>A) the odds ratio is more than one among diabetic and control groups. The level of TG is significantly higher among the diabetic groups compared to control groups of poly C tract mutated and non mutated groups.

Whereas the comparison of TG level between 16189 (T>C) diabetic and control groups showed non significant results (student's t value is less than 1.96 i.e. p<0.05). Thus, nt position 16189 and poly C tract mutation may have impact in biogenesis of diabetes along with other point mutation in the coding region.

Out of the nine positions in the coding region where mutations have been observed with odds ratio more than one, we have observed eight positions are in the part of oxidative phosphorylation enzyme system. The position nt 3316 to nt 3954 are in the enzyme NADH dehydrogenase 1 and 4796 to 4916 are in NADH dehydrogenase 2. The nt position 5744 is a part of the L-Strand origin (Table 4).

Table : Coding region and nucleotide position mutated in different groups

Sl. No.	Coding region (nt position)	Sample type observation		
		16189 (T-C)	Poly C tract mutated (nt)	Wild Type
01.	NADH dehydrogenase	3316	Yes	—
		3531	—	—
		3630	Yes	Yes
		3741	—	—
		3921	—	Yes
		3954	—	Yes
02.	NADS Dehydrogenase	4796	—	Yes
		4916	—	Yes
03.	L Strand Origin	5744	Yes	Yes

Analysis of the anthropometric and other information revealed that the mean age of the three groups of control subjects is 45 years and that of the diabetic patients is 55 years (Table – 5).

Table : Comparison of Bio anthropometric parameters of the diabetic and control subjects (Mean ± SD) for different groups

Genetic Status of Subjects (Count)	Parameters (Mean ± SD)										
	Age (years)	Age at onset (years)	Systolic Blood Pressure	Iastolic Blood Pressure	Fasting Sugar	Cholesterol	TG	Weight ratio	Statuses	BMI	Waist/hip
Changed poly C tract (24) (control)	45.38 ±	— 15.86	125.57 ±	78.78 ±	89.20 ±	191.53 ±	143.50 ±	59.87 ±	157.79 ±	24.38 ±	0.88 ±
			9.51	6.02	7.29	31.58	45.72	12.57	10.78	4.68	0.06

Genetic Status of Subjects (Count)	Parameters (Mean \pm SD)										
	Age (years)	Age at onset (years)	Systolic Blood Pressure	Diastolic Blood Pressure	Fasting Sugar	Cholesterol	TG	Weight ratio	Statues	BMI	Waist/hip
Changed poly C tract (30) (Diabetic)	55.63 \pm 8.54	49.79 \pm 9.46	144.13 \pm 21.21	89.13 \pm 11.53	142.10 \pm 54.49	192.16 \pm 47.01	182.16 \pm 79.47	63.50 \pm 9.13	156.64 \pm 6.77	25.90 \pm 3.62	0.82 \pm 0.29
16189 T >C (18) (Control)	46.22 \pm 15.18	—	125.29 \pm 8.74	78.94 \pm 5.25	89.00 \pm 8.41	190.86 \pm 33.19	143.40 \pm 40.11	60.29 \pm 12.87	157.17 \pm 11.13	24.39 \pm 4.84	0.88 \pm 0.06
16189 T >C (18) (Diabetic)	55.94 \pm 7.30	49.76 \pm 8.46	141.44 \pm 20.94	88.67 \pm 11.68	134.22 \pm 43.45	190.39 \pm 52.67	173.53 \pm 82.89	63.22 \pm 9.21	156.77 \pm 5.64	25.75 \pm 3.73	0.78 \pm 0.6
Wild Type (64) (Control)	45.86 \pm 15.18	—	125.97 \pm 15.04	81.86 \pm 7.65	92.60 \pm 12.43	201.04 \pm 56.54	131.87 \pm 60.60	63.39 \pm 11.88	160.72 \pm 8.61	24.51 \pm 4.05	0.89 \pm 0.08
Wild Type (108) (Diabetic)	56.54 \pm 8.85	49.42 \pm 9.38	139.20 \pm 18.52	86.56 \pm 12.02	142.12 \pm 45.34	197.18 \pm 50.36	180.85 \pm 78.00	61.70 \pm 8.73	154.79 \pm 7.16	25.81 \pm 3.69	0.92 \pm 0.07

The mean age at onset of diabetes is 49 years. The systolic and diastolic blood pressure of the three control groups were 125 mm/Hg and 78 to 81.89 mm/Hg, whereas all diabetic patients showed higher values ranges from 139.20 to 144 mm/Hg and 86 to 89 mm/Hg. The fasting blood sugar of the three control groups showed a value of 89.20 to 92.60 mg/dL and that for diabetic patients show higher range (134.22 to 144.12 mg/d L), which is 61.89% higher than the control groups. The mean post prandial blood sugar was below 150 mg/d L for control subjects and it was above 220 mg/d L for diabetic patients of all three groups after two hours of normal meal. The serum cholesterol level of the three diabetic and control groups ranges between 191 to 201 mg/d L. No substantial variation has been observed between diabetic and control groups. The serum triglyceride value of the control groups ranges from 131.87 to 143.40 mg/d L and that of the diabetic groups between 173.53 to 182.16 mg/d L, which is higher in all the diabetic groups than the control groups. The five point mutations (nt 3316, 3630, 4796, 4916, 5744) were observed with odds ratio more than one between diabetic and control subjects. The wild type i.e. where no mutation observed in the poly C tract area, we have encountered three point mutation at nt position 3531 (G>A), 3921 (C>T) and 3954 (C>T) with odds ratio more than one. The highest odds ratio of 3.539 have been observed at nt position 3630 (C>T) and 4796 (C>T) among the poly C tract mutated samples.

The student's t test between diabetic and control samples where no mutation taken place in poly C tract area of mt DNA, significant differences found in SBP, DBP, FBS and TG (Table – 6).

Table : t' Test between diabetic and control subjects among different groups for Physiological, Biochemical and Anthropological Parameters

Genetic Status of Subjects	Age	SBP	DBP	Fasting Blood	Cholester of	TG	Weight	Statuses	BMI ratio	Waist/hip
16189 T >C	2.51	3.10	3.31	4.48	0.03	1.43	0.81	0.14	0.97	1.17
Mutated Poly C tract	2.91	4.36	4.33	5.36	0.06	4.01	1.21	0.46	1.34	0.32
Without Poly C tract mutation	5.71	5.07	3.14	8.84	0.71	3.90	1.26	4.50	1.76	3.27

In case of poly C tract mutated samples, significant differences exist between diabetic and control subjects in SBP, DBP, FBS and TG. Similarly' test in case of nt 16189 (T>C) mutated diabetic and control subjects show significant differences in all three categories for SBP, DBP and FBS, where as no significant difference exist for cholesterol between all the three categories of diabetic and control groups. Student's t test of anthropometric parameters, ratios and indices show significant differences in stature and waist hip ratio of diabetic and control subjects where no mutation occurred in poly C tract.

Discussion

The current study demonstrated that the mean values of anthropometric parameters are higher among the diabetic samples compared to control samples in all the three categories. Thus, the phenotypic expression in the level of carbohydrate and fat metabolite product i.e. glucose, cholesterol, T G are higher in diabetic compared to control subjects. The intake of rich carbohydrate, less protein and fat diet is indicative of the fact that cholesterol level is not significantly different between diabetic and control subjects. It indicates that the intake of free fat, which is the source of cholesterol, is same in both diabetic as well as control. In this studied population, the increased level of TG in diabetic compared to controls are indicative of involvement of fat accumulation as well as glucose accumulation in the blood plasma.

BMI and waist/hip ratio are indicative of fat deposition, show higher mean values for the poly C tract mutated groups as well as in nt 16189 (T>C) mutated diabetic patients than the controls. Food intake of all subjects is uniform as they are fixed income salaried people and many lead sedentary lives. Their energy requirement and intake remains almost constant throughout the day. Seasonal diet change can not be expected from this studied population. Thus, the thrifty gene hypothesis of Neel (1962) can not be applied to this population for prognosis of diabetes due to maximum metabolic efficiency of gene and fat storage as less number of obese people was found among the diabetic patients. The other hypothesis (Wei et al 1998) of organ specific origin cannot be completely ruled

out as the maintenance of glucose level within a reasonable limit does not affect the organ function within a detectable level. The third theory of Mendelian origin (Lin et al 1994) of diabetes cannot be fully ruled out as most of the cases have some diabetic history attached directly or distantly. However, all diabetic patients do not fallow this hypothesis. Thus, environmental trigger of diabetes is the best possible hypothesis which encompasses both genetic and no genetic components applied to these subjects .The genetic components change by chemical mutagenesis is the best possible target to explain the prognosis of diabetes. As diabetes is the over production, accumulation, faulty absorption and delayed catabolism rate in single or in a synergic way alters the glucose hemostasis. Mean body weight of the diabetic patients of poly C tract mutated sample was higher than the control group where as the same parameter was higher in control group of wild type sample compared to diabetic group. The average body mass index values ranges from 24.38 to 24.51 for three control groups where as that for diabetic groups the values were above 25, which belong to over weight category. The waist/hip ratio of the poly C tract control groups were higher than that of the diabetic group of the poly C tract, however, for wild type samples, reverse trend has been observed between control and diabetic samples.

In the present study we could not find statistically significant difference of BMI and WHR between diabetic vs. control and between 16189 mutated vs. Poly C tract mutated samples. However, we have observed a significant difference between diabetic and control subjects for non poly C tract mutated samples. Our findings collaborate with the finding of Korean people (Chinnery et al 1997).

Screening for point mutation in the NDI region at nt 3316, 3531, 3630, 3741, 3921 and 3954 position suggested that a large number of the diabetes patients who were diagnosed after the age of 45 years reported mutation in the NADH1 region, which is consistant with the hypothesis that oxidative strees induced by mitochondria increases with aging (Kamiya and Aoki 2003). Mitochondrial DNA unlike nuclear DNA, protected by histamine, is more sensitive to be attacked by reactive oxygen species produced by mitochondria and susceptible to mutation, which may be acclerated in the diabetic state (Lin et al. 2006). It has been suggested that increased mitochondrial reactive oxygen production (OA-, H₂O₂) during hyperglycemia may contribute to the pathology of diabetes.

In our study the frequency of diabetes patients is 50% of the total samples with 16189 (T>C) mutation. 60% of the samples with poly c tract disturbed have diabetes. Harboring the 16189 mt DNA variant may impair the ability of a cell to respond properly to oxidative stress and oxidative damage as suggested earlier (Wei et al. 1998) holds good for the present study. The increase of BMI, WHR and TG in diabetic state compared to normal state is possibly the result of variation in the mt DNA sequence, though other genetic (hereditary and non-hereditary) and non-genetic factors may contribute for precipitation to diabetes. Variation in the individual and regional predisposition to degenerative disease like diabetes may result from the interaction of intake of carbohydrate loaded vegetarian

food in Indian diet due to excess production of reactive oxygen species, in time and space. Therefore the mitochondria provide a direct link between environment and genes in this population.

The mitochondrial DNA, although not protected by histones or DNA binding proteins, is susceptible to oxidative damage by ever increasing levels of ROS and free radicals in the mitochondrial matrix with increase of age and pathogenesis of degenerative diseases (Wei et al.1998, 2001) .In Indian diet rich in carbohydrate increases the chance of production of more ROS thus increases the chance of unprotected mitochondrial DNA damage. Nucleotide position 16189 is very near to control region which directs the production of the mitochondrial DNA. Thus, mutated mitochondrial DNA decreases the production of correct mitochondrial DNA quantity responsible for the underutilization of glucose, which in turn leads to hyperglycemia. In this study our findings demand further study with greater sample size to eliminate the effect of genetic factors of nuclear DNA origin and specific enhancer of ROS mutagens which increases the chance of occurrences of diabetes in this population. Nucleotide position 16189 mutations in mitochondrial DNA can be taken

as a marker for development of type 2 diabetes in Indian population as in other Asian countries.

Declaration

The views expressed in this paper are completely of the authors

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Prevalence of Type 2 Diabetes and Obesity in Gangadikara Vokkaligas of Mysore, Karnataka

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ABSTRACT

The present paper discusses prevalence of Type 2 diabetes and obesity among Gangadikara Vokkaligas of Mysore. Data was collected from 1318 subjects comprising 569 males and 749 females, by well trained investigators using standardized protocols, such as medical history, demographics, phenotypic and genotypic information including anthropometric measurements. Prevalence of diabetes, among the Gangadikara Vokkaliga of Mysore, is very high (27.5 %) compared to coastal Karnataka (16%) and Chennai populations (15.5%). It is observed that both male and female diabetics have more body weight compared to non-diabetics, though they are under medication and diet restrictions. However, female diabetics are more obese compared to male diabetics. The frequency of obesity among Gangadikara Vokkaliga of Mysore (24%) is lower than in coastal Karnataka population (28%).

INTRODUCTION

Diabetes mellitus is a complex multi factorial metabolic disorder caused by both environmental and genetic factors. The incidence of Type 2 Diabetes is increasing globally from 2.8 per cent in 2000 to 4.4 per cent in 2030 as per World Health Organization (Wild et al, 2004). The prevalence of Type 2 Diabetes in Asian Indians ranges from 2.7 per cent in rural India to 14 per cent in urban India. India has the highest number of diabetes

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in the world (Basnayakar and Rajapasha 2004; Yach et al. 2004). Even though most Indians are vegetarians, they have high prevalence of Type 2 Diabetes Mellitus with a relatively young age of onset (Sanghera et al, 2006). The National Urban Diabetic Survey reported 12.1 per cent of diabetes and 14 per cent of impaired glucose tolerance (Ramachandran et al, 2001). The prevalence of diabetes was 16 per cent in coastal population of Karnataka (Rao et al, 2010). The incidence of obesity among Type 2 Diabetes of Mysore population was reported (Shekar et al, 2005). A few genetic studies of Type 2 Diabetes among Asian Indians have focused on public health significance of this disorder (Chadha et al, 1990; McKeigue et al, 1991; Misra et al, 2001). The studies on the genetics of Type 2 diabetes in endogamous castes in India are scanty, except the study on Khatri Sikhs of Punjab and Haryana states in northern India (Sanghera et al, 2006). In India 13 per cent of women and 9 per cent men are either Overweight or Obese, according to the National Family Health Survey (2005- 06) and the incidence is rising at an alarming rate. The incidence of obesity is around 25 per cent in European population.

Anthropological Survey of India launched 11th plan research project, Bio-cultural risk factors assessment for Type 2 Diabetes in Gangadikara Vokkaligas of Mysore, Karnataka. Gangadikara Vokkaliga is a major dominant agricultural community. They speak Kannada, a Dravidian language. Gangadikara derives the name from Gangavadi, the original habitation of a country ruled by Ganga kings who ruled over southern Karnataka for many centuries (Nanjundayya and Iyer, 1930; Banerjee 1966). Vokkaliga means a man whose profession is agriculture. They are predominantly distributed in Mysore, Kodagu, Hassan, Mandya, Tumkur, Ramanagaram and Chamarajanagar districts. Gangadikara Vokkaligas are non-vegetarians and their staple food constitutes Rice and Ragi (millets). Vokkaliga man affixes Gowda as title, meaning headman. Traditionally they were two endogamous divisions namely, Pettigeyavaru and Bujjanigeyavaru based on their customary practice of carrying marriage ritual articles (Nanjundayya and Iyer, 1930). Inter group marriages between these divisions are allowed at present. They had numerous exogamous kulas (clans) named after material objects that are sacred. Banerjee (1966) wrote that the clan system in Gangadikara Vokkaligas of Mysore is based on the worship of gods called Devara Vokkalu, i.e. families who worship a common divine couple form a unit. These exogamous clans regulate their marital alliances. They marry consanguineous relatives and prefer marriage between first cousins. Gangadikara Vokkaliga worship both Shiva and Vishnu and have family gods to whom they show special reverence. They worship Bhairaveswara and Venkataramana as their family gods. They bury the dead and observe ancestor worship on Mahalaya Amavasya day by setting up a Kalasha and offer water libations. Traditionally Gangadikara Vokkaliga had caste Panchayats called kattemanes, which were presided by the hereditary Gowda. In recent years Vokkaliga caste associations have taken over the functions of caste panchayats in implementing welfare and development programs.

This is the first systematically conducted family based study undertaken in south India. Gangadikara Vokkaliga caste was selected for the study after discussions with local Clinicians, Endocrinologists and Diabetologists. Institutional ethical committee clearance

was obtained prior to the initiation of the study. The selection of diabetes probands was identified from the clinical records of Apoorva diabetes foundation, Mysore. Written informed consent was obtained from all the participants. Data from diabetes and their families was collected using predesigned questionnaire, comprising 1330 individuals of either sex aged 18 years and above. Study variables included demographic traits, food intake of the subjects, socio-economic parameters, physical activity, psychological information, anthropometric measurements: Height, Weight, Waist and hip circumferences, Skin fold measures, and Body Composition Estimation by Bioimpedance, clinical profile of the participants, blood pressure and blood samples were analyzed for glucose levels, Insulin, C-peptide, Resistin, and Lipid profile: Total cholesterol, HDL cholesterol, LDL cholesterol, and Triglycerides, Ghrelin, thyroxine (T4), triiodothyronine (T3) and thyroid stimulating hormone (TSH). Alkaline phosphatase, Alanine aminotransferase, Aspartate aminotransferase and Total bilirubin, Adiponectin, Leptin, Glucagon-like Peptide-1 (GLP-1), Tumor necrosis factor-alpha (TNF- α), Interleukin-6 (IL-6), and C-reactive protein, Creatinine, Blood urea nitrogen (BUN), and Albumin. Urine samples were tested for Total protein, Creatinine, and Albumin.

After a 12 hour overnight fast, venous blood samples were drawn by a Phlebotomist under the supervision of a Physician. The samples were drawn after obtaining their informed consent of each participant from the densely populated southern districts of Karnataka. Samples were immediately sent to the biochemistry laboratory and plasma/serum was separated by centrifugation. The fasting plasma/serum concentrations of glucose and lipids were measured on fully automated analyzer (Transasia EM360, Bio- chemical analyzer, India). A person was considered having diabetes, if he / she was already diagnosed case of diabetes or on treatment or current fasting blood glucose >110 mg /dl (WHO, 1999). Blood pressure and blood glucose estimation were done for the individuals of the household irrespective of whether they had diabetes or hypertension. Individuals with either a parent or a sibling (brother or sister) having diabetes were considered to have a positive family history.

The present study reports on the prevalence of Type 2 Diabetes and Obesity in Gangadikara Vokkaligas of Mysore, Karnataka.

Methods

The diabetes patients were identified from clinical records available at Apoorva Diabetes Foundations, Mysore, as stated earlier. Initially, 250 diabetes patients' clinical records were screened and identified the probands of Gangadikara Vokkaliga community living in the neighbouring districts of Mysore. Enquiries were made with all willing participants to enroll themselves in Mysore Family Diabetic Study after obtaining their informed consent. Extended pedigrees were drawn to ascertain the family size of each proband with Type 2 Diabetes and such probands were enrolled for detailed genetic study of Type 2 Diabetes. A standardized protocol was implemented and obtained data from each participant, such as medical histories, demographics, phenotypic (i.e., Type 2 diabetes, obesity, hypertension, and metabolic syndrome) and genotypic information. Anthropometric

measurements were taken on 1318 subjects comprising 569 males and 749 females by well trained investigators using standardized anthropometric protocols. Height was measured to the nearest 0.1cm using Stadiometer (Holtain, UK) and the highest value is recorded. Weight was measured to the nearest 0.1kg using a calibrated balance beam scale (Tanita Weighing Machine HD 318, Japan). Waist circumference measurement was taken at the end of normal expiration to the nearest 0.1cm, measuring from the narrowest point between the lower borders of the rib cage and the iliac crest using flexible measuring tape. Hip circumference was measured at the level of the greater trochanters (i.e. widest portion of the hip) to the nearest 0.1cm with a measuring tape, following Anthropometric manuals (WHO, 1995). The Body mass index (BMI) is calculated by dividing weight (Kg) by height (m²). Waist- hip ratio is calculated as the ratio of waist circumference over hip circumference (WHO, 1995). A person is considered Obese, if the body mass index (BMI) > 30 kg/ m² and overweight when BMI > 25 kg / m², and normal when BMI < 24.9 kg/ m². Central/

abdominal obesity is considered to be present when waist circumference is > 90 cm in males and > 80 cm in females, and Waist hip ratio > 0 .95 for males and > 0.80 for females is defined as truncal obesity for Asians as proposed by WHO, (2000).

Results and Discussion

Out of 1318 subjects, 27.52 per cent subjects are diabetes (16.06 % males and 12.44 % females), while 71.48 per cent are non diabetes (27.09 % males and 44.39 % females) (Fig 1). The prevalence of diabetes in Gangadikara Vokkaligas is higher than the coastal Karnataka population (16%) (Rao et al, 2010) and Chennai urban-rural population (15.5%) (Mohan et al, 2006).

Height

The height of male diabetes ranges from 151.2 cm to 189.7 cm, while it ranges from 149.4 cm to 185.2 cm in male non diabetes. The height of female diabetes ranges from 141.1 cm to 167.2 cm, while it ranges from 141.2 cm to 171.6 cm in female non diabetes. The mean height of males varies from 167.90 cm in diabetes to 169.06 cm in non diabetes, where the difference (1.16 cm) is insignificant (t value 2.123, P < 0.02). The mean height of females varies from 153.50 cm in diabetes to 155.11 cm in non diabetes, where the difference (1.61 cm) is significant (t value 3.214, P > 0.001) (Table 1). Significant differences (14.40 cm) are observed in between the mean height of male and female diabetes (t value 22.627, P > 0.001). Significant differences (13.95 cm) are also observed in between the mean height of male and female non diabetes (t value 36.698, P > 0.001) (Table 2).

Weight

The body weight of male diabetes ranges from 37.4 kg to 99.1 kg, while it ranges from 39.1 kg to 111.8 kg in male non diabetes. The body weight of female diabetes ranges from 41.7 kg to 99.2 kg, while it ranges from 34.8 kg to 129.7 kg in female non diabetes. It is evident from the above that both male and female non diabetes have put on body

weight compared to male and female diabetes. The mean weight of males varies from 68.48 kg in non diabetes to 71.16 kg in diabetes, where the difference (2.68 kg) is significant (t value 2.573, P < 0.001). The mean weight of females ranges from 61.32 kg in non diabetes to 65.40 kg in diabetes, where the difference (4.08 kg) is significant (t value 4.443, P > 0.001) (Table 1). Significant differences are observed in between the mean body weight of male and female diabetes (5.76 kg) (t value 5.159, P > 0.001). Significant differences (7.16 kg) are also observed in between the mean weight of male and female non diabetes (t value 8.155, P > 0.001) (Table 2).

Body mass index (BMI)

The BMI value of male diabetes ranges from 14.55 kg/m² to 35.10 kg/m², while it ranges from 15.00 kg/m² to 37.70 kg/m² in male non diabetes. The BMI value of female diabetes ranges from 19.59 kg/m² to 38.20 kg/m², while it ranges from 14.42 kg/m² to 51.24 kg/m² in female non diabetes. It appears that female diabetes is obese compared to male diabetes. The mean BMI values for males range from 24.01 kg/m² in non diabetes to 25.22 kg/m² in diabetes, where the difference (1.21 kg/m²) is significant (t value 3.794, P > 0.001). The mean BMI values for females range from 25.48 kg/m² in non diabetes to 27.77 kg/m² in diabetes, where the difference (2.29 kg/m²) is significant (t value 6.116, P > 0.001). The mean BMI values for females indicate that women are obese; whereas the mean BMI values of males indicate that only diabetes are obese (Table1). The mean BMI values in female diabetes (27.92 kg/m²) show 2.55 kg/m² higher value than in male diabetes (25.19 kg/m²), where the difference is significant (t value 6.504, P > 0.001). The mean BMI values in female non diabetes (25.38 kg/m²) show 1.47 kg/m² greater value than in male non diabetes (23.81 kg/m²), where the difference is significant (t value 4.833, P > 0.001).

There are 2 diabetes males (0.35%) and 7 non diabetes males (1.23%) in severe underweight category, while there are 4 non diabetes females (0.53%) in severe underweight category (<16 kg/m²). There are 3 diabetes males (0.53%) and 6 non diabetes males (1.05%) in moderate underweight category, while there are 11 non diabetes females (1.47%) in moderate underweight category (16 -16.9 kg/m²). There are 2 diabetes males (0.35%) and 14 non diabetes males (2.46%) in mild underweight category, while there are 23 non diabetes females (3.07%) in mild underweight category (17 -18.49 kg/m²).

The frequency of male non diabetes (4.74%) is greater by 3.51% than male diabetes ((1.23%)) in BMI Underweight category (<18.5 kg/m²), while female non diabetes record 0.33% higher frequency (5.07%) than male non diabetes (4.74%). The frequency of male diabetes (16.70%) shows 11.49% greater frequency than that of female diabetes (5.21%) in the BMI Normal category (18.5- 24.9 kg/m²). The above trend continues in non diabetes also, where the frequency of male non diabetes (33.22 %) is greater by 1.18 % than female non diabetes (32.04 %) in BMI Normal category. The frequency of overweight male diabetes (13.64 %) is greater by 3.10% than in female diabetes (10.54%), while the frequency of female non diabetes (28.03 %) is higher by 7.75% than in male non diabetes (20.38 %) in BMI overweight category (25.0 - 29.9 kg/m²). The frequency of obesity in

female diabetes (6.15%) is greater by 3.61% than in male diabetes (2.99%) and the same trend continues in non diabetes also, where the frequency of obesity in female non diabetes (12.95%) show 8.55% higher frequency than in male non diabetes (4.40 %). The frequency of male diabetes (2.81%) is 1.73% lower than that of female diabetes ((4.54%)) in BMI Obesity Grade I category (30.0-34.9 kg/m²). While the frequency of female non diabetes (9.48%) record 5.61% higher than in male non diabetes (3.87%). The frequency of male diabetes (0.18%) is lower by 1.16% than in female diabetes ((1.34%)) in Obesity Grade II category (35.0 - 39.9 kg/m²). While the frequency of female non diabetes (2.00%) record 1.65% higher than in male non diabetes (0.35%). There are 6 non diabetic females (0.80 %) in Obesity Grade III category (> 40.0 kg/m²) in Gangadikara Vokkaligas as per WHO (2000) BMI classification of Obesity (Table 3 & Fig 2).

Waist circumference

The waist circumference of male diabetes ranges from 61.0 cm to 114.0 cm, while it ranges from 60.0 cm to 117.8 cm in male non diabetes. The waist circumference of female diabetes ranges from 66.4 cm to 128.3 cm, while it ranges from 54.4 cm to 138.0 cm in female non diabetes. The mean waist circumference of male diabetes (93.12 cm) is greater by 7.32 cm than that of male non diabetes (85.80 cm) and the difference is significant (t value 8.281, P > 0.001). The mean waist circumference of female diabetes (89.51 cm) is 8.21 cm higher than in female non diabetes (81.30 cm) and the difference is significant (t value 9.456, P > 0.001) (Table 1). The difference in the mean waist circumference between male diabetes and female diabetes (3.61 cm) is significant (t value 3.744, P > 0.001). Significant differences (4.50 cm) are also observed in mean waist circumference between male and female non diabetes (t value 5.725, P > 0.001) (Table 2).

The frequency of central /abdominal obesity in male diabetes (27.70%) is higher than female diabetes (19.25%), while the frequency of central /abdominal obesity among female non diabetes (43.45%) is significantly greater than in non male diabetes (25.88%). The frequency of normal category of diabetes in males (11.62%) is greater than in females (2.54%), while the frequency of normal category of non diabetes in males (36.79%) is lower than in female non diabetes (34.76%) (Table 5 & Fig 3). The waist circumference of male non diabetes with central / abdominal obesity recorded greater range (90 cm - 117.8 cm) than that of male diabetes (90 cm -114 cm) and the same trend continues in females also, where the waist circumference of female non diabetes with central /abdominal obesity recorded greater range (80 cm - 138 cm) than that of female diabetes (80 cm - 128.3 cm). The mean value of male diabetes with central / abdominal obesity (97.70 cm) is slightly greater than in male non diabetes (97.10 cm). The mean value of female diabetes with central /abdominal obesity (91.50 cm) is slightly greater than in male non diabetes (89.40 cm) (Table 7 & Fig 5).

Hip circumference

The hip circumference of male diabetes ranges from 73.8 cm to 110.8 cm, while it ranges from 71.0 cm to 120.6 cm in male non diabetes. The waist circumference of female

diabetes ranges from 75.8 cm to 123.0 cm, while it ranges from 74.2cm to 143.3 cm in female non diabetes. The mean hip circumference of male diabetes (94.20 cm) show greater value than that of male non diabetes (92.70 cm) and the difference (1.50 cm) is insignificant (t value 2.356, P > 0.01). The mean hip circumference of diabetes females (100.38 cm) is 3.68 cm greater than the mean value of diabetes females (97.00 cm) and the difference is significant (t value 4.461, P > 0.001) (Tablel). The mean hip circumference of female diabetes (100.38 cm) is greater than mean value of male diabetes (94.20 cm) and the difference 6.18 cm is significant (t value 7.659, P > 0.001) (Table 1). The mean hip circumference of non diabetes females (97.00 cm) is 4.30 cm greater than the mean value of male non diabetes (92.70cm) and the difference is significant (t value 6.986, P > 0.001) (Table 2).

Waist: hip ratio

The waist: hip ratio of male diabetes ranges from 0.78 to 1.24, while it ranges from 0.70 to 1.14 in male non diabetes. The waist: hip ratio of female diabetes ranges from 0.74 to 1.12, while it ranges from 0.64 to 1.11 in female non diabetes. The mean waist: hip ratio of male diabetes (0.99) is 0.07 units greater than the value of male non diabetes (0.92) and the difference is significant (t value 12.374, P > 0.001). Whereas the mean waist: hip ratio of female diabetes (0.89) is greater by 0.05 units than in female non diabetes (0.84) and the difference is significant (t value 4.903, P > 0.001) (Table 1). The waist: hip ratio of male diabetes (0.99) is greater by 0.10 units than the mean value of female diabetes (0.89) and difference is significant (t value 15.618, P > 0.001). The waist: hip ratio of male non diabetes (0.92) is greater by 0.06 units than the mean value of female non diabetes (0.84) and difference in is significant (t value 17.889, P > 0.001).

The frequency of truncal obesity in male diabetes (29.57%) is greater than in female diabetes (19.65%), while the frequency of truncal obesity in female non diabetes (56.01%) is far greater than in male non diabetes (26.41%). The overall frequency of truncal obesity in females (75.66%) is greater than in males (55.98%). The frequency of normal category of diabetes in males (7.58 %) is greater than in females (2.15%), while the frequency of normal category of non diabetes in males (36.44 %) is greater than in female non diabetes (22.19%) (Table 6 & Fig 4). The waist: hip ratio of male diabetes with truncal obesity recorded greater range (0.95 -1.24) than that of male non diabetes (0.90 -1.14) and the same trend continues in females also, where the waist hip ratio of female diabetes with truncal obesity recorded greater range (0.80 - 1.12) than that of female non diabetes (0.80 - 1.11). The mean value of male diabetes with truncal obesity (1.01) is slightly greater than in male non diabetes (0.99). The mean value of female diabetes with truncal obesity (0.90) is slightly greater than in male non diabetes (0.87). The waist: hip ratio of male diabetes in the normal category recorded greater range (0.78 - 0.94) than that of male non diabetes (0.70 - 0.94) and the same trend continues in females also, where the waist hip ratio of female diabetes in the normal category recorded greater range (0.74 - 0.79) than that of female non diabetes (0.64 - 0.79). The mean waist hip ratio of male diabetes in normal category (0.90) is greater than the mean value of male non diabetes normal

category (0.87) and the same trend continues in females also in the normal category (Table 8 & Fig 6).

Body mass index (BMI): Waist circumference

The waist circumference in male diabetes varies from 60.0 cm to 69.0 cm, while it ranges from 62.0 cm to 74.0 cm in male non diabetes. The waist circumference in female non diabetes varies from 54.4 cm to 83.8 cm. The mean waist circumference in male diabetes (67.96 cm) is 1.55 cm greater than that of male non diabetes (66.41cm) and the difference is insignificant (t value 0.607, P < 0.05). The mean waist circumference in female non diabetes is 66.37cm in BMI underweight category.

The waist circumference in male diabetes varies from 75.2 cm to 99.0 cm, while it ranges from 65.0 cm to 105.1 cm in male non diabetes. The waist circumference in female diabetes varies from 66.4 cm to 93.0 cm, while it ranges from 56.0 cm to 95.0 cm in male non diabetes. In BMI normal category, the mean waist circumference in male diabetes (88.39 cm) is greater than that of male non diabetes (81.00cm) and the difference is significant (t value 9.347, P > 0.001). The female diabetes falling in BMI normal category have greater mean waist circumference (81.01 cm) than that of female non diabetes (75.00 cm) and the difference is significant (t value 5.621, P > 0.001).

The waist circumference in male diabetes varies from 80.8 cm to 114.0 cm, while it ranges from 64.0 cm to

107.8 cm in male non diabetes. The waist circumference in female diabetes varies from 73.0 cm to 105.2 cm, while it ranges from 69.0 cm to 102.0 cm in female non diabetes. The male diabetes falling in BMI overweight category show greater mean waist circumference (97.65 cm) than in male non diabetes (94.20 cm) and the difference is significant (t value 3.930, P > 0.001). The BMI overweight category female diabetes (89.00 cm) record greater mean value than female non diabetes (85.20 cm) and the difference is significant (t value 4.531, P > 0.001).

The waist circumference in male diabetes varies from 95.0 cm to 111.0 cm, while it ranges from 60.0 cm to

117.8 cm in male non diabetes. The waist circumference in female diabetes varies from 84.0 cm to 128.3cm, while it ranges from 68.0 cm to 138.0 cm in female non diabetes. The male diabetes falling in BMI obesity category shows slightly greater mean value (104.90 cm) than in male non diabetes (103.30 cm) and the difference is insignificant (t value 0.625, P < 0.05). The mean waist circumference of female diabetes (97.90 cm) falling in BMI obesity category show marginally higher value than in female non diabetes (96.20 cm) and the difference is insignificant (t value 1.051, P< 0.05) (Table 4).

Body mass index (BMI): Hip circumference

The hip circumferences in male diabetes vary from 76.0 cm to 86.0 cm, while it ranges from 71.0 cm to 86.0 cm in male non diabetes in BMI underweight category. The hip circumferences in female non diabetes vary from 74.2 cm to 89.8 cm. The mean hip

circumference in male diabetes (80.01 cm) is greater than in male non diabetes (78.80 cm) and the difference is insignificant (t value 0.834, P < 0.05), while the mean hip circumference in female non diabetes is 81.66 cm in BMI underweight category.

The hip circumference in male diabetes varies from 73.8 cm to 98.2 cm, while it ranges from 74.0 cm to 106.4 cm in male non diabetes in BMI normal category. The hip circumference in female diabetes varies from 75.8 cm to 103.0 cm, while it ranges from 75.8 cm to 110.0 cm in female non diabetes in BMI normal category. The mean hip circumferences in male diabetes (91.42 cm) show greater mean value than in male non diabetes (91.19 cm) in BMI normal category and difference is insignificant (t value 1.359, P < 0.05). The mean hip circumferences of female diabetes (90.23 cm) falling in BMI normal category show slightly higher value than in female non diabetes (89.40 cm) and the difference is insignificant (t value 0.217, P < 0.05) (Table 4).

The hip circumference in male diabetes varies from 85.0 cm to 109.0 cm, while it ranges from 78.0 cm to

110.0 cm in male non diabetes. The hip circumference in female diabetes vary from 88.0 cm to 120.0 cm, while it ranges from 86.2 cm to 119.4 cm in female non diabetes in BMI overweight category. The mean hip circumference in male diabetes (97.70 cm) shows lower value than in male non diabetes (98.70 cm) in BMI overweight category and the difference is insignificant (t value 1.521, P < 0.05). The mean hip circumference in female diabetes (100.60 cm) falling in BMI normal category show slightly higher mean values than in female non diabetes (99.88 cm) and difference is insignificant (t value 0.856, P < 0.05).

The hip circumference in male diabetes varies from 95.0 cm to 110.8 cm, while it ranges from 78.0 cm to 120.6 cm in male non diabetes in BMI obesity category. The hip circumference in female diabetes varies from 95.0 cm to 123.0 cm, while it ranges from 85.0 cm to 143.3 cm in female non diabetes. The mean hip circumference in male diabetes (103.0 cm) is lower than in male non diabetes (104.90 cm) in BMI obesity category and the difference is insignificant (t value 0.965, P < 0.05). The mean hip circumference in female diabetes (108.80cm) is slightly lower than in female non diabetes (111.20 cm) and the difference is insignificant (t value 1.705, P < 0.05) (Table 4).

Body mass index (BMI): Waist- hip ratio

The waist hip ratio in male diabetes varies from 0.78 to 0.95, while the ratio ranges from 0.76 to 0.93 in male non diabetes. The waist hip ratio in female non diabetes ranges from 0.68 to 0.99 in BMI underweight category. The mean waist - hip ratio in male diabetes (0.85) is slightly greater than the mean ratio in male non diabetes (0.84) and difference is insignificant (t value 0.456, P < 0.05). The mean waist hip ratio in female non diabetes is 0.76.

The waist hip ratio in male diabetes varies from 0.83 to 1.18, while the ratio ranges from 0.70 to 1.13 in male non diabetes. The waist hip ratio in female diabetes ranges from 0.76

to 1.03, while in female non diabetes, the ratio ranges from 0.67 to 1.02 in BMI normal category. The mean waist hip ratio in male diabetes (0.98) shows greater value than the mean ratio in male non diabetes (0.91) and the difference is significant (*t* value 9.900, *P* > 0.001) in BMI normal category. The mean waist hip ratio in female diabetes (0.89) shows greater waist - hip ratio than in female non diabetes (0.82) and the difference is significant (*t* value 2.196, *P* < 0.001).

The waist hip ratio in male diabetes varies from 0.84 to 1.24, while the ratio ranges from 0.78 to 1.14 in non diabetes in BMI overweight category. The waist hip ratio in female diabetes ranges from 0.74 to 1.12, while the ratio ranges from 0.64 to 1.06 in female non diabetes. The mean waist hip ratio in male diabetes (1.00) show higher mean waist - hip ratio than in male non diabetes (0.96) and the difference is significant (*t* value 4.714, *P* > 0.001) in BMI overweight category. The mean waist hip ratio in female diabetes (0.89) shows slightly higher mean waist - hip ratio than in female non diabetes (0.85) and the difference is significant (*t* value 4.240, *P* > 0.001) in BMI overweight category.

The waist hip ratio in male diabetes varies from 0.93 to 1.10, while the ratio ranges 0.77 to 1.10 in male non diabetes. The waist hip ratio in female diabetes ranges from 0.79 to 1.09, while the ratio ranges from 0.71 to 1.11 in female non diabetes in BMI obesity category. The mean waist hip ratio in male diabetes (1.02) shows higher mean waist - hip ratio than in male non diabetes (0.98) in BMI obesity category and the difference is insignificant (*t* value 1.638, *P* < 0.05). The mean waist hip ratio in female diabetes (0.90) shows higher mean waist - hip ratio than in female non diabetes (0.87) and difference is insignificant (*t* value 2.343, *P* < 0.01) (Table 4).

Conclusions

The incidence of Type2 Diabetes, metabolic syndrome, and diabetes complications have been alarmingly rising worldwide and such trends also have been observed in several Indian populations, especially those living in the urban environment (Chennai City: 18.6%, Kanchipuram Town: 16.4%, Panruti, a semi urban village: 9.2%, Rural Andhra Pradesh: 3.7%). Approximately, 79 million people in India are expected to be afflicted with diabetes by the year 2030

The prevalence of diabetes (27.5 %) in Gangadikara Vokkaligas of Mysore is very high compared to coastal Karnataka population (16%) and Chennai population (15.5%). It is observed that both male and females diabetes have more body weight compared non diabetes, though they are under medication and diet restrictions. However, female diabetes is obese compared to male diabetes. The frequency of obesity in the present study (24%) is lower than in coastal Karnataka population (28%). Incidence of central and truncal obesity is more common in male diabetes. The difference in mean values of waist and

hip circumference in both males and females in underweight and obese categories are insignificant while they show significant differences in normal and overweight BMI categories.

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Table 1 : Statistical constants for anthropometric traits

Anthropometric traits	Male (N 568)			Female (N 748)			Male + Female		
	Diabetes N 211	Non Diabetes N 357	t value	Diabetes N 163	Non Diabetes N 585	t value	Diabetes N 374	Non Diabetes N 942	t value
Height (cm)	167.90 ± 6.48	169.06 ± 5.91	2.123	153.50 ± 5.73	155.11 ± 5.36	3.214	161.63 ± 9.44	160.40 ± 8.77	2.160
Weight (kg)	71.16 ± 11.33	68.48 ± 13.17	2.573	65.40 ± 9.59	61.32 ± 12.77	4.443	68.67 ± 10.97	64.03 ± 13.38	6.444
BMI (kg / m ²)	25.22 ± 3.56	24.01 ± 4.07	3.794	27.77 ± 3.90	25.48 ± 4.99	6.116	26.33 ± 3.92	24.93 ± 4.71	5.600
Waist circumference(cm)	93.12 ± 9.20	85.80 ± 11.83	8.281	89.51 ± 9.36	81.30 ± 11.44	9.456	91.50 ± 9.43	83.02 ± 11.78	2.615
Hip circumference(cm)	94.20 ± 6.72	92.70 ± 8.44	2.356	100.68 ± 9.08	97.00 ± 10.20	4.461	97.02 ± 8.46	95.40 ± 9.79	2.977
Waist:hip ratio	0.99 ± 0.06	0.92 ± 0.08	12.374	0.89 ± 0.07	0.84 ± 0.07	4.903	0.95 ± 0.08	0.87 ± 0.08	16.000

Table 2 Inter group comparison of Diabetes and Non Diabetes

Anthropometric traits	Diabetes			Non Diabetes		
	Male (211) Mean ± SD	Female (163) Mean ± SD	t value	Male (357) Mean ± SD	Female (585) Mean ± SD	t value
Height (cm)	167.90 ± 6.48	153.50 ± 5.73	22.627	169.06 ± 5.91	155.11 ± 5.36	36.698
Weight (kg)	71.16 ± 11.33	65.40 ± 9.59	5.159	68.48 ± 13.17	61.32 ± 12.77	8.155
BMI (kg / m ²)	25.22 ± 3.56	27.77 ± 3.90	6.504	24.01 ± 4.07	25.48 ± 4.99	4.833
Waist circumference (cm)	93.12 ± 9.20	89.51 ± 9.36	3.744	85.80 ± 11.83	81.30 ± 11.44	5.725
Hip circumference (cm)	94.20 ± 6.72	100.68 ± 9.08	7.659	92.70 ± 8.44	97.00 ± 10.20	6.986
Waist:hip ratio	0.99 ± 0.06	0.89 ± 0.07	15.618	0.92 ± 0.08	0.84 ± 0.07	17.889

Table 3 BMI categories among Diabetes and Non Diabetes

Category	BM! Clasification BMI values	Male (N 569)		Female (N 749)	
		Diabetes N 212	Non Diabetes N 357	Diabetes N 164	Non Diabetes N 585
Underweight	<18.5 kg/ m ²	7 (1.23)	27 (4.74)	0	38 (5.07)
Normal	18.5 - 24.9 kg/m ²	95 (16.70)	189 (33.22)	39 (5.21)	240 (32.04)
Overweight	25-29.9 kg/m ²	93 (13.64)	116 (20.39)	79 (10.54)	210 (28.03)
Obesity	> 30 kg/m ²	17(2.99)	25 (4.40)	46 (6.15)	97 (12.95)

Table 4 Comparison of waist and hip circumference of males and females in BMI categories

Anthropometric traits	Male			Female		
	BMI category : Under weight			BMI category : Under weight		
	Diabetes (N 7)	Non Diabetes (27)	t value	Diabetes (N 0)	Non Diabetes (38)	t value
	Mean ± SD	Mean ± SD		Mean ± SD	Mean ± SD	
Waist circumference (cm)	67.96 ±6.51	66.41 ± 3.56	0.607	0.00	62.37 ±6.32	—
Hip circumference (cm)	80.01 ± 3.38	78.80 ±3.53	0.834	0.00	81.66 ±3.49	—
Waist: hip ratio	0.85 ±0.07	0.84 ± 0.05	0.456	0.00	0.76 ± 0.06	—
	BMI category: Normal			BMI category: Normal		
	Diabetes (N 94)	Non Diabetes (189)		Diabetes (N39)	Non Diabetes (240)	
Waist circumference (cm)	88.39 ± 5.48	81.00 ±7.74	9.347	81.01 ±6.05	75.00 ±7.00	5.621
Hip circumference (cm)	90.23 ±4.58	89.40 ± 5.33	1.359	91.42 ±6.27	91.19 ±5.47	0.217
Waist: hip ratio	0.98 ± 0.05	0.91 ±0.07	9.900	0.89 ±0.07	0.82 ± 0.06	2.196
	BMI category : Overweight			BMI category : Overweight		
	Diabetes (N 93)	Non Diabetes (116)		Diabetes (N 79)	Non Diabetes (210)	
Waist circumference (cm)	97.65 ±6.24	94.20 ±6.31	3.930	89.00 ±6.40	85.20 ±6.20	4.531
Hip circumference (cm)	97.70 ± 4.44	98.70 ± 5.06	1.521	100.60 ± 6.65	99.88 ±5.49	0.856
Waist: hip rati	1.00 ±0.005	0.96 ±0.06	4.714	0.89 ± 0.07	0.85 ±0.07	4.240
	BMI category: Obesity			BMI category: Obesity		
	Diabetes (N 17)	Non Diabetes (25)		Diabetes (N 45)	Non Diabetes (97)	
Waist circumference (cm)	104.90± 4.44	103.30 ± 11.54	0.627	97.90± 9.09	96.20 ± 8.78	1.051
Hip circumference (cm)	103.00 ±4.47	104.90 ±8.19	0.965	108.80 ±6.88	111.20 ±9.43	1.705
Waist: hip ratio	1.02± 0.06	0.98 ±0.08	1.638	0.90 ± 0.07	0.87 ±0.08	2.343

Table 5 : Central Obesity among male and female Diabetes and non Diabetes by waist circumference

Disease status	Male (N 568)		Female (N 748)	
	Abdominal	Normal	Abdominal	Normal
Diabetes	obesity (> 90cm)	(< 90 cm)	obesity (> 80 cm)	(< 80 cm)
	146 (25.70%)	66 (11.62%)	144 (19.25%)	19 (2.54%)
Non Diabetes	147 (25.88%)	209 (36.79%)	325 (43.45%)	260 (34.76%)
Total	293 (51.59%)	275 (48.41%)	469 (62.70%)	279 (37.30%)

Table 6 : Truncal Obesity among male and female Diabetes and non Diabetes by waist -hip ratio

	Male (N 568)		Female (N 748)	
	Truncal obesity (0.95)	Normal (< 0.95)	Truncal obesity (0.80)	Normal (< 0.80)
Diabetes	168 (29.57%)	43 (7.58%)	207 (36.44%)	250(44.02%)
Non Diabetes	150 (26.41%)	207 (36.44%)	419 (56.01%)	166 (22.19%)
Total	318 (55.98%)	250 (44.02%)	566 (75.66%)	182 (24.34%)

Table 7 : Statistical constants for Central Obesity among male and female Diabetes and non Diabetes

Statistical	Male				Female			
	Diabetes		Non Diabetes		Diabetes		Non Diabetes	
	N 146 90	N 65 < 90	N 147 90	N 210 < 90	N 144 80	N 19 < 80	N 324 80	N 261 < 80
Minimum	90	61	90	60	80	66.4	80	54.4
Maximum	114	89.8	117.8	89.4	128.3	79.8	138	79.8
Mean ± SE	97.70 ± 0.49	82.80 ± 0.82	97.10 ± 0.49	77.80 ± 0.53	91.50 ± 0.67	74.77 ± 0.85	89.40 ± 0.42	71.35 ± 0.40
S. D	5.89	6.64	5.95	7.71	8.06	3.7	7.57	6.47

Table 8 : Statistical constants for Truncal Obesity among male and female Diabetes and non Diabetes

Statistical	Male				Female			
	Diabetes		Non Diabetes		Diabetes		Non Diabetes	
	N 169 0.95	N 42 < 0.95	N 150 0.95	N 207 < 0.95	N 147 0.80	N 16 < 0.80	N 419 0.80	N 166 < 0.80
Minimum	0.95	0.78	0.95	0.7	0.8	0.74	0.8	0.64
Maximum	1.24	0.94	1.14	0.94	1.12	0.79	1.11	0.79
Mean ± SE	1.01 ± 0.005	0.90 ± 0.007	0.99 ± 0.003	0.87 ± 0.004	0.90 ± 0.005	0.78 ± 0.004	0.87 ± 0.002	0.75 ± 0.002
S. D	0.05	0.04	0.04	0.05	0.06	0.02	0.06	0.03

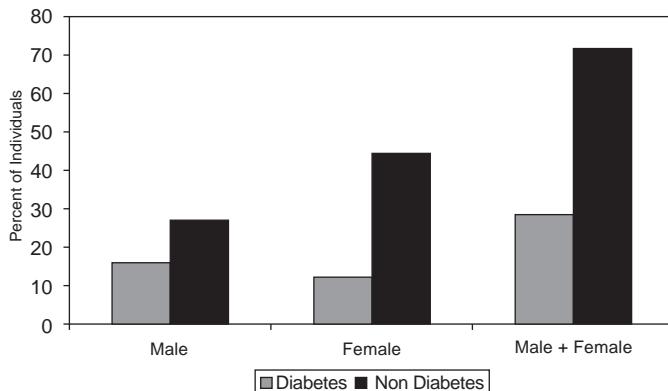
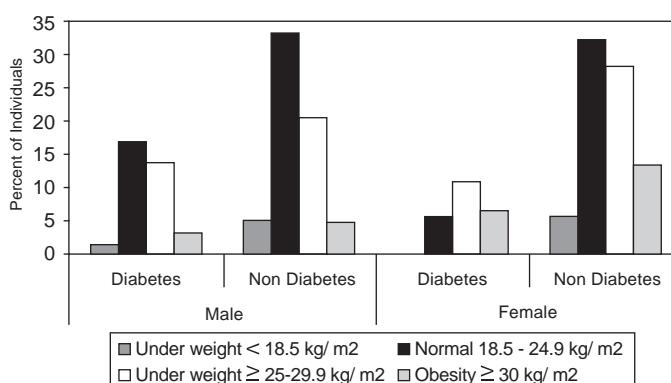
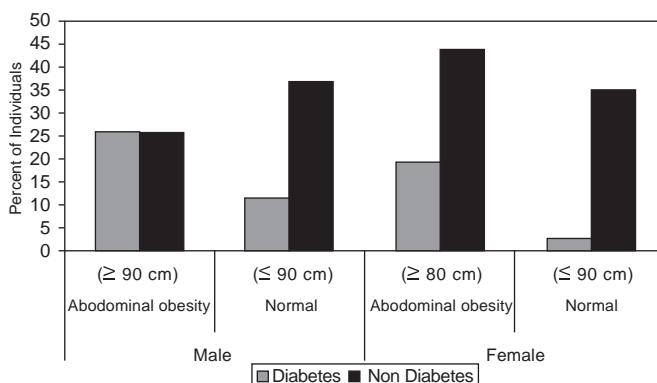
Fig. 1 : Disease Status among males and females**Fig. 2 : BMI categories among male and female by disease status****Fig. 3 : Abdominal obesity among male and female by disease status**

Fig. 4 : Truncal obesity among male and female by disease status

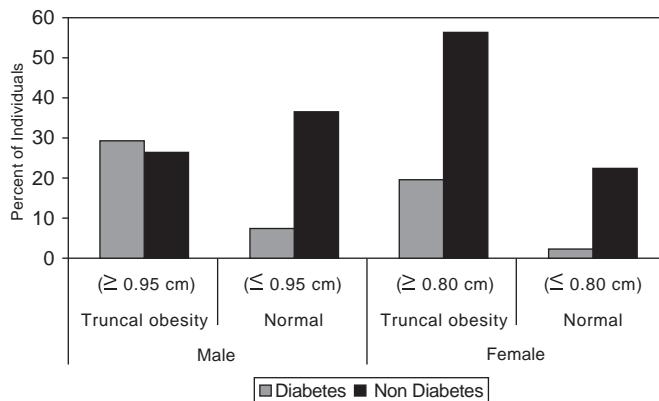


Fig. 5 : Mean central obesity among male and female by disease status

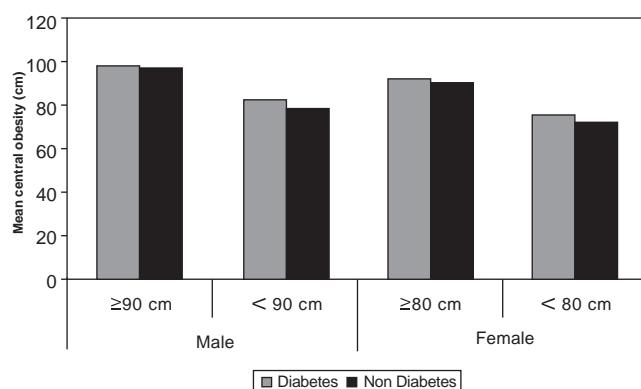
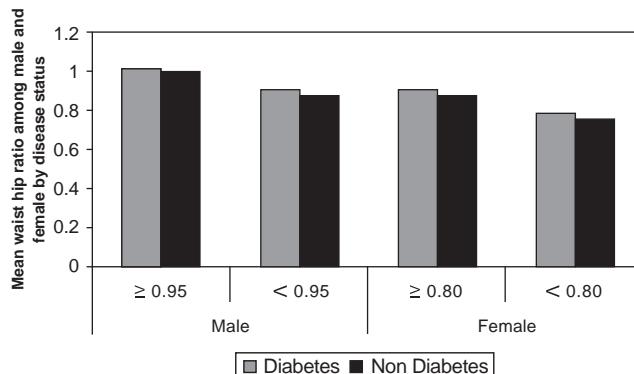


Fig. 6 : Mean waist hip ratio among male and female by disease status



Marital Distance and Genetic Structure among the Mullukuruman of Kerala

Dr. B. P. Urade¹

ABSTRACT

The tribal populations with primitive technological attainment inhabiting varied environments in peninsular India, with peculiar socio-cultural feature having distinctive biological make up provides excellent opportunity for the anthropologists in investigating their genetic structure. The present study attempts to report a comprehensive genetic structure of the Mullukuruman of Wynad, one of the primitive tribal groups of Kerala. The data from 148 Mullukuruman couples have been collected through couple information schedule. The blood samples were drawn by finger prick method with disposable needles from 102 Mullukuruman individuals residing in 7 villages namely, Tirunelly, Kottanede, (Pootadi) Kolikka, Pullakkudi, Punchavayal, Mukkam and Makhttii in Sultan Battery taluka of Wynad district in Kerala. The blood samples were analyzed for the A1A2BO, the MNs, the Rh system and sickle cell trait following standard techniques. Out of 148 studied spouses only two couples, one couple of first-cousin ie., mother's brother's daughter (MBD) and another couple of third-cousin were found consanguineous. Thus, the consanguinity among the Mullukuruman was very low (1.35 per cent) compared to other ethnic groups of Kerala. The mean inbreeding coefficient for autosomal gene is 0.000457 ± 0.0004263 with a coefficient of variance of 1134.73 ± 65.95 . The Mullukuruman follows village exogamy and strictly prohibited kulam endogamy. The mean marital distance among them is only 18.52 ± 0.84 Kms. The findings of A1A2BO blood groups show the preponderance of O blood group corresponding to a very high frequency of O gene (0.7819) followed by B and A along with their gene frequencies of 0.1365 and 0.0816 respectively. The Rh system shows a very distinctive feature in Mullukuruman with a relatively high frequency (8.82%) of haplotype cDe (R0). The highest frequency of haplotype is the CDe (R1) with 49.02 per cent among the Mullukuruman and the lowest is Cde haplotype (rI) with 0.98 per cent. The presence of Rz haplotype (4.90 per cent) among the Mullukuruman is of special interest as it is rare in Indian populations. The

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gene frequency of N is higher (0.5792) than that of m (0.4208). The Mullukuruman show an interesting situation where the gene ‘n’ shows dominant over gene ‘m’ which is a typical feature of the people living in Pacific area including Australia. . Only one person was found to be having the colour vision deficit with very low frequency of 0.98 per cent of Deutan type (green). About 10.78 per cent of the total 102 sample comprising 5 males and 6 females were found to have the gene HbS in the Mullukuruman.

INTRODUCTION

Indian tribal population constitutes 8.2 per cent of the total population in the country offers unique opportunity for genetic and anthropological studies because of the diversity that exist within and between populations. The study of genetic structure of a human population is important to understand human biology of the population. The genetic structure of a population is determined by the nature of gene or gene flow within a geographical area though it's breeding structure and marital movement, in addition to the biological make of the group. Mating patterns, inbreeding, gene flow, geographical isolation are some of the factors which act on the gene pool of a population in addition to the evolutionary forces which brings upon the changes in allelic frequency of a population.

The earliest studies on ABO blood groups were reported among the Cochin castes (Mcfarlane, 1937) and Pre-Dravidians of Wynad plateau (Aiyappan, 1936). Few more studies have been carried out on ABO blood groups system on Kerala populations by Mcfarlane et al., (1940). In recent years Sastry (1970; 1990) conducted serological studies on the Kurichian and Mullukuruman of Wynad and a few tribal groups of Nilgiri and Kodagu. Sickle cell trait was reported in several tribal groups inhabiting the Nilgiri – Wynad region by Buchi (1955, 1961), Das et al., (1967), Negi (1975), among Kurumba, Kurichian, Irula, Paniyan, Adiyan, Yerava and Soliga.

The present study attempts to report a comprehensive genetic structure of the Mullukuruman of Wynad, one of the primitive tribal groups of Kerala, who were hunters, food gatherers and shifting cultivators. The principal occupation of the Kuruman was wood cutting and collection of forest produce (Thurston, 1909). According to Luiz (1962) they were Vedas of south India. They have their own dialect which is an admixture of Tamil, Malayalam and Kannada words. They have four exogamous kulams (clan) namely Kathiya, Vangade, Villippa and Vandaka. Marriage within the kulam is prohibited.

Material and Methods

The data from 148 Mullukuruman couples have been collected through couple information schedule comprising information on couples age, sex, clan, couples birth places, distance between the birth places of couple, residence prior to marriage, type of consanguineous marriage etc. The data were analyzed following standard procedures and statistical constants were calculated following standard formulae. The mean inbreeding coefficient and other derivatives were calculated in accordance with the procedure laid down in Li (1961), Cavali-Sforza and Bodmer (1971) and Bala Krishnana (1988).

The blood samples were drawn by finger prick method with disposable needles from 102 Mullukuruman individuals residing in 7 villages namely, Tirunelly, Kottanede, (Pootadi) Kolikka, Pullakkudi, Punchavayal, Mukkam and Makhtti in Sultan Battery taluka of Wynad district in Kerala. Care was taken to exclude nearest blood relatives. The data was collected in the month of October 1996. The blood samples were analyzed for the A1A2BO, the MNs, the Rh system and sickle cell trait following standard techniques. The gene frequencies were calculated following Mourant (1954) and also the maximum likelihood method as illustrated by Bala Krishnan (1988). The gene frequencies for different blood group systems were rechecked following Mourant (1954) and Race and Sanger (1954).

Results and Discussion

Mating patterns

The frequency distribution of the different types of marriages among the Mullukuruman have been presented in Table-1. Out of 148 studied spouses only two couples, one couple of first-cousin ie., mother's brother's daughter (MBD) and another couple of third-cousin were found consanguineous. Thus, the consanguinity among the Mullukuruman was very low (1.35 per cent) compared to other ethnic groups of Kerala. The mean inbreeding coefficient for autosomal gene is 0.000457 ± 0.0004263 with a coefficient of variance of 1134.73 ± 65.95 , which is very less compared to other Kerala castes and tribes reported by Ali (1968). Although the mean inbreeding coefficient values are very high among the Indian tribes particularly in southern India, the Mullukuruman are an exception to this phenomenon. The occurrence of first cousin marriages are more prevalent among the castes and tribes of southern India but marriages with 1 _ cousin, 2nd cousin, 2 _ cousin and beyond 3rd cousin are very few (Ali, 1968). Even in the occurrence of different forms of consanguineous marriages, the Mullukuruman show contrasting picture with their neighbouring tribes inhabiting the same region and opt for non-consanguineous marriages. The most frequently occurred marriages among the villages surveyed are in between Vadaka kulam versus Villippa followed by Kathiya versus Villippa.

Table – 1. Matting patterns among the Mullukuruman

Type of marriage		N	%
Uncle - Niece		—	0
First cousins	FSD	—	0
	MBD	1	0.68
First cousins once removed			
	i) Matrilateral	—	0
	ii) Patrilateral	—	0
Second cousins		—	0
Third cousins		1	0.68
Total consanguineous marriages		2	1.35
Non-consanguineous marriages		146	98.65
Total marriages		148	100

Table – 2. Mean Inbreeding coefficients among the Mullukuruman

I ± SE	SD ± SECV ± SE	
0.000457 ± 0.0004263	0.0051857 ± 0.0003014	1134.73 ± 65.95

Marital distance

The marital distance is measured in terms of the actual road distance between permanent residences of the spouses before marriage in kilometers. The frequency distribution of marriage distance among the Mullukuruman of Wynad is shown in Table-3. The Mullukuruman follows village exogamy and strictly prohibited kulam endogamy. About 68.24 per cent of the marriages among the Mullukuruman were held within the distance of 20 Kms. while 12.84 per cent of marriages took place beyond the distance of 32 Kms. from their actual birth places. The mean marital distance among them is only 18.52 ± 0.84 Kms. which is lesser than that of the Kurichian ie., 21.07 (Saheb, 1999). It means the Mullukuruman tribe preferred short distance for selection of spouse than that of their Kurichian counterpart though they share the same habitats and region.

A₁A₂BO blood groups

Table-4 portrays the findings of A1A2BO blood groups which shows the preponderance of O blood group corresponding to a very high frequency of O gene (0.7819) followed by B and A along with their gene frequencies of 0.1365 and 0.0816 respectively. The

frequency of blood group A is very low among the Mullukuruman while that of frequency of O gene is above 75 per cent.

It is in general agreement that the Indo-Aryan affiliations are characterized by 'A' gene with its preponderance over 'B' gene whereas the Mongoloid populations exhibit high proportion of 'B' gene and lower frequency of 'A' gene. On the other hand the Proto-Australoid groups possess moderate value of both A and B gene. It is noteworthy that 'O' gene is universally high in all the populations except the Paniyan, Adiyan (Sarkar, 1954), Toda (Kirk, et al., 1962), Ulladhan, Malavadan, Muthua and Vettuvan (Buchi, 1958; Roy, 1955) of south India.

Rh blood groups

The frequency of Rh blood groups (tested with 5 anti-sera) for 102 Mullukuruman individuals are shown in Table-5. The Rh system shows a very distinctive feature in Mullukuruman with a relatively high frequency (8.82%) of haplotype cDe (R0) but Bhasin et al., (1994) reported the absence of this haplotype in Indian populations. The highest frequency of haplotype is the CDe (R1) with 49.02 per cent among the Mullukuruman and the lowest is Cde haplotype (rI) with 0.98 per cent. The presence of Rz haplotype (4.90 per cent) among the Mullukuruman is of special interest as it is rare in Indian populations. The occurrence of 'r' chromosome in Mullukuruman might be due to isolation which leads to genetic drift and lesser interaction with the neighbouring tribes of wynad and Nilgiri hills though living in the same ecological niche.

Table – 3 Frequency distribution of marital distance among the Mullukuruman

Marital distance (in Km)	Total	
	N	%
0 (Village endogamy)	0	0
0 - 4	11	7.43
5 - 10	22	14.86
11 - 15	20	13.51
16 - 20	48	32.43
21 - 25	4	2.70
26 - 30	22	14.86
31 - 35	5	3.38
36 - 40	15	10.14
41+	1	0.68
Total	148	100.00

Mean \pm S.E. = 18.52 ± 0.84 Km

Table-4 Frequency distribution of A1A2BO blood groups among the Mullukuruman

Blood group	Observed absolute No.	Frequency %	Expected frequency	Gene frequency
O	63	61.76	61.14	$p_1 = 0.0658$
A1	11	10.78	10.92	$p_2 = 0.0158$
A2	2	1.96	2.5	$q = 0.1365$
B	23	22.55	23.21	$r = 0.7819$
A1B	2	1.96	1.8	
A2B	1	0.98	0.43	
Total	102	99.99	100	1

MN blood groups

The distribution of MN blood groups phenotype and genotype frequencies among the Mullukuruman are given in Table-6. The result shows higher frequency of MN (46.53 per cent) than that of N and M phenotypes ie., 34.65 per cent and 18.81 per cent respectively. The gene frequency of N is higher (0.5792) than that of m (0.4208). Some of the south Indian tribes eg. The Chenchu, Kadar, Irula, Kota, Kurumba, Toda and Kanikkar show more 'm' gene frequency than 'n' gene. But the Mullukuruman, the Kurichian, the Malapantaram (Buchi, 1955) of Kerala and the Dhodia of Gujarat show an interesting situation where the gene 'n' shows dominant over gene 'm' which is a typical feature of the people living in Pacific area including Australia. This variation may be due to their genetic composition and relative isolation where genetic drift has vital role on such a small gene pool.

Table-5 Frequency distribution of Rh system in the Mullukuruman

Phenotype	N	Observed frequency	Haplotype frequency
ccdee	2	1.96	$r = 0.1409$
ccDee	9	8.82	
ccddEe	2	1.96	$R' = 0.0352$
ccddEE	—	—	
ccDEe	1	0.98	$R'' = 0.0704$
ccDEE	—	—	
Ccddee	1	0.98	$R1 = 0.2818$

Phenotype	N	Observed frequency	Haplotype frequency
CCddee	—	—	
CcDee	18	17.65	R0 = 0.1896
CCDee	32	31.37	
CcDDEe	—	—	Rz = 0.2821
CcddEE	—	—	
CCddEe	—	—	
CCddEE	—	—	
CcDEe	11	10.79	
CcDEE	3	2.94	
CCDEe	18	17.65	
CCDEE	5	4.9	
Total	102	100	1

Table-6 Distribution of MN blood group among the Mullukuruman

No.	Phenotype			Gene frequency	
	MM	Mn	NN	m	n
101	19	47	35	0.4208	0.5792

Colour blindness

Colour vision deficiency test using Ishihara (1977) chart comprising 38 plates was performed in day light on 102 Mullukuruman of both the sexes consisting of 57 males and 45 females from seven villages. Only one person was found to be having the colour vision deficit with very low frequency of 0.98 per cent of Deutan type (green). Contrary to this no female person was found for vision deficit. This low frequency of colour blindness in Mullukuruman justifies the hypothesis propounded by Post (1962) that the incidence of colour blindness will be negligible in the hunting and gathering communities due to relaxation of selection.

Sickle cell traits (HbS)

The sickle cell test was performed on 102 individuals belonging to 14 to 85 years of age is shown in Table-7. About 10.78 per cent of the total 102 sample comprising 5 males and 6 females were found to have the gene HbS in the Mullukuruman primitive tribal group of Kerala. The incidence of sickle cell trait varies from 0 to 40 per cent among the

tribes inhabiting the Western Ghats spread over three states. The genetic disorder caused by mutation is believed to have occurred first in south India as the high frequency of HbS is widely spread among the tribal groups of all southern states followed by central and western states of Indian subcontinent. Lehman and Cutbush (1952) first detected the gene HbS among the Irula boy of Nilgiri hills in Tamilnadu.

**Table-7 Distribution os sickle cell trait among trib
al groups of southern India Tribal group**

Tribal group	N	AA	As	SS	%	Source
Adiyar	75	51	24		16	ICMR, 1986
Paniyan	61	40	21		17.21	ICMR, 1986
Irual	124	85	39		15.73	Lehman & Cutbush, 1952
Irual	254	168	81	5	17.91	Sastry, 1990
Irual	130	84	46		35.38	Undevia et al., 1981
Kurumba-Mullu	101	62	38	1	19.8	Sastry, 1990
Toda	98	—	—	—	1.02	Saha et al., 1976
Kurumba	43	—	—	—	20.93	Saha et al., 1976
Toda	60	—	—	—	3.33	kirk et al., 1962b
Irula	15	—	—	—	40	kirk et al., 1962b
Kurumba	43	—	—	—	23.25	kirk et al., 1962b
Kota	549	—	—	—	0	Ghosh et al., 1977
Irula	175	—	—	—	26.28	Saha et al., 1976
Kurichian	106	104	2	—	1.88	Saheb, 1999
Mullukuruman	102	91	11	—	10.78	Present study

The Mullukuruman of the present study exhibits moderate frequency of 10.78 per cent as compare to other tribal groups in southern India which is higher than the Kurichian but lower than the Adiyan, Paniyan, Irula and the Kurumba of the same area. The Allison (1954) hypothesis says that the sickle cell trait shows its presence among the population whose economy revolves around agriculture and settled populations which justifies the hypothesis for the Mullukuruman with the presence of moderate frequency of sickle cell trait.

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Prevalence of Hypertension among Santal Individuals Addicted to Alcohol

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ABSTRACT

Studies have indicated that increased consumption of alcohol leads to an increase of systolic and diastolic blood pressures. However, such studies on ethnic communities of India are rare. The present study attempts to understand the effects of alcohol consumption (in this case particular country-brewed hard liquor) on systolic and diastolic blood pressures among the Santals in a West Bengal village. The results indicate that this alcohol consumption has a statistically significance effect on systolic blood pressure among Santal male individuals.

INTRODUCTION

Hypertension is often referred to as high blood pressure. An individual is considered to be hypertensive if he/she possesses systolic blood pressure (SBP) \geq 140 mm Hg and/or diastolic blood pressure (DBP) \geq 90 mm Hg (Stranges et al., 2004). Chronic hypertension is a “silent” killer causing changes in blood vessels and retina, abnormal thickening of heart muscles, kidney failure, and brain damage. There has been innumerable number of scientific literature on hypertension. It is the leading cause of heart disease in the United States, affecting twenty five percent of the adult American population (Rapport, 1999).

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Hypertension is caused by a number of factors such as genes, age, obesity, alcohol intake, excessive intake of salt and a sedentary lifestyle. Ethnic group can also be another factor as hypertension prevalence has been shown to rise more rapidly with age among Blacks than Whites in the United States (Geronimus et al., 2007). Increased body mass index also further elevated blood pressure (Kastarinen et al., 2007). Multivariate analysis of potential risk factors showed age over 40 years, worker & smokers and stress were independently associated with an increased risk of essential hypertension (El-Shafei et al., 2002). It has also been reported that significant relationship existed between blood pressure, age, obesity and the workplace (Ledesert et al., 1994). Other recent studies are those on hypertension during pregnancy (Carvalho et al., 2006) and relation with diabetes mellitus (Martinez and Latorre, 2006) and coronary heart disease (Cosin-Aguilar et al., 2006). Studies have also focused on the role of various parameters that can serve as predictors of hypertension. The study of Peixoto et al. (2006) on the role of waist circumference and body mass index as predictors of hypertension can be cited here.

Alcoholism is a condition in which an individual loses control over his alcohol intake. This condition is characterized by repeated drinking of alcoholic drinks to such an extent that exceeds customary use or compliance with the social customs of the community and adversely affects the drinker's health and interferes his/her social or economic activities. Broadly alcoholism has four major dimensions: (i) excessive intake of alcoholic drinks (ii) individuals begin to increasing worry over the drinking (iii) loss of control over the process of drinking and the quantity consumed and (iv) the disturbance in functioning in the social world. Consumption of alcohol leads to a number of clinical effects. Alcohol consumption has been shown to be associated with decreased antiretroviral uptake, adherence and viral suppression among HIV patients (Chander et al., 2006). Chronic alcohol consumption also seemed to constitute a strong risk factor for pancreatic necrosis (Papachristou et al., 2006) and liver fibrosis (Jamal et al., 2005). Children exposed to alcohol in the prenatal period suffer from fetal alcohol syndrome and characterized by a distinct pattern of craniofacial malformations, physical and mental retardation (Sant'Anna and Tosello, 2006). It was further observed by Reid et al. (2002) that consumption of alcohol was a demonstrated risk factor for several adverse cognitive outcomes.

Hypertension and alcohol dependence have been linked by epidemiological surveys and clinical observations and there has been a number of studies in this regard. A significant prospective relationship was shown for the first time between heavy drinking and risk of developing high blood pressure by Dyer et al. (1981). The lowering of blood pressure after stopping alcohol consumption and its rise after starting to take alcohol again were good evidences of a causal relationship between the two (Lang et al., 1985). In the United

States where hypertension has been linked to the regular consumption of three or more standard alcoholic drinks a day, Miller et al. (2006) very recently discussed the Accelerating Alcohol Screening-Translating Research into Practice project. This project was designed to improve detection and management of alcohol problems in primary care patients with hypertension. In another review, Miller et al. (2005) pointed out that heavy alcohol consumption (three or more standard drinks per day) was associated with hypertension. Miller et al. (2005) further highlighted the importance of routine evaluation of alcohol consumption using alcohol biomarkers in hypertensive patients. In yet another review, Huntgeburth et al. (2005) discussed the relationship between alcohol consumption and hypertension, and also highlighted the consequences on cardiovascular risk. Indian studies include those of Hazarika et al. (2002), Gupta et al. (1995), Gopinath et al. (1994) and Chadha et al. (1990).

In India, a number of ethnic communities consume alcohol and as a matter of fact, drinking country-brewed liquor forms an integrated part of their social life. The Santals are one such community numbering more than three million in India. They are mostly concentrated in the four states of Jharkhand, Bihar, Orissa and West Bengal. The main objective of the present study was to understand the relationship between alcohol consumption and hypertension as characterized by SBP and DBP among the Santals.

Material and Methods

The present study was conducted in a Santal village in the state of West Bengal during the period of January–February 2006. The village is situated under Kumarganj Block of Dakshin Dinajpur district of West Bengal. During the collection of the data, drinking of only one particular form of hard country-brewed alcohol locally called as ‘Cholai’ has been taken into consideration. The conventional data collection methods like interview and observation have been utilized to collect data on the drinking habits. For measuring blood pressure, the method and guideline provided by Pickering et al. (2005) has been followed. The blood pressure has been taken from adult male Santal individuals ($n=38$). The important points that have been followed at the time of blood pressure measurements were:

- | The subject was seated comfortably with the legs uncrossed, with the back supported and upper arm bared without constrictive clothing.
- | The arm was supported at heart level, and the bladder of the cuff was encircled to at least 80% of the arm circumference.

- | The mercury column was deflated at 2-3 mm/s. and the first and last audible sounds should be taken as SBP and DBP.
- | Neither the subject nor the observer was talking during taking the measurement.
- | For more accurate result, the measurements were taken at early morning from the subject on empty stomach
- | The blood pressure was taken three times and the mean recorded.

For the classification of the type of drinkers, a modified classification given by Cahalan (2003) has been adopted and followed in the present study. The drinkers were grouped into two groups based on the basis of frequency of drinking:

- a) Light drinker, who drinks once or twice a month.
- b) Moderate-heavy drinker, who drinks three or four times in a month to who drink every day or several drinks during the day.

The data was statistically analyzed using Systat (<http://www.systat.com/>). Descriptive statistics and paired t-test were utilized for the statistical analysis.

Results and Discussion

Female individuals were excluded from the present study as the frequency of drinking country-brewed alcohol was found to be almost negligible among them. Of the total male population of the village (n=145), 38 were classified as drinkers. They were further classified into light drinkers (n=25) and moderate-heavy drinkers (n=19). Blood pressure was taken from 19 light drinkers and 19 moderate-heavy drinkers, so as to keep the number of drinkers in both these categories identical. The means, standard deviations and ranges of SBP and DBP of these two groups are given in Table 1. The SBP of the moderate-heavy drinker group was 134.20 mm Hg as compared to 118.79 mm Hg in the light drinker group. Similarly, the moderate-heavy drinker group showed elevated DBP (87.21 mm Hg) than the light drinker group (81.47mm Hg). Evidently the mean systolic and diastolic blood pressures of the moderate-heavy drinkers were elevated as compared to those obtained for the light drinkers. To assess the differences between the mean SBP and DBP between the two groups, the paired t-test was utilized. The results of the paired t-test are shown in Table 2. The t-value was statistically significant ($p<0.05$) when the means of the SBP was compared between the light drinkers and the moderate-heavy drinkers ($t=3.55$, d.f.: 18). However, the t-value was not statistically significant ($p>0.05$) when the means of the DBP was compared between the two groups ($t=1.91$, d.f.: 18).

Yoshita et al. (2005) tried to determine the association of alcohol consumption with years-long blood pressure change and concluded that the baseline SBP after multivariate adjustment was significantly higher in drinkers than in non drinkers ($p<0.001$). Using a multivariate logistic regression model, Hazarika et al. (2002) showed that consumption of country-brewed alcohol intake was found to increase the risk of hypertension. Cushman (2001) has reported that a relationship existed between consumption of three or more alcoholic drinks daily and hypertension, and further observed that reduction in alcohol intake was associated with lowering of blood pressure in randomized clinical trials. It has also been shown by Nakanishi et al. (2001) that there was an increase in the risk for hypertension in a dose-dependent manner as alcohol intake increased in middle-aged Japanese men. Malhotra et al. (1999) reported that one of the various risk factors among hypertensives as compared to normotensives were alcohol consumption. Significant correlations were also reported between SBP and measures of both recent and lifetime alcohol consumption in men by York and Hirsch (1997). Gopinath et al. (1994) also showed that regular alcohol consumption was a significant risk factor for hypertension. A study carried out during a hypertension-screening program in Hungary showed a direct and significant relationship existed between the quantity of alcohol consumed and SBP ($p<0.001$) and DBP ($p<0.05$) (Mohaesi et al., 1991). It was also shown that consumption of alcohol was significantly associated with greater risk of hypertension among men (Laforge et al., 1990). After controlling for other risk factors, these authors further reported significant effects for hypertension among men who on average consumed more than one drink/day.

The results of the present paper show that although alcohol consumption led to an increase in both SBP and DBP, the effect was more pronounced on SBP. The results are in broad agreement with many of the studies already done and discussed above. The nature of this relationship between hypertension and consumption of alcohol still remains unresolved. There are a number of mechanisms by which hypertension is generated while consuming alcohol. Vasoconstriction effects and modification of smooth muscles are some of the well-established factors of alcohol-induced hypertension. Moreover, a reduction of alcohol consumption provokes a significant diminution of hypertension. It has been observed by Kodavali and Townsend (2006) that a reduction in blood pressure of up to an average of 4 mm Hg. Reduction in alcohol consumption was also associated with a significant dose-dependent lowering of mean SBP and DBP (Miller et al., 2005) there is also a dearth of such studies on various ethnic communities in India where consumption of alcohol has found a place in their daily life. Moreover, the present study has dealt with consumption of a particular form of country-brewed alcohol ('Cholai') only. There is also consumption of other forms of alcohol whose association with hypertension needs to be investigated.

Table 1: Means, Standard deviations and ranges of SBP and DBP among Light drinkers and Moderate-heavy drinkers in the present study

Category	N	Mean	Standard Deviation	Range
Light drinker: Systolic BP	19	118.79	10.26	100.00-138.00
Moderate-heavy drinker: Systolic BP	19	134.20	15.36	100.00-160.00
Light drinker: Diastolic BP	19	81.47	13.50	60.00-105.00
Moderate-heavy drinker: Diastolic BP	19	87.21	10.23	65.00-105.00

Table 2 Results of Paired t-test between the SBP and DBP of light drinkers and moderate-heavy drinkers

Light drinker vs. Moderate-heavy drinker	t-value	Degree of freedom	Level of significance
SBP	3.55	18	P<0.05
DBP	1.91	18	P>0.05

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Prevalence of sickle cell anemia Among the school students of Nagpur city

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Prodyot Gangopadhyay²

ABSTRACT

The present paper is based on the data collected from four schools of Nagpur city under. Students from class VIIIth to Class Xth have been selected for the study. Students who were present during the time of field work were screened and venous blood from the sickle cell positive students was taken to the laboratory for confirmation test through paper electrophoresis and Capillary 2 electrophoresis. A total number of 1077 students were screened and out of which 53 were tested as carrier of sickle cell trait. Vulnerable caste groups as identified are Mahar, Teli and Kunbi. No homozygous individual has been identified in the present study.*

*The data were collected during 2010–2011, under the aegis of Anthropological survey of India project “COMMUNITY GENETIC EXTENSION PROGRAMME RELATED TO SICKLE CELL ANAEMIA AND THALASSAEMIA IN NAGPUR CITY, MAHARASHTRA’

Sickle Cell anemia is an autosomal recessive hereditary disorder wherein polymerization of hemoglobin under low oxygen tension causes structural change in the RBC. The abnormal hemoglobin---- HbS is the result of a single point mutation in the HBB gene which is responsible for hemoglobin synthesis. Because of its selective advantage against malaria, the mutant gene is largely prevalent in malaria infested regions of the world.

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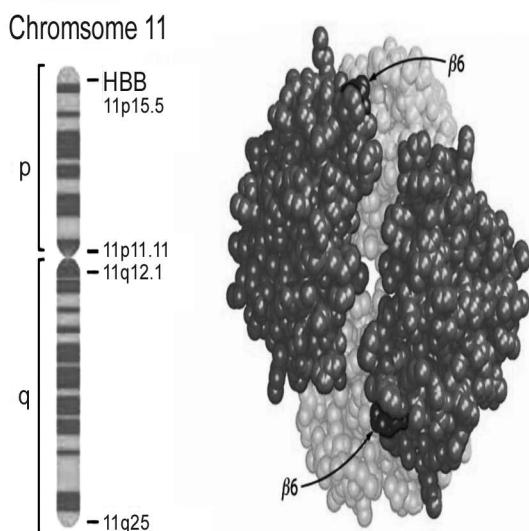


Fig. No.1: Location of HBB gene and the position of mutation in betaglobin chain of the hemoglobin

The HBB gene is located on the short arm of chromosome No.11 at 15.5 position, more precisely from 5,203,271 – 5204876 bp. Normal hemoglobin (A) consists of 2 α and 2 β globin chains. The mutation changes a single protein building block in beta hemoglobin, replacing glutamic acid (water soluble) to valine (fat soluble) at position 6 of the beta globin chain.(Fih-1).

This replacement produces abnormal hemoglobins which stick together and form long rigid molecules inside the RBC under low oxygen tension. These polymerized hemoglobin stick to the membrane of RBC and extends pressure and thus bend the red cell into a sickle shape.(Fig-2).

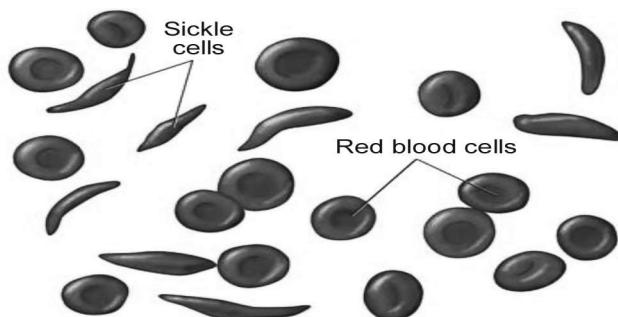


Fig. No.2: Red blood cells in heterozygous condition wherein both normal and sickle shaped RBC are visible

The Sickled Cells die prematurely and lead to the shortage of RBC and thus causes anemia. The sickled RBC loses its elasticity and can not pass through the small blood vessels causing pain and organ damage of the individual.

History

Sickle cell anemia was unknown till 1904 when an intern E. E. Iron of Chicago Presbyterion hospital found “peculiar elongated and sickle shaped cells” in the blood of W. C. Noel – a 20 years old first year dental student who was suffering from anemia. He informed Professor James Herrick – the professor of medicine of the same hospital and who brought the structural peculiarity of RBC under lime light. After nearly two decades in 1922 Verman Rason named the disease as sickle cell anemia. Linus Pauling and colleagues were the first in 1949 to demonstrate that sickle cell disease occurs as a result of an abnormality in the hemoglobin molecule. This was the first time a disease was linked to the mutation of a specific protein – a milestone in the history in the molecular biology.

India

Sickle cell disorder was first detected in India by Lehman and Cutbush more than half a century back in 1952 among the Veddoid of Nilgiri Hills and almost at the same time by Dunlop and Majumdar among the tea garden labourers of Assam. Since then studies from different parts of India show the prevalence of the mutant gene in the whole Central India, parts of Orissa, Andhra Pradesh, Gujarat and Rajasthan.

Central India

Central India is considered as hub of this abnormal gene HbS and the distribution of the trait is 2%-35% among the population with different ethnic background. Nagpur is situated in Central India and comes under the Vidarbha region of Maharashtra state. Earliest research work on sickle cell anemia was conducted in Nagpur City and the event has silently completed its Golden Jubilee in the year 2008. In 1958 two doctors from Nagpur Medical College conducted survey among the labourers of Model Mills in Nagpur and examined them for the diagnosis of sickle cell anemia. Their results show highest incidence of SCA among the Mahar (22.2 percent) followed by Teli (11.4 percent) and Kunbi (9.4 percent) (Shukla and Solanki, 1958). Recent work among the population shows an estimated population of 400000 carriers and 22000 homozygous patients in Nagpur and other parts of Vidarbha region .This however is estimated from the annual birth rate of 260 homozygous and 7500 carriers in the Nagpur city and adjoining areas. (Srikhande 2012).

Inheritance

It was the discovery by Emmel in 1917 in the member of a family which first suggested hereditary basis of sickle cell anemia. Later on, in 1923 Huck and Sydenstricker analyzed the pedigree of the patients with sickle cell anemia and concluded that Sickle Cell Anemia

is inherited following Mendelian inheritance of recessive trait. Discovery by Pauling in 1949 regarding abnormal slow rate of migration of sickle hemoglobin on electrophoresis was confirmed in the same year by Beet through his work among the Bantu of Africa also shows that (Beet, 1949) there are two groups of sickle cell patients one is heterozygous state for sickling positive without significant symptoms and the other is symptomatic homozygous state for sickling positive with severe anemia, vaso occlusive disorders etc.

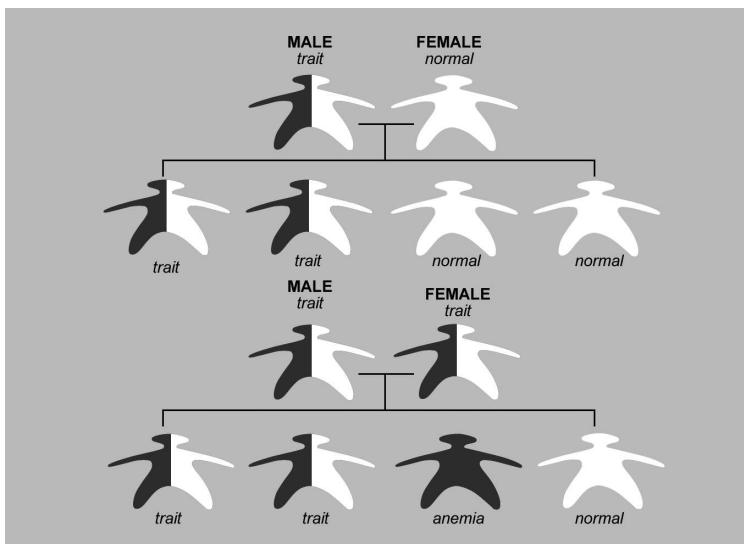


Fig No. 3: Schematic representation of inheritance of Sickle Cell anemia

Inheritance of sickle cell anemia follows the rule of Mendelian inheritance. Marriage of a normal man with a woman who is a carrier for sickle cell trait will give rise 50% normal and 50% carrier among their children; however all of them will be apparently healthy without any phenotypical abnormality. Homozygous state for sickle cell anemia arise only when two carriers (heterozygous for the trait) marry and 25% of the children becomes homozygous for the trait and suffer from severe anemia and other health problems related to sickle cell anemia. Following Mendelian inheritance 25% of them remain normal whereas 50% of them becomes carrier for the trait(Fig-3)

Material and Method

The present paper is based on the data collected from four schools of Nagpur City under the Project “. Students from Class VIII to Class X have been selected for the study as they represent adolescent premarital and age groups. Students who were present during the time of field work were screened and venous blood from the sickle cell positive students was taken to the laboratory for confirmation test through paper electrophoreses and Capillary II electrophoresis (Sebia). DNA from the blood samples of positive individuals was extracted and preserved for further study.

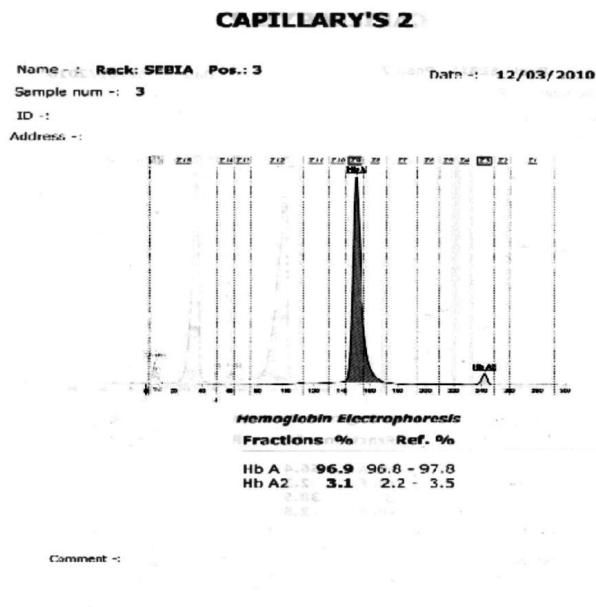


Fig. No.4 : Polygraph depicting the blood sample normal individual (AA)

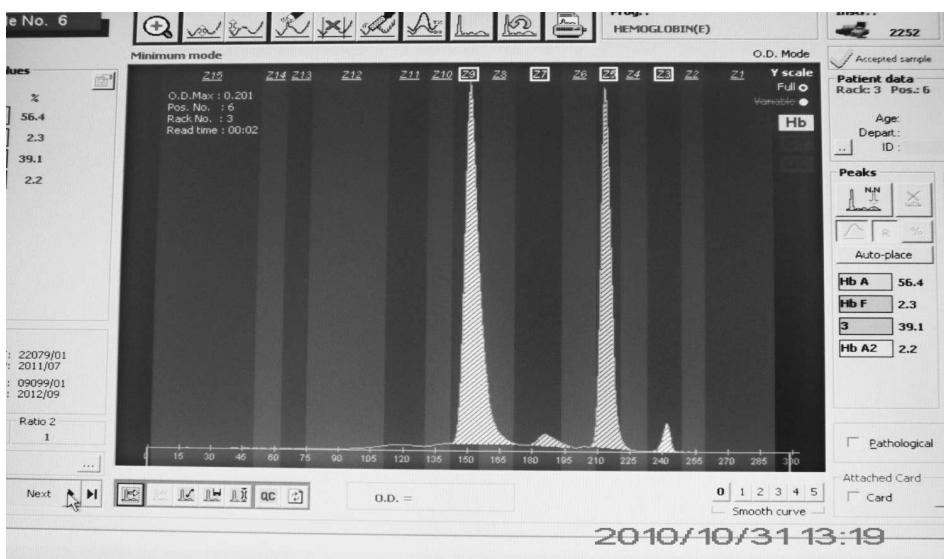


Fig. No.5: Polygraph of a heterozygous (AS) individual

Polygraph of capillary 2 electrophoresis shows the result of an individual who was tested as screened positive but actually confirmed as false positive after the analysis of blood sample in the capillary 2 electrophoresis. (Fig.. 4). Polygraph of a heterozygous sample (Fig--5) clearly shows the graph in Zone 5 region which is the position for hemoglobin S.

Awareness program have been conducted among the students of four schools with the help of audio visual presentation. Impact of the lecture has also been assessed by questioning the students regarding their perception about inheritance, social stigma etc. of sickle cell disease immediately after the presentation. Booklets on sickle cell have also been distributed among the interested students

Results and Discussion

A total number of 1077 students were screened, out of which nearly 5 % percent were tested with confirmation as sickle cell positive. No homozygous individual has been identified in the present study. Out of total – 64 communities, majority of the students belong to OBC category followed by Scheduled Caste, General, Scheduled Tribe and Nomadic Tribal Groups (Fig-6).

Table No.1
Population Composition of school students under present study

Sr. No	Caste	Category	Male	Female	Total
1	Mali	OBC	28	12	40
2	Sutar	OBC	4	21	25
3	Gondhali	OBC	2	0	2
4	Lohar	OBC	16	7	23
5	Wadhi	OBC	7	9	16
6	Kewat	OBC	0	2	2
7	Jain	Gen	2	3	5
8	Chambhar	SC	5	7	12
9	Mochi	SC	0	3	3
10	Bahana	SC	1	0	1
11	Padam Sali	OBC	1	0	1
12	Kori	SC	1	0	1
13	Khargarbhat	SBC	15	9	24
14	Koshti	SBC	15	9	24
15	Balai	SC	4	2	6
16	Dhobi	Gen	7	6	13
17	Barai	OBC	3	7	10
18	Bhat	OBC	2	7	9

Sr. No	Caste	Category	Male	Female	Total
19	Mang	SC	5	3	8
20	Matang	SC	1	0	1
21	Burud	SC	0	1	1
22	Mehter	SC	1	0	1
23	Banjari	VJ	4	0	4
24	Pinjari	OBC	0	1	1
25	Dalal	Gen	0	1	1
26	Brahman	Gen	4	9	13
27	Christian	Gen	0	1	1
28	Rajput	Gen	1	2	3
29	Thakur	ST	4	5	9
30	Dhangar	NT	1	1	2
31	Beldar	NT	1	0	1
32	Gadi Lohar	NT	14	8	22
33	Godhal	NT	0	4	4
34	Gaoli	Gen	0	1	1
35	Rangari	OBC	0	1	1
36	Dhiwar	NT	6	3	9
37	Maratha	Gen	10	10	20
38	Muslim	Gen	12	4	16
39	Teli	OBC	89	80	169
40	Pawar	OBC	13	18	31
41	Kunbi	OBC	86	94	180
42	Halba	ST	9	18	27
43	Sonar	OBC	21	20	41
44	Bhoi	NT	3	2	5
45	Kumbhar	OBC	0	1	1
46	Navi	OBC	4	9	13
47	Gond	ST	13	13	26
48	Shimpi	OBC	6	9	15
49	Mahar	SC	79	77	156
50	Ahir	NT	3	2	5

Sr. No	Caste	Category	Male	Female	Total
51	Kalar	OBC	22	16	38
52	Wadhai	Gen	1	1	2
53	Kushwa	Gen	2	2	4
54	CKP	Gen	2	2	4
55	Halwai	Gen	1	1	2
56	Nathjogi	SC	1	1	2
57	Gowari	OBC	3	2	4
58	Khatik	OBC	2	1	3
59	Wadi	OBC	1	1	2
60	Mana/Mane	ST	1	1	2
61	Gurav	OBC	0	3	3
62	Raut	OBC	1	0	1
63	Satnami	SC	1	0	1
64	Peraki	OBC	2	1	3
TOTAL			543	534	1077

Community wise distribution of the data shows that the students of the four schools are distributed in 64 communities. The majority of which are Teli, Kunbi and Mahar.

Table no.2
Distribution of total population in different categories
under present study

Sr. No.	Category	Male	Female	Total	%
01.	OBC	313	321	634	58.87
02.	SC	99	94	193	17.92
03.	ST	27	37	64	5.94
04.	Gen	42	44	86	7.98
05.	VJ	4	0	4	0.37
06.	NT	28	20	48	4.46
07.	SBC	30	18	48	4.46
TOTAL			543	534	1077
Percentage		50.42%	49.58%		100%

Table No.2 depicts highest number of OBC (58.8 percent) and lowest number of nomadic tribe (0.37 percent). Next to OBC major category of students under the presents study is represented by Scheduled Caste (17.92 percent), General Caste group (7.98 percent) and Scheduled Tribe (5.94 percent). Nomadic Tribe and Special Backward Class shares equal representation (Fig-6) under the current study.

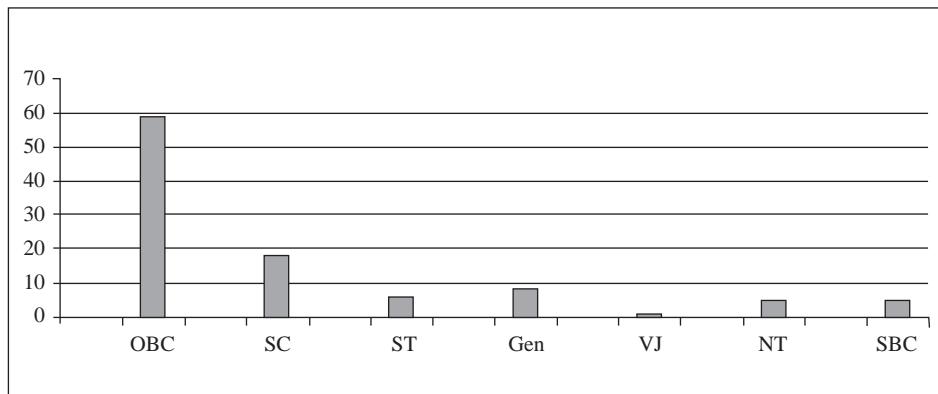


Fig. No.6: Distribution of students under different categories

Incidences of sickle cell trait (AS) among the OBC and SC are equal and show higher percentage (2.13 percent) as compared with the students under ST, SBC and General category. (Fig. No.7).

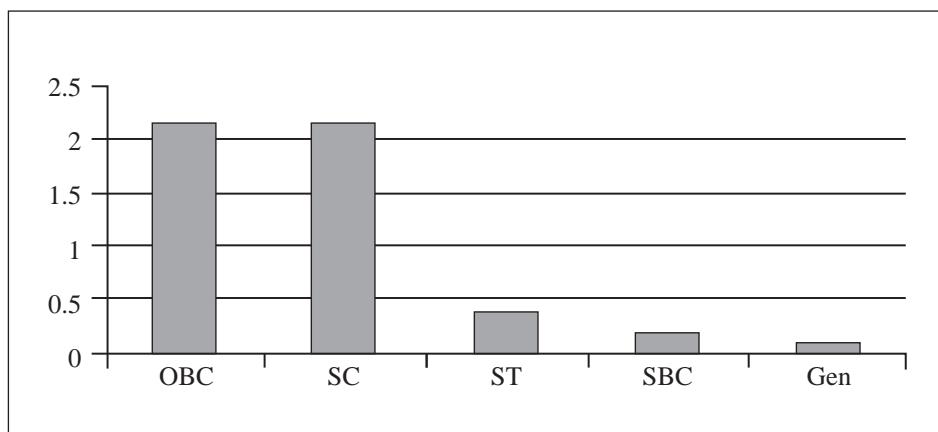


Fig. No.7: Distribution of sickle cell trait among the students under different categories

Table No.3
Distribution of sickle cell carries (as) in different caste groups

S.No	Caste	Category	Male	Female	Total	%
01	Lohar	OBC	0	1	1	0.09
02	Mahar	SC	6	17	23	2.13
03	Kunbi	OBC	2	3	5	0.46
04	Barai	OBC	1	0	1	0.09
05	Teli	OBC	5	4	9	0.83
06	Gowari	SBC	2	0	2	0.18
07	Kalar	OBC	2	0	2	0.18
08	Sonar	OBC	1	0	1	0.09
09	Gond	ST	2	1	3	0.28
10	Dhiwar	NT	0	1	1	0.09
11	Sutar	OBC	0	1	1	0.09
12	Halba	ST	0	1	1	0.09
13	Power	OBC	0	1	1	0.09
14	Mali	OBC	0	1	1	0.09
15	Wadai	OBC	1	0	1	0.09
TOTAL			22	31	53	

Community wise distribution of data reveal highest incidence of sickle cell trait among the Mahar (Fig-8) as compared to other communities.

Distribution of sickle cell trait among the other communities show more or less same pattern i.e. less than 0.5 percent excepting Teli (0.83 percent).(Table No.3).

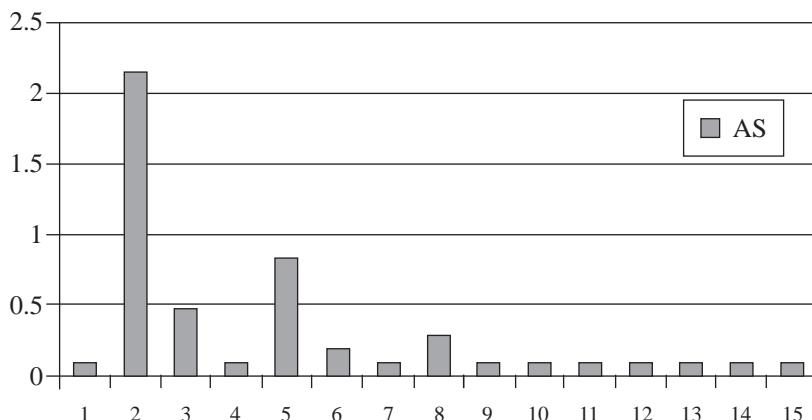


Fig. No.8: Distribution of sickle cell trait among the major cast groups under study
(Graph corresponding to Table No.3)

Table no.4
Percentage showing intra cast incidences of sickle cell trait

Sr. No.	Caste	Total Sample (M + F)	AS Individual	Percentage
1	Mali	40	1	2.5
2	Sutar	25	1	4
3	Gondhali	2	0	0
4	Lohar	23	0	0
5	Wadhi	16	1	6.25
6	Kewat	2	0	0
7	Jain	5	0	0
8	Chambhar	12	0	0
9	Mochi	3	0	0
10	Bahana	1	0	0
11	Padam Sali	1	0	0
12	Kori	1	0	0
13	Khargarbhat	24	0	0
14	Koshti	24	0	0
15	Balai	6	0	0
16	Dhobi	13	0	0
17	Barai	10	1	10
18	Bhat	9	0	0
19	Mang	8	0	0
20	Matang	1	0	0
21	Burud	1	0	0
22	Mehter	1	0	0
23	Banjari	4	0	0
24	Pinjari	1	0	0
25	Dalal	1	0	0
26	Brahman	13	0	0
27	Christain	1	0	0
28	Rajput	3	0	0
29	Thakur	9	0	0
30	Dhangar	2	0	0
31	Beldar	1	0	0
32	Gadi Lohar	22	0	0
33	Godhal	4	0	0
34	Gaoli	1	0	0

Sr. No.	Caste	Total Sample (M + F)	AS Individual	Percentage
35	Rangari	1	0	0
36	Dhiwar	9	1	11.11
37	Maratha	20	0	0
38	Muslim	16	0	0
39	Teli*	169	9	5.32
40	Pawar	31	1	3.22
41	Kunbi*	180	5	2.76
42	Halba	27	1	3.7
43	Sonar	41	1	2.44
44	Bhoi	5	1	20
45	Kumbhar	1	0	0
46	Navi	13	0	0
47	Gond	26	3	11.54
48	Shimpi	15	0	0
49	Mahar*	156	23	14.74
50	Ahir	5	0	0
51	Kalar	38	2	5.26
52	Wadhai	2	1	50
53	Kushwa	4	0	0
54	CKP	4	0	0
55	Halwai	2	0	0
56	Nathjogi	2	0	0
57	Gowari	5	2	40
58	Khatik	3	0	0
59	Wadi	2	1	50
60	Mana/Mane	2	0	0
61	Godavi	3	0	0
62	Raut	1	0	0
63	Satnami	1	0	0
64	Peraki	3	0	0

Intra community comparison of data of those communities which have significant representation (more than 100 individuals) in the total number of collected data shows highest incidence of sickle cell trait among the Mahar (14.74 percent) followed by Teli (5.32 percent) and Kunbi (2.74 percent). This however supports the results of the first study in Nagpur by Shukla and Solanki (1958) and reiterates the categorical position of the aforesaid three caste groups with regards to sickle cell trait. Research works from

different parts of Maharashtra in different time period also depict the same view (Table No. 5). It is important to mention that the percentage of sickle cell trait has declined in all these three communities under the current study. Higher percentage of sickle cell trait among some other communities has not been taken in to consideration because of their small number of representation in the present study.

Table no. 5
Prevalence of sca in a few population of maharashtra

Sr. No.	Community	Incidence (%)	Reference & Year
01.	Bhil	15.85	Negi, 1976
02.	Bhil	18.00	Negi, 1978
03.	Bhil	20.24	Sathe, et al, 1987
04.	Bhil	20.60	Kate, 2001
05.	Pradhan	09.00	Ahmed & Choudhary, 1980
06.	Pradhan	11.08	Bankar et al, 1984
07.	Pradhan	10.60	Deshmukh et al, 2006
08.	Pradhan	15.80	IGIMC, Wardha, 2009
09.	Teli	11.10	Shukla & Solanki, 1958
10.	Halba	13.6	Negi, 1976
11.	Gond (MP)	19.4	Negi, 1963
12.	Mahar (Rural)	18.6	Urade, et. al, 2001
13.	Mahar (Nagpur)	18.1	Das et. al, 1961
14.	Pardhan (Nanded)	16.8	Banker, et. al, 1984
15.	Pawar	25.5	Kate, 2001
16.	Halba (Raipur)	13.6	Negi, 1976
17.	Thakur	6.06	Tiwari, 1980
18.	Chamar (Raipur)	4.5	Tiwari, 1980
19.	Chamar (Raipur)	6.7	Tiwari, 1980
20.	Mahar (Raipur)	18.8	Tiwari, 1980
21.	Mahar (Raipur)	19.5	Tiwari, 1980
22.	Gond (Raipur)	7.96	ICMR, 1986
23.	Kamar (Raipur)	2.38	Tiwari, 1986

Conclusion

Community specific trend of occurrence of sickle cell trait in Nagpur in particular and Maharashtra as a whole is discussed in the present study. The percentage of incidences however shows trend of decline among the vulnerable caste groups (Mahar, Teli and Kunbi) which may be a sign growing awareness among these groups regarding the particular genetic trait.

Acknowledgements

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Demographic Features, Consanguinity, Marital Distance and Cultural Traits of Kurichians, a Matrilineal Tribe in Kerala State

S. Yaseen Saheb¹

ABSTRACT

Data from 149 Kurichian couples was collected during 1996 from Mananthavady taluk in Wayanad district of Kerala with an objective to elucidate the demo-genetic structure of the matrilineal tribe. They observe touch pollution with other communities. Their economy is primarily based on agriculture. They live in exclusive settlements called mittoms. Therattu kalyanam is performed to girls on attaining menarche. They maintain endogamy and prefer consanguineous marriages. They are 4 sub tribes: Jati Kurichians, Kannan Kurichians, Anchilla Kurichians and Paathiri Kurichians. Monogamy is the common practice. The mean age disparity in spouses is 8.07 years. Consanguineous marriage is the preferential form of marriage. The total consanguinity rate is 47.65% in Kurichian. The mean inbreeding coefficient in Kurichian (0.0300) records the highest value in Kerala populations. Nearly 5 per cent couples married within the village. The mean marital distance of Kurichian is 21.07 km. Maximum mean marital distance is recorded in Karuvancheri (31.75km), while the lowest marital distance is recorded in Palliyara (13.88km) mittoms. Couples in 20-59 years preferred mates from shorter distances compared to couples in older ages. Maximum mean marital distance (27.55 km) is recorded for couples aged 60-64 years, while the lowest mean marital distance (13.00 km) is recorded for couples aged 80-84 years.

INTRODUCTION

The structure of a population is determined by the nature of the gene flow within a geographical area, through its breeding structure and marital movement, in addition to the biological makeup of the group. Human populations are differentiated into smaller groups because of their ethnicity, religion, language, spatial distribution apart from their

¹ Anthropological Survey of India, Mysore.

genetic composition. Mating patterns, inbreeding, gene flow and geographical isolation are some of the factors, which act on the gene pool of a population, in addition to the operation of evolutionary forces that brings upon changes in allelic frequency of a population. The primitive tribes inhabiting varied environments in peninsular India with peculiar socio-cultural features, provides an excellent opportunity for Anthropologists in investigating their population structure. Some researchers have reported on the mating patterns and the level of inbreeding among Kerala populations (Ali 1968, Chakravarti 1968, Saheb et al 1989). Thavanati et al (2007) reported that higher mortality among consanguineous couples, and higher levels of inbreeding among Kurichians have eliminated the deleterious genes leading to increase in homozygosity of many genes that might have adapted to those conditions would explain the increased survival of the individuals under inbreeding. Studies on demographic aspects were limited to Kanikkar (Nag 1954) and Kurichian (Devi and Saraswati 1985). Except a few studies by Saheb et al 1989 and Saheb (1999) the Kurichiyans have not been thoroughly investigated for demo-genetic studies. This paper elucidates the demo-genetic structure of Kurichians of Mananthavady taluk in Wayanad district of Kerala.

Topography& History

The name Wayanad is derived from Wayalnadu, meaning land of paddy fields. The altitude of Wayanad plateau ranges from 700 to 2100 meters above sea level. Wayanad lies between $11^{\circ} 27'$ and $15^{\circ} 58'$ N latitude and $70^{\circ} 27'$ and $75^{\circ} 47'$ E longitude. The district is bounded on the east by Udagamandalam district of Tamil Nadu and Mysore district of Karnataka, on the north by Kodagu district of Karnataka, on the south by Mallapuram district and on the west by Kozhikode and Cannanore districts of Kerala. Wayanad plateau is hilly with tropical humid climate. Archeologists opine that organized human life existed 10 centuries BC in Wayanad region. Numerous evidences about new Stone Age civilization can be evinced in Wayanad hills. The two caves of Ampukuthimala located in between Sultan's Battery and Ambalavayal, with pictures painted on their walls and the pictorial writings there provide ample evidence for the bygone life and civilization. In ancient times this land was ruled by the Rajas of the Veda tribe. In later days Wayanad came under the rule of Puzhassi Rajas of Kottayam royal dynasty. When Hyder Ali became the ruler of Mysore, he invaded Wayanad and brought it under his sway. In the reign of Tippu Sultan Wayanad was restored to the Kottayam royal family. But Tippu Sultan handed over entire Malabar to the British after the Srirangapattanam truce that he made with them. This was followed by fierce and intrepid encounters between the British and Kerala Varma Puzhassi Raja of Kottayam dynasty. When the Raja was driven to wilderness of wayanad hills, he organized Kurichian inhabitants into a sort of people's militia and engaged the British in guerrilla type encounters. The British could get only the dead body of the Raja, who killed himself somewhere in the interior forest. Thus Wayanad fell into the hands of the British and with it began a new turn in the history of this area.

Population Dynamics

Kurichians inhabit Wayanad and Kannur districts of Kerala. In Wayanad district, they are concentrated in Mananthavady taluk and are sparsely distributed in Vythiri and Sultan's Battery taluks. According to Census 1901 and 1911, Kurichians numbered 9642 and 9722 persons respectively; while in subsequent decade their population declined to 7465 persons (Census 1921). During 1921- 1941 period, Kurichian population sharply declined to about 1214 persons. They showed steady increase in 1951, 1961 and 1971 decades. As per 1961 Census the total population of Kurichian was 11849 with 968.9 females per 1000 males. Majority of Kurichian reside in rural areas. During 1971 census there were 15700 Kurichians comprising 7996 males and 7704 females, forming 963.5 females per 1000 males. According to Census 1981 the Kurichian total population was 22,215 persons, of whom only 54 persons were living in urban areas, while rest were residing in rural areas. According to census 2001 Kurichian population was 32,746 in the state. They numbered 20,412 in Wayanad district forming 17.38% of the total tribal population of the district. The sex ratio in Kurichian has declined alarmingly, as there were 886 females per 1000 males (Census 2001). There were 62 % joint families as per the sample survey 2006. The average family size is 8.12. Majority of them reside in rural areas.

Society and Cultural traits

Kurichian trace their legendary origin to *Bhagavathi* deity and *Chenthamarapakshi* (Luiz 1962). They claim descent from Thekku Perumbadam Villoliyari Nairs, who were brought as archery soldiers from Perumbadam by the Kottayam Raja to fight the Veda kings. They were known as Villoliyari Nairs. Kurichian population was 32,746 (Census 2001) and they inhabit Wayanad and Kannur districts of Kerala. They are also known as *Malai* (Hill) Brahmins. The name Kurichian was derived from two words, *kuri* (target) and *chiyan* (people), indicative of their expertise in shooting at the target in archery (Luiz 1962). Kurichians are monolinguals and speak Malayalam. Kurichians eat the flesh of sheep, goat, rabbit, wild boar, deer etc animals, while Paathiri Kurichian consumes both beef and pork. Rice is their staple food. Traditionally Kurichian woman wear a cloth between right arm pit and left shoulders, with a knot over the left shoulder. Kurichians are tall statured, long armed, robust and have curly hair. Their complexion varies from light to very dark brown. Some of the elderly men tie their hair on the left side as *kuduma* (Luiz 1962). They observe pollution with all other tribes and castes except Nambuthiri Brahmin and Nair. Kurichian are divided into 4 sub tribes, basing on their social, territorial and religious affiliations: Kurichian of Wayanad hills are called Jati Kurichian; Kunnam Kurichian inhabit Kannavam forest; Anchilla Kurichian, who reside in Thirunelly were the descendants of excommunicated members of Kurichian society for violation of customary norms and for committing incest; Paathiri Kurichian are those who embraced Christianity. Intermarriages between sub tribes are prohibited, but commensal relations are allowed between Jati Kurichian and Kunnam Kurichian. Jati Kurichian considers

Anchilla Kurichian and Paathiri Kurichian as untouchables (Singh 1993). Kurichian follow matrilineal traditions, matrilineal descent and inheritance, but practice verilocal residence after marriage, except the Paathiri Kurichian. They are divided into several exogamous lineages (*mittoms*) / clans and have separate worship places for their lineage deities. All the houses belonging to the *mittom* are located in clusters and form one settlement is also known as *tharavad*. About 148 *mittoms* are reported among Jati Kurichian, but only 54 *mittoms* have been traced (Saheb et al 1989). Each lineage / *mittom* is headed by *karnavar* to supervise all social rituals, ceremonies and economic activities. Joint families (*tharavads*) are common among Kurichian. The *karnavar* performs the duties as administrative head and all persons in a *mittom* have to abide by his decisions. Kurichian claim superior status and rank in the tribal social hierarchy and concede higher status to the Nambuthiri Brahmin and Nair. They observe touch pollution with other communities. Jati Kurichian adheres to tribe endogamy and prefers cross-cousin marriages. The institution of *thalikattu kalyanam* was abolished from their society, but *therattu kalyanam* is performed for girls on attaining menarche. The mean age of menarche of Kurichian woman is 14.83 ± 0.15 years (Shibu & Gangadhar 2011). The maternal uncle, *karnavar* is the supreme functionary in this ritual and *karnavar*'s wife takes the lead in performing these rites. The age at marriage for males is around 20 years and it is 18 years for females. Generally marriages are arranged through negotiations by *karnavar* and elders of the maternal *tharavad*. Kurichians are monogamous, however sporadic cases of polygyny is reported. Divorce is permissible with the consent of tribal council headed by *Nadu Moopan*. The divorced woman lives in her maternal *mittom* with her children. Remarriage is allowed for both divorced and widowed. Nuclear families are emerging as a result of modernity and development. Ancestral property is inherited in female line, as they follow *marumakkathayam* rule, wherein the nephew has the right on the property. Kurichian tribal council composed of *Karnavars* of different *tharavads*, headed by *Nadu Mooppan*, who wields authority over all matters pertaining to the tribe. Kurichians are Hindus and have several clan/ lineage deities, *Bhagavathi*, *Malakkari*, *Monnan*, *Athrappan*, whom they worship periodically. They celebrate *Thulampattu*, *Theyyamthira*, *Puthari*, *Onam* and *Vishu* festivals. *Naripattu* and *Kumbhampattu* are their folk songs. Kurichian are tall statured, long armed, robust and have curly wavy hair. Their complexion varies from light to very dark brown (Singh 1993). Majority of them are Hindus and followers of Hinduism. Kurichian economy is primarily based on agriculture and labour. 73.79% of them own lands with an average land possessed by Kurichian are 2.80 acres. They cultivate paddy and grow cash crops like coffee, pepper, ginger, turmeric, tapioca and banana. Majority of them are cultivators, and some are engaged in livestock, forestry, hunting etc. Traditionally Kurichians are shifting cultivators and hunters.

Material and Methods

Data from 149 Kurichian couples have been collected on predesigned schedules comprising information on age, sex, clan/ lineage, clan deity, birth place, marriage distance, parent's

birth place, type of marriage and residence after marriage, literacy and occupation, from several hamlets/ colonies in Mananthavady taluk of Wayanad district during 1996. Age of couples has been recorded as told by the informant. Sometimes age was estimated with the help of knowledgeable persons/ *karnavar/ Moopan* and revenue officials, wherever birth records were not available. Age of children was recorded as per the school records. The distance between birth places of spouse is recorded in Kilometers through well informed and knowledgeable persons of the locality to measure marriage distance. Types of marriages have been recorded with the help of genealogical charts drawn with the assistance of *karnavar/elders* of the *mittoms*, to assess the levels of consanguinity and inbreeding. Data was analyzed applying standard statistical tools and formulae. The mean inbreeding coefficients and statistical constants were calculated following Cavalli-sfroza and Bodmer 1971.

Results and Discussion

Demographic features

The data on 149 Kurichian couples show that male spouse's age ranged from 20-85 years, while that of female spouses ranged from 18-75 years. Most of the male spouses are in 25-70 years age groups, while female spouses fall in 20-60 years age groups. The highest frequency of male spouses is noticed in 40-49 years (26.38%), followed by 50-59 years (21.53%), 30-39 years and 60-69 years (15.97% each), 20-29 years (10.50%) and 70+ years (9.72%). The highest frequency of female spouses is observed in 30-39 years and 40-49 years (24.83% each), followed by 20-29 years (20.81%), 50-59 years (14.77%), 60-69 years (12.75%) and 70+ years (2.01%) age groups. The presence of more male spouses in 70+ years indicate that males survived longer than females and have greater life span. Satyvathi et al (2012) reported that centenarians are common among Kurichia tribe, and they enjoy a lengthy period of longevity relatively free from age associated chronic problems. Three bigamous unions and one trigamous union is recorded among elderly couples, which indicate that Kurichian practiced polygyny till recent times. The younger couples prefer monogamy, while polyandrous unions are reported. Age disparity exists among Kurichian couples; wherein 44.44% couples have age difference up to 5 years, while 36.81% couples have 6-10 years age difference; 14.58% couples have 11-15 years difference; 4.17% couples have 16-20 years difference and 3.47% couples have 21+ years difference. The mean age difference of Kurichian couples is 8.07 ± 0.45 years (SD: 5.50 ± 0.32 ; CV: 68.15 ± 3.95).

Marriage patterns

Out of 149 marriages that are recorded from 28 *mittoms*, 47.65% marriages are consanguineous, while 52.35% are non consanguineous marriages. About 43.62% marriages are between first cousins, where mother's brother's daughter (31.54%) is preferred over father's sister's daughter (12.08%). The preference to marry mother's brother's daughter

is a significant feature of Kurichians. Uncle-niece marriage, the most prevalent form of consanguineous marriage in castes and tribes of southern India (Rao & Saheb 1984) is nonexistent among Kurichians (Saheb & Bhanu 1983, Saheb & Naidu 1994). The frequency of marriages between first cousins once removed is very low (1.34%), where matrilateral cousins (0.67%) and patrilateral cousins (0.67%) are in equal proportion. The frequency of marriages between second cousins is 2.68%. The mean inbreeding coefficient for autosomal gene is 0.0300 ± 0.002347 (SD: 0.028653 ± 0.00166 ; CV: 95.51 ± 5.5327). The mean inbreeding coefficient obtained in the present study is in agreement with the earlier findings of Saheb et al (1989) among Kurichians of Wayanad. Uncle-niece marriage is nonexistent in castes and tribes of Kerala (Ali 1968). Cross-cousin marriages are the most prevalent form and it ranges from 0.68% in Kurumans to 44.71% in Kurichians (Saheb et al 1989). The incidence of cross-cousin marriages in Kurichians is higher than in Paniyans and Muthuvans (Chakravarti 1968). Some of the Hindu Castes showed intermediate values ranging from 12.6% in Pulayans to 23.5% in Nayars. The Valans (5.6%), Nambutri Brahmins (6.0%), Cherumans (6.7%) and Chaliyans (8.6%) show very low proportions of first cousin marriages (Ali 1968). Among the religious groups, Kerala Muslims recorded higher frequency of first cousin marriages than Caste Hindus and Latin Catholic Christians (Ali 1968). All the communities registered very low proportion of consanguineous marriages beyond first cousins. The incidence of marriages beyond first cousins once removed is also high in Kerala Muslims (5.7 % to 9.5%) than that of Hindus and Christians, except Mukkuvan Christians (7.0%). The frequency of marriages beyond first cousins once removed in Kurichians (1.34% to 1.44%) is closer to that of Nambutris and Nayars (1.5%). The consanguinity rate in Kurichians, Paniyans and Muthuvans is significantly greater than other tribes, except Kurumans. The highest mean inbreeding coefficients for autosomal gene (0.0300 to 0.02848) is recorded in Kurichians, followed by Paniyans (0.0180) and Muslims (0.0167 to 0.013), while all other ethnic groups showed much lower values than the present study. Thavanati et al (2007) reported that higher mortality among consanguineous couples, and higher levels of inbreeding among Kurichians have eliminated the deleterious genes leading to increase in homozygosity of many genes that might have adapted to those conditions would explain the increased survival of the individuals under inbreeding.

Consanguinity in Mittoms

The occurrence of marriages along with the associated *Kulam deivams* (clan/ lineage deities) illustrate the nature and the pattern of mating that have occurred in different *mittoms* and also the type of consanguineous marriages practiced by them. The common deities recorded for different *mittoms* are Malakkari, Rajava, Moonan, Karimpili, Bhagavathi, Aril Bhagavathi and Karimbichchi. None of the marriages contracted between different *mittoms* have the same clan / lineage deities. The frequency of different form of marriages recorded in 28 *mittoms* indicates that the most common form of marriage

is between first cousins. The Pulamula (2.68%), Ozukolli (4.03%), Odamutil (4.70%), Natipara (4.02%), Kakkotara (2.68%), Edathana (5.37%) and Edamana (3.35%) *mittoms* show higher frequency of first cousin marriages than other *mittoms*. Most of the *mittoms* preferred matrilateral cousins (MBD) than patrilateral cousins (FSD). The occurrence of marriages beyond first cousins is reported in Odamutil (0.67%), Palliyara (0.67%), Nellikudian (0.67%), Karuvanazeri (0.67%) and Kuttiyottil (1.34%) *mittoms*. The occurrence of non-consanguineous marriages (NC) are higher than consanguineous marriages(C) in many *mittoms*, except in Ozukolli (C: 4.03%, NC: 0.67%), Palliyara (C: 3.36%, NC: 2.01%), Konneyodu (C: 1.34%, NC: 0.67%), Chelliyyottil (C: 1.34%, NC: 0.0%) and Velakottil (C: 1.34%, NC: 0.67%) *mittoms*. The highest mean value for different forms of marriages is observed in Edathana *mittom* (M: 9.0; SD: 1.41; CV: 15.67), followed by Kakkotara (M: 7.0; SD: 4.24; CV: 60.57), Kuttiyottil (M: 6.5; SD: 0.71; CV: 10.92), Edamana and Palerimuttill (M: 6.0; SD: 1.41; CV: 23.50 each), Kottutara (M: 5.5; SD: 3.54; CV: 64.36), Pulamula and Odamutil (M: 5.0; SD: 1.41; CV: 28.20 each). The least values are observed for the rest of the *mittoms*. The highest coefficients of variation are observed for Natipara and Ozukolli *mittoms*.

Marital Distance

Marital distance has been measured as the actual road distance between birth places of the spouses in Km. The frequency of village endogamy is high (8.45%) in consanguineous couples than that of non-consanguineous couples (1.28%). The high frequency of village endogamy among consanguineous couples is due to their preference of cross cousin marriages and also due to the influence of matrilineal tradition of inheritance of property. Generally nephews reside with maternal relatives till their marriageable age, at their maternal home rather than at paternal home. Children born to Kurichian woman grow under the care of maternal uncles and their marriages are generally performed with maternal cross-cousins. The marital distance ranges from 1 km-56 km in consanguineous couples, while it ranges beyond 61km in non-consanguineous couples. About 85% of consanguineous marriages are contracted with in 36km distance. Nearly 28.19% of consanguineous marriages have taken place within a distance of 20 km, while only 15.44% of consanguineous marriages have occurred beyond 20 km of distance. About 13.42% of consanguineous marriages have taken place between 25-40 km distances. Nearly 47.65% of consanguineous couples married up to a distance of 56 Km, while 52.35% of non-consanguineous couples have chosen their spouses up to a distance of 61+ km. About 24.16% of non-consanguineous marriages have taken place within a distance of 20 km, while 20.13% marriages have occurred within 20-40 km distance and only 7.38% of non-consanguineous marriages have taken place between 41-61+ km distances. The pooled sample shows 4.70% of village endogamy among Kurichians. About 61.01% of marriages have taken place within the distance of 25 km, while 36.91% of marriages have taken place within 25-50 km distance. Only 2.28% of marriages were contracted beyond 50 km from their actual birth places.

The mean marital distance of consanguineous couples (M: 17.37 ± 1.54 km; SD: 12.96 ± 1.09 ; CV: 74.61 ± 6.26) show significantly lower value by 7.06 km than in non-consanguineous couples (M: 24.43 ± 1.73 km; SD: 15.26 ± 1.22 ; CV: 62.46 ± 5.00). The non-consanguineous couples show 3.36km higher mean marital distance than the mean marital distance of pooled sample (M: 21.07 ± 1.20 km; SD: 14.64 ± 0.85 ; CV: 69.48 ± 4.02), while the difference in mean marital distance is 3.70 km between pooled sample and that of consanguineous couples. The coefficient of variation shows 12.15 units higher value between consanguineous and non-consanguineous samples, whereas the consanguineous sample exhibit 5.13 units higher value than the pooled sample, while the non-consanguineous sample show 7.02 units less value than the pooled sample. Libee (1971) reported regional differentiation in the mean marital distance of the north Indian and south Indian populations. The north Indian populations show higher mean marital distance than that of south Indian populations. The mean marital distance of Andhra Pradesh tribes reported by Pingle (1983) and Saheb & Naik (1983) show higher mean marital distance values: ranging from 20-54 miles than Kurichians (13.10 miles) and Kurumans (11.51miles) of Kerala. The mean marital distance of the present study is slightly higher than the mean value of Kurumans of Wayanad district (Urade 1997). The mean marital distance of Kurichians is significantly lower to that of Andh (87.27 km), Mathura (43.25 km), Pradhan (44.33 km) and Kolam (36.85 km) tribes of Andhra Pradesh (Pingle 1983). The mean marital distance of Kurichians (Saheb 1999) is lower to the mean values of Raj Gonds (29.96 km) and Banjaras (26.58 km) of Andhra Pradesh reported by Pingle 1983 and Saheb & Naik 1983 respectively, but higher to that of Kurumans (18.52 km) of Kerala (Urade 1997). The mean marital distance of Kurichians is significantly greater than the mean values of Bhils (8.37 km) and Pawra (8.37 km) of Maharashtra (Malhotra 1978).

Marital distance in mittoms

Two couples each from Kottutara and Kakkotara *mittoms* and one couple each from Palliyara, Edathana and Kottuyottil *mittoms* have chosen their mates from the same village. The couples from rest of the 23 *mittoms* preferred village exogamy. The couples hailing from Kottutara and Edathana mittoms contracted marriages beyond 60 km. About 90.6% of couples belonging to different *mittoms* contracted marriages up to a distance of 40 km. The couples that preferred marriages beyond 40km distance are fewer in number and sporadically distributed in different *mittoms*. The Karavanacheri *mittom* recorded the highest mean marital distance (M: 31.75 ± 4.10 km; SD: 8.20 ± 2.90 ; CV: 25.83 ± 9.13) followed by Kottutara (M: 26.55 ± 5.45 km; SD: 18.07 ± 3.85 ; CV: 68.06 ± 14.51) and Odamuttill (M: 26.00 ± 4.65 km; SD: 14.70 ± 3.29 ; CV: 56.54 ± 12.64). The mean marital distance recorded below 20 km in few *mittoms* like Palliyara (M: 13.88 ± 3.87 km; SD: 10.96 ± 2.74 ; CV: 78.96 ± 19.74), Kakkotara (M: 14.36 ± 2.92 km; SD: 10.94 ± 2.07 ; CV: 76.18 ± 14.40), Kottuyottil (M: 17.00 ± 3.25 km; SD: 11.72 ± 2.30 ; CV: 68.94 ± 13.52) and Pulamula (M: 18.00 ± 3.87 km; SD: 12.25 ± 2.74 ; CV: 68.06 ± 15.22). The Ozukolli (M: 21.57 ± 3.74 km; SD: 9.90 ± 2.65 ; CV: 45.90 ± 12.27), Palerimuttill (M: 21.33 ± 3.67 km; SD: 8.98 ± 2.59 ; CV: 42.10 ± 12.15), Edamana (M: 22.58 ± 4.15 km; SD: 14.36 ± 2.93 ; CV: 63.60 ± 12.98) and Natipara (M: 25.86 ± 2.22 km; SD: 5.88 ± 1.57 ; CV: 22.74 ± 6.08) *mittoms* showed that mean marital distance values fluctuating

between 21km to 25km. The highest value of coefficient of variation is observed in Edathana, followed by Palliyara, Kakkotara, Kottuyottil, Pulamula and Kottutara *mittoms*. The lowest value of coefficient of variation is observed in Karavanacheri and Natipara *mittoms*. The mean marital distance for the pooled sample is (20.64 ± 1.20) km, with a standard deviation of 9.90 ± 2.65 and coefficient of variation 45.90 ± 12.27 .

Impact of couple's age on marital distance

The couples aged 20-59 years have chosen their spouses with in a distance of 40 km; whereas the older generation couples aged 60-85 years opted marriage partners from greater distances i.e. beyond 60 km-65 km. However such marriages are fewer in number. It is evident that young Kurichian couples preferred spouses from short distances compared to older generation couples, contrary to the general observations in other ethnic groups (Majumdar 1977). The highest mean marital distance (27.55 ± 5.80 km) is observed among the couples aged 60-64 years, followed by couples aged 65-69 years (26.33 ± 4.91 km) and couples aged 45-49 years (26.00 ± 4.29 km). The lowest mean marital distance is observed among couples aged 40-44 years (12.13 ± 2.59 km) and couples aged 80-84 years (13.0km). Only one couple below 20 years of age has contracted marriage with in a distance of 3 km. Majority of the couples preferred their mates with in a distance ranging from 17 km-25 km. The mean marital distance for all the couples is 20.28 ± 1.16 km, which is lower than the value for the 45-74 years aged couples (range: 20.82 km-27.55 km) and higher than that of the couples aged 20-44 years (range: 12.13 km-18.60 km) and 75-84 years (13.0 km-18.0 km). The coefficient variation ranges from 28.00 ± 6.60 km in 70-74 years aged couples to 90.72 ± 24.25 km in 20-24 years aged couples.

Summary and conclusions

Demographic data was collected during 1996 on the Kurichians of Wayanad district in Kerala with an objective to elucidate the demo-genetic structure of the matrilineal tribe. Kurichians still adhere to the matrilineal and matriarchal traditions. They observe touch pollution with other tribes and castes, except the Nambuthri Brahmin and Nair castes. Their economy is primarily based on agriculture. They live in exclusive settlements named after their respective *mittoms*. There are about 148 *kulams* among the Kurichians and each *kulam* has a specific deity and worship place within the courtyard of the *mittom*. *Therattu kalyanam* is performed to girls on attaining menarche, under the supervision of the *Karnavar*. The institution of *talikattu kalyanam* was abolished recently by their tribal council. They maintain strict endogamy and prefer consanguineous marriages. There are 4 sub tribes among Kurichians, namely Jati Kurichians, Kannan Kurichians, Anchilla Kurichians and Paathiri Kurichians and are differentiated at socio-religious levels. The present study is confined to Jati Kurichians, who are numerically dominant, ritually pure and maintain social distance with other sub tribes. The Jati Kurichians are Hindus, while Paathiri Kurichians profess Christianity. They celebrate all the Hindu festivals. They are excellent bowmen. Tradition says that they are a martial tribe, who assisted Pazhaassy king of Kottayam in his fight against the British during 18th century. They claim to be the descendants of Perambadan Villoli Kari Nairs.

The Kurichian couples age ranges from 20 years to 89 years, which indicates that average life span of Kurichian is significantly higher than the life span of average Indian. Though monogamy is the common practice, three cases of polygynous unions are reported in Kurichians. Maximum number of couples falls between 20-60 years indicating that high proportions of them in the breeding age group. The age disparity among Kurichian spouses range from 5-10 years, where the mean age difference of couple is 8.07 years. Out of the 28 *mittoms*, Pulamula, Ozukolli, Odamuttil, Natipara, Kakkotara, Edamana and Edathana *mittoms* recorded higher frequency of first cousin marriages compared to other forms of marriage. Consanguineous marriage is the preferential form of marriage among Kurichians but the frequency of consanguinity is much below to that of Andhra Pradesh tribes. The uncle- niece marriage is not practiced by Kurichians and other ethnic groups of Kerala. The consanguinity rate in Kurichian (47.65%) is significantly higher than that of other ethnic groups of Kerala. The preference for matrilateral cross-cousins over patrilateral cross- cousins is in conformity with the practice in Andhra Pradesh tribes. The mean inbreeding coefficient for autosomal loci in Kurichian (0.0300) records the highest value in Kerala populations, but is closer to the values recorded in various other ethnic groups of south India. Nearly 5 percent Kurichian couples married within the native village, which is higher than the frequency recorded among the Kuruman tribe of Wayanad district. Majority of Kurichian couples married within 40 km. The mean marital distance of Kurichian (21.07km) is lower than the mean marital distance of non-consanguineous couples (24.43km), but it is significantly higher to that of consanguineous couples (17.37km). The mean marital distance of Kurichian is closer to the mean marital distance of the Kolams, but lower to that of Andh and Pradhan tribes of Andhra Pradesh. The couples from Kottutara and Edathana *mittoms* contracted marriages up to a distance of 65 km, while couples from other *mittoms* chosen their mates within a distance of 40 km. The maximum mean marital distance is recorded in Karuvancheri *mittom* (31.75km), while the lowest mean marital distance is recorded in Palliyara *mittom* (13.88km). The couples in 20-59 years age groups preferred mates from shorter distances compared to elderly couples. The maximum mean marital distance (27.55 km) is recorded for couples aged 60-64 years, while the lowest mean marital distance (13.00 km) is recorded for couples aged 80-84 years.

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परम्परागत औषधीय ज्ञानः झारखण्ड के गढ़वा जिला के खरवार जनजाति पर अध्ययन

सुदर्शन उर्हाव*

सामान्य परिचय

किसी समूदाय, प्रजाति अथवा जाति के उद्भव और विकास का इतिहास उस प्रदेश/क्षेत्र विशेष की भौगोलिक पृष्ठभूमि से विशेष रूप से जुड़ा रहता है, जहाँ उनके पूर्वज आदि काल से रहते थे या किसी कारण विशेष रूप से विचारणीय है कि पुरातात्त्विक एवं भौगोलिक दृष्टि से झारखण्ड भारत के उन प्राचिनतम प्रदेशों में से एक है, जहाँ आदि मानव के प्रारंभिक विकास यात्रा से लेकर आधुनिक मानव के अत्याधुनिक निवास की यात्रा कथा सुरक्षित है। झारखण्ड के छोटानागपुर के पठारी भाग में आदि मानव के विकास के कुछ पुरातात्त्विक प्रमाण मिले हैं। यहाँ विभिन्न युगों-पूर्व प्रस्तर युग से लेकर नव प्रस्तर युग तथा ताम्र युग के अवशेष सिंहभूम, रांची, हाजारीबाग, संथाल परगना आदि स्थानों पर मिले हैं। जो 10,000 ई० पू० से लेकर 1000 ई० पू० तक के हैं। उत्तर वैदिक काल में 1000 ई० पू० से लेकर 600 ई० पू० जब ऐतिहासिक काल प्रारम्भ होता है, आर्यों का पर्दापण गांगेय घाटी में हुआ था।

आर्यों के आगमन के पूर्व इस प्रदेश में अनेकों जनजातियों आकर बसी थीं जिनका आगमन मुख्यतः सिंधु घाटी एवं अन्य क्षेत्रों से हुआ था। विभिन्न विद्वानों के मतानुसार दो मुख्य प्रजातियों के कबीले उत्तर पश्चिम से बिहार अब झारखण्ड प्रदेश में आये थे। इनमें ‘प्रोटो-आस्ट्रो लॉयड’ या आस्ट्रिक प्रजाति के मुंडा, हों, भूमिज खड़िया आदि तथा द्रविड़ियन प्रजाति के उर्हाव, खरवार आदि। इस क्षेत्र में “असुर” जनजाति के लोग पूर्व काल से रह रहे थे और वे ही ताम्र युग के बाद लौह-युग के प्रणेता थे। इस राज्य के पठारी भागों (छोटानागपुर और संथाल परगना), कैमूर की पहाड़ियों तथा गंगा, सोन, कोयल आदि नदियों की घाटी में विभिन्न जनजाति समूदाय के लोक काल कमानुसार आकर बसते गये जहाँ आर्यों अथवा अन्य जनजाति द्वारा विरोध या संघर्ष की स्थिति उत्पन्न होने पर उनका पलायन एक दूसरे सुरक्षित स्थानों में होता रहा है। ऐतिहासिक तथ्यों और विभिन्न विद्वानों के मतानुसार कैमूर की पहाड़ी पर अवस्थित रोहतास में कभी उर्हाव जनजाति बसी हुई थी। वहाँ कभी खरवार जनजाति का भी शासन था। परन्तु कालकमानुसार इन दोनों जनजातियों को अपनी सुरक्षा के लिए सोन नदी पार के छोटानागपुर के पठारी क्षेत्र के सघन बनों में आकर बसना पड़ा। झारखण्ड की 30 (वर्ष 2001) जनजातियों में आधिकांश जनजातियों छोटानागपुर और संथाल परगना में निवास करती है। सबसे पुरानी असुर जनजाति कभी खूंटी क्षेत्र तथा अन्य भागों में निवास करती थी अब केवल नेतरहाट के पठार पर सिमट कर रह गयी है।

खरवार जन-जाति, जो द्रविड़, मूल (प्रजाति) की है, का आगमन उत्तर प्रदेश से माना जाता है। विद्वानों के मतानुसार वे खेरागढ़ या खेरा झार नामक स्थान से आये थे। उनमें प्रचलित परम्परा के अनुसार उनके पूर्वज पहले वृन्दावन (उत्तर) प्रदेश में कथा बनाने का काम करते थे और वे वही से कैमूर पहाड़ पर आ कर बस गये थे।

श्री हेम्ब्रम ने अपनी पुस्तक “आस्ट्रिक सिविलाइजेशन ऑफ इण्डिया” में यह प्रस्तुत किया है कि भारत में 3500 बी.सी. में गैर-आर्य संस्कृति का स्वर्ण युग था। आर्य तो भारत में 2500 बी. सी. से आकर बसना शुरू किए थे। उन्होंने इसी संदर्भ में “खेरवाली” “खेरवारी” संस्कृति एवं जनजाति का भी प्रसंग प्रस्तुत किया। श्री हेम्ब्रम के अनुसार मेसोपोटामिया में मिले शिलालेखों के अनुसार खरवार जनजाति अत्यन्त विकसित द्रविड़ प्रजाति थी।

डॉ. गुप्ता के अनुसार “खरवार” द्रविड़ मूल की जनजाति है। (सन्दर्भ 1898) और वे खेरिझार नामक स्थान से आये इसलिए खेरवार कहलाये। सन्दर्भ का प्रसंग देते हुए उन्होंने उनकी (खरवार की) छ: उपजातियों का वर्णन किया है 1. सर्यवंशी, 2. दौलतबन्दी, 3. पटबन्दी, 4. खेरी, 5. भोगती या गंडू, 6. मंझिया शहाबाद में वे अपने को “सूर्यवंशी राजपूत” कहते हैं जनेऊ धारण करते हैं।

*Anthropological Survey of India, Ranchi

कर्नल डाल्टन ने एक लोककथा का प्रसंग देते हुए “खरवार” और “संथाल” की उत्पत्ति एक जंगली हंस के दो अंडों से बताया है। दोनों अंडों से दो मानव संताने हुईं। एक अहिंसी पिपरी में बस गए जो संथाल कहलाये और जो हारादुटी चले गये वे खरवार कहलाये।

सर एच. रिजले के अनुसार खरवार अपना मूल स्थान रोहतास बताते हैं। और सूर्यवंशी राजा हरिशचन्द्र के पुत्र रोहिताश्व से अपना संबंध स्थापित करते हैं। वे अपने को सूर्यवंशी राजपूत कहते हैं और जनेऊ धारण करते हैं।

श्री हवलदारी राम गुप्त ने अपनी पुस्तक पलामू का ऐतिहासिक अध्ययन में पौराणिक एवं ऐतिहासिक सन्दर्भों में खरवार जनजाति के उदभव स्थान को पौराणिक “अजानगर” बताया है जो अब अयोध्या के नाम से जाना जाता है। पुराण पुरुष वैवश्वत मनु के छठे पुत्र “केरुस” थे। उन्होंने भारत के पूर्वी राज्यों में अपना शासन कायम किया था खरवार जनजाति का विस्तार उन्हीं करुसों से होना बताया जाता है। खेर नामक स्थान पर ये करुस (करुस राजा के वंशज) बस गये थे। जिसके कारण कालान्तर में उनकी सन्ताने “खेरवाल” और आगे चलकर खरवार कहीं जाने लगी।

महाभारत के युद्ध में भी करुस जाति था प्रसंग आया है, जिन लोगों ने कौरवों का साथ दिया था संजय ने धृतराष्ठ से अपनी ओर की सेनाओं के वर्णन में करुस का नाम लिया है। (सिन्हा 2000)

अध्ययन के दौरान साक्षात्कार के क्रम में खरवार लोगों से समूह साक्षात्कार से लोगों ने खैरीगढ़ से खरवाला वंश के ही खरवार हुए। आगे खरवार का विच्छेद कर खर से खरा, वार से लडाई, खर + वार = खरवार पड़ा पूर्वज लोग लडाई करते थे इसलिए खरवार पड़ा।

वर्तमान में खरवारों का वितरण पलामू प्रमण्डल के गढ़वा जिला, डलटनगंज, लातेहार एवं लोहरदगा, रांची, चतरा, जिलों के अलावे संथाल परगना के कुछ जिलों में भी पाए जाते हैं। झारखण्ड के बाहर के कुछ जिलों में तथा प0 बंगाल तथा उड़िसा में थोड़ी बहुत संख्या में ये मिलते हैं।

1941 की गणना में इनकी जनसंख्या 77589 थी किन्तु 1981 में इनकी संख्या 22758 दर्ज की गई थी 1991 में 173308 जनसंख्या रही तथा 2001 की गणना के अनुसार इनकी जनसंख्या 192024 व्यक्ति है। जिनमें से ग्रामीण जनसंख्या 188524 एवं नगरीय जनसंख्या 3500 है।

1991 जनगणना के अनुसार खरवार जनजाति का जिलावार जनसंख्या

जिला	जनसंख्या
रांची	579
लोहरदगा	7141
गुमला, सिमडेगा	6342
साहेबगंज एवं पाकुड़	14950
देवघर	654
दुमका, जामताड़ा	132
गोड्डा	179
पलामू, गढवा एवं लातेहार	131035
प0 सिहभूम, सारण्डा	549
पू0 सिहभूम	3572
हजारीबाग, चतरा एवं कोडरमा	2408
धनबाद, वर्तमान, बोकारो	1310
गिरिडीह वर्तमान, बोकारो	4457
कुल जनसंख्या	173308

स्त्रोत : लैण्ड एण्ड पिपुल ऑफ झारखण्ड पेज सं – 388.

अध्ययन क्षेत्र :

क्षेत्रीय अध्ययन हेतु झारखण्ड के गढ़वा जिला के रंका प्रखण्ड अन्तर्गत पड़ने वाले सेवाडीह, सींगा कला एवं उचरी ग्रामों का चयन किया क्योंकि इन ग्रामों में जड़ी-बुटी औषधीय जानकार के कुछ खरवार वैद्य हैं साथ ही दूसरे ग्राम गढ़वा प्रखण्ड अंतर्गत बानुटीकर (तुलबुला) में एक उरांव वैद्य से भी संपर्क किया जो इस क्षेत्र के लोगों को जड़ी-बुटियों द्वारा विभिन्न बीमारियों का इलाज करते हैं क्षेत्रीय दौरा दो चरणों में सम्पन्न किया। प्रथम जनवरी से मार्च 2010 लगभग दो महीना एवं द्वितीय चरण जनवरी से फरवरी 2011 एक महीना इस दौरान वैयक्तिक अध्ययन, साक्षात्कार, अवलोकन, समूह साक्षात्कार जो मानव वैज्ञानिक तकनीक है के द्वारा तथ्य संग्रह किया।

खरवार जनजाति का इतिहास

खरवार जनजाति का उल्लेख करते हुए पी. सी. टैलेन्ट्स लिखते हैं “पलामू के खरवार” अठाहरह हजारी भी कहे जाते हैं। उस सयम चेरो “बारह हजारी कहे जाते थे। इसका संबंध पलामू पर भागवत राय (चेरो राजा) के हमले से जुड़ा हुआ है। जिनकी सेना में इतनी ही संख्या में खरवार और चेरो सैनिक थे वे द्रविड़ मूल के प्रतीत होते हैं। वे कभी बड़े-बड़े जागीर के मालिक थे। परन्तु बाद में अपनी शाहखर्ची से केवल खेतिहर भर रह गए। लापरवाही और आलसीपना के कारण वे खेती में भी पिछड़े हुए हैं।

खरवार जन-जाति को चेरो जनजाति से निकट बताते हुए श्री डाल्टन लिखते हैं कोल कहे जाने वाले खरवार बहुत काल से चेरो के साथ मिलजुलकर रह गए और उनकी प्रजा के रूप में रहते आये। दोनों के रीति-रिवाज एक दूसरे से मिलते जुलते हैं। वे अपना उद्भव “सूर्य” से मानते हैं। उनके पिता क्षत्रीय और माँ एक जनजाति (भरनी) महिला थी। उनका उद्भव तुरानियन प्रजाति से भी माना जाता है। कैटन बलंट 1794 में जब खरवार जनजाति से कैमूर पहाड़ पर मिले थे तो उन्हें आदिम अवस्था में पाया था।

डॉ. प्रसाद ने खरवार और खेरवार सम्बोधन को समानार्थक माना है खरवार समुदाय के लोग अधिकांशतः पलामू में रहते हैं और वे अपने को अड्डाहरह हजारी कहते हैं। उनमें बहुत लोग अपने को “राजपूत” भी कहते हैं। दूसरी मान्यता के अनुसार संथाल जनजाति के कुछ धार्मिक पूरुथानवादी अपने को खरवार मानते हैं। परन्तु सभी सन्दर्भ में वे संथाल समुदाय के अभिन्न अंग हैं।

तीसरी मान्यता यह है कि खरवार शब्द का प्रयोग एक ऐसे वर्ग या समुदाय के लिए किया जाता था, जो सोन नदी के घाटी में रहते थे और खेर वृक्ष से कथा बनाते थे। बाद में वे सोन घाटी को छोड़कर छोटे-छोटे दलों में बटकर विभिन्न भागों में चले गए और मुंडारी भाषा बोलने वाली जनजाति के समकालीन बन गए। श्री प्रसाद के अनुसार अपने पारम्पारिक इतिहास के आधार पर खरवार अपने को सूर्यवंशी हरिश्चन्द्र के पुत्र रोहिताश के वंशज मानते हैं।

श्री रसेल ने खरवार को एक आदिम जनजाति बताते हुए क्रुक्ष और कर्नल डाल्टन का उद्धरण प्रस्तुत करते हुए खेरावार, खरवार खेरा और खेरवा से सम्बोधित किया है। उनके अनुसार उस समय (1916 सेन्ट्रल प्रेविन्सेज) सुरुजा बिलासपुर, दमोह आदि में वे बसे हुए थे उनकी जन संख्या लगभग बीस हजार थी। कर्नल डाल्टन खरवार को चेरो के काफी सन्त्रिकट मानते हैं। उनके अनुसार कभी गोरखपुर और शाहबाद में काफी प्रभावशाली थे। परन्तु गोरखा लोगों के द्वारा भगाये जाने पर वे पलामू आ गये।

जातीय पहचान :

खरवार जनजाति “द्रविड़” प्रजाति या मूल की जनजाति की है। जैसा कि विद्वानों द्वारा प्रस्तुत विचारों के आधार से प्रकाश डाला गया है। काल क्रमानुसार खरवार अपने मूल वास स्थल से विस्थापित होकर विभिन्न स्थानों एवं विभिन्न जातियों/जनजातियों के बीच जाकर बसते गए इस कारण वे अपनी सामाजिक, सांस्कृतिक, धार्मिक भाषायी एकता खोते गए। कहीं उन्होंने सूर्यवंशी राजपूत के रूप में अपनी पहचान बनाने का प्रयास किया तो कहीं वे जनजाति के रूप में जाने गए। जो खरवार रोहितास गढ़ से पलामू आदि क्षेत्रों में जाकर बसे वे अपने को सूर्यवंशी मानते हैं परन्तु खरवरों का जो दल खेरागढ़ (मध्यप्रदेश) से पलामू, गुमला, रांची आदि क्षेत्रों में आकर बसा वे अपने को खरवार या देशवारी (मूल) खरवार जनजाति का मानते हैं। इस कारण अब इस क्षेत्र में सूर्यवंशी खरवार को बड़ा खरवार और शेष को छोटा खरवार कहते हैं। दोनों के खान-पान शादी विवाह धार्मिक अनुष्ठान, पर्व त्योहार आदि में थोड़ा अन्तर पाया जाता है।

उनकी जातीय पहचान उनके गांवों, गोत्र प्रतीक सामाजिक एवं सांस्कृतिक पहचान, पूजा पाठ देवी देवता, पर्व त्योहार आदि के रूप में अक्षुण्ण हैं। वे इस क्षेत्र में जनजातियों के बीच में बस गए हैं। अतः उन पर जनजातियों की संस्कृति तथा सामाजिक और धार्मिक परम्पराओं का प्रभाव भी काफी पड़ा है। वे अपनी सुरक्षा और कल्याण के लिए हिन्दू तथा अन्य स्थानीय जन- जातीय समुदाय की देवी एवं प्रेतों की भी पूजा करते हैं।

उनकी जातीय पहचान के रूप में उनमें प्रचलित 40 गोत्र हैं, जिसके प्रतिकों की पवित्रता बनाये रखकर खरवार वे उनकी पूजा करते हैं। इस कारण वे सगोत्री विवाह नहीं करते हैं। दहेज रहित विवाह उनमें आदिकाल से प्रचलित है, जो आज भी यथावत है। अन्य जनजातियों की तरह वृद्धमूल्य या मोनांग की प्रथा इनमें नहीं है विवाह पूर्व यौन संबंध की वर्जना इनकी अपनी विशिष्टता है जन्म एवं मृत्यु के अवसर पर किए जाने वाले धार्मिक संस्कार खानपान, स्त्रियों में गोदना का प्रचलन, उनके उपनाम के साथ खरवार का जुड़ा रहना आदि ऐसे तत्व हैं जो उनकी जातीय पहचान बनाए हुए हैं। जनजातीय क्षेत्र में उनके रूप रंग शारीरिक बनावट आदि में बहुत कम परिवर्तन आया है। परन्तु वे आदिकालीन खरवारी या खेरवाली बोली बिल्कुल भूल चुके हैं। वे अब स्थानीय बोली ही बोलते हैं। गढ़वा क्षेत्र में भोजपुरी मिश्रित मगही बोलते हैं। वे अपने धर्म को हिन्दू धर्म मानते हैं। जनजातीय क्षेत्र में बसने वाले खरवार सरना धर्म को भी मानते हैं। और विभिन्न अवसरों पर वे जनजातीय देवी देवताओं को संतुष्ट करने के लिए बकरा और मुर्गा की बलि चढ़ाते हैं।

पारम्परिक औषधियाँ और वैद्य :

खरवार जनजाति के लोग पहाड़ों पर और जंगलों में रहते हैं, उन्हें उस क्षेत्र में भिन्न वाली जड़ी-बूटी एवं औषधीय गुणों से युक्त पौधों की अधिक जानकारी रहती है। उनके समुदाय में जो ओझा गुणी होते हैं, वे रोग के निवारण के लिए मंत्र-तंत्र के साथ जड़ी-बूटी का भी प्रयोग करते हैं।

श्री महेशा सिंह खरवार वैद्य 75 वर्ष, सेवाडीह रंका, जड़ी-बूटी एवं झाड़—फूँक मंत्र द्वारा लोगों का ईलाज करते हैं।

साँप के काटने पर जड़ी बुटियों का प्रयोग :—

(नाग, करैयत एवं बहीरा साँप)

- 1 करवन की जड़ी (करेंदा—कारिसा कोराण्डा) 25 पैसे वनज भर
- 2 वोन हरदी—कुरुकुमा एरोमेटिका 1 रुपया वजन भर।
- 3 गोलमिर्च—(ब्लैक पीईपर) 10 दाने।

उपयोग : उपरोक्त तीनों सामग्रियों को पीस कर एक बूँद भगवान के नाम पर जमीन पर गिरा देने के बाद मरीज को पिला देना है। तीन खुराक एक—एक घंटा के अंतराल पर सात दिन पिलाना एवं सात दिनों तक कर्ते हुए स्थान पर लेप लगाना है। नोट : बहीरा सांप के काटने पर लेप लगाना है, जिस जगह तक फूलता है उसी के चार इंच उपर दवा का लेप लगाना पड़ेगा। पानी पाव भर पिलाना है वैद्य जी का कहना है कि विश्वास होने पर दवा कराये नहीं तो जहाँ जाना हो जाय, चार आदमी के सामने दवा पिलाना चाहिए दूसरे व्यक्ति को परीक्षण के तौर पर दिलाना है कहीं जहर तो नहीं है, गवाह जरूरी है। नहीं तो मरीज के मरने पर पुलिस मुझे कहेगी जहर पिला दिया।

वर्जित — नमक नहीं खाना है।

मंत्र द्वारा विष उतारना

कंचन के बहुरिया से

तरकरिया नंगनियाँ ले

बढ़नियाँ वीखम (विष) बाहर पाँच बार।

पहला दवा पीसकर पाँच बार मंत्र के बाद एक बूँद गिरा देना है, उसके बाद मरीज को पिला देना है। दवा को एक ही आदमी पीसेगा जड़ को भी पीसकर पिलाना एवं लेप (छावेगा)।

लेप लगाने का दवा जड़वा (बहीरा साँप) के लिए अमरोड़ा की जड़ी, भैरो के बोकला (छाल) सेमर के जड़, (एंटी सेपटीक) लहर नहीं देगा कुटकर 30—40 दाने गोलमिर्च (ब्लैक पीईपर) मिलाकर पीसकर लेप लगा देना है।

एक वैद्य ने कहा कि, निम्न उल्लेखित चीजों को साँप का काटा हुआ व्यक्ति यदि देख लिया तो उसे बचा पाना मुश्किल है वो है:-

1. घर आंगन पर पुरानी सेम लतर (लरंग)।
2. रेड़ी एवं
3. घर के ऊपर छप्पर उल्टा किया हुआ को देख लेने पर।

खपरविच्छा मंत्रा (मंत्र)

धरती – धरती, धरती ऊपर टिला उठे

टिला ऊपर खपरविच्छा जन्में

खरपविच्छा के विष लागें

केकर कहल गुरु के कहल

गुरु महादेव ईश्वर गौरा पार्वती

नैना जोगी सीत गुरु के गोड़ लाग थी।

दवा : उजरैई के बोकला (छिलका) को छिल कर उसे पीसकर कम दर्द हो तो आठ आन्ना वनज भर के बराबर भाग को खपरविच्छा, टेटंगा (गिरगिट), मकरा (मकड़ी), कनगोजर, छिपकली एवं मेंढ़क के काटने पर लगाया जाता है।

झाड़–फूँक (झारनी)

धरती में खपरविच्छा

जन्मा (जन्म) तोहार रे

दिलावाहा में लेले ऊपदेश

तुक्क जे खपरविच्छा मनवा के काटे मुती के पिलाना तू।

सई जे मनवा हो मरी न गईल

तोर बीखा (विष) लागे आकाश दो बार

तोर बीखा झारू उतारूँ

तोर बीखा झारू उतारू गुरु।

मिर्गी बीमारी के लिए जड़ी–बुटियों का प्रयोग

1. चिरैया कान की जड़ी एक इंच
2. काला दुधलर की जड़ी एक इंच
3. ललका करजनी की जड़ी एक इंच

उपरोक्त तीनों को मिलाकर पीस कर एवं छानकर मरीज को पिलाना है। बैल के मरने पर कहीं जंगल–झाड़ पर पड़े हड्डी पर खुखड़ी (मशरूम) उगाने पर उस मशरूम को लाकर घर में झोली पर रख देना है। उसके सब्जी बनाकर रोटी के साथ मिर्गी वाले व्यक्ति को बिना बताए खिला देना है।

दूसरा दवा चितौर की जड़ी को पीसकर कपड़े में करके दोनों हाथ एवं दोनों पैर पर बाँधना है। हाथ में हथेली के ऊपर एवं कुहनी के ऊपर दोनों हाथ पर एवं पैर पर, पैर के ऊपर एवं घुटने के ऊपर दोनों पैर पर बांध देना है।

कुत्ता सियार, (लोमड़ी) के काटने पर

अद्वारह एवं बीस नाखुन वाले कुत्ता के काटने पर विष लगना ही है। कुकुर काला जड़ को एक इंच पीसकर भेड़ी (भेड़) वाले कम्बल के रुआ (रुई) को मैस लेना है एवं जड़ को महीन पीसकर गुड़ के अंदर छुपा देना है। पाँच गोली मंगल एवं रविवार को खिला देना है।

यदि कुत्ता जनवरी —फरवरी में काटा है तो जून — जुलाई वर्षा के समय असर करता है। असर करने से पहले दवा खिलाना जरूरी है काटने का भी ग्रह होता है। वैद्य जी ने कहा कि दवा का दाम लेते हैं, झाड़ने का नहीं। कुछ गांवों के लोगों को दवा दिया हूँ जैसे छोटकी रंका, हुड़दाग, बीरबाँध उचरी सेरका आदि जगहों से जाकर कुत्ता काटने वालों को झाड़—फूँक एवं दवा दिए।

झाड़ने की विधि : मुडुआ का आटा नहीं मिलने पर टिला के मिठ्ठी पांच गोली, पाँच बार झाड़ना है जहाँ काटा है। गाय बैल के उपर से हुआ देना है यूँ छ एवं चारों पैर पर पाँच बार चढ़ाना एवं पाँच बार उतारना है। गाय—बैल को पीलू (कीड़े) होने पर कुकुर काला को ढाई पत्ता डंठल के साथ घास के साथ ध्यान रहे पत्ते में छेद न हो खिला देना चाहिए।

बिच्छु के काटने पर

जड़ी—कुकुर काला (चिरचिटी) ये तीन प्रकार के होते हैं लाल, काला, एवं सफेद डाली सहित जड़ के तरफ से मरीज को सीधा दिखाना है एवं मरीज को इसके जड़ को खिलाना है यदि बाई हाथ में बिच्छु ने काटा है तो बाई तरफ मुँह में चबाना है यदि दाई तरफ में काटा है तो दाई तरफ चबाना है मुँह में जड़ को पीछे ले जाना है एवं कम करते— करते मरीज को पूछना है, कि दर्द कितना कम हो रहा है।

श्री राम खेलावन सिंह खरवार वैद्य उम्र — 66 वर्ष ग्राम — उचरी, रंका

खपरबिच्छा, गिरगिट, गोजर (लाल) छिपकली घर रखवार के काटने पर।

उपचार : खपरबेहड़ा के लतर को पीसकर पिलाना पड़ेगा, दो तीन खुराक अंदाज से एक ग्लास पानी के साथ तुरंत ईलाज जरूरी है। खपरबिच्छा गिरगिट के वर्ग के होते हैं इनका जीभ तीन भागों में विभक्त होता है। जिनका किस्मत खराब होता है उसे ही काटता है।

नोट : बैद्य जी ने कहा यदि खपरबिच्छा काटने के बाद भागते हुए पेशाब करके उसे उलटकर यदि पेशाब को पी लिया तो लाख कोशिश के बाद भी मरीज को बचा पाना मुश्किल है।

फूलनी बीमारी पर (पूरा शरीर फूलने पर)

मोथा (साईप्रस रुड्स) (गोल जड़ वाली काली रंग अंदर) से दूध निकलता है।

पीपर (पीपर लंगम)

मरीच (गोल मिर्च)

मिश्री

उपचार : उपरोक्त चारों बुटियों को सील पर पीसकर रोगी को खिलाना है यदि रोगी का रोग एक वर्ष से है तो उसे दवा एक ही बार देना है। यदि पांच वर्ष से रोग हुआ है तो उसे दवा पांच बार पीलाना है जब तक बीमारी ठीक नहीं हो जाता है।

परहेज दवा जब तक चलेगा नमक बिल्कुल वर्जित रहेगा।

मिर्गी बीमारी : मिर्गी एवं फरका दोनों एक ही बीमारी है एक में मरीज शांत हो जाता है। दूसरे में फड़फड़ाने लगता है दानों की स्थिति में एक ही दवा का प्रयोग होता है।

उपचार : कुकुर की जड़ी भगजोगनी (जुगनू) के घर पराश (पलाश) के वृक्ष में गोल—गोल घर बनाता है। तीसरा गुड़ तीनों को पीसकर रोगी को खिलाना है।

परहेज : सूअर का शिकार (मांस) शराब भैसा का सिर (मांस) एवं पोठिया मछली।

दवा कुत्ता एवं सियार के काटने पर

डकडोल का बोकला (छिलका) 2 रु 0 वजन भर

गूरजान नदी पर मिलता है चार अन्ना वजन तक पीसकर पिला देना है।

रानी (लाला रंग के कीड़े) ये प्रायः आषाढ़ महीने के प्रथम वर्षा होने पर इकट्ठा करके रखना पड़ता है बाकी समय ये मिलेगा नहीं।

गुड़।

उपचार : रानी को गुड़ के अंदर करके मरीज को एक ही दिन में पाँच बार देना है पन्द्रह महीना दिन होने पर तीन बार।

शारीरिक कमज़ोरी पर ताकत के लिए दवा
कपुरनी की जड़ी इसकी महक काफ़ी तेज होती है।

बकरी का दुध

उपचार : रोगी को कपुरनी की जड़ पीसकर बकरी के दूध में मिश्री/चीनी मिलाकर सबेरे खाली पेट पर याद रहे जाड़े के दिनों में ही देने से कारगर सिद्ध होता है।

कामराज : एक अंगूली के बराबर सबेरे शीलोट में पीसकर पीने से तंदुरुस्ती आती है।

गठिया, गिरेहवाह

गुरीच

मेद

हरदी (हल्दी)

उपचार : तीनों को पीसकर जाड़े के दिनों में एक दो महीना पीना है। उपरोक्त दवा का प्रयोग वैद्य जी ने खुद किया है।

गर्भवती औरत का बच्चा पैदा होने पर देरी होने में।

उपचार : चनकी रेड़ी के दाना को कपड़ा में करके गले में बाँध देना चाहिए बच्चा तुरन्त पैदा हो जाएगा, बच्चा पैदा होने पर उसे तुरन्त औरत के गले से उतार देना चाहिए।

धाध, सुजाग — में रंपावन की जड़ी के पीसकर सबेरे खाली पेट में पिलाना है। जितनी पुरानी बीमारी हो 15 दिनों में असर दिखने लगेगा।

बवासीर : गजमोहनी पौधा चार—चार अंगूली काटकर उसे दिनभर पकाना है, आखरी अरख बचने के बाद उसे गोली बना लेना है सबेरे बारह बजे एवं शाम को खिलाने पर इस बीमारी में लाभ मिलता है।

वर्जित : मिठ्ठा, खट्टा, मिर्च एवं शराब के सेवन से बचना है।

श्री तेजू सिंह उम्र — 35 वर्ष

पुत्र श्री रामखेलावन सिंह वैद्य

सिंगाकाला, रंका।

मंत्र द्वारा विष निकालना : सुखी हल्दी को पीसकर कोई भी पत्ता पर रखकर मरीज को जिस जगह पर दर्द हो रहा हो उस स्थान पर 10 मिनट तक रखना है। तत्पश्चात मंत्रोचारण के बाद एक सफेद कपड़ा पर झाड़ दिए जाते हैं। इस विधि से यदि विष है तो जैसे मांस, हड्डी, कील इत्यादि के रूप में निकल जाता है और मरीज ठीक हो जाता है।

पशु बीमारी

डगहा (लंगडा) भरमटिया, खुरहा चपका, अढ़ाईयां जो ढाई दिनों तक रहता है। तिलैय बढ़वा—तिलैय पेड़ का छाल भथुवा, झोल (घर में जो होता है मकड़ जाल जैसा रसोई घर में) प्याज मिलाकर पिलाना है।

खुरहा में फलहद, एक साथ जुड़े बड़े (बरगद) एवं ऑवला का वृक्ष के छाल एवं फलहद की डाली को पशु रखने के स्थान के नीचे रखते हैं जिसे पशु का पैर उससे स्पर्श होता रहे इससे खुरहा बीमारी ठीक हो जाता है।

बीमारी भूत—प्रेत द्वारा—कहीं से आए बीमार पड़ गए ओझा के पास गए मंत्र से झाड़—फूँक देने के बाद ठीक हो जाने पर विश्वास है कि इसी के कारण से बीमारी हुआ था बीमारी ठीक हो जाने पर ओझा बोलेगा एक साड़ी, एक धोती, एक मुर्गा, एक पाठी की मांग करते हैं घर पर पूजा करते हैं कोई ले जाते हैं।

हड्डी टूटने पर : पशु या मनुष्य का हड्डी टूट जाने पर उसे बाँस की पट्टी के साथ हड्जोड़वा को पीसकर बाँध देने पर हड्डी जुड़ जाता है।

औरत को बच्चा जन्म के बाद दूध नहीं निकलने पर दवा :

उपचार : सतावर (अशपरागास रेसमोसस) की जड़ का रस पिलाने से महिला का दूध बढ़ने लगता है।

गर्भवती महिला की बीमारी के संबंध में धारणा :-

गर्भवती महिला की बीमारी पर सोच दोनों प्रकार का होता है। भूत अथवा बीमारी भी होगा ऐसी परिस्थिति में ज्ञाड़ फूँक एवं डॉक्टरी ईलाज दोनों चलता है देहात में अब जड़ी बुटी का अधिक जानकारी नहीं होने के कारण इसका प्रभाव नहीं पड़ता है। आज के खान-पान की वजह से भी बीमारियाँ होने लगी हैं।

बीमारियाँ

स्थायी रूप से मलेरिया होता है। पहले देहात में जड़ी बूटियों के द्वारा बीमारी ठीक होती थी परन्तु अब ठीक नहीं होता है। यह बीमारी नब्बे (90) प्रतिशत तक होती है पहले यह मौसमी बीमारी थी परन्तु अब ऐसा नहीं रह गया है। पाँच प्रतिशत, गैस पलायन से होती है।

श्री रामरेखा कुशवाहा – अरंगी, मेराल गढ़वा ने बुखार होने पर गूरीच को एक दो ईंच छिलका छोड़ाकर पांच गोलमिर्च के साथ पीसकर सुबह पांच दिन मरीज को पिलाने से ठीक हो जाता है।

—सिर दर्द में जटमौसी को पानी में भिंगाकर सर के ऊपर धुमाने से सिर दर्द ठीक हो जाता है

बीमारी का लक्षण

बुखार में सिर दर्द, शरीर में दर्द हो तो बुखार आने वाला है।

पेट दर्द : पेट दर्द में दर्द उत्पन्न होने से पत्ता दस्त होने से डायरिया होने वाला है।

सर्दी—खाँसी : बार—बार ठीक आना।

सर्दी—खाँसी : बार—बार ठीक आना।

गढ़वा प्रखंड के श्री बंशी उराव वैद्य जी उप्र- 67, ग्राम—बानुटीकर (तुलबुला) में खरवार लोग विभिन्न विमारियों के ईलाज के लिए आते हैं, जो निम्नलिखित है :—

क्र०सं०	नाम	स्थान	बीमारी
1.	श्री रादेश्वरी सिंह	भंडरिया, वधवार	गैष्टिक
2.	श्री दीनबन्धु सिंह	सेमड़खाड़	हाईझ्वेशील
3.	श्री सुखेन्द्र कु० सिंह	बरदरी	मिर्गी
4.	श्री चन्द्रश्वर सिंह	सेमड़खाड़	गिरेहबाद, सटका
5.	श्री रमन सिंह	बानुटीकर	बवासीर
6.	श्री रामदेवी सिंह	बैलाहाखड़ा	पुराना दामा
7.	श्री ठोमी सिंह	करसो	गेठिया
8.	श्री बलकु सिंह	तेरडीह	गैष्टिक, सटका
9.	श्री मिटू सिंह	बगवार	गेठिया, सटका
10.	श्री सुखदेव सिंह	गोदरमाना	गेठिया
11.	श्री रामदेवी सिंह	बैला खखड़ा	दामा
12.	श्री राजेन्द्र सिंह	कितासुती कला	गैष्टिक
13.	श्री तहसीलदार सिंह	बहाहारा	सटका, गैष्टिक
14.	श्री सागर सिंह	मगाही	बँझापन
15.	श्री वासु सिंह	भैवरी	सटका
16.	श्री शिव प्र० सिंह	ताबी	गेठिया, सटका
17.	श्री लखपति सिंह	वरवाडीह	फुदकी, गैष्टिक
18.	श्री योगेन्द्र सिंह	वारवाडीह	गेठिया

19.	श्री अजय सिंह	सरईडीह	पड़िता, टी. बी.
20.	श्री सुरेशा सिंह	भलवानी	सटका, गैष्टिक
21.	श्री चैतू सिंह	बानुठीकर	पोलियो
22.	श्री लाल मोहन सिंह	कसमार	सुजाक
23.	श्री अजय सिंह	बानुठीकर	सटका
24.	श्री जिमेदार सिंह	खुर्द सिरोई	लकवा
25.	श्री जगन्नाथ सिंह	कोरगाई	गेठिया, सटका

इन्होंने पूछने पर कुछ जड़ी बुटियों का नाम एवं प्रयोग के बारे में बताए जो निम्न है :-

जड़ी बुटियाँ

रोग	निवारण
1. संजीवन, लाइकोपोडियम कलभेट्स	गैस, दर्द
2. कामराज (सीडा एक्यूटा)	धाध, कमजोरी
3. तेजराज, न्यायनोसायकला ग्यालका	कमजोरी
4. भोगराज (यूसीडेनम धाना)	मिर्गी, फरका
5. भैचापा	गेठिया, सटका
6. भुई जामुन	गेठिया, गिरेहबाद
7. महादेव जठ	दर्द
8. धनरास / वनरलौरी (कासिया फिर टुला)	बहीरा सॉप के काटने पर पिलाना।
9. भाभी रंग	गैस
10. सनी पता	गैस
11. इन्द्र जौ	गैस
12. घोड़वाछ (एकोरस क्लेमस)	दर्द
13. अर्जून छाल / कहवा (टरमिनेलिया अर्जूना)	हृदय रोग

बहुत ऐसा जड़ी पानी बरसने से पहले पता नहीं चलता है जैसे भुईजामुन, पताल कोहड़ा वैद्य जी का कहना है कि उपरोक्त सभी जड़ी बुटियों को खरीदना पड़ता है नाम से पता है इसके पेड़-पौधों को देखकर मैं भी नहीं पहचान पाऊँगा क्योंकि ये सभी सुखी रूप में खरीदता हूँ। मरीज को देखकर बीमारी के बारे में जानकारी लेने के बाद दवा जैसा जरूरत पड़ता है मिश्रित रूप में बनाकर देता हूँ।

उपरोक्त रोगों का इलाज इन्होंने 20–22 वर्षों से करते आ रहे हैं। वैद्य जी ने ये ज्ञान अपने दादा रव० चालहो भगत एवं एक मियां जी जिनका नाम करामत शेख था दोनों में दोस्ती थी ये दोनों से ही मैं सीखा दवा मंगाना पड़ता है कुछ गढ़वा में मिल जाता है। जिससे दवा बनाते हैं। मरीज को देखे परखे बिना दवा नहीं दे सकता हूँ।

इस प्रकार खरवार जन-जाति का जीवन पूर्व में काफी समय तक नवों एवं वनोत्पादित चीजों पर निर्भर करता था। कभी उनके पूर्वज इन्हीं वनों में पाये जाने वाले खैर वृक्ष से कथा निकालकर और उसे बेच कर अपना भरण-पोषण करते थे। परन्तु अब वे उस पेशे से अलग हो चुके हैं

जिन क्षेत्रों में खरवार जनजाति के लोग रहते हैं उन क्षेत्रों में जंगल पहाड़ियाँ पर विभिन्न प्रकार की जड़ी बूटीं एवं औषधीय गुणों से युक्त पौधे पाये जाते हैं। जिनका सेवन वे स्वयं करते हैं तथा उन्हें बेचकर आर्थिक लाभ भी प्राप्त करते हैं। ऐसे पेड़-पौधों का विवरण निम्न प्रकार है :

क्र.सं. जड़-बूटी/पौधों के नाम रोग का नाम जिसमें प्रयोग होता है।

1. बधरंडी	जले अंग पर लगाया जाता है। इसके खाने से दस्त होता है।
2. बनाबार	पेचिस और डायरिया को ठीक करता है। इसका फल रक्त साफ करने के काम आता है।

3. बरियारी	पेट दर्द की दवा।
4. भौंसरी	सर्प दंश की दवा।
5. भुई जामुन	गठिया, वात एवं सूजन ठीक करता है।
6. बीधी मन्दार	प्रसव के बाद रक्त शुद्धि के लिए दिया जाता है।
7. चैली	हैंजा होने पर दिया जाता है।
8. कठकरेजनी या जैठी मधु	खांसी में दिया जाता है।
9. चितावर	बुखार, पेट दर्द, और हाइड्रोसील में दिया जाता है।
10. छोटी दूधी	बुखार, चर्म रोग, पेशाब की बीमारी ठीक करता है।
11. दातरोम सिंगी	हड्डी को जोड़ने के काम में आता है।
12. दुधिया	देह दर्द, बुखार, और पेचिस में काम आता है।
13. धोबाछ	बच्चों को बुखार में, देह दर्द, तथा सिर दर्द ठीक करने के लिए देते हैं।
14. गुलेंची	प्रसूता के दूध बढ़ाने के लिए।
15. गुरु सुकरी या कुकुर बिचा	डायरिया और पेचिस की दवा।
16. हड्डजोड़वा	टूटी हड्डी जोड़ने के लिए।
17. परही	बुखार, हैंजा आदि होने पर काम में आता है। गर्भवती के खाने पर गर्भपात हो जाता है।
18. सियार पोंछी	सेटिक घाव की दवा।
19. रक्तसार	सूजन ठीक करता है।
20. सतावर	गर्भी लगाने से हुए बुखार की दवा।
21. तिरियो	पेट दर्द, खूनी पेचिस, और पेशाब के खून रोकने की दवा।
22. चिरैयता	बुखार एवं रक्त साफ करने की दवा।
23. सनई	पेट साफ करने की दवा।
24. भेलवा	इसके फल के रस को सिर (ललाट) में लगाकर सिर दर्द दूर करते हैं। यह बहुत जलनशील होता है।
25. सखुआ बीज	गर्भ निरोधक होता है।
26. अर्जून	इसके छाल के रस का प्रयोग हृदय रोग में होता है।
27. आँवला, हर्दे, बहेरा	इसका त्रिफला बनता है। जो पेट की बीमारी कब्ज आदि को दूर करता है।

वनों के विनाश से उनके पर्यावरण काफी प्रभावित हुआ है। इसका विपरीत प्रभाव उनके आर्थिक एवं सांस्कृतिक जीवन पर पड़ा है।

कन्दमूल एवं फूल :

गढ़वा, पलामू आदि पहाड़ी एवं वन क्षेत्र में अनेकों प्रकार के कन्दा और फल आदि पाये जाते हैं। जिन्हें अन्य जनजातियों के साथ-साथ खरवार भी वनों से लाकर खाने के लिए व्यवहार करते हैं। इनमें पौष्टिक तत्त्व भी प्रचुर मात्रा में पाये जाते हैं जब अन्न की कमी

होती है, तो ये कन्दमूल और फलादि उनकी क्षुधा को शांत करने में सहायक होते हैं। विभिन्न प्रकार के कन्दमूल की विवरणी निम्न प्रकार है :-

- गेंठी :** यह एक प्रकार का कन्दा है जो जुलाई से अगस्त माह में होता है। यह 100 ग्राम से 250 ग्राम का होता है। यह काफी तीखा स्वाद का होता है और इसके छोटे-छोटे टुकड़े कर रात भर पानी में रखकर दुसरे दिन उबाल कर खाते हैं।
- बड़ा कन्दा :** यह जीन से लगभग 1 फीट ऊचे रहता है। जो जुलाई से अक्टूबर माह में होता है। यह तीन से चार किलो तक वजन में होता है यह हल्का मीठा होता है। इसे उबालकर खाते हैं।

3. बेरनई : इसकी लता पेड़ पर फैल जाती है। यह प्रायः जुलाई—अक्टूबर में होती है। कन्दा वजन तीन से चार फीट नीचे जमीन में रहता है। यह तीन से चार केंजी तक होता है।
4. डुरा : इसकी लताएँ काफी लम्बी होती हैं। यह अगस्त से दिसम्बर माह में होता है। इसका कन्द 15 कि. से 20 कि. का होता है। यह कम संख्या में मिलता है। इसे भी उबालकर नमक के साथ खाते हैं।
5. लकमा : यह जमीन में ज्यादा नीचे नहीं होता है। यह अगस्त से दिसम्बर माह में होता है। इसके खाने से मुँह में खुजली होती है। इसे भी उबालकर खट्टा डालकर खाते हैं।
6. डुरुषिठारु : यह जमीन में 3 फीट नीचे मिलता है। यह अगस्त से दिसम्बर माह में होता है। इसका स्वाद में काफी मीठा होता है और लोग इसे कच्चा भी खाते हैं।
7. बेरनडी : इसकी लताएँ जमीन पर फैलती हैं। और यह जमीन में बहुत नीचे रहता है इसे उबाल कर या आग में पकाकर खाते हैं। यह अगस्त से दिसम्बर माह में होता है।
8. बयना : यह भी खुजली पैदा करता है। इसे भी खट्टा देकर पकाते हैं। यह अगस्त से दिसम्बर माह में होता है।
9. कुकुच सांगा : इसके लतर की पतियाँ लगभग 10 इंच चौड़ी होती हैं। यह अधिक नमी वाले जंगलों में मिलता है। इसे भी पकाकर खाते हैं। यह जुलाई से सितम्बर माह में होता है।
10. कुलुसांगा : इसकी लताएँ भी बड़ी पतियाँ वाली होती हैं। यह पेड़ पर दूर तक चढ़ जाता है। यह जुलाई से सितम्बर माह में होता है।
11. खणियाँ : इसे भी उबाल कर खाते हैं। यह जुलाई से सितम्बर माह में होता है।
12. टुंगम कन्दा : इसके लताएँ में कुछ काँटे भी रहते हैं। यह कुछ बड़ा और कड़ा होता है। इसे उबालकर भूनकर खाते हैं। यह अगस्त से दिसम्बर माह में होता है।
13. भेड़वा कन्दा : इसे पकाकर खाते हैं। यह पेट को ठीक रखता है और इस पौधे का रस पीने से पेटझरी ठीक होता है। यह अगस्त से दिसम्बर में होता है।
14. बनकुन्दरी : यह लतावाला कन्दा पहाड़ी घाटी में अधिक मिलता है। इसका फल, पता, और कन्दा, तीनों को पकाकर खाते हैं।
15. पत्थर कोहड़ा : इसकी लताएँ काफी मोटी और कड़ी होती हैं। इसे उबालकर खाते हैं और इसके पता को बुखार और गठिया बात होने पर पीस कर लगाते हैं। यह दिसम्बर से फरवरी माह में होता है। इन कन्दों में प्रोटीन, वसा, कार्बोहाइड्रेट, कैल्सियम, आयरन, विटामिन—सी, आदि पोषक तत्व पाये जाते हैं। इनमें यथेष्ठ मात्रा में कैलोरी (158–170ग्राम) भी मिलती है। जैसा कि पूर्व में किए गए अनुसंधानों में पता चलता है।

वस्त्र

खरवार पुरुष सामान्यतः धोती, गंजी कुरता या कमीज और पगड़ी या चादर वस्त्र के रूप में धारण करते हैं वे सादे चादर की पगड़ी बांधते हैं। अपने कंधे पर एक गमछा या तौलिया अवश्य रखते हैं। अब पढ़े लिखे और आधुनिक युवक फुलपैट, कमीज, बुशार्ट, टी—शर्ट सफारी आदि भी पहनते हैं। छोटे लड़के हाफ़ पैंट, जंघिया, कच्चा, भगई आदि पहनते हैं। वे भी कमीज या गंजी पहनते हैं। जनजातीय एवं अन्य पिछड़े और गरीब क्षेत्रों में अधिकांश छोटे लड़के लड़कियाँ नग्न या अर्द्ध नग्न देखी जाती हैं। कुछ लोग, जो राजनीति से जुड़े हुए हैं, धोती और कुर्ती या कमीज के साथ जवाहर, बंडी भी पहनते हैं।

महिलाएँ अधिकतर साड़ी झूला या ब्लाउज कंचुकी या चौली, साया या तहबन पहनती हैं। अब वे सूती और सिंथेटिक दोनों तरह के कपड़े पहनती हैं। विधवा होने पर खरवार महिलाएँ रंगीन वस्त्र न पहन कर सफेद वस्त्र ही पहनती है। कम आयु की लड़कियाँ पैंट, फ्राक सलवार, ओढ़नी आदि पहनती हैं। जो लड़किया विद्यालय में पढ़ती हैं। वे उस विद्यालय द्वारा प्रसीदृक्त गणवेश भी पहनती है। इनमें अभी पुरानी परम्परा के अनुसार महिलाएँ साड़ी का आंचल अपने सिर पर रखती हैं और बड़े बुड़े के सामने धूँधट काढ़ती हैं। जो परिवार गरीब और विपन्न है। वहाँ लोग कम कपड़े फटे पुराने कपड़ा पहन कर ही काम चलाते हैं। वैसे रहते हैं जनजातीय और ग्रामीण क्षेत्रों में अधिकांश लोग हाटों से कपड़े खरीदते हैं।

खान—पान

जनजातीय बहुलक्षेत्र में रहने वाले खरवारों का भोजन वहाँ पैदा होने वाले अनाजों और वनों में मिलने वाले फल—फूल, कन्द मूल आदि पर निर्भर करता है। और उनका पूरा प्रभाव उनकी पोषण स्थिति पर पड़ता है। इस क्षेत्र में दिन रात के खाने का वे तीन भागों में बाँटते हैं।

- लुकमा :** सुबह का नास्ता, जिसमें वासी भात, रोटी, या अन्य कोई चीज अल्पाहार के रूप में लेते हैं। कहीं कहीं लुकमा के साथ चाय भी लेते हैं।
- कलवा या कलेवा :** दिन के भोजन को वे कलेवा कहते हैं। दिन में वे चावल या मकई का भात या घट्टा कुरधी रहर या अन्य कोई दाल और मौसमी साग या सब्जी खाते हैं।
- बियारी :** रात के भोजन को वे बियारी कहते हैं। रात में अधिकांश लोग भात या घट्टा और कई साग या सब्जी खाते हैं। अब लोग गेहूँ या मकई के आटा की रोटी भी खाते हैं। सर्वेक्षण के दौरान लोगों ने बताया कि पहले मकई का घट्टा, मडुवा, गोंदली, कोदो आदि नौ महीना खाते थे। बाकी तीन महीना चावल, चकोड़ का साग, सरई को पकाकर पानी निकालकर बाद में खाया जाता था। गेटी (कन्द) आदि खाते थे। वर्तमान में चावल रोटी, मकई घट्टा, सतू मकई, गेहूँ आटा रोटी, आदि।

इस क्षेत्र के खरवार आर्थिक रूप से कुछ अधिक विपन्न है। अतः खाने में अधिक पौष्टिक भोजन दूध, धी, दही, अंडा, मांस आदि का उपयोग कम ही कर पाते हैं। फिर भी वहाँ वनों में उपलब्ध पोषक तत्वों से युक्त साग सब्जी, फल—फूल, कन्द—मूल आदि का सेवन कर अपनी पोषण की स्थिति को बनाये रखते हैं। खानपान में शाकाहारी एवं मांसाहारी दोनों चलता है। शराब भी लेते हैं, सामाजिक तौर पर लेते हैं। परन्तु लोगों का कहना है कि पूरे समाज को शराब ही खत्म कर रहा है।

आवास—गृह

खरवार के अधिकांश घर मिट्टी की दीवार और खपरैल छप्पर के बने होते हैं। उनके घरों में आंगन और बाहर में बरामदा बनाने की परम्परा है। आंगन में कहीं—कहीं तुलसी का वृक्ष भी लगाते हैं। जो कोई मिलने आता है उसे बाहर के बरामदे में बैठते हैं। कहीं—कहीं बाहर के बरामदे में घेर कर एक कमरा भी बना देते हैं। जहाँ अतिथि को ठहराते हैं। वे अपनी आवश्यकता एवं क्षमतानुसार तीन, चार या उससे अधिक कमरे का घर बनाते हैं। अतः कमरों की संख्या तदनुसार होती है। ताकि परिवार के सभी सदस्य उसमें रह सके। उनके घरों में सामान्यतः रसोई और भंडार घर (स्टोर) अलग बना रहता है कहीं—कहीं एक कमरे या भीतर के बरामदे में ढेकी और जाता या चक्की रहता है। जहाँ घर की महिलाएँ धान या चावल कूटने और आटा पीसने का काम करती हैं।

कहीं—कहीं छप्पर के नीचे एक और छत बनाकर खाद्यान्न आदि रखने के लिए दुछती बनाते हैं। उनके कमरों की लम्बाई चौड़ाई सामान्यतः 10 से 12 फीट लम्बा और 6 से 8 फीट चौड़ा होता है। रसोई घर काफी छोटा होता है। घरों में खिड़की या झरोखा वे नहीं बनाते हैं। उनका मवेशी घर मुख्य आवास गृह से बाहर होता है। कहीं—कहीं लोग सुरक्षा की दृष्टि से मवेशियों को घर के भीतर रखते हैं।

खरवार अपने घरों की लिपाई—पुताई दीपावली और रामनवमी के अवसर पर करते हैं। जनजातीय क्षेत्रों में घर की पुताई—उनकी स्त्रियाँ वहाँ मिलनेवाली सफेद या रंगीन (काला या लाल) मिट्टी से करती हैं। जिन लोगों का पक्का मकान है, वे चूना आदि से पोचाड़ा करवाते हैं। खरवार कच्चे घर की जमीन को गोबर से लिपते हैं। इनका घर साफ सुथरा रहता है।

जीवन चक्र

विभिन्न विद्वानों ने खरवार या खेरवाल के रूप में उस प्रजाति का वर्णन किया है जिससे संथाल जनजाति की उत्पत्ति हुई है। आर. बी. रसेल ने कर्नल डाल्टन द्वारा प्रस्तुत एक संथाली लोक कथा का प्रसंग देते हुए खरवार जनजाति की उत्पत्ति को एक मादा हंस के अंडे से माना है।

इस प्रकार खरवार जनजाति के आदि पुरुष का जन्म एक पक्षी के अंडे से माना गया है। और यह लोक विश्वास अन्य जनजातियों में भी प्रचलित है। सवर और हिल खड़िया की उत्पत्ति मोर के अंडे से माना जाता है।

खरवार अपने को राजा हरिशचन्द्र के पुत्र रोहिताश्व की संतान भी मानते हैं। और इस कारण अपने को सूर्यवंशी राजपूत भी मानते हैं। उनमें यह भी लोक विश्वास है कि मानव जन्म केवल स्त्री, पुरुष के समागम से ही नहीं होता, वरन् वह ईश्वर की कृपा या इच्छा पर निर्भर करता है वे पूर्वजन्म को पूर्व जन्मों का प्रतिफल भी मानते हैं।

जब कोई स्त्री गर्भधारण नहीं करती है तो वे उसका निम्नांकित कारण मानते हैं :

1. भगवान या काली मार्इ उस पर नाराज है।
2. उस पर किसी प्रेत या चुड़ैल का प्रभाव है।
3. उसे डायन या ओझा बाँझ बना दिया है।
4. वह किसी दुराचरण के कारण माँ नहीं बन सकती है।

परन्तु अब पढ़ लिखकर जागरूक हो गए हैं वे इसे रोग या बीमारी के रूप में लेते हैं। और उसका इलाज कराते हैं। परन्तु जनजातीय क्षेत्र में अधिकांश उपर्युक्त बातों को ही बांझापन का कारण बताते हैं और उसके लिए ओझा गुनी की सहायता लेते हैं उनमें से बहुत कम यह जानते हैं कि बांझापन का कारण स्त्री या पुरुष अथवा दोनों में किसी शारीरिक दोष अथवा यौन संबंधी रोग या विकृति से होता है।

बांझापन खरवार समुदाय में भी हेय दृष्टि से देखा जाता है। परन्तु बोझ होने पर भी अपनी पत्नी का परित्याग नहीं करते वरन् उसकी सहमति से सन्तान हेतु दूसरी शादी करते हैं परिवार में शिशु का जन्म लेना वे एक महत्पूर्ण घटना मानते हैं।

गर्भधारन एवं गर्भ की पहचान

खरवार जन-जाति में लड़कियों की शादी सामान्यतः 18 से 20 वर्ष के बीच हो जाती है। शादी के बाद ससुराल चली जाती है समान्यतः शादी के एक वर्ष के भीतर वह गर्भवती हो जाती है। जब उसका मासिक धर्म होना बन्द हो जाता है। तब यह अनुमान लगाया जाता है कि वह गर्भवती है इस अवस्था को स्त्रियाँ दिन चढ़ना कहती है।

गर्भधारण का पता महिलाएँ कई प्रकार से लगाती हैं।

1. स्त्री का मासिक धर्म यदि एक-दो माह तक रुक जाता है तो समझा जाता है कि वह गर्भधारण कर चुकी है।
2. पेट के निचले भाग में उभार आदि शारीरिक लक्षणों को देख कर भी गर्भवती होने का अनुमान लगाया जाता है।
3. मुँह का स्वाद बदलने या बार-बार उल्टी होने पर भी यह अनुमान लगाया जाता है कि वह गर्भवती है।
4. गर्भवती स्त्रियाँ अक्सर खट्टा या मिट्टी के बर्तन का टुकड़ा खाना पसंद करती हैं।

गर्भ में पुत्र है या पुत्री इसकी पहचान चार-पाँच महीने का गर्भ होने के बाद बड़ी बूढ़ी महिलाएँ गर्भवती के शारीरिक लक्षणों को देखकर अनुमान के आधार पर करती हैं। यदि गर्भवती मोटी-ताजी या स्वरथ रहती है तो समझा जाता है कि उसके गर्भ में कन्या है। इसके विपरीत यदि वह दुबली-पतली हो जाती है तो पुत्र का अनुमान लगाया जाता है। यदि गर्भवती को पेट अधिक बड़ा लगता है तब भी पुत्र होने का अनुमान लगाया जाता है।

गर्भस्त शिशु का खरवार भी अपने पूर्वजों के पुनर्जन्म के रूप में लेते हैं। गर्भवती हो जाने पर उसकी देखभाल विशेष रूप से की जाती हैं ताकि शिशु का जन्म बिना किसी विघ्न बाधा के सुरक्षित रूप से हो जाय। जनजातीय क्षेत्र में कहीं-कहीं और जनजातीय क्षेत्र के बाहर खरवार में गर्भवती को सम्मान देने के लिए नया वस्त्र देने का भी प्रचलन है।

गर्भवती के लिए विधि-निषेध :-

जनजातीय क्षेत्र में तथा अन्य क्षेत्रों में खरवार जनजाति में गर्भवती को कई निषेधों को मानना पड़ता है। ये निषेध उसके गर्भ की रक्षा तथा कष्टहीन प्रसव के लिए आवश्यक माने जाते हैं।

1. शमशान घाट या कब्रगाह में जाने की मनाही है।
2. अकेले नदी, तालाब, झारना, आदि के पास जाना माना है।
3. वह जंगल या निर्जन स्थान में नहीं जा सकती है।
4. श्राद्ध के भोज में वह नहीं भाग ले सकती है।

5. सूर्यग्रहण या चन्द्रग्रहण देखना मना है।
6. गर्भवती को खान—पान में कई चीजें वर्जित हैं।
 1. रोवांदार पशु का मांस।
 2. बासी भात, बासी रोटी, या बासी मकई का घड्हा।
 3. पशु—पक्षी का सिर, पैर या अंतड़ी का मांस खाना।
 4. शिकार किये गये पशु या पक्षी का मांस।
 5. बातारी चीजें—जैसे कोहड़ा, बैगन, सेम आदि।
 6. कुछ खास किस्म की मछली जैसे गोंजी, बामी।
 7. महुआ की शाराब या चावल का हड़िया।
 8. जोड़ा या जौआं फल या सब्जी।

गर्भवती की देख—भाल उसकी सास या माँ करती है या घर की अन्य वृद्ध महिलाएँ उसका ख्याल रखती हैं।

प्रसव के समय प्रसूता को एक अलग कमरे में रखा जाता है, जिसे सजरी या सौर गृह कहते हैं। कहीं—कहीं इसे परस्तौती घर भी कहा जाता है। इस कमरे में केवल स्त्रियाँ ही जाती हैं। पुरुषों का जाना वर्जित रहता है। वे केवल आपातकाल में ही जाते हैं। प्रसव के समय घर की बड़ी बूढ़ी और अनुभवी महिलाएँ प्रसूता को प्रसव कराने में मदद करती हैं। कहीं—कहीं गाँव की डगरिन या प्रशिक्षित दाई या नर्स प्रसव कराने के लिए बुलाई जाती हैं। अब लोग इस कार्य के लिए प्राथमिक चिकित्सा केन्द्र रेफरल अस्पताल या अन्य अस्पताल की भी मदद लेते हैं।

प्रसव के बाद धार्मिक एवं अन्य कृत्य: “नार कटाई” शिशु के गर्भ से बाहर आते ही डगरिन या दाई बुलाकर शिशु के नार, नाल को उसके शरीर से अलग कर देती हैं। पहले यह कार्य किसी पुरानी छुरी या हंसिया से किया जाता था। जिसके कारण टेटनस हो जाने के कारण अनेक शिशुओं की मृत्यु हो जाती थी। परन्तु अब नाल काटने के लिए ब्लेड अथवा नई और सफ छुरी से किया जाता है। जहाँ प्रशिक्षित दाई या नर्स प्रसव कराती हैं वहाँ स्टेलाइज्ड ब्लेड से नाल काटती है। नालकाट कर नाभी में रह गए नाल के शेष भाग को किसी औषधीय पता का रस लगाकर सूखने के लिए छोड़ दिया जाता है। दाई नारकाटाई के रूप में कुछ नगद राशि और कपड़ा या अनाज लेती है।

नाल—पुराइन को आँगन में या घर के निकट कहीं सुरक्षित स्थान में काफी नीचे गाढ़ देते हैं ताकि उसे कुता या अन्य कोई जानवर निकाल कर खा न जाय। उनमें यह लोक विश्वास प्रचलित है कि यदि नाल पुराइन को कोई जानवर खा जायेगा तो जंगल में जाने पर उस शिशु को बाघ या अन्य जंगली जानवर द्वारा खा जाने की संभावना बनी रहेगी।

छूत एवं छूत की अवधि : नया जन्म होने पर प्रसव होने के दिन से छः दिन तक छूत माना जाता है। इस अवधि में सौर गृह में कोई नहीं जाता है। (बाहरी व्यक्ति) घर में कोई शुभ कार्य नहीं किया जाता है। कहीं कोई भोज खाने या अन्य अवसर पर बाहर नहीं जाता है। छठे दिन नाई आकर प्रसूता का नाखून काटती है और प्रसूता को स्नान कराया जाता है। इस अवसर पर नवजात शिशु को भी नहलाया जाता है। छठे दिन छह्ड़ी समारोह मनाया जाता है। और अपने संबंधियों को तथा सामर्थ्य रहने पर ग्रामवासियों को भी प्रति भोज दिया जाता है। पलामू में लड़की होने पर पांच दिन में लड़का होने पर छः दिन में छह्ड़ी होता है।

नामकरण संस्कार

शिशु का नामकरण छह्ड़ी के दिन या उसके बाद ब्राह्मण या माता पिता द्वारा किया जाता है। जनजातीय क्षेत्र गढ़वा, पलामू आदि—में खरवार जनजातीय परम्परा के अनुसार “सगून” निकाल कर नामकरण करते हैं। इसके अनुसार घर का मुखिया थाली या लोटा में पानी भर कर अपने पूर्वजों (पितरों) का नाम लेकर चावल डालता है।

यदि किसी एक नाम लेने पर दो चावल एक साथ मिल जाते हैं तो शिशु का वही नाम रखा जाता है। इस क्षेत्र में खरवार शिशुओं का नाम उनके दादा—दादी के नाम पर रखा जाता है। परन्तु अब अधिकांश नाम ब्राह्मण द्वारा रखे जाते हैं। अथवा माता—पिता कोई आधुनिक प्रचलित नाम रख देते हैं। नामकरण के अवसर पर कोई समारोह नहीं होता है।

अन्न प्रासन संस्कार या मुँहजुड़ी

खरवार जनजाति की महिलाएँ शिशु के जन्म के बाद से ही स्तनपान कराना शुरू कर देती है और एक-दो वर्ष तक शिशु को स्तनपान कराती है। शिशु जब 5 या 6 महीने का हो जाता है। तो “मुँहजुड़ी” (अन्न प्रासन) का समारोह या रश्म की जाती है। इस अवसर पर दूध चावल और चीनी या गुड़ से बना खीर नयी कटोरी में लेकर शिशु के दादा, नाना, पिता या मामा उसे खिलाते हैं। इसके बाद ही शिशु को कोई ठोस, आहार दिया जाता है खरवार अपने बच्चों को मुंडा, संथाल आदि की तरह ‘हड़िया’ (चावल की शराब) नहीं पिलाते हैं। खरवार के शिशु कम उम्र से ही ठोस आहार (दाल भात, खिचड़ी) आदि लेने लगते हैं। औसतन खरवार के बच्चों स्वस्थ पाये जाते हैं।

कर्ण छेदन : इस जनजाति में लड़कियों का कर्ण छेदन अथवा कान छेदना का कार्य कहीं-कहीं लड़की के एक वर्ष का होने पर और कहीं-कहीं चार वर्ष का हो जाने पर कराया जाता है। लड़कों का भी कर्ण छेदन कराया जाता है। धारणा है कि बिना कान छेद के छप्पर कैसे छावेगा।

विवाह :

भारतीय समाज में विवाह एक महत्वपूर्ण सामाजिक एवं धार्मिक कृत्य है, जो सामाजिक एवं पारिवारिक जीवन को कठिपय सिद्धांतों एवं आदर्शों के आधार पर सुसंगठित और विनियमित करता है। विवाह की व्यवस्था द्वारा ही आज का समाज एवं परिवार सुसंगठित है। यह वह पवित्र बन्धन है जो दो व्यक्तियों में भी विवाह का विशेष महत्व है शादी पहले कम उम्र में होता था, अब 18 वर्ष के बाद लड़की, 20 वर्ष के बाद लड़का का विवाह होता है। प्रथम कहीं से किसी के द्वारा पता लग जाने पर लड़की वाले लड़का के यहाँ जाते थे परन्तु वर्तमान में लड़का वाले लड़की के यहाँ जाते हैं। बातचीत होता है। बात बनने पर ज्येष्ठ या वैशाख माह निर्धारित कर शादी की तिथि तय होती है। खरवार जो शिक्षित हो गए हैं। तिलक की मांग भी करने लगे हैं। शेष साधारण वर्गों के लोगों में प्रचलन नहीं है। शादी में मड़वा (मण्डप) आँगन में गाड़ा जाता है घर का देवी देवता का पूजा अपने द्वारा किया जाता है। शादी पंडित एवं टाकुर (नाई) द्वारा ही संपन्न कराये जाते हैं।

लगन जैसा हो पांच दिन या दस दिन का लड़की एवं लड़की दोनों तरफ से इसके बाद हल्दी लगाना शुरू हो जाता है। लगन के हिसाब से पांचवें या दसवें दिन जो निश्चित हो बारात रात में प्रस्थान करता है शाम में शादी पंडित एवं नाई द्वारा संपन्न कराया जाता है। सुबह लड़की की विदाई होती है। निश्चित दिन तिथि को कन्या वर पक्ष के यहाँ आते हैं जिसे बहुराता (लियावन) कहते हैं। लड़की को वापस ले जाते हैं। बारात में केवल पुरुष ही जाते हैं। शादी के बाद एक से तीन वर्ष बाद बच्चा पैदा हो जाता है। एक दो बच्चे होने के बाद अपने माता-पिता से अलग हो जाते हैं।

गोत्र : काशी, शाम, हेम, कश्यप आदि गोत्र होते हैं, गोत्र में शादी नहीं होती है।

मृत्यु

व्यक्ति की मृत्यु हो जाने पर आस-पास के लोगों को एवं हित कुटुम्ब को जानकारी देते हैं लोग आते हैं इकट्ठा होते हैं। शव यात्रा की तैयारी होती है। शव को नदी किनारे ले जाकर अग्नि दी जाती है। दशवां दिन धोबी जाति के लोग आते हैं एवं पूरे गोतिया के लोगों के कपड़े को धोते हैं। वामन (पंडित) को खटिया, तोशक, रजाई, आवश्यक रूप से गाय, भैंस, बकरी, दिए जाते हैं। इन सब के अभाव में नगद रकम देकर खुश करके भेजना पड़ता है। शव यात्रा में केवल पुरुष ही शमिल होते हैं। महिलाएँ नहीं जाती हैं पंडित को हजार रुपये और कटहा वामन को पांच सौ रुपये देते हैं। दशवा के बाद ब्राह्मण भोज बारहवें दिन होता है।

अस्थि प्रवाह-अस्थि को बनारस ले जाकर गंगा में प्रवाहित करते हैं वहाँ भी पंडित जी को रकम देना पड़ता है जोर जबरजस्ती नहीं होता है अस्थि प्रवाह कर दशवां से पहले ही वापस होना पड़ता है दशवां दिन जो निज होते हैं बाल-दाढ़ी मुड़वा लेते हैं। पुरुष बच्चों से बुढ़े तक।

खान पान अनिन्दियन संस्कार के बाद ब्राह्मण भोज तक हल्दी तेल, मांस, मछली, आदि वर्जित रहता है। बाल में तेल भी नहीं लगाते हैं।

यदि विवाहित मर जाते हैं। तो उपरोक्त नियमों का पालन किया जाता है। बच्चों की मृत्यु पर तीन दिन तक तिरात कहते हैं, नियम किए जाते हैं। इन्हें जलाते नहीं गाड़ते हैं दस से बारह वर्ष तक के लड़का लड़की की

मृत्यु पर सात दिनों तक नियम मानते हैं इन्हें भी गाड़ते हैं। यदि तीन से बारह वर्ष तक के बच्चे मरते हैं, और उसे जलाते हैं तो दशवां, बारवां एवं ब्राह्मण भोज करना जरूरी है। तब जाकर शुद्धिकरण होता है। गर्भवती के मरने पर जलाने एवं गाड़ने का भी प्रथा है। (फुलनी बीमारी पर मृत्यु) होने पर स्त्री व पुरुष हो गाड़ते (दफन) किया जाता है। साँप काटने पर मृत्यु होने पर इन्हें भी गाड़ा जाता है। तेरहवें दिन पानपगरी इसके बाद खान—पान सामन्य हो जाता है।

आर्थिक एवं पारिस्थितिकी

क) प्राकृतिक संसाधन : खरवार झारखण्ड के जिन क्षेत्रों में निवास करते हैं उनमें काफी विविधता है। उनके क्षेत्र की भौगोलिक स्थिति, जलवायु, आर्थिक संसाधन आदि अलग—अलग है। फलस्वरूप उनके जीवन यापन के आर्थिक संसाधन उनके क्षेत्र में उपलब्ध प्रकृति सम्पदा की सम्पन्नता और विपन्नता पर निर्भर करता है। खरवार मूलतः कृषि जीवन से जुड़े हुए है। वे पशुपालन में भी रुचि रखते हैं।

छोटानागपुर के पलामू गुमला, लोहरदगा आदि जनजातीय बहुल पहाड़ी क्षेत्रों में कुल खरवार जनजाति के जनसंख्या का 60 प्रतिशत लोग बसते हैं। यह क्षेत्र पश्चिम में मध्यप्रदेश अब छतीशगढ़ और उत्तर प्रदेश की सीमा से सटा हुआ है। इस क्षेत्र में तुलनात्मक दृष्टि से वन अधिक है। अतः इन क्षेत्रों में इमारती लकड़ी में साल सलई, आसन, बीजा सागवान, महुआ, जामुन आदि के पेड़ काफी हैं। फिर भी इन क्षेत्रों में भी वनों का विनाश काफी हुआ है। वन से भी खरवार अपना आर्थिक स्रोत प्राप्त करते हैं साल बीज, केंदू पता, आँवला, हर्र, बहेरा, केंद, पियार, महुआ, जामुन, आम, कटहल आदि बहुतायत में इन जंगलों में मिलते हैं जिन्हें ऋतु के अनुसार वे जंगल से लाकर बेचते हैं। और अपने उपयोग में लाते हैं। इसके अलावा सतावर, चिरायता, सनई पती, ज्येष्ठ मधु, चितावर, घोरबाछ, परही, तिरियों आदि औषध गुण वाली जड़ी बुटी लाकर भी बेचते हैं। इस क्षेत्र में अनेकों प्रकार के खाने वाले कन्दा और गेढ़ी मिलते हैं जिन्हें वे जंगल से लाकर खाते हैं।

इन वनों में कहीं— कहीं मोर, तीतर, हारियल, वनमुर्गी आदि पक्षी तथा बनेला सूअर साहिल, कोटरा, हिरण, खरगोश आदि भी मिलते हैं जिनका शिकार कभी—कभी कर लेते हैं।

वे जंगल में बहने वाली नदी या नाले में मछली भी मारने जाते हैं जिसके लिए छोटे जाल या बाँस की कुमनी का प्रयोग करते हैं।

जंगल से अनेक प्रकार के खाने—वाले साग और फूल भी प्राप्त करते हैं। जिनमें कचनार, जिहूल, कैमा, मौना, चकवड़, कोयनार, फुटकल, भुजा, टूरचा, सरवत आदि मुख्य हैं इस क्षेत्र में खरवार अब केला, अमरुद, पपीता आदि की वागवानी भी करने लगे हैं। इन पहाड़ी क्षेत्रों में जहाँ अच्छी मिट्टी है धान की खेती होती है टॉड जमीन में गोड़ा धान, गोंदली, मडुआ, कुर्खी, सरसों, सुरगुजा, रहर, आदि लगाते हैं गेहूँ की खेती बहुत कम होती है। वे आलू प्याज, गोभी, बैंगन, सेम आदि सब्जी का भी खेती करते हैं। जिससे उनकी आय में वृद्धि होती है। वे पलाश वृक्षों पर लाह की भी खेती करते हैं।

क्र0सं0 बुनने की अवधि

1. जनू—जूलाई
2. तदैव

फसल / अनाज का नाम

- धान, गोड़ा, धान छोटा
- गोंदली, मडुआ, जिनारी

काटने की अवधि

- सितम्बर—अक्टूबर
- सितम्बर—दिसम्बर

3. मई—जून
4. जून

- मकई, खेड़ी, कोनी चीना
- भद्रई और अगहनी
- मकई, ज्वार, बाजरा
- घंघरा, नूँग, उड़द, कुर्थी

- सितम्बर—दिसम्बर
- सितम्बर—दिसम्बर
- अक्टूबर—दिसम्बर

ख) रब्बी

1. जून
2. सितम्बर
3. तदैव
4. नवम्बर
5. तदैव

- रहर
- रेडी
- सुरगुजा
- जौ, जई, खेसारी, गेहूँ
- तीसी

- फरवरी—मार्च
- मार्च—अप्रैल
- दिसम्बर
- फरवरी—मार्च
- अप्रैल

यह फसल चक्र गढ़वा पलामू आदि जनजातीय एवं पहाड़ी क्षेत्रों में अनावृष्टि या सुखाड़ से प्रभावित होता है।

पशुधन

खरवार कृषि कार्य से जुड़े रहे हैं। अतः वे गाय बैल, बकरी, मुर्गी, पालते हैं। इनसे दूध एवं मांस प्राप्त होता है। बैलगाड़ी एवं कृषि कार्य हेतु बैलों से करते हैं। पहाड़ी क्षेत्रों में प्रायः कम दूध देने वाली गाय छोटी गायें पालते हैं जिसके रख रखाव में बहुत कम खर्च आता है। गायों को जंगल में चरने के लिए छोड़ देते हैं। ऐसी गायें औसतन आग्ना लीटर से डेढ़ लीटर तक दूध देती हैं। पहाड़ी क्षेत्र में भैंस पालन कम होता है।

धर्म

खरवार जन-जाति के धर्म एवं धार्मिक व्यवस्था के संबंध में रसेल डाल्टन, संडर, रिजले आदि ने उन्हें हिन्दू धर्मावलंबी माना है।

खरवार जनजाति के लोग, विशेषकर रोहतासगढ़ से संबंधित हैं अपने को रोहिताश के वंशज सूर्यवंशी राजपूत मानते हैं। साथ ही उनके मानव वैज्ञानिक और समाज शास्त्रीय इतिहास और उससे संबंधित विभिन्न विद्वानों के विचारों और तथ्यों से स्पष्ट होता है कि खरवार द्रविड़ मूल की जनजाति है। अतः जनजातीय धर्म एवं धार्मिक परम्पराओं का प्रमाण भी उनके धार्मिक अनुष्ठान में मिलता है।

जनजातीय क्षेत्र पलामू आदि : इस क्षेत्र के खरवार में भी कुछ अपने को सूर्यवंशी और कुछ देशवारी कहते हैं। इनकी धार्मिक अवधारणा कैमूर के खरवारों से थोड़ा मिलती है। वे हिन्दू देवी देवता के साथ—साथ जनजातीय देवी, देवता, और प्रेतों को मानते हैं और विभिन्न अवसरों पर उनकी पूजा करते हैं। पलामू गजेटियर (1926) में खरवार के धार्मिक लोक विश्वास और देवी देवता के विषय में यह लिखा गया है कि खरवार अब हिन्दू की तरह ब्राह्मण से पूजा—पाठ करवाते हैं। परन्तु काफी संख्या में जनजातीय धर्म और संस्कृति को भी मानते हैं वे ओझा—डायन पर भी विश्वास करते हैं। गजेटियर में निम्नांकित देवी देवताओं का उल्लेख है :-

1. परमेश्वर — सबसे बड़ा देवता।
2. चन्द्र राय — कोरवा जनजाति का प्रेत।
3. छतर राय — मारा गया सैनिक का प्रेत।
4. गौरैया — खरवार प्रेत।
5. अंकार मल — राजपूत राजा का प्रेत।
6. मेहतर पलहट — भांट प्रेत
7. पुरविया — भुझियां का देवता।
8. चन्दी — देवी।
9. मुचुक रानी दुरजगिया देवता — यह खरवारों का विशिष्ट प्रेत है जिसका वास स्थल अपने ठप्पा पर है।

पर्व त्योहार

खरवार जनजाति, जनजातीय पर्वों के साथ—साथ अपने क्षेत्र में मनाये जाने वाली हिन्दू पर्वों को भी धूम धाम से मनाते हैं। इस कारण उनके पर्व त्योहार में विविधता पाई जाती हैं।

होली : नया वर्ष के उपलक्ष्य में मनाते हैं।

रामनवमी

छठ — चैत्र महीने में।

सरहुल पर्व — बैगा द्वारा पूजा।

सवनी — देवता, पितर, देवता को नया अन्न चढाने के बाद ग्रहण करते हैं।

करमा — भादो में।

जितिया — अष्टमी कृष्ण पक्ष अश्विन (पुकर)।

दूर्गापूजा — आश्विन कार्तिक महिना में मनाया जाता है।

दिपावली — कार्तिक महिना में मनाया जाता है।

भेलगड़ी,

छठ—कार्तिक पिछला पक्ष छ: दिन जाने के बाद छठ (सुबह शाम पंडित द्वारा ही पूजा संपन्न होता है) देवठान — छठ के नौ दिन में उपवास दिन में शाम में व्यंजन बनाया जाता है। देवता को चढ़ाने के बाद पूरे परिवार के लोग खाते हैं। इस दिन भगिना को खिलाने का प्रथा है। मकर संक्रांति 14 जनवरी के दिन मनाई जाती है। गुड़—चूड़ा, लाई, दही, शिव स्थल में पूजा पाठ करते हैं। सरस्वती पूजा पहले इसकी पूजा विद्यालय में ही होती थी। परन्तु अब गांवों में भी स्थापित कर पूजा किए जा रहे हैं।

सरहुल पूजा में खरसी, मुर्गी, धी, धूवन सिन्दूर, अरवा चावल, पानी से बलि वाले जीवों को बैगा द्वारा धोकर टिका लगाया जाता है। पूआ बनता है। सरहुल पूजा ग्रामीणों द्वारा चंदा एकत्रित करके किए जाते हैं पूरे गांव में मांस को प्रसाद के तौर पर बलि के बाद बाँट (वितरण) कर दिए जाते हैं, बलि देने वाले जीव बलि पूर्व चरने पर खुश होते हैं।

गाँव देवता, डीहवार मुख्य देवता, देवी, पुरविया, काली दूर्गा, सतबहनी कभी सात बहन सती हुई थी। सरना में वास होता है। दरहा, बधौत उपरोक्त सभी देवी—देवताओं के लिए बलि देने की प्रथा है।

सारांश : खरवार जनजाति के जो लोग पहाड़ों पर और जंगलों में रहते हैं, उन्हें उस क्षेत्र में मिलने वाली जड़ी—बुटियों से विभिन्न रोगों का इलाज करते हैं उनके समुदाय में जो ओझागुनी होते हैं। वे रोग के निवारण के लिए मंत्र—तंत्र के साथ—साथ जड़ी—बुटी का भी प्रयोग करते हैं। लेकिन धीरे—धीरे आधुनिकीकरण की चमक से लुप्त होती जा रही है। इस स्थानीय ज्ञान को संरक्षित करके—उसके अनुसंधान एवं प्रसार की आवश्यकता महसूस की जा रही है। झारखण्ड की कुल जनसंख्या का 26 प्रतिशत आदिवासियों से परिपूर्ण है जिसमें लगभग 30 (वर्ष 2001) आदिवासी जातियाँ हैं आज भी आदिवासियों का एक बड़ा समुदाय अपने जीवन यापन के लिए वनों पर आश्रित है। यहाँ अपना एक अलग सामाजिक सांस्कृतिक एवं पारंपरिक ढंग व रहन सहन है। जैवविविधता वाले क्षेत्र में संबंधित रहने की वजह से इन्हें औषधीय पौधों की उपयोगिता एवं संरक्षण के विषय में काफी जानकारी है। उन्होंने इस पारंपरिक ज्ञान को वर्षों के प्रेक्षण, प्रयास एवं निष्कर्ष से विकसित किया हैं कुछ घरेलू तकनीक जो स्थानीय क्षेत्र में प्राकृतिक संसाधनों पर आधारित एवं बनाने में आसान है वास्तव में प्रभावशाली और आधुनिक दवाओं (एलोपैथी) की अपेक्षा काफी सस्ती है। आज यह देशज स्वास्थ्य तकनीक अपनी क्षमता एवं पहचान बढ़ाने में लगी है नशी पीढ़ी अपनी पारंपरिक जीवन शैली को छोड़कर आधुनिकीकरण की ओर बढ़ रही है जिसके कारण इस उपयोगी ज्ञान को जानने वालों की कमी होती जा रही है। इस विलुप्त होते हुए उपयोगी ज्ञान को मानव समाज के वंशजों के लिए संग्रहित करने हेतु इस पर शोध एवं प्रलेख तैयार करने की आवश्यकता महसूस की जा रही है।

अध्ययन क्षेत्र के वैद्यों से मिलकर जड़ी—बुटियों के प्रयोग विधि आदि की जानकारी लिया उन्होंने अपने स्तर से जितना जानकारी था बताए बहुत सी जड़ी—बुटियों वर्षा के समय में जंगलों पहाड़ों पर उगते हैं। बहुतों को अधिक दिनों तक संरक्षित कर के घरों में नहीं रखा जा सकता है, ऐसा वैद्यों का कहना है। जंगलों में अधिकतर सांप तथा अन्य विषेले जीव—जन्तु के काटने पर विष का ही दवा को अधिकतर प्रयोग करते हैं क्योंकि इसके काटने की संभावना अधिक रहती है। लोग जंगल झाड़ में जाते हैं। और इन जीवों से प्रत्यक्ष—आप्रत्यक्ष रूप से मिलना स्वाभाविक ही है जिसे कभी—कभी घटना घटित हो ही जाती है। अन्य वीमारियों के इलाज के लिए क्षेत्र के दूसरे समुदाय के वैद्य के पास इलाज के लिए खरवार समुदाय के लोग जाते हैं।

खरवार लोगों से समूह साक्षात्कार से पता चला कि आज के खान—पान की वजह से जड़ी—बुटी भी काम नहीं करता है इन लोगों को वनों में पाये जाने वाले औषधीय पौधों की जानकारी भी उतनी नहीं है। बीमारियों के इलाज के बारे पूछने पर बाताए कि जड़ी—बुटी एवं एलोपैथी से भी इलाज कराते हैं।

क-11 अनुसूचित जनजाति विशेष से सम्बन्धित राज्य प्राथमिक जनगणना सार - 2001 खरवार (झारखण्ड)

क्र०सं	मद	लिंग		योग	ग्रामीण		योग	नगरीय		योग
		पूरुष	स्त्री		पूरुष	स्त्री		पूरुष	स्त्री	
1	अनुसूचित जनजातियों की जनसंख्या (राज्यस्थागत और बैंधव जनसंख्या सहित)	98762	93262	192024	96784	91740	188524	1978	1522	3500
2	0-6 आयु समूह की अनुसूचित की जनसंख्या जनजातियों	22143	21943	44086	21838	21693	43531	305	250	555
3	साक्षर	33855	9937	43792	32442	9144	41586	1413	793	2206
4	कुल कर्मी	48672	33860	82532	48001	33754	81755	671	106	777
5	दीर्घकालिक कर्मी	35175	10595	45770	34593	10548	45141	582	47	629
	काश्तकार	23979	6696	30675	23967	6695	30662	12	1	13
	खेतीहर मजदूर	7720	3096	10816	7682	3092	10774	38	4	42
	पारिवारिक उद्योग कर्मी	252	145	397	247	142	389	5	3	8
	अन्य कर्मी	3224	658	3882	2697	619	3316	527	39	566
6	अल्पकालिक कर्मी	13497	23265	36762	13408	23206	36614	89	59	148
	काश्तकार	4219	8413	12632	4218	8407	12625	1	6	7
	खेतीहर मजदूर	8286	13642	21928	8250	13608	21858	36	34	70
	पारिवारिक उद्योग कर्मी	125	284	409	122	283	405	3	1	4
	अन्य कर्मी	867	926	1793	818	908	1726	49	18	67
7	गैर कर्मी	50090	59402	109492	48783	57986	106769	1307	1416	2723

स्रोतः भारतीय जनगणना 2001

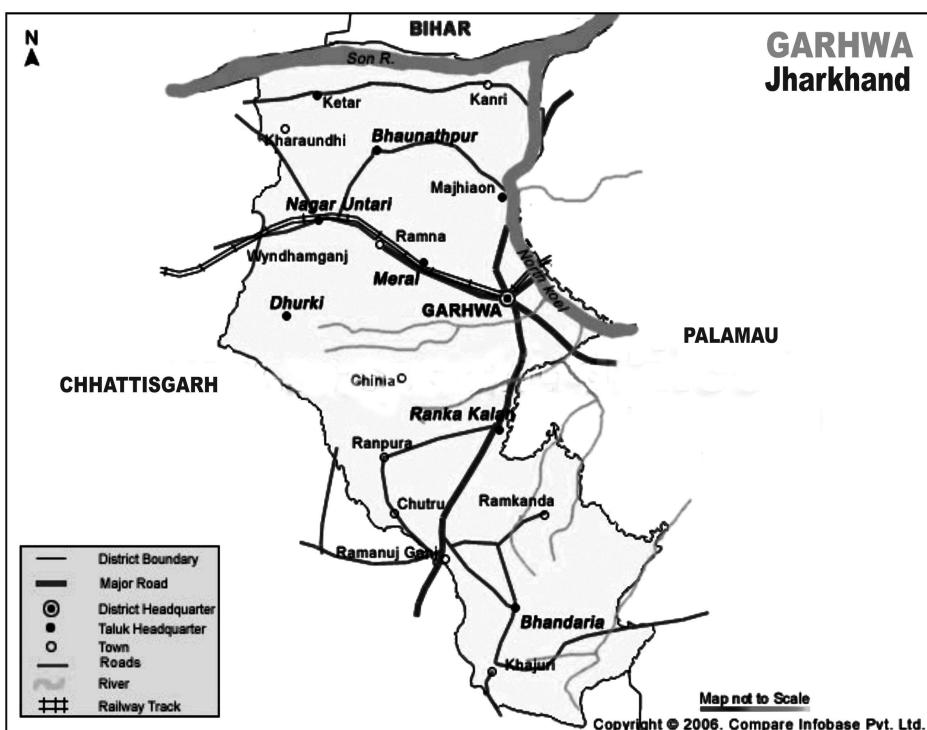
पंचायत समिति की जनसंख्या, रंका प्रखण्ड गढ़वा जिला।

प्रखण्ड	पंचायत क्रम	ग्राम पंचायत	ग्राम पंचायत की जनसंख्या	अनुसूचित जनजाति
रंका	1.	सिरोई खूर्द	5744	2753
"	2	कटरा	5116	3070
"	3	दूधवल बेलवादामर	5409	2035
"	4	चुतरु	5545	1729
"	5	चुटिया	5266	1067
"	6	विश्रामपुर	4835	2992
"	7	सोनदाग	5335	1393
"	8	रंका कला	5837	32
"	9	कंचनपुर रुबदा	5518	581
"	10	खरडीहा	4325	1250
"	11	खपरो	4396	55
"	12	मानपुर	4693	300
"	13	तमगेकला	5841	3261
"	14	बाहाहारा	4903	1485

स्रोतः सांख्यिकी विभाग समाहरणालय, गढ़वा, झारखण्ड।



झारखण्ड के उत्तरी-पश्चिम में अध्ययन क्षेत्र गढ़वा जिला अंतर्गत रंका प्रखण्ड(झारखण्ड)।



गढ़वा जिला के मध्य में स्थित अध्ययन क्षेत्र रंका प्रखण्ड (गढ़वा झारखण्ड)

संदर्भ – सूची

1. उरांव, पी. सी. – 2003 – लैण्ड एण्ड पिपुल ऑफ झारखण्ड, जे० टी० डब्लू० आर० आई, रांची।
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Implementation of Forest Rights Act in Odisha: An anthropological understanding to upgrade the livelihood of Tribal people

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ABSTRACT

Ethnic groups are the organic components of Odishan society. Broadly they can be classified as scheduled tribe, scheduled caste, other backward castes and general caste group. For centuries they have been living in and around the bounty of natural resources. Their intangible cultural heritage influences their life and living. Since independence many of these communities who are popularly known as the Scheduled groups in India and also in Odisha have been provided with some preferential benefits. Government, as the major agency to formulate welfare policies has been implementing various development programmes for their upliftment. In spite of this, it is observed that over the decades these indigenous communities have been losing control over their livelihood sources like land and forest resources. As a result, the livelihood resource base and living of these communities have been marginalized.

With this background the paper first critically explains the concept of ecological anthropology and ecology of indigenous groups. Secondly, it briefly describes the life and living of the people of Odisha, particularly of tribal people covered under Fifth scheduled areas of the State. Thirdly, it gives an overview of governance of forest and land resources of the state and the rights enjoyed by tribal communities over them. Fourthly, it provides a brief description of some of the features of the Forest Rights Act 2006. Fifthly, the paper attempted to review the status of implementation of FRA, its regional variations in the achievements in the state of Odisha. Finally, the paper while looking at the prospects and the challenges of implementation of FRA argues that in order to upgrade the livelihood, the forest dwellers are to be integrated with various stages of the implementation of both individual and community claim settlement processes of FRA within a time frame.

The paper reviewed the secondary data on the implementation of FRA upto June 2011 collected from ST SC Development Department website. In addition, the authors have used the major observations of two different workshops organized one by Government

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and another by the civil society during the month of August and December 2011 respectively. The analysis of the data has been made on the basis of categorization of districts into certain categories based on the concentration of tribal people. The districts of Odisha have been grouped into three categories of region. They are viz: scheduled area districts, partially scheduled area districts and non-scheduled area districts. The data on the achievements of the implementation of FRA in each district have been categorized and analysed according to scheduled area, partially scheduled area and non-scheduled area of the state.

CONCEPT OF ECOLOGY AND ECOLOGICAL ANTHROPOLOGY

During last couple of decades one finds plethora of materials in social sciences relating to ethno-ecology, ecological anthropology, environmental economics, human ecology and political ecology. Such areas of specialization describes a type of research that is interested in deepening our understanding of how human have been affected by their natural environment through time and conversely how they have influenced their natural environment and with various results (Worster, 1988a,290-91). The term ecological anthropology came during 1960s by the thinkers like Alfred Kroeber and Julian Steward. The concept of cultural ecology influenced the concept of ecological anthropology, but one finds a shift from the concept of ‘cultural population’ to the ‘ecological population’. The ecological anthropology is known for its functionalism and systems theory. For anthropologists role of cultural practices and beliefs in enabling human population to optimize their adaptations to their environments and in maintaining undegraded local and regional eco-systems are important. Rappaport (1971) used the word ‘ecological population’ as an ‘aggregate of organisms having a common pattern of distinctive means by which they maintain a common set of material relations within the eco-system in which they participate’.

The native landscapes are created through human actions, including environmental features as legacies of past action both intended and unintended. Whether these are patches of highly fertile soil, islands of distinct vegetation types or areas of land degradation, an understanding of land use histories and the intersection of social, institutional, political, and economic processes over time is essential. Crumley (1994:6-7) defined landscapes as the material manifestation of the relations between humans and the environment, which ‘represent another means of introducing geographical space into anthropological analysis, where it can serve as the laboratory of past human choice and response in which the effects of environmental changes can be palpably understood. An ecological understanding of landscapes involves analysis of the knowledge systems, productive practices, and religious rites that natives have developed over the course of centuries as a means of interacting with and gaining sustenance from their biophysical environments.

The ‘cultural materialism’ of Harris and the ‘ethno-science’ of Berlin Conklin explained that the indigenous groups have traditional ways of categorizing resources, regulating their use and preserving the environment. Ethno-ecology is the traditional set of environmental perceptions i.e its cultural mode of the environment and its relation to

people and society. Vayda and Walters (1999) maintain that ecological research should not make prior judgments concerning the causes of environmental change, but must be willing and able to assess all possible factors of biological and social origin. In anthropological and ecological research different kinds of generalizations are obtained from different levels of analysis (Bennett, 1976). In biological term the distinction are made between 'eco-system people' whose subsistence is tied with particular local eco-systems and 'bio-sphere people', who drew their support from resources obtained at a planetary level (Dasmann, 1988). Human ecology research on global climate change considers the impact of these changes on regional, bio-cultural systems (Gunn, 1994) and the human causes of these changes (Stern et al,1992). The landscape, ideas, values and traditional management systems are identical with the natives.

When one looks at the changing scope of ecological anthropology, one finds that the earlier ecological anthropology was based on cultural relativism, while the new ecological or environmental anthropology blends theory and analysis with political awareness and policy concerns. This led to the new field of applied ecological anthropology and political ecology (Greenberg and Park, 1994). Orlove (1980) while reviewing the literature on ecological anthropology noted the processual ecological anthropology as a stage gradually supplementing neo-functional approach. Within the processual ecology human system ecology (Bennett,Ibid) emphasized on human ecology as human behavior. Anthropological political ecology established relation with geography and political economy in which concepts such as claims, rights, power and conflicts predominant. Anthropological human ecology established relation with biological sciences and concepts like energy flows, knowledge systems, subsistence and adaptation.

However, ecological anthropology many time face methodological difficulties to understand geological, biological and cultural temporalities developed over millions of years. In new ecological anthropology everything is on a larger scale. The focus is no longer the local eco-system. The outsiders are the key players in local ecology. With the changing scope of the subject ecological anthropologist need to pay attention to study the importance of external organizations and forces like government, NGOs and the market that are nowplaying claims to local and in the regional eco-systems throughout the world.

The fact remains that sustainable development aims at culturally appropriate, ecologically sensitive, and self regenerating changes. It has to mediate among traditional native ethno-ecology, environmentalism and developmentalism. Sustainability has become a *mantra* in the discourse of planning of conservation and development projects but clear cases of successful sustainable development are few. The biggest difficulty with applying cultural theory to ecological resources management is the paucity of good ethnographic data by and large not observed during last fifty years particularly in Indian context. The resource management information is usually focused on the resource itself and not on the users. Rare or no data is available on non-technical parameters like group affiliations and/or the concept of cultural ecology of the people and the area. It is popularly observed that the role of research institutions and Universities in building ethnographic data pool is quite inadequate or non-contributory for last couple of decades. Again with the increasing user pool various cultural biases also increases, as a result the application of one management

strategy became inconsistent and problematic to another. Therefore, the development of an ecological theory that incorporates both natural and cultural dimensions within a single broad paradigmatic framework is more urgent than ever.

ODISHA: PEOPLE AND AREA

Last decade of 20th Century has witnessed a visible shift in the development planning, consumption of goods and services. It also talked of accessibility of all people particularly of minority communities like Scheduled Tribes (STs), Scheduled Castes (SCs), women and other deprived sections of the population. Such approaches in the development planning primarily aimed at removing those conditions of social deprivation and discriminations that restrict capabilities of, and deny opportunities for participating in normal economic and social activities. These social activities include attending school at the primary level, having access to quality health care, safe drinking water, sanitation, and gainful employment of an assured nature which connotes the processes of widening people's choices as well as various levels of their well being.

The tribal population recorded as Hindu has never been referred to *Jati*/or caste norms as organic components of the Hindu society. Odishan society incorporates the major divisions or categories, which are hierarchically, ordered as Brahmins, Kshatriyas, Vaishyas (Traders), Sudras (Servents), and the *Asavarna jatis* (Exmp Untouchable Castes). As a part of the larger caste structure of Indian society caste groups in Odisha are functionally inter-dependent and are thus organically related. Besides, there are different tribal communities who are socio-culturally nearly autonomous. These tribal communities have economic ties with caste population. They constitute the folk segment of Indian society and are in constant interaction with village communities or peasants, the latter are in interaction with the urban literates.

In accordance with the provisions of Article 342 (1) of the Constitution of India, the President of India notifies a community as Scheduled Tribe on the recommendation of the concerned State Government for being eligible to enjoy Constitutional safeguards and protective discriminations. Next to undivided Madhya Pradesh, Odisha has large concentration of tribal population in the country. There are a total of 62 S.T communities identified in Odisha. Tribal communities constitute the base of Odishan society. About 45 per cent of the total land area in Odisha has been declared as Scheduled Area. Excepting the coastal belt and few in western as well as in central Odisha, rests of the districts of the State are either partially or fully Scheduled Area. Out of 30 districts of Odisha the districts largely dominated by Scheduled Tribes are Malkangiri, Mayurbhanja, Nawarangpur, Rayagada, Sundargarh, Koraput and Mayurbhanja, while the districts partially dominated by tribal communities include Kalahandi, Balasore, Ganjam, Keonjhar, Sambalpur, Gajapati, Nuapada and Kandhamal. The non-scheduled districts include 16 district spread over coastal and central part of the state.

Tribal communities living in the State range from numerically small communities like *Chenchu, Bonda, Juang, Didayi*, to large communities like *Munda, Santal, Kondh, Oraon,*

Saora and Bhuyan. The tribal communities of the State can be categorized as hunter-gatherer-nomads living in hilly and forest areas, hunter-gatherer and shifting cultivators, simple artisans, settled agriculturists, industrial and urban unskilled and semi-skilled workers (Behura, 1990). In Odisha out of 62 Scheduled Tribes, 13 groups have been declared as Primitive Tribal Groups. They are: *Bonda Paraja, Chuktia Bhunjia, Didayi, Dongaria Kondha, Hill Kharia, Juang, Kutia Kondh, Lanja Saora, Lodha, Mankiridia, Birhor, Paudi Bhuiyan, and Saora*. These vulnerable communities have differences with each other, which are reflected in their political, economic and socio-cultural life. However, these communities have similarities as regards their dependency on the nature for livelihood and in adherence to nature-spirit complexes. It is observed that few of these vulnerable communities like *Santal, Munda, Birhor, Kondh and Paudi Bhuyan* are also found beyond the State boundaries and are distributed in the States of Jharkhand, Chhattisgarh, Assam and West Bengal. The tribal economy by and large is based on natural resources and overwhelmingly subsistence-oriented. Circulation of goods is largely based on barter. However, changes have been observed on their ownership and use of natural resources, adoption of cash crop or multi-cropping etc.

The attention on the tribes in transition has neither re-examined the notion of internal dynamics in tribal society, nor freed itself from the Indian sociological overemphasis on castes. Virtually many tribes are shifting towards *jati* characteristics, a movement which has greatly accelerated as communications have improved and external forces have impinged more closely (Mandelbaum, 1956). It is true that most of the major tribal communities have had interactions with the Hindus, and other religious groups, in the process of which changes have appeared in the cultural and structural complexes of the tribes, the castes and others. Such a transition is very well present, but justifying this change may be inadequate and misleading, unless it is associated with the universal dynamics of the primitive societies and the contradictions and negations within the tribal society. More or less tribal communities are still living as culturally living entities through there are many changes observed in their political economic life and living.

GOVERNANCE OF LAND RESOURCES: CORPORATE RIGHTS OVER LAND

The land has always played a major role in the life of the tribal communities of the State. The management of land by these communities has long been carried out through corporate rights which are firmly rooted in their customs and practices. The vulnerable tribal communities by and large are adhered to forest based economic pursuits like food gathering, hunting and shifting cultivation. They have rudimentary technologies, gender-based division of labor and pre-capitalist modes of production, consumption, distribution and exchange system. The strong corporate social ties not only influences their mind but also provides guidelines to build the gamut of their entire social organisation and structural arrangements like *Mutha, Pirha, Mandals, Praganas* etc.

The shifting cultivation i-e slash and burn cultivation practised by many of these vulnerable tribal communities has been a major economic activity. The authority for the distribution of the shifting cultivation patches has been vested in the hands of the village elders with

no property right on land, except in those areas where *rayatwari* tenure was imposed on the tribal people along with taxes and tributes, by the local chiefs. The growth of population, restricted government forest policies, commercial plantation, deforestation, land alienation, non-availability of suitable hill slopes and availability of alternative livelihood has reduced the cycle of shifting cultivation from 10-15 years to a short period of 5-2 years gap which is more pernicious (Panigrahi, 2006). The practice of shifting cultivation among these communities is being criticized from various corners and all have attempted to wean away tribals from this practice. Unlike today land had never been treated as a commodity in earlier social formations and these tribal communities have rarely encouraged the individual proprietorship of land rather this has been foisted on them. In Independent India, with the introduction of various laws and regulations, lands become a commodity under individual proprietorship, which treats land either as a means of survival or shelter.

Another dimension of tribal land problem is its alienation by the non-tribals for individual interests and by the State in the name of development projects. Establishment of mega-development projects in tribal regions have encroached tribal land and displaced them from their age old land. These projects have immense impact on the life and livelihood of these tribals. They are Hydroelectric-cum-irrigation projects like Hirakud (1948), Balimela (1963), Machkund (1949), Upper Kolab (1978), Indravati (1978), Mandira, Rengali (1973), Subarnarekha; mineral based industries like Rourkela Steel Plant, National Alluminium Company at Angul (1985), Hindustan Aeronautics Limited (1962), Buxite Mining Project at Koraput (1981) and projects on Cement, iron, Dolomite and lime stone, etc. All these projects have immense impact on the village economy, family life, and village power structure of the tribal people which have been presented through various empirical studies in the State (Panda & Panigrahi, 1986; Behura and Nayak, 1993; Mohapatra 1998).

DECLINE IN OPERATIONAL HOLDING

The Agriculture Census Report of the State for the year 1980-81, 1985-86 and 1990-91 reported a fall in the size of holdings of the Scheduled Tribes. More specifically, the average size of holdings of marginal and small farmers among the STs have increased overtime, while medium and large holdings have declined both in absolute numbers and the area covered. For example, for the period of 1980-81 to 1985-86 the number of ST households working on land has increased from 9.18 lakh to 9.65 lakh, however, the total operational area of these households has declined from 15.79 lakh hectares to 15.47 lakh hectares. This clearly indicates a decline in ST holdings by 31,000 hectares (Panigrahi, Ibid). Another dimension of tribal land holding is the impact of Government policies on the distribution of waste land to the tribals and restrictions imposed on the alienation of tribal lands. The Odisha Land Reform Act 1960 (OLR Act) emphasizes on the distribution of wasteland for households and agricultural purposes. Due to lack of data to assess the impact of this policy on the vulnerable tribal communities here an analysis has been made from the achievements made under this policy during 1980-81 to 1995-96. The data show that 29, 678 STs have been benefited from the distribution of 41, 263 acres of wasteland, which is less in average when compared with SC households.

In case of the vulnerable tribal communities of the State, who are basically residing on the hill beyond 9 degree slope the State has failed to measure their lands through Cheaper Plane Table Method of Cadstral Survey, rather the State blames these vulnerable tribal communities for encroaching on Government land. This has become an issue whenever the State has attempted to establish a mega-project in the resourceful tribal regions ignoring the corporate rights of these vulnerable communities over their community land and forest based resources enjoyed for generations together.

GOVERNANCE OF FOREST RESOURCES:

Forest policies of Pre-Independent India

The Forest Act 1865, which came into force during the British period, empowered the Government to declare any land covered with trees as forest land. As a result, the rights of the tribal people were restricted in the name of ‘national interest’. **The Indian Forest Act 1878** divided forest into three categories, such as reserve forest, protected forest and village forest. This way of division of forest strengthened government control over forest and forest resources. This not only restricted tribal communities as regards free entry, but also restricted certain forest areas for the people in the name of forest classification. Thirdly, **the National Forest Policy 1894** again laid emphasis on the regulation of community rights and restrictions on the privileges previously enjoyed by the villagers in the immediate neighbouring forest, and brought out a formal relation maintained by the tribals with that of Forest Department as a crucial issue in forest management. It protected hill slopes and imposed ban on shifting cultivation. Fourthly, **the Indian Forest Act 1935** consolidated the power of the State on forest so as to meet the requirements of British industry, military and commerce. By this forest resources of India during pre-British era were siphoned for commercial use by non- tribals and even non- Indians.

FOREST POLICIES OF POST-INDEPENDENT INDIA

In the post- independent period the first **National Forest Policy of 1952** attempted to redefine the forest policy and the traditional rights of the forest dwelling tribes which converted certain concessions enjoyed by tribals for long by withdrawing the release of forest land for cultivation, controlling free grazing, discouraging tribals to do away with the practice of shifting cultivation. **The National Commission on Agriculture (NCA) 1976** revised the National Forest Policy which recommended that forests be managed efficiently for commercial purposes and for the minimization of forest productivity, but NCA became silent about the traditional rights of the tribals. Gaining over experiences the Govt. of India under **42nd Amendment of the Indian Constitution deleted forest from State list and entered it under concurrent list in 1976**. The **Indian Forest Bill 1980** after a thorough consideration vested powers with forest officers to arrest and for the seizure of forest goods from the people who are caught with such resources. This policy also reflected the colonial legacy which did not treat *adivasis* as the friend of forest and empowered State Government to declare any reserve forest as non- reserved and also allotted forest land for non- forest purposes. **The National Forest Policy 1988** talked more on environmental stability through the preservation of forest by replacing contractors by tribal co-operatives, gave concession to the ethnic minorities, and provided

suitable alternatives for the shifting cultivators. But in practice the official draft did not follow the letter and spirit made in the resolution.

FOREST RESOURCES ADMINISTRATION IN ODISHA

In Odisha originally the forest administration was a part of Bihar and Bengal Government. During the formation of a separate State of Odisha a **Forest Department came into existence in 1936**. The villagers by paying *nistar cess* were enjoying rights over the collection of MFPs in 'B' class forests only. With the new classification of forest, access of tribal people into the forest started declining and their alienation from forest resources started. All the forest policies promulgated during both pre-and-post-independent periods have been directly implemented in the State. As a result of this, the tribal communities particularly the vulnerable ones were steadily isolated and segregated from appropriating the forest resources: the only source of their livelihood. The traditional rights of these communities over the time have been transferred to concessions and controlled under various State policies. The implementation of these policies during different plan periods has drastically affected the economic, social and cultural life of the tribal people. This also directly affected the livelihood interests of many Vulnerable Communities (popularly covered under Particularly Vulnerable Tribal Groups) who started migrating to outside. The continuation of this migration of these vulnerable tribal communities to outside was also observed for a couple of years even in post-independent period. Much before the introduction of Joint Forest Management in the State it was seen that around 3 to 10 percent of all reserved and protected forest lands of Odisha were under informal Community Forest Management (Ghosh, 1981). The tribal people had very intensive and intimate relationship with forest where local people were considered as equal partner (Banarjee, 1989). Prior to the Introduction of **Joint Forest Management (JFM) in Odisha during 1990** it was found that in hill top land areas the tribal people of Odisha seen to have shown remarkable performance in managing their land and forest resources.

From time immemorial forest produces have been playing a major role in the life and livelihood of the tribal people. Various studies carried out in the tribal societies have found out that around 60.percent of the procured forest produces are consumed by the forest dwellers (Malhotra et al 1992; Gupta and Guleria, 1982). Roy Burman Committee (1982) has pointed out the commercial viability of around 300 NTFPs, explained the close linkages between the tribals and forest; and the potential of prosperity of different traders to trade forest produces at various levels. The study of Mallik and Panigrahi (1998) on the NTFP Collection; Benefits and Management in Odisha with special reference to two PTGs of Juangas and Bhunyas of Odisha have observed that among the Bhunyas almost 32.8 percent NTFPs are consumed by themselves, while it is 45.0 per cent among the Juangas. The study has also found out that around 28.98 percent of the total annual income of the Bhunyas is raised from the sale of different forest produces, while it is 29.18 percent among the Juangs who are largely depending on it. NTFP have been used by these communities for various purposes like construction of houses, preparation of household articles, tools and implements, music instruments, food, fuel, fodder, medicine, decoration of houses, and for ritual requirements during birth, marriage and death ceremonies.

With the **73rd Amendment of Indian Constitution**, which gave power and revitalized the Panchayati Raj Institutions, Govt. of India extended this special power to the scheduled areas through the **Panchayats (Extension to the Scheduled Areas) Act (PESA) 1996**. Following this Government of Odisha has announced and formed the Odisha Panchayati Raj (Amendment) Act of 1997 and extended the Central Act 40 to the Scheduled areas of the State. Recently (2000) Government of Odisha have considered these special provisions and involved the local communities as partners in the management of degraded forests and the members of the **Vana Samrakshyan Samiti (VSS)** are entitled to share the use of forests. Considering this the Government of Odisha has handed over 70 NTFP items during 2000 to Gram Panchayats as regards its procurement and marketing at local level.

SCOPE OF FOREST RIGHT ACT (FRA) 2006

The Forest Rights Act 2006 (Thus known as FRA) recognizes and vests the forest rights and occupation in forest land by forest dwelling scheduled tribes and other traditional forest dwellers who have been residing in such forests for generations but whose rights could not be recorded. The forest rights on ancestral lands and their habitat were not adequately recognized in the consolidation of state forests during the colonial period as well as in Independent India resulting in historical injustice to the forest dwelling Scheduled Tribes. FRA addresses the long standing insecurity of tenurial and access rights of forest dwelling scheduled tribe and other traditional forest dwellers. Some of the basic and important features of “The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006” are explained below.

1. This Act may be called as “The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006;
2. (a) “Community Forest Resource” means customary common forest land within the traditional or customary boundaries of the village or seasonal use of landscape in the case of pastoral communities, including reserve forest, protected forests and protected areas such as sanctuaries and National Parks to which the community had traditional access;
- (b) “Forest Dwelling Scheduled Tribes” means the members or community of the Scheduled Tribes who primarily reside in and who depend on the forests or forest lands for bonfire livelihood needs and includes the Scheduled Tribe pastoralist communities;
- (c) “Forest Land” means land of any description falling within any forest area and includes unclassified forest, undemarcated forest, existing or deemed forests, protected forests, reserve forests, sanctuaries and national parks;
- (d) “Forest Villages” means the settlements which have been established inside the forests by the forest department or any state government for forestry operations or which are converted into forest villages through the forest reservation process and includes forest settlement villages, fixed demand holdings, all types of taungya settlements, by whatever name called, for such villages and includes lands for cultivation and uses permitted by the Government;

- (g) “Gramsabha” means a village assembly which shall consist of all adult members of a village and in case of State having no panchayats, padas, tolas and other traditional village institutions and elected village committees, with full and unrestricted participation of women;
- (h) “Habitat” includes the area comprising of the customary habitat and such other habitats in reserved forests and protected forests of primitive tribal groups and pre-agricultural communities and other dwelling Scheduled Tribes;
- (m) “Scheduled Areas” means the Scheduled Areas referred to in clause (1) of Article 244 of the constitution;
- (p) “Village” means-
 - (i) A village is referred to in clause (b) of Section 4 of the provisions of the Panchayats (Extension to the Scheduled Areas) Act, 1996; or
 - (ii) Any area referred to as a village in any state law relating to Panchayats other than the Scheduled Areas; or
 - (iii) Forest villages, old habitation or settlements and unsurveyed villages, whether notified as village or not; or
 - (iv) In the case of states where there are no Panchayats, the traditional village, by whatever name called;

The scope of FRA absolutely touches all the livelihood options of tribal area. Chapter II Section 3(1) of the FRA mentioned that:

- | Right to hold and live in the forest land under the individual or common occupation for habitation or for self cultivation for livelihood.
- | Community rights such as *nistar*, by whatever name called, including those used in erstwhile princely states, zamindari or such intermediary regimes.
- | Right of ownership, access to collect, use and dispose of minor forest produces which has been traditionally collected within or outside village boundary.
- | Other community rights of uses or entitlements such as fish and other products of water bodies, grazing and traditional seasonal resource, access of nomadic or pastoralist communities.
- | Rights including community tenures of habitat and habitation for primitive tribal groups and pre agricultural communities.
- | Right to protect, regenerate or conserve or manage any community forest resource which they have been traditionally protecting and conserving for sustainable use.
- | Rights which are recognized under any state law or laws of any Autonomous District Council or Autonomous Regional Council or which are accepted as rights of tribal under any traditional or customary law of the concerned tribes of any state.

- | Right of access to biodiversity and community rights to intellectual property and traditional knowledge related to biodiversity and cultural diversity.
- | Any other traditional right customarily enjoyed by the forest dwelling Scheduled Tribes or other traditional forest dwellers, as the case may be, which are not mentioned in clauses ‘a’ to ‘k’ but excluding the traditional right of hunting or trapping or extracting a part of the body of any species of wild animals.

So the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 recognizes all the livelihood option of the forest dwelling tribal’s, except hunting and given title over it.

STATUS OF IMPLEMENTATION OF FRA IN ODISHA:

Settlement of Individual Claims (IC)

Odisha claims to be the second best state in India as far as FRA implementation goes (after Chhattisgarh). The study attempted to analyse the data of the achievements of FRA in Odisha. The analysis is based on the data collected from the website of ST SC Development Department of Government of Odisha which was uploaded upto the period August 2011. The district wise achievements were clubbed under three broad divisions. The districts covered under fully scheduled areas include Mayurbhanja, Sundargarh, Malkangiri, Nawarangpur, Rayagada and Koraput were kept in one category. The districts clubbed under partially scheduled district include Kondhamal, Keonjhar, Gajapati, Balasore, Sambalpur, Ganjam and Kalahandi kept in another category. In addition, other 17 districts of Odisha popularly known as non-scheduled area districts kept in one category for analysis. The analysis reflect that around 99.30 per cent villages in Odisha have formed Forest Rights Committee (FRC) who have initially verified the claim forms of around 50428 individual claims for the settlement. Of the total verified claims, around 94.99 percent applications were send to Gram Sabha for further verification. A regional look

Forest Rights Committee means a committee constituted by the Gramsabha under Rule (3)- The Gram Sabha shall be convened by the Gram Panchayat and in its first meeting it shall elect from amongst its member, a committee of not less than ten but not exceeding fifteen persons as members of the Forest Rights Committee, where in at least one-third members shall be the Scheduled Tribes: provided that not less than one-third of such members shall be women.

The state Government shall constitute Sub-Divisional Level Committee with following members, namely Sub -Divisional Officer or equivalent-chairperson, Forest Officer in charge of a sub-Division- as member, three members of the block or Tehsil level Panchayats to be nominated by the District Panchayat of whom at least two shall be the scheduled Tribes preferably those who are forest dwellers, or who belong to the primitive tribal groups and where there are no scheduled Tribes, two members who are preferably other traditional forest dwellers and one shall be a woman member; or in areas covered under the sixth schedule to the Constitution, three members nominated by the Autonomous District Councilor Regional Council or other appropriate zonal level , of whom at least one shall be a woman member.; An officer of the Tribal Welfare Department in charge of the subdivision or where such officer is not available the office in-charge of the tribal affairs.

at the settlement of individual claims at Gram Sabha level shows that in fully scheduled area districts of Odisha around 85.14 per cent individual claims have been approved in the Gram Sabha, and send to Sub-Division Level Committee (SDLC) for further action, while it was only 77.48 per cent in partially scheduled area and 83.94 per cent in non-scheduled area villages of the state. As regards the average areas of land per household approved by the Gram Sabha, it was 1.73, 4.69, and 1.32 acres in fully scheduled area, partially scheduled and non-scheduled area districts respectively. On an average the Gram Sabha in the state has approved 1.64 acres of land per family and proposed to Sub Division Level Committee (SDLC) (Table no-1).

Table No.1. Implementation status of Individual Claims under FRA 2006 in the Gram Sabhas of Odisha

Sl No	Districts	No of district	Individual Claims				
			Received by district	Approved by Gram Sabha & send to SDLC	No. of families	Land in acre	Average land per family
1	Fully Scheduled area	6	193616 (100)	1,64,855 (85.14)	1,64,855	2,85,486.91	1.73
2	Partially Scheduled area	7	2,02,107 (100)	156594 (77.48)	156,594	2,65,587.02	4.69
3	Non Scheduled area	17	83267 (100)	69897 (83.94)	69,894	92647.87	1.32
	G. Total	30	4,78,990(100)	2,91,346 (60.82)	3,91,343	6,43,721.18	1.64

Source:- SC & ST dept. Govt. of Odisha, August 2011

With respect to the disposal of the individual claims at SDLC level the data indicate that around 76.86 per cent claims have been settled against 1,26,410 individual families in fully scheduled area districts, while it was 92.34 per cent and 34.94 per cent in non-scheduled area districts respectively. The average land area allotted per each household has reduced in all the regions when compared with the extent of land allotted by the Gram Sabha. The details of achievements can be viewed from Table No-2. In some places people have claimed for forest land along with revenue land, so during verification the extent of revenue land excluded from the claimed land. Without proper measurement people claimed for the land, but after measurement in many cases the land area was reduced. Govt. has not taken into consideration of the disputed land and allotted without their settlement, as a result, those lands were delisted afterwards. It is also observed that the number of claim forms forwarded by Gramsabha was not fully approved by SDLC due to the lack of proper evidences attached with the claim forms, and rejection of the claim forms of Other Traditional Forest Dwellers due to the want of evidences for their settlement for three generations.

Table No-2. Implementation status of FRA 2006 at Sub Divisional Level Committee (SDLC) in Odisha

Sl No	Districts	Individual Claims				
		Received by SDLC	SDLC sent to DLC	No. of families	Total area (Area in acre)	Average land per family
01	Fully Scheduled area	1,64,855 (100)	1,26,710 (76.86)	1,26,410	2,27,492.87	1.79
02	Partially Scheduled area	1,56,594 (100)	1,44,605 (92.34)	1,44,605	2,23,105.14	1.54
03	Non Scheduled area	69,897	30714 (100)	30714 (34.94)	39,725.47	1.29
	G.Total	2,91,346	3,02,029	3,01,729	4,90,323.48	1.62

Source:- SC & ST dept. Govt. of Odisha, August 2011

Settlement of individual claims at district level was analysed. The data indicate that on an average 97.59 per cent individual claims have been settled at district level, where as allocation of average land per family varies from 1.78 acres in case of fully scheduled area to 1.36 acres in non-scheduled area districts (Table No-3)

Table No-3. Implementation status of FRA 2006 at District Level Committee (DLC) in Odisha

Sl No	Districts	Individual Claims				
		Received from SDLC	Approved by DLCC	No. of families	Total area	Average land per family
1	Fully Scheduled districts	1,26,710 (100)	1,22,733 (96.86)	1,22,733	2,18,537.91	1.78
2	Partially Scheduled districts	1,44,605 (100)	1,43,634 (99.32)	1,43727	2,21,896.08	1.54
3	Non Scheduled districts	30714 (100)	28,403 (92.47)	29,438	40,304.20	1.36
	G.Total	3,02,029 (100)	2,94,770 (97.59)	2,95,898	4,80,738.19	1.62

Source:- SC & ST dept. Govt. of Odisha, August 2011

The state Government shall constitute District Level Committee (DLC) with following members, namely District Collector or Deputy Commissioner as chairperson, concerned Divisional Forest Officer or concerned Deputy Conservator of Forest as member, three members of the District Panchayats to be nominated by the District Panchayat of whom at least two shall be the Scheduled Tribes preferably those who are forest dwellers, or who belong to the primitive tribal groups and where there are no Scheduled Tribes, two members who are preferably other traditional forest dwellers and one shall be a woman member; or in areas covered under the sixth schedule of the Constitution, three members nominated by the Autonomous District Council or Regional Council, of whom at least one shall be a woman member; An officer of the Tribal welfare Department in charge of the district or where such officer is not available the office in-charge of the tribal affairs.

A look into the gap between total cases approved and finally distributed with title by DLC shows that 27.68 per cent cases have been rejected by the District Level Committee (DLC) when compared with the approved cases by the Gram Sabha. This gap tunes to the extent of 60.43 per cent in case of non-scheduled districts, followed by fully scheduled districts (28.81%) (Table No-4).

Table No-4. Distribution of land title under FRA 2006 in Odisha (Land in Ac)

Sl No	Districts	Individual Claims				Average land per title	
		Approved by Gramsabha		Title distributed by DLC			
		No. of claims	area	Title	area		
1	Fully Scheduled districts	164855 (100)	2,85,486.91	1,17,365 (71.19)	2,04,625.85	1.74	
2	Partially Scheduled districts	156594 (100)	92,647.87	1,38,002 (88.12)	2,18,833.64	1.58	
3	Non Scheduled districts	69897 (100)	2,65,587.02	27662 (39.57)	37,692.81	1.36	
	G.Total	3,91,346 (100)	6,43,721.18	2,83,029 (72.32)	4,61,152.3	1.62	

Source:- SC & ST dept. Govt. of Odisha, August 2011

With respect to the settlement of individual rights among the PTGs of Odisha, the data show that such a settlement process has been carried out among all the 13 PTGs of the state, which covers 21,974 households. Among the PTGs of Odisha FRC had received 20309 claims and 18644 claims were verified and send to Gram Sabha, of which 17,511 cases were approved and send to SDLC. SDLC approved 16909 cases and distributed the title of individual rights which covered a total land area of 26,239 acre with an average land area distribution to the tune of 1.56 acre per individual family.

SETTLEMENT OF COMMUNITY CLAIMS (CC)

Provision of handing over of community rights under FRA seems to have special importance when one looks at the life and living of the tribal communities and more particularly the primitive tribes of the State. For the purpose the analysis is made with respect to the settlement of such claims at various levels of Implementation of the Act. The data reflect that on an average 59.74 per cent community claims have been approved by the Gram Sabha, which was highest (93.14%) in fully scheduled area, followed by non-scheduled area (71.53%). With respect to the land settled under community claim, in one village it was observed that maximum land to the extent of 91.14 acres was allotted in a village covered under fully scheduled districts, followed by partially scheduled districts (59.62 acres) and non-scheduled districts (42.66 acres). Similarly, on an average 58 families per one community claim in a village have been provided with rights in fully scheduled districts, while it was 48 families in partially scheduled districts and 14 in non-scheduled districts. This shows that the importance of community claims in the villages of non-scheduled districts are not important and community claim settlements are quite important in case of fully scheduled area districts (Table No-5).

Table No-5. Implementation of Community Claims under FRA 2006 at Gram Sabha level in Odisha (Land in Ac)

Sl No	Districts	Community Claims				
		No. of claims verified by	Received by Gram Sabha	Approved by Gram Sabha	Total Land area **	Total families ***
1	Fully Scheduled districts	704 (100)	350 (49.71)	326 (93.14)	29713 (91.14)	18842 (58)
2	Partially Scheduled districts	1590 (100)	1491 (93.77)	727 (48.75)	43351 (59.62)	34587 (48)
3	Non Scheduled districts	397 (100)	397 (100)	284 (71.53)	12118 (42.66)	3863 (14)
	G.Total	2691 (100)	2238 (83.16)	1337 (59.74)	85182 (63.71)	57292 (43)

Source:- SC & ST dept. Govt. of Odisha, August 2011

* percentage of approval by Gramsabha is taken out of the claims received by them from FRC

** Figures in the bracket refers to the average extent of lan allotted per community claim settlement

*** Figures in the bracket refers to the average number of families per community claim

The data with respect to the settlement of community claims at SDLC level show that a total of 68.36 per cent cases have been settled by SDLC and send to DLC. Highest numbers of community claim cases have been settled in fully scheduled districts, which is followed by partially scheduled districts (63.49%), and non- scheduled districts (24.64%). The data also analysed on the average families and land areas settled per community claim which shows that on an average in Odisha 56 families have been provided with 78 acres of land which have been settled under one community claim at SDLC level (Table No-6). Settlement of community claims at DLC shows that around 91.46 per cent community claims have been approved of which 89.71 per cent cases have been provided with land titles. When one compared the gap between the title distributed by DLC and such cases approved by the Gram Sabhas, one finds a gap of 43.91 per cent community claims covering 30,856 acres of land between the two stages of land settlement.

Table No-6. Implementation of Community Claims under FRA 2006 at SDLC level in Odisha (Area in Ac)

Sl No	Districts	Community Claims			
		Received by SDLC	Approved by SDLC and sent to DLC	No. of Families *	Total Land Area **
1	Fully Scheduled districts	326 (100)	237 (72.69)	15540 (66)	28266 (119)
2	Partially Scheduled districts	727 (100)	607 (63.49)	33,846 (56)	42701 (70)
3	Non Scheduled districts	284 (100)	70 (24.64)	1521 (22)	658 (94)
	G.Total	1337 (100)	914 (68.36)	50907 (56)	71625 (78)

Source:- SC & ST dept. Govt. of Odisha, August 2011

*Figures in the bracket refers to the average number of families per community claim

**Figures in the bracket refers to the average extent of land allotted per community claim

The paper also analysed the types of land settled under community claim settlement. The data in this regard shows that around 71.73 per cent land settled under community land was reported Revenue Forest type, while only 10.70 per cent were Reserve Forest type. In fully scheduled areas revenue forest accounted 54.72 per cent, while in partially scheduled areas revenue forest accounted 83.84 per cent and in non-scheduled areas revenue forest shared 79.23 per cent. Reserve forest shared only 10.70 per cent of the total settled community land in Odisha till August 2011. This shows that revenue forest as a major source for settling land under FRA is very important. The status of individual claims settlement among different Particularly Vulnerable Tribal Groups (PTGs) of Odisha shows that maximum extent of land have been settled is reported to the extent of 2.95 acres per family belonging to the Chuktia Bhunja tribe, followed by the Kandhas (2.53%), and the Bondos (2.48%). Paudi Bhuiyans of Pallahara region (0.41 acres) and Barkote region have been settled with lowest of land, followed by the Lodhas of Suliapada (0.75 acres).

MAJOR CHALLENGES FACED BY DIFFERENT STAKEHOLDERS WHILE IMPLEMENTING FRA IN THE STATE

The state has organized awareness programmes by translating the FRA in 10 adivasi languages and distributed them among different stakeholders. The state has approved over 2 lakh titles (for individual land rights); paid special attention to the rights of PTGs (related to individual land claims); 'demanded' (sending back for re-examination) rather than rejecting claims not found tenable in the first round; issued timely circulars to clarify various points of confusion or differential interpretations of the Act. In order to facilitate these processes the state has conducted fortnightly video teleconferencing with all districts to assess progress under the Act. In Odisha the state machinery engaged in the implementation of FRA was found more progressive than in most other states of India. Some of the practices would be good to document as 'best practices' or innovations that other states could benefit from. Some of the key issues encountered by different stakeholders at various levels are as follow.

Settlement of Individual Forest Rights (IFR): Odisha has done much more than most other states in recognizing and titling individual forest land rights (with over 2 lakh having been accepted or titled). However, there are also widespread complaints. Some of them are as follows: (i) Vaguely worded titles, without clear or any boundaries, size, etc, which could lead to conflicts or exclusions later; (ii) Land to the extent of less than 4 acres had been claimed (in some cases less than a tenth of an acre), being recognized without any explanation; (iii) Rejection of claims without any explanation or notice to the claimants, denying them the right of appeal; (iv) Non-acceptance of claims submitted by women.

Settlement of Community Forest Rights (CFR): Odisha is ahead of most other states in encouraging and accepting community rights of various types been accepted or titled, but Section 3(2) being passed off as CFRs, is not popularly encouraged. However, compared to IFRs, and in an absolute sense, there is widespread neglect, delays, or denial of CFRs. The following problems are commonly cited by communities or officials while settling the community claims: (i) Lack of clarity on the concept of CFRs can be claimed;

(ii) confusion on to whom CFRs are to be given to in the case of villages that have mixed population of both eligible claimants and ineligible residents; (iii) Titles for CFRs being given in the names of some individuals (at times, only the FRC members); (iv) Imposition of JFM/VSS boundaries on the CFR claims, which may or may not match the boundaries claimed by the community; (v) Confusion on the extent to which a customary boundary could be claimed in the case of grazing grounds that may be very far from the village.

Other Traditional Forest Dwellers (OTFD): As in other states, OTFDs in Odisha are facing a serious problem to get evidence of their occupation/dependence on the land for 75 years (especially given that the state itself was formed in 1936). There is little proactive move by the district administration to find such evidence, even where it may exist in old working plans, gazetteers, settlement records, princely state or zamindari records, etc. Additionally there are many claimants that are not three generations old and are requesting that the time limit be reduced.

Particularly Vulnerable Tribal Groups: The state government has given special focus to make the FRA available to PTGs, and has issued titles to 14,000 against 18,000 claims filed (of the total 19,000 PTG households in Odisha). However, it is observed that not much has been done for the CFR and 'habitat' rights of PTGs. In some cases where CFRs have been given, they are determined by government agencies rather than by the community itself. In several geographical locations (e.g. Similipal) where PTGs have been resettled and in some cases they are nomadic they are forcibly settled into permanent villages. In such situations their traditional territories may no longer be accessible to them. Role of civil society particularly Vasundhara a NGOs in Odisha helped few PTGs to begin the process of claiming their customary/traditional 'habitat' boundary to settle the community claims. This is evident in case of Juang and the Bhuiyan PTGs in Keonjhar district and the Chuktia-Bhunjias of Nuapada district. Still confusion persists with respect to the meaning and scope of 'habitat rights', especially in situations where the tribe is no longer actually using the entire traditional territory, or where other communities have settled in it or 'development' projects have come up inside such territories.

Joint Forest Management (JFM) and FRA: Across the state there seems to be an imposition of the JFM model on the FRA process. Communities are being told, or being given, boundaries that have been fixed under JFM. These may or may not match the boundaries that the community may be claiming or the boundary of the self-initiated community forest protection process that is widespread in Odisha. Secondly, it is told that the Van Suraksha Samitis, formed under government programmes, would continue to operate to manage the CFRs. This denies the chance of the Gram Sabha (in Odisha's case, the Palli Sabha) to make its own institution under Section 5 and Rule 4e. Till recently a readymade format (in place of Form B attached to the FR Rules) was being given to people to fill in, who made communities accept conditions that are not in the FR Act/Rules, and accept the JFM/VSS model. Officials also have pointed out that Palli Sabhas are at times dominated by people who are not truly dependent on the forests and may not take into account the needs of hamlets where the VSS have been formed because only those hamlets are dependent on the forest. This was confirmed by NGOs working on community forestry in Odisha as being a genuine problem.

Forest Rights Committee (FRCs) and Gram Sabhas: FRCs were formed without due process, and many times the members representing in FRC were not necessarily representative of those most dependent on the forest. There was also a doubt on whether the required Gram Sabha (Palli Sabha) process, e.g. of 2/3rds quorum have been followed in all the places. Officials have alleged that many claims were collected by NGOs and passed onto the SDLC. The co-ordination between the NGO and the villagers some time were not based on ground realities. The villagers are not involved in various stages of FRC formation.

Sub-Division Level Committee (SDLCs) and District Level Committee (DLCs): Agencies set up for implementing the FRA are functioning across the state. However, arbitrariness in accepting claims, delays in verification, lack of transparency (with decisions and records not being publicly available), access to villagers, poor coordination amongst various departments (e.g. in carrying out field verifications or harmonizing records), and severe shortage of staff and their capacity to deliver the services to carry out the mammoth exercise under FRA is being questioned many times.

Role of Civil Society: NGOs help in sensitization, and have been a means to facilitate evidence gathering and also in monitoring the processes in some places without much administrative recognition. However, the role of Civil Society in various stages of implementation of FRA in Odisha is not visible much. It is even less when one compares their role in implementing the PESA in Odisha. Inadequate financial support to CBOs in this respect has restricted their role and involvement in the implementation of FRA in Odisha.

PLANTATIONS AND MINING LEASES ON LANDS HAVING CLAIMS/RIGHTS

It is a very widespread complaint in Koraput district that lands that were under occupation or being used for community needs, have been planted under JBIC, CAMPA, or other development projects. Again some of these lands have also been allocated for mining (e.g. Mahanagar Coal Ltd in Sundergarh district), resettlement of jawans (e.g. Deogarh district), etc. Therefore, in some villages the villagers have been denied the opportunity to claim community rights.

STATUS OF FOREST AND UNSURVEYED VILLAGES

State officials were not able to give the status of unsurveyed villages' with respect to number of forest villages, who justify by saying that the process of their conversion was underway through procedures under the state's revenue laws. Therefore, the issue of providing land under FRA for ineligible residents in such villages is non-materialised. As per the Act the households who have settled in the period of pre-1980 will be regularized under Forest Conservation Act. The unsurveyed villages in Odisha are also quite many in which land records and maps do not exist. In such situations the process of claims by the villagers under FRA is taking longer.

Declaration of Critical Wildlife Habitats (CWHs): Odisha is apparently the first state to send CWH proposals to the Central Government. So far three CHCs like Bhitarkanika, Nalabana, and Chandaka have been proposed. The process of identification has been initiated in all other Protected Areas (PAs). There is however confusion on whether CWHs have to be notified over Critical Tribal Habitat (CTHs) also. Declaration of CWHs has minimised the scope of implementing FRA and appropriating the benefits of the Act.

Undulating and hill type land structure: An issue peculiar to Odisha is that of 'pahar kisam', or 'hill type', lands that have forest on them are revenue lands by nature. Claims over these lands by the villagers under FRA have been turned down as these lands are not legally forest land (the state government has indicated however that these claims should be treated under revenue law procedures). However, if the interpretation of the term 'forest' under FRA includes area that is physically/biologically forest, such lands should be eligible for claims under FRA.

The problem of Inter-state claims: An interesting question that came in the context of a case in Sundergarh district is that some of the households cultivate forest land across the state boundary in Jharkhand have made a claim over the land in Jharkhand. In such cases the FRA is silent to settle such interstate land settlement. Since Odisha is bordering to many states like Jharkhand, Chhattisgarh, West Bengal and Andhra Pradesh having large areas of inter-state border region, this issue is to be taken seriously.

FRA and development projects: The problem of displacement is a chronic issue in Odisha. Many displaced have not been resettled properly. A number of cases of previous displacement were brought up, where those displaced have had to resettle on forest land (e.g. in the case of Rourkela steel plant, Sundergarh district). In the case of non-STs who have resettled themselves in the forest areas of Sundargarh are not eligible to get the benefit under FRA since this is all less than 75 years ago, which recognizes for Other Traditional Forest Dwellers. Recently Odisha has issued a circular requiring the completion of FRA procedures and Gram Sabha consent for diversion of forest land for development projects, following up on MoEF's July 2009 circular to this effect. There is clearly a major clash between the state's 'development' programmes in the form of widespread mining, industries, ports, etc and the continuation of forests and forest rights of the people.

Conclusion

From the above discussion one can say that the ethno-ecologies of the natives are being challenged, transformed, and replaced. Over the time migration, media and industry spread people, institutions, values, and technologies. This is also observed that imported values with respect to natural resources management often conflict with native values. In the context of population growth, migration, commercial expansion, national and international incentives, ethno-ecological systems that have preserved local and regional environments for centuries in many contexts are adversely affected.

With the changing approaches to development anthropologists are to make use of various modern methodologies like satellites and other remote sensing devices, including Geographic Information Systems (GIS) and a host of new possibilities for anthropological and ecological research particularly in the areas of land use patterns and changes. Anthropologists with the changing nature of global-local equations have to think globally and act locally. As new environments emerge and grow in importance, new types of ecological analysis will be needed to understand the interrelations that human groups maintain with nature and natural resources.

The establishment of new environmental problems that arises out of such situations result in new problem of environment that can and are to be studied ethnographically popularly dealt by anthropology of environmentalism. Anthropologist's study of ecology raises various problems faced by the natives. The combination of ecological and ethnographic approaches has expanded anthropological research resulting in new possibilities of contributing to solve the larger problems of the natives. This is an important issue with regards to the indigenous people since the paradigm shift in ecological anthropology incorporates new trends, priorities and audiences from both applied and advocacy anthropological point of view.

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Cooperatives, Welfare Societies and Self-Help Group for promoting Handicraft Industry and Role of Sikkimese Women

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ABSTRACT

Indeed, importance of cooperatives and welfare societies involved in handicraft productions as well as its selling have also been no doubt significant in Sikkim and that play important contributing role in spreading as well as imparting handicrafts training, providing opportunities for self-help and earning i.e. employment, development of handicrafts, continuity of age old traditions, and local market economy etc. Moreover, women play decisive contributing role in the functioning of these cooperatives. This can be envisaged from the preceding detailed delineation of functioning of various cooperatives vis-a-vis the role of women in these cooperatives, welfare societies, etc.. In fact, this article is based on the information drawn from the facts collected during the field survey in Sikkim.

The various cooperatives including exclusive women cooperatives , development agency, welfare societies , self help group etc. in terms of their role in imparting handicraft training , production of various handicraft items and its selling including marketing as well as their background have been delineated in the followings . Besides , the role of women in these cooperatives has also been discussed elaborately.

M/S Dzongri Enterprises

It is located in New Market area of Gangtok town, run by a Bhutia woman namely Mrs. Pema Chomu along with her husband. This enterprise was originally a privately owned knitting Center for woolen garments. But in the year 2002 it closed down its production and reopened as ready-made modern garments manufacturer and used to produce modern garments and supply its products to various private enterprises dealing with ready-made garments. All workers at present are men. Before that, all the workers were women .

S.R.D.A. (Sikkim Rural Development Agency)

One S.R.D.A. showroom at Gangtok located in the New Market area was visited. In this showroom, one Nepali saleswoman namely Sukhmaya Rai used to look after the selling of various handicrafts like, Lepcha Bag, Lepcha Shawl, wall hangings like Lucky signs,

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woolen sweaters, Thangka paintings, different types of wall decoration items e.g. flowers, Buddhists God / animals, paintings of human beings (both men and women belonging to Lepcha , Bhutia and Nepalese communities) . This sales woman also used to do knitting of woolen sweater by Knitting machine.

Khadi Gram Udyog Board

One showroom of Khadi Gram Udyog Board in Super Market area is run by one woman showroom in-charge, and one woman sales assistant. Various Kahdi materials like towel, bed cover, kurta, bag etc. are sold here.

Denzong Women Handloom Cooperative Society Ltd. It is located in the Super Market area in Gangtok. This society is registered under the Sikkim Government Cooperative Society. The secretary of this cooperative society is one Bhutia woman . Apart from her, three women are also working in the society . Among them, two belong to Bhutia community and another one is Bengali . Besides, the daughter-in- law of Secretary also works here voluntarily and maintains all sorts of bank transaction and used to advise the designs of woolen sweaters. This society mainly deals with various types of woolen sweaters production and its selling in the market. The price range of woolen sweaters are varied from Rs. 150/- to Rs. 600/- depending on the size and quality of wools.

Lotus Associates Pvt. Limited

This enterprise is located in the village known as Bagthang about 5 kilometers away from Gangtok towards Mangan (North Sikkim). This is actually a German Angora Rabbit Firm and Breeding Center run by one Nepali namely Shri M. Pradhan. Shri Pradhan after getting training in Kulu of Himachal Pradesh established this firm in the year of 1997. Here , mainly German rabbits are bred for rabbit wool production. There are also such centers in North, West and South Sikkim . In case of North Sikkim, such center is run by Government , and rest are run privately . From Bagthang center the rabbit wools are supplied to Kathmandu in Nepal as well as for the use of the local people.

Carpet Production Centers in Swastik area

Carpet Production Centers is located in Swastik area about 3 kilometers away from Gangtok. Earlier there was about 15 carpet production centers, where Tibetan, Bhutia, Lepcha and Nepali women were working as carpet weavers . But these centers were not government registered and doing carpet production and its selling on their own i.e. privately. All these centers are now closed due to problems of sufficient capital for investment as well as problems of selling. As they all had to import woolen yarns from Punjab and the price of woolen yarns had has been increased day by day. It was difficult for them to purchase the woolen yams from Punjab. Moreover, selling of their carpets was not regular. Initially, some offices and others used to purchase carpets from them, but now they are purchasing carpets from GICI with cheaper cost than that of their price. Due to which their selling of carpets came down gradually day by day. That is why, it was difficult for them to continue such production and ultimately they had to stop production. As they are either illiterate or very lowly educated , and due to lack of their knowledge about how to apply for Government monetary assistance in the form of household industry loan, they are very much afraid to apply for loan and never applied

for the same. Moreover, they have the belief that the Government used to provide loan only to large scale enterprises/cooperatives, and the small scale enterprises/small carpet centers would not get any loan assistance. It articulates to the fact, that they are completely unaware about the procedures of applying the loan as well as about the Government's assistance for small scale/household industries development programmes. Resultantly, all the workers now either have opened wine shop, grocery shops, petty restaurants etc. at Swastic area, or doing only household work. Whenever enquired about that why they did not form a cooperative, then they opined that the Government is interested only to those cottage industries and training centers run by Government.

Carpet (Den) Weaving Training Center

Carpet (Den) Weaving Training Center is located in Ranipool about 11 kilometers away from Gangtok. This training center was started since 27th November, 2001 under the scheme of Swarna Jayanti Shahari Rojgar Yojana. There are now 15 women trainees particularly for a period of one year training session (November, 2001 to October 2002). Of which 8 trainees belong to Bhutia community, 1 Lepcha and 6 Nepali women . The teacher of that center is a Nepali women, namely Mrs. Vandana Biswakarma. Each trainees gets Rs. 250/- per month as stipend. After completion of training each of the trainees will get completion certificate and can get job in any cooperatives, training institutes, Government showrooms and other private enterprises related with handicraft productions and selling.

Srishti Samity

It is a small scale industry located in Sarmasa-Jalipool area under Ranipool post office, which is about 13 km. away from Gangtok towards Pakyoung. This Samity was established under the small scale industry scheme of NABAD, Government of India. Apart from imparting training this Samity produces and also sells its various jute products like, table mats, foot mats, carpets, telephone mats, sofa seat covers, chair cover, wall hangings and chains for decorative purposes, etc. In this Samity, 26 women were already trained. Among them 3 are Bhutia women, 22 Nepali women, and 1 Lepcha women. The training was imparted by one Bengali man as a instructor who came from Cooch Behar of West Bengal. At present, out of 26 already trained woman, 12 of them have been running this Samity together as a Private Cooperative dealing with production and selling of various type of jute products.

The details of price according to size of their products are given below.

Product item	Size	Price in Rs.
Foot mat	24 inches/18 inches	60.00
Telephone mat	11 inches/11 inches	30.00
Sofa mat (big)	48 inches/18 inches	600.00
Sofa mat (small)	18 inches/24 inches	600.00
Carpet (designed)	36 inches/60 inches	700.00
Carpet (plain)	36 inches /60 inches	400.00

Source : Field Survey , 2002-2005.

The member including Secretary do not get any salary from this Samity. While, they in respect of the Samity normally take part in various trade fairs (me!a)/exhibitions (pradarshani) and sell its products . And whatever earn after selling their products in various trade fairs (mela)/exhibitions (pradarshani) etc. , they used to divide the entire cash into two equal parts. One part of the cash used to be kept for purchasing raw materials and for other necessary requirements for running the Samity, and the another part of the money they used to distribute among themselves equally.

Educated Unemployed Women's Welfare Cooperatives Society Ltd This cooperative is located in Nop Gao area of Pakyoung about 30 km. away from Gangtok This cooperative runs as a training center dealing with tailoring, cutting, stitching of various dress materials and garments including fabric painting, and also knitting of various woolen garments. All the trainees of this cooperative are women. Of which 33 are Nepalese, 4 Lepchas, 1 Bhutia , and 4 others. The training is imparted by one woman instructor namely Mrs. Pabitra Sharma who belong to Nepali community. AH the trainees of this cooperatives has to pay Rs.150/- per month as a training fee. The training is imparted for a duration of two hours for each trainee in three shifts per day for 6 days in a week. An woman can be a member of this cooperative only after completion of her training in this cooperative. Indeed, the trainees and also the members of this cooperative used to collect orders for supplying their products privately. Besides, the members of this cooperative also participate in trade fairs/exhibition for selling their products. For instance, they participated in one exhibition held during April 26 to May 6 in Gangtok town. The details of the price according to size and quality is given below :

Product item	Price in Rs.
Chow Bandhi (Nepali traditional dress)	200.00
Dawra (upper part of traditional dress for Nepali boy)	200.00
Surwale (trouser or lower part of traditional dress for Nepali boy)	200.00
Shawl	250.00
Blouse	30.00
Frock	40.00
School dress (full set)	60.00
School dress (any part)	40.00
Salwar-Kamiz	60.00
Wall hanging (big size fabric paintings on canvas)	15000.00
Wall hanging (small size fabric paintings on canvas)	5000.00
Table -cloth (fabric paints, single shed)	150.00
Table -cloth (fabric paints, double shed)	200.00
Fabric paints on frock, kurta, night dress etc.	20.00 to 40.00

Source : Field Survey , 2002-2005.

Nayuma Women Cooperative Society Limited is exclusively run by women at Tadong of Gangtok. This cooperative was established in the year 2001 due to initiatives taken by Mrs. Chamling, the wife of present chief Minister of Sikkim. Indeed, after taking training by her at Delhi in the field of operational use of modern equipments for sewing , she aspired to impart her knowledge among the educated unemployed women in Sikkim through this cooperative. The reason behind has been that after training in this cooperative some women can earn as well as to introduce modern equipments/machines like computerized sewing machines, computer etc. among the women of Sikkim. This would obviously help the women to get themselves empowered financially to some extent. Thus, it would have contribution in reducing unemployment among educated women to some extent.

After establishing Nayuma Women Cooperative , and with the initiative taken by Mrs. Chamling the announcement through Radio and TV was made for interested women to join in the Cooperative. Besides, with help of MP and MLAs meetings were arranged in their constituencies for letting the women know about this Cooperative as well as to create interest among them for training on handicrafts . Thereafter, some of the educated women were selected through formal procedures. The educational level of those selected women were in between Class VIII to Graduate.

First training of this Cooperative started in the month of April, 2001 . The training period was six months and the total number of first batch of trainees was 32 . The admission fee of each trainee was Rs. 500/- . Moreover, each trainee had to purchase shares of this Cooperative for which they deposited an amount of Rs. 5,000/- . Thus an amount of Rs. 1,50, 000/- fund of Cooperative was raised. Which was later deposited to Sikkim State Cooperative Bank (SISCO) under fixed deposit scheme for getting loan . On the basis of that fixed deposit amount, the SISCO Bank sanctioned an amount of Rs. 50 lakh loan for the Cooperative. All formal procedures behind was done by Department of Cooperative, Government of Sikkim. Of the total loan amount, 80% was subsidy provided by Department of Cooperative, Government of Sikkim, and rest 20% had to be repaid by this Cooperative. Indeed, as per condition an amount of Rs. 2,80,000/- had to be repaid per year. Of which 20% i.e. Rs. 56,000/- had to be repaid by Nayuma Women Cooperative yearly. And till September 2002, this cooperative already repaid an amount of Rs. 1 lakh. It shows that this Cooperative has also been earning .

After this Cooperative started functioning on its own, Mrs. Chamling handed over the charge to its members. Interestingly all the first batch trainees (32 women) became the members of this Cooperative. At present, this Cooperative has now its own permanent building at Amdogoli, Tadong, Gangtok. Apart from its main center at Amdogoli , there are other three centers. Of which one is located at Namchi in South Sikkim, one at Mangan in North Sikkim, and another one at Geyzing in West Sikkim. Indeed , 2nd training in its main center at Amdogoli was started on 10th May, 2002, and the number of total trainees was 55. The training was completed by October, 2002. Besides, in its other three centers the training was also started since 2002. In Mangan center the training was started on 15th May, 2002, in Namchi center on 25th May, 2002, and in Geyzing center on 20th May, 2002. At present each of the trainees of this Cooperative used to get Rs. 450/- as

stipend per month from the fund of State Rural Development Agency (SRDA) under Government of Sikkim.

The entire six months training is divided into two parts i.e. the first and second year. Though each trainee can learn any course of the training according to her choice. But the scheduled courses are on Tailoring , cutting , stitching , hamming, varieties of embroidery, work (both manual and machine techniques), lamp-shed technique, making of Lepcha and Bhutia bags, pillow and cushion covers etc. Taking the staff position of this cooperative, at present it is having one President (Smt. Sheela Rai by name, she is higher secondary passed), and one Secretary (Smt. Arti Rai by name, she is a graduate). Besides , there is also one accountant. Moreover each center is having one center - in - charge , and one Tailoring Master. All of them are getting monthly consolidated salary from this Cooperative, and their salaries range from Rs. 1,200/- to Rs. 5,000/- according to position.

Presently, Nayuma Women Cooperative is having the following modern equipments for training of women workers.

- i) Two computers purchased from Delhi.
- ii) Ten computerized sewing machines known as Asia Pacific Fashion Machine purchased from Delhi. It is used for different embroidery work with varieties of designs done with the help of computer.
- iii) Twenty sewing hand machines given by Social Welfare Department, Government of Sikkim.
- iv) Five puff machines which are purchased from Delhi and used for putting button, and doing varieties of designs like zigzag lines, hamming, comb-like design etc.

Interestingly, after completion of the training, each trainee can work as daily paid worker. The details of rate according to item is shown in the preceding page.

Cutting Rate for the daily paid worker

Item		Rate in Rs.
Cushion both side cutting		10.00 (per set)
Shirt cutting		5.00
Pant cutting		4.00
Half shirt cutting		2.00
Full shirt cutting		3.00
Tunic without plate		2.00
Salwar suit cutting		10.00
Napkin cutting		1.00
Bed-sheet with pillow cover cutting		9.00
Lamp-shed fitting	Big Small	20.00 10.00

Source : Field Survey , 2002-2005.

Stitching Rate for the daily paid worker

Item	Rate in Rs.
Cushion cover stitching with tassels	10.00
Shirt stitching	20.00
Panf stitching	15.00
Half shirt stitching	10.00
Full shirt stitching	12.00
Tunic without plate	10.00
Salwar suit stitching	40.00
Lamp-shed	40.00
Napkin hamming	1.00

Source : Field Survey , 2002-2005.

Making charge in Rs. taken by Nayuma Women Cooperative

Item		Rate in Rs.
School dress stitching		25.00/35.00
Emblem of Police (each)		30.00
Bottom flower (ail types)		35.00/45.00
Bhutia brochet bag (purse made in brochet cloth according to size)		15.00 to 75.00
Lepcha bag (according to size)		15.00 to 150.00
Machine embroidery (according to duration of entire preparation)	For first minute Rest each minute	5.00 1.00

Source : Field Survey , 2002-2005.

Selling price of various products item of Nayuma Women Cooperative

Item		Rate in Rs.
Salwar suit		250.00 to 700.00
Choubandhi Choli (Nepali dress)		150.00
Kurta (General)		150.00
Night Gown		250.00
Nightly		150.00
Computer design (each)		200.00

Item		Rate in Rs.
Lamp-shed	Small	150.00
	Middle	200.00
	Big	300.00
Pillow cover set (depends upon material and design)		90.00 to 200.00
Bed sheet / bedcover with embroidery		250.00/300.00
Cushion cover set		350.00 to 700.00
Hand embroidery on salwar suit		200.00
Cardomom bag(made of small sized white cloth) according to size		30.00,40.00, 50.00
Different types of Bhutia purse (gents and ladies)		15.00 to 75.00

Source : Field Survey , 2002-2005.

Various necessary raw materials are used to be purchased from Siliguri and Delhi as per availability. This Cooperative normally gets order of work of various items particularly from number of government departments like Police under Home department, Forest, Zilla Panchayat, CM's and other Minister's residences etc. The Cooperative also advertises its various products through local TV channel. Besides, the common people also place order for making different products as per their requirement. Moreover, people also can purchase various product items directly as per their choice from its showroom located in the Supermarket of Gangtok town. Apart from this, the Cooperative also used to take part in Exhibition, Trade Fair etc. for selling its products as well as for advertisement too. In the month of January 2003, it was reported that this Cooperative got order from Department of Rural Development, Government of Sikkim for production of 34 quills which cost Rs. 1,60,000/-.

Vijra Carpet Center

This center is a manufacturer and exporter of various handicraft items located at Super market, Gangtok . It is owned by a Tibetan Bhutia a widow woman namely Mrs. Y. Dolma Shay . She is educated up to class X, and her husband was graduate. Their parents were not having any formal educational qualification but they could sign only. Her husband was school teacher and father was businessman. She is a full-fledged business woman and her family entirely depends on the income from selling of various handicraft items of this center. In her shop various handicraft items like carpet, woolen sweater, Bhutia dress like Bokhus, and other items for women are sold. She normally bring carpet from his brother at Ravongla, South Sikkim.

Kumphenling Tibetan Multi-purpose Co-operative Society Limited

This cooperative society is located in Ravongla, South Sikkim. This was formed in the year of 1978 with the total number of 548 individual share-holders. The minimum amount of share initially was Rs. 10/- , but now it is enhanced to Rs. 50/- per share, and anyone

can purchase any number of share according to his/her financial ability. This cooperative society is registered under the Sikkim Cooperative Societies Act of 1978 and is also registered under the Small Scale Industrial Unit of the Indian Government. Undoubtedly, this cooperative society has been playing crucial role for income generation as well as continuity of traditional arts and crafts and vocational training for the women of the settlement.

The cooperative has one chairman and the 5 members of Board of Directors elected by its shareholders of the respective camps of the settlement. The group leaders of the respective camp leaders are also the committee members of the society. Under the supervision of chairman, it has a secretary, one accountant and a cashier. Chairman makes the major decision in consultation with the Board of Directors and Secretary. This cooperative society is having its own office in the settlement area in Ravongla. Its office is well furnished with computers and Xerox machine. Its major section is carpet-weaving section in which there are 45 carpet weavers and 6 carpet scissors along with one instructor. Besides, it has also one tailoring section with 6 trainees and one instructor. It has two well-organized showrooms (with one sales-woman each) that serves a promising carpet and garment out-let apart from selling of carpet from the society's office directly to the customers. Indeed, 99% of the total workers engaged in this cooperative society are women. All the trainees in carpet section and tailoring sections, instructors, carpet weavers and scissorers are women. The working hours of both carpet and tailoring section is from 0800 hrs. to 1600 hrs. including 1 hour lunch -break at 1200 hrs. and 6 day working in a week . In fact, all the trainees of both carpet and tailoring section including the permanent carpet weaver and instructor should be a share-holders as per rule of the society. At present, in carpet section there are 27 permanent carpet weavers and 2 carpet weaving trainees, particularly due to retirement of 18 carpet weavers after their completion of 20 years service as carpet weavers.

The number of trainees (all women) in carpet weaving and tailoring sections in the last four years is shown below.

Number of women trainees since 2000

Carpet Weaving Section		Tailoring Section	
Year	Number of Trainees	Year	Number of Trainees
2000	7	2001	8
2001	5	2002	
2002	6	2002 - 2003	6
2003	2		

Source : Field Survey , 2002-2005.

In general, working span of permanent women carpet weavers is 20 years as per the society's rule. But, depending on ability any woman can do such work even after her retirement. For instance, Mrs. Chewang Tenzing who worked as permanent carpet weavers for 20 years and even after her retirement she is continuing the work as carpet scissorers on wage basis due to her interest and ability in this regard .

Apart from her work in the carpet section as scissorer, she used to do carpet weaving privately on the basis of receipt of orders from her known persons from Namchi and Gangtok. Actually, in the evening particularly during 1900 hrs. to 2000 hrs. she used to spend for weaving carpet in her home.

All the carpet weaver used to weave carpet on wage basis e.g. for OCM variety of carpet @ Rest. 40/- per square feet and for New Zealand variety of carpet @ Rs. 54/- per square feet in the carpet section of the society. And the carpet scissorers used to do cutting of the woven carpet for finishing to make it final product. On the time of retirement a permanent weaver used to get Rs. 1850/- at a time and total amount of her savings under Saving Deposit Fund (SDF) which has been 5% of the total amount of monthly income of each weavers from carpet weaving. Besides, a good-bye tea party is also served on the day of her retirement. The women carpet wavers used to get 3 months leave during the winter season. These women during winter season used to go to various places in plain areas for selling woolen garments which they purchase from Ludhiana (Punjab State) along with their own hand knitted woolen garments.

Actually, both men and women can take training in this society. But only the women had been taking such training from this society. Training course for Carpet weaving has been 6 months. And each trainee used to get Rs. 500/- each month as a stipend . After completion of training they may continue carpet weaving on wage basis in the carpet weaving center of this society . In such case, the cooperative used to supply the materials to this permanent weavers for weaving carpet . Selling Rates of Carpet produced by the weavers of this Cooperative is given below.

Selling Rates of Carpet produced by the weavers of Cooperative

(Rates as on 23/05/2002)

Nomenclature	Size	OCM (60% Tibetan wool and less knots (140 knots)	NEWZEALAND (40% Tibetan wool and more knots (180 knots)
		Rs.	Rs.
Bed and Floor Cushion	6 ft. X 3 ft.	3150/-	3870/-
	6 ft. X 4 ft.	4200/-	5160/-
	7 ft. X 5 ft.	6125/-	7525/-
	9 ft. X 6 ft.	9450/-	11610/-
	12 ft. X 10 ft.	21000/-	25800/-
Sofa Set Cushion	5 ft. X 2 ft. / 2 ft. X 2 ft.	3150/-	3870/-
	46 inches X 18 inches 18 inches X 18 inches	1794/-	2204/-
Chair Cushion	18 inches X 18 inches	394/-	484/-

Source : Field Survey , 2002-2005.

As informed by the secretary, a quantity of 2.77 kilograms yarns is required for producing per square feet carpet. The cost of per kilogram yam varies from Rs. 165/- to Rs. 205/- according to quality. All varieties of yarns are purchased from Panipat in Punjab. The wooden loom for carpet weaving is made by local carpenters. The produced carpets of this cooperative society is normally sold through its two show rooms. Besides, on the basis of orders received from local peoples and the tourists, the cooperative also produces carpet according to their demand vis-a-vis orders and sell it accordingly. Some tourists and also the local people also purchase carpets directly from its center. Tailoring section of this cooperative society started since the year 2000 with 8 trainees. In this year 2003, there are 6 trainees and one instructors, and all of them are women. In this section the training course is for 1 year and 6 months. Each trainee normally gets Rs. 500/- each month as stipend . After completion of training the society provides them with Rs. 1500/- in cash as incentive and one sewing machine so that they can generate income for them from tailoring. The tentative making price of dress materials usually charged by the tailoring section of this cooperative has been, as follows –

Tentative making charge of tailoring section of the cooperative

Type	Size		Rate in Rs.
School Pant	Material and Stitching	Bigger Size	105/-
		Smaller Size	85/-
		Smallest Size for Kid	65/-
School Shirt	Material and Stitching	Bigger Size	75/-
		Smaller Size	45/-
Tie	Material and Stitching		10/-
School Pant	Only Stitching		40/-
School Shirt	Only Stitching		25/-
Gent's Shirt	Material and Stitching		125/-
	Only Stitching		50/-
Lady's Shirt	Material and Stitching		90/-
	Only Stitching		20/-
School Skirt	Material and Stitching	Bigger Size	150/-
		Smaller/Smallest Size	110/-
Lady's Chupa	Material and Stitching	Better Quality	200/-
		Inferior Quality	180/-

Source : Field Survey , 2002-2005.

Rate of stitching given to students by the cooperative

Type	Description	Rate in Rs.
School Pant	Stitching	40/-
School Shirt	Stitching	30/-
Gent's Pant	Stitching	80/-
Gent's Shirt	Stitching	50/-
Lady's Chupa	Stitching	85/-
Lady's Coat	Stitching	200/-
Skirt	Stitching	60/-

Source : Field Survey , 2002-2005.

Now this society is planning also to open a tailoring shop where the best three trainees will be given employment on the basis of monthly salary (yet to be fixed).

Indeed, the demand of the carpet is more and day by day increasing. So, if there is any feasible network of selling the produced carpets in various places of this country, as well as there is scope for exporting the same to other countries. Then such handicrafts may become one important source for income generation and employment for women and thus it can sustain the economy of the state too.

Training programme organized by Sub-Divisional Magistrate's (SDM) Office at Mangan

It was reported by a local Bhutia lady, that one 6 months training programme for tailoring was held in Chungthang organized by the SDM Office at Chungthang. This training was held for Bhutia and Lepcha women and the duration of course was from August 2002 to January 2003. More than 20 women both married and unmarried participated and received such training . After successful completion of the training each was given Hand Sewing Machine by SDM Office at Chungthang. The trainees came mainly from Pegong, Thanga, Bop and Chungthang areas. The entire training course was free of cost for the trainees. The instructor was a local tailoring master. The details could not be collected due to non-availability of tailoring master and any trainees as well as closing of SDM Office due to holidays during my stay at Chungthang.

Tibetan Refugee Carpet (Den) Training Center

Locales of one Tibetan settlement namely Pegong 3 km. away from Chungthang towards Mangan reported that there was one Tibetan Refugee Carpet (Den) Training Center run privately by the refugees . But the same was closed down since few years back. Apart from offering training to the locales , this training center also used to take orders for supplying produced carpets to its various customers . This Center used to produce mainly

6ft. X 3ft. size carpet which was cost Rs. 3,000/- per piece. The main reason behind the closing down of this center was that the younger generation of Tibetan refugees are now used to go to school and not interested in carpet weaving. Moreover, finished product of carpet has now been easily available in the market particularly GICI products, products from Ravongla or Dharmashala. Locales of this area used to go to Gangtok and Ravongla wherefrom they can easily purchase the carpet. As a result, the demand of carpet produced by this center had been gradually diminished and finally there was no demand, and as a result the said center was closed down.

Weaving of Carpet on the basis of wage only

In Chungtang, that there are some carpet (den) weavers who use to weave carpet on demand/hire particularly on the basis of daily wage with food (as reported), and the raw materials in this case used to be supplied by the concern customer too. One such lady namely, Miss Tshering Lachungpa of Lachung in North Sikkim performs weaving on the basis of such on wage. For instance, she was hired by Miss Norzing Lachungpa in Chunghthang for weaving three numbers of carpet (size 2 ft. X 5 ft.) in her permanent residence at Lachung. For this purpose, Miss Norzing supplied the 11 Kilograms Wool to Miss Tshering along with daily wage @ Rs. 80/- per day and food. Miss Tshering took 6 days weaving to complete 3 numbers of aforesaid carpets.

Scheduled Caste Entrepreneurs Service Cooperative Society Limited (SCESCOS)

This cooperative located in Gangtok was previously organized by 11 scheduled caste educated but unemployed young men and women together after collecting money as membership fee for the cooperative. But all of them could not deposit the money equally. While some of them deposited @ Rs. 525/- each, others deposited @ Rs. 3,000/- each. Thus, they collected a total amount of Rs. 25,000/- and thereafter hired a shop in the supermarket complex @ Rs. 1,300/- per month rent and deposited Rs. 5,000/- advance too which was later adjusted in monthly rent. Then they applied for registration of their cooperative and also for subsidy for pre-establishment cost of the cooperative to the Department of Social Welfare, Government of Sikkim. On 17th March 2000 this cooperative was registered under the Cooperative Act. It also received an amount of Rs. 25,000/- as subsidy grant for pre-establishment cost of the cooperative from the Department of Social Welfare, Government of Sikkim.

At present this cooperative is having 44 members. Out of them, 5 are executive members (all men), 11 promoters (3 women and 8 men) and 28 general members (13 women and 15 men). Now, anybody can become a member of this cooperative but he/she should belong to scheduled caste community. The membership fee (for one person) at present is Rs. 25/- only. This cooperative organizes various vocational training programmes and free of cost coaching for the students of classes X and XI who are not having financial capability to take any such coaching outside. All these programmes are mainly sponsored by the Department of Social Welfare, Government of Sikkim. One of such programme was Vocational Training for Stuff Toys. First batch vocational training given by this cooperative was in 3rd January 2002 to 15th April 2002. And 2nd batch training was

held during the period from 14th September to 19th November. In case of both the above said trainings, the trainees either came on their own but through assessment of the cooperative or sponsored by the Department of Social Welfare, Government of Sikkim. Among those trainees, only those who were sponsored by the Department of Social Welfare, Government of Sikkim, they used to get Rs. 300/- per month as stipend. The number of trainees of two batches according to communities is shown below.

Number of Trainees by communities

Batch	Total No. of Trainees	Community					
		General	Lepcha	Bhutia	Sherpa	SC	OBC
1st Batch	31 (Sponsored by Deptt. of Welfare)	2	3	4	–	10	12
	7 (Privately but came through assessment)	2	–	–	–	1	4
2nd Batch	30 (Sponsored by Deptt. of Welfare)	–	1	7	2	10	10
	13 (Came on their own but through assessment by the cooperative)	4	1	–	–	4	4

Source : Field Survey , 2002-2005.

There were 2 women instructors (belong to Nepali community) who imparted training on the course of preparation of the stuff toys. Such training mainly was imparted to those trainees entirely about how to make stuff toys item like teddy- bear, panda , monkey , Giraffe ,dog and other likely animals of different size. During the training period, all the trainees were given raw materials like fur, synthetic cotton, thread, button, etc. The raw materials are normally purchased from Siliguri. After completion of the training successfully each of the trainees were given completion certificate by this cooperative. It also helped the trainees. For example, some of the trainees were given the opportunities to prepare toys for the cooperatives. Some of the trainees after completion of training now prepare toys privately and sell the same to this cooperative. Besides, some of such trainees sell the produced items of toy to ICDS Department, Government of Sikkim. Price of the toys has been Rs. 185/- each. In this cooperative, students were given raw materials and Rs. 25/- per toys. This cooperative also took part in the exhibition held in White Memorial Hall in Gangtok. During training session, the cooperative recruits teachers on temporary basis for three months with salary Rs. 3000/- per month.

This cooperative also gives Vocational Training for cutting and tailoring. Such training was started since 14th November 2002 and completed on 9th May 2003. In this training all of the trainees were women and sponsored by Department of Social Welfare, Government of Sikkim.

Community-wise distribution of trainees

No. of total trainees	SC	OBC	ST		
			Lepcha	Bhutia	Sherpa
30	10	10	2	5	3

Source : Field Survey , 2002-2005.

The number of instructor for such training was 2 (one is Lepcha woman and another Nepali man). Their salary was Rs. 4,000/- per month. After completion of the aforesaid training, all of the trainees were awarded certificate and one sewing machine, so that they can do it privately for earning as well as can work in the private sector, and thus can establish themselves in the society. Indeed, after completion of the training the SCESCS organized one ‘cultural function’ in which important persons from the Department of Social Welfare, Government of Sikkim were attended. Secretary of this department had given the certificates to the trainees of Stuff Toys, and Honorable Minister of the same department had given the certificates to those trainees of cutting and tailoring and sewing machines each.

In fact, this Cooperative use to perform following activities

1. Arrange the vocational training of different handicrafts and typing work.
2. Guidance is given to its trainees even after completion of training i.e. post-training period.
3. Use to provide financial help to its trainees for starting their own business on handicrafts, and also help even in cases of official matters e.g. for loan from government/other institution, other matters in view of making them self-sufficient.
4. Use to help those trainees after completion of their training for selling their produced items like toys and or dress materials who can not sell on their own.

This cooperative also organized different types of programmes sponsored by Department of Social Welfare, Government of Sikkim. These are

Name of the programme	Places where held
Health Programme	Gangtok
Metal Sheet Work Programme	Gangtok
AIDS concerned Programme	Namthang
General Awareness Programme	Gangtok
Nutrition Programme	Namthang, Sichey, Burthuk, Gangtok
Free Special Coaching Classes SC/ST/OBC	Gangtok

Source : Field Survey , 2002-2005.

This cooperative also has planned to start very soon one Vocational Training for Machine Embroidery particularly for women. For this purpose, the Department of Social Welfare, Government of Sikkim already provided this cooperative with 15 number of Singer Embroidery Machines. Besides this, another Vocational Training for Recycling of Hand-made Paper Products is going to be organized by this cooperative. Both these training Programmes will be held in its Development Area complex at Gangtok. The working days of this cooperative has been six days in a week . Besides Sunday, there is 2nd Saturday as holiday and also other state holidays.

Women's Cutting Knitting and Tailoring Cooperative Society Ltd.

This cooperative was established and registered on 7th March 2003. Indeed, 10 women members together started this cooperative in the super market shopping complex of Development area of Gangtok particularly in a rented shop, and the rent is Rs. 800/- per month. For starting this cooperative, Department of Urban Development and Housing Development, Government of Sikkim sponsored Rs. 25,000/- as subsidy for the pre-establishment cost of the cooperative. The membership fee is Rs. 125/- per head. Of the total 10 women members , 7 of them belong to Nepali community and rest 3 are Lepcha. Besides the members, there is one President-cum-Secretary who belong to Nepali community. Her name is Mrs. Sudha Rasaily. She has been doing cutting and tailoring since last 17 years in Gangtok, and also owns one tailoring shop in Gangtok and the name of her shop is 'Payel Dress Training Center1. Now she is running both of her shop and the cooperative together.

Indeed, the members of this cooperative initially took training from her 'Payel Dress Training Center'. After completion of training they proposed to Mrs. Rasaily to start a cooperative , and Mrs. Rasaily also contemplated to do so. Resultantly, all the members and Mrs. Rasaily jointly established this cooperative. This cooperative is now planning to have one show-room. Besides, Mrs. Rasaily also reported that they have planned to start one garment manufacturing factory in near future. At this moment, the cooperative does not have its own sewing machine. While, this cooperative is using sewing machine hired from Mrs. Rasaily on rent basis @ Rs. 500/- per month. But the members have already planned to purchase sewing machine, embroidery machine, inter-lock machine, and woolen machine etc. for the cooperative. Apart from members, 3 women are also working as paid worker in this cooperative, and they earn according to each item produced by them. The details of rate/price of making charge is given below.

Item	Price/making charge of each
Apron	Rs. 5/-
Night Dress	Rs. 20/-
Nightly	Rs. 15/-
Blouse	Rs. 20/-
Pettycoat	Rs. 10/-
1 Flower (machine embroidery)	Rs. 25/- to Rs. 100/-
Baby suit	Rs. 50/-

Source : Field Survey , 2002-2005.

In this cooperative, entire day work is used to be done in three shifts. In every shift, three members and instructor-cum-secretary Mrs. Rasaily used to work, and they used to work in all the three shifts. In case of 1st and 2nd shifts, three paid-worker also used to work along with members and secretary. In such shifts, one usually do the training and others used to do knitting of woolen garments. These three shifts are 1000 hrs. to 1200 hrs., 1200 hrs. to 1500 hrs., and 1500 hrs. to 1730 hrs. Among three paid workers, 2 of them are Nepali while another one belongs to Lepcha community. The mottos of this cooperative are :-To work hard, increase in income, to make one self-sufficient, increase the number of members of the cooperative, and decrease unemployment problem through cooperative, etc.

Panchayat Weaving Center

It was established on 16th march, 2005 at Darap of West Sikkim (7 kms. from Felling) by Mr. Harkaman Limbu a Panchayat member of Sidhbu Ward of Darap Panchayat . According to him some women of Darap village knew carpet weaving either trained traditionally or from different branches of GICI, Government of Sikkim . But these women did not have any capital and space to run any carpet weaving center, as a result they were not in a position to weave carpet and selling for earning. Thereby they had to remain as unemployed. Under consideration of making these trained women gainfully employed and to use their expertise in carpet weaving , Mr. Limbu established this carpet weaving center in a rented room at lower Darap village nearer to Darap School by utilizing the money from Panchayat Fund allotted for development of his ward i.e. Sidhbu ward of Darap village. In this center, one woman is instructor-cum-weaver and other three women are weavers only. The instructor who is GICI trained also weaving privately for earning since last three years in her house. All these four women were trained from either GICI or SRDA and belong to Nepalese community. Indeed, the Panchayat is also very keen to employ more women in the center particularly those who have received training either from GICI or SRDA. The 4 numbers of loom (Tan) have been actually purchased by the Panchayat to run the Center apart from providing other infra-structural facilities . Panchayat actually takes the 'order' of weaving carpet for the center and provide cash for purchasing the raw materials from Gangtok. While designing , colour selection and completion of the carpet depend on the instructor and weavers themselves. The order of weaving carpets usually comes from Gayzing , Darap and nearby villages and Gangtok too. The working hours of this Center is daily 9.00am in the morning to 3.00 pm and Sunday is a holiday. At this moment the weavers do not have any fixed wage structure while they will get commission depending on the number of carpet finished and sold.

In this Center the following size of carpets are woven.

Size	Selling price	Time (in Rs.)	Type of takes	Design wool yarn
3ft.-6 ft.	1,500/-	45 days	New Zealand wool	Tibetan style.
2ft. - 5 ft.	1,200/-	30 days	do	do
18 inches - 18 inches.	750/-	20-25 days	do	do
3 pieces set (sofa set) (2ft - 5ft. + 18 inches - 18 inches + 18 inches - 5ft.)	3,600/-	2 months minimum		

Source : Field Survey , 2002-2005.

When the center is visited on 26th May 2005, the weaver did not get any wage because a few woven carpets were ready for selling but the customer who made the order did not buy that time.

Self Help Group Rural Artisan Center

This Self Help Group is a group of Den (Carpet) weaver situated in Darap, West Sikkim about 7 km. away from Pelling and 16 km. from Gyalshing. All these weavers are women who got training from Sikkim Rural Development Agency. Previously , it was a training center only. While at present it is only a production center run by those members of self help group. It is situated in Panchayet Bhawan near Darap Bazar. Indeed , this center was started in 1982 under the supervision of Sikkim Rural Development Agency. The number of students in the first batch was 12 and training period was only 1 year. During training the trainees were also trained in preparing table clothes, TV cover making in frame with the help of nails and woolen yarn and sweater knitting. Only two batches of trainees were trained here. After that this center became a production center only and no one took further training here. Now this center has 10 women members. Among them 8 Nepalese, 1 Bhutia and 1 Lepcha . They are also the members of the self help group and members of the cooperative fund named as “Self Help Group Rural Artisan”. This cooperative has a bank account in State Bank at Pelling. Every member of this cooperative give Rs. 50/- per month individually. After collecting all money it is deposited in Bank. Any artisan can take membership of this fund. Male also can take membership . The details of carpet weaving according to type, size and price is given below:

Carpet

Type	Size	Price
3 piece set	2'5'	Rs. 3200/-
Car set	18718" and 18"5"	Rs. 3500/-
Single Bed Carpet	376'	Rs. 4000/-

Woolen items

Woolen items	Size	Price
TV Cover	Small	Rs. 80/-
	Big	Rs 100/- to 150/-
Table Cover	Small	Rs. 60/-
	Big	Rs. 140/-
Sweater	Small	Rs. 180/- to 190/-
(Handmade)	Big	Rs. 300/- to 400/-
	Lady's sweater (cardigan)	Rs. 300/-

Source : Field Survey , 2002-2005.

The type of wool is used only New Zealand quality. Wool and cotton yarn are usually brought from Gantok. The price of cotton yarn (Dhaga) is Rs. 150/- per kg. And woolen yarn is Rs. 350/- to Rs. 380/- per kg. Some time they brought wool from Kalimpong also. The price difference between cotton and wool yarn is Rs.10/- to Rs.20/- taken from Gangtok

and Kalimpong. Tans and frame were provided by Sikkim Rural Development Agency (SRDA).

Order of items taken by Rural Marketing Centrer (RMC) of SRDA or production center itself in Darap collect directly. RMC of Darap is situated in Hostel Road of Pelling but nearer to Darap . Working hours of this center has been daily 9 a.m. to 3 p.m. and Sunday is holiday. Wage of the each weaver is Rs. 1000/- per month along with commission depending on the number and size of carpet produced and sold. The instructor of this center is a Nepali young lady. She is also a carpet weaver here who also doing private carpet weaving in her resident. Carpets, sweaters and TV table cover are sold by center itself or through RMC. Designs they used for carpet are Tibetan style and some shorts of Persian style. Some time customer/buyer gives or choose the design and colour of the carpet and some time by weaver themselves. Weavers mainly belong to Darap or nearby bustees. This is the oldest carpet weaving center in Darap.

Findings

In summing up it may be indicated that there are number of Women Cooperatives Societies which are run exclusively by women located in different parts of the state. For instances – Tribal Women's Weaver and Handicraft Cooperative Society Ltd. at Nambu of West Sikkim; Denzong Women Handloom Cooperative Society Ltd., at Nam Nam of Gangtok, East Sikkim ; Women Cutting and Tailoring Cooperative Society Ltd. at Namchi of South Sikkim; Nayuma Women Cooperative Society Ltd. at Tadong, Gangtok of East Sikkim; Mahila Broom Marketing Cooperative Society Ltd. at Namthang of South Sikkim; Denzong Women Handloom Cooperative Society Ltd. at Gangtok of East Sikkim ; Carpet (Den) Weaving Training Centre under Swarna Jayanti Saharey Rozgar Yojana at Ranipool of East Sikkim; Srishti Samity at Sarmasa-Jalipool under Ranipool of East Sikkim; Educated Unemployed Women's Welfare Cooperatives Society Limited at Nop Gao under Pakyoung of East Sikkim; etc. Besides, there are number of Cooperative Societies which are involved in carpet weaving. Apart from these, there are number of private business enterprises dealing exclusively with carpet, woolen and other handicraft items etc. where women have the opportunity to work there.

All these have access to exhibitions, retail outlets as sells emporium/center, trade fairs, tourism and other fairs, thorough which the handicraft items are sold. Besides, the handicraft product items are also sold/marketed directly to its customer in urban and rural areas by private entrepreneurs themselves involved in handicraft production.

Therefore, it may be said that the importance of cooperatives and private entrepreneurs involved in handicraft productions as well as its selling have also been no doubt significant in Sikkim and that play important contributing role in spreading as well as imparting handicrafts training, providing opportunities for self- help and earning i.e. employment, development of handicrafts, continuity of age old traditions, and local market economy etc.

It is the fact that the Sikkimese women play decisive contributing role in the functioning of these cooperatives. They are the producers of various handicraft items and at the same time sellers. They are also playing the contributing role in the continuity of these cooperatives and play the key role too either as a member or by occupying managerial positions vis-a-vis key port folios in different cooperatives and play pivotal role to run the cooperatives smoothly. Not only these, women also play the contributing role in imparting training on various handicrafts to other women in these cooperatives. In case of cooperatives run exclusively by women , they provide the job opportunities to other women for earning and also to make them self-dependent.

A Study on Traditional Knowledge of Santal with special reference to their Health, Disease and Ethno-medicine

Swati Das¹

ABSTRACT

Santal is one of the largest agricultural tribes in eastern India. It is found to have retained an enduring tradition of culture and self-image since long in the midst of various external economic, political and cultural interventions in the past. The particular groups of Santal with whom the present discourse is concerned are well exposed, among other things, to the forces of modern health care system. They, however, combine the modern ideas and practices with their traditional ones in their everyday behavior but differ in their orientation to the cosmos of health and life. Health and disease among the Santal are confined not only to the individual and his/her society but also to the natural and the supernatural beings at large. The Santal form a morally bounded world with natural and supernatural beings. Their orientation to the cosmos is essentially participatory.

The Santal thus seem to lack a commensurable space for meaningful communication with the modern society that is fragmentary, individualistic and characterized more by a causal orientation to the cosmos.

The present paper initiates an ethno scientific discourse on Health, Disease and Medicine among the Santal of my study area.

INTRODUCTION

Modernization may be viewed broadly as an evolutionary transformation of simple and traditional society to a universal pattern of culture. One of the major perspectives of modernization or human development is to improve, among other things, the health condition of traditional/tribal peoples through modern medicine and health care facilities. It has, however, been found that the tribal peoples' own perception of health, disease and medicine as well as the associated socio-cultural norms and practices often stand as crucial

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barriers to the effective implementation of modern health facilities, and subsequently, a doubt is raised in the uniform applicability of the modern medical science uncritically to all traditional societies. Recently, in anthropology and other related disciplines, there has also emerged a concern with the study of the ‘specifics’ of particular cultures instead of putting them straight into any grand theory of the Western World. The problem that seems to arise from the situation is that there is a practical as well as a theoretical necessity to learn about the indigenous knowledge and culture with reference to health, disease and medicine of the people.

In the present discourse, an attempt has been made to study the ideas and practices of a specific group of the Santal, an agriculturalist tribe in Birbhum district of West Bengal with particular reference to health, disease and medicine. For the purpose I adopted mainly a cognitive approach and collected information on folk taxonomies of health, disease and medicine. An attempt has also been made to understand the meanings of the terms in the context.

Medical Anthropology is a subfield of anthropology that draws upon social, cultural, biological and linguistic aspects of man and tries to understand specifically the factors influencing physical, psychological and social well being of a people in particular and humanity in general. It involves the study of the diseases, the process of their prevention and treatment and medicine in varying socio-cultural contexts of peoples.

Health, disease and medicine though often claimed to be the subject matter of medical science; the history proves that social science in general and anthropology in particular has contributed significantly to them. The work of Bodding(1925), Mahapatra(2003) and Frake(1961) projected a common viewpoint that there exist a strong relationship between health and social situations which led to researchers in understanding social and cultural dimension of illness.

Santal, the studied ethnic group is one of the largest tribes in eastern India mainly concentrated in Bihar, Orissa and West Bengal. According to 1991 census the population of santals in West Bengal is more than three and half a million which is about 9.55% of the total population. Though at present the tribe has been much influenced by the modern society, they still persist many aspects of their traditional customs, norms, beliefs and practices. Traditionally, santal look upon illness normally as a phenomenon arising from an imbalance between the '*Human World*' and the '*Other World*'. The two worlds form a unity into the belief system of the people. The ideas and practices related to health, disease and medicine are closely related to their socioeconomic and religious system and ultimately, their outlook on life. Santal, however, perceive a number of diseases, identify their specific symptoms, have specialist healers and use different kinds of herbal and non-herbal ingredients as well as amulets, spells, divination and exorcism for prevention and cure of diseases. They seem to have an institutional system of identification, nomenclature, cognition and symbols centered round health, disease and medicine.

Although my present study seems to initiate an ethno-scientific discourse on health, disease and medicine, it differs from it in its consideration of the indigenous verbal categories in social action. In my study the primary information relating to the santal notions of health disease and medicine are being gathered from the santal medicine men (*Ojha / Janguru*) and from common people through informal conversations during group or individual interviews, participant as well as non-participant observation etc. I have tried to note the process of classification, study the meanings of the terms in the actual contexts of use, and understand the culturally agreed categories through careful question-and-answer sessions.

Study area

The village Mahisdhali is situated under the jurisdiction of Bolpur P.S. of Birbhum district, West Bengal, where I have been carried out my present field study for the last two years. I have already taken preliminary census of 188 household. From my initial study of the household census I have come to know the total population, numerical strength of male and female, the literacy status, occupation, marital status etc of the people of the village. Mahisdhali is a multiethnic village in where Santalas are dominant but there are some other ethnic groups with a very few numbers. The total population of the village is 804 of which 373 are males and 431 are females and the Santal population is 597 (272 male and 325 female)

Concept of health disease and medicine in modern science

HEALTH: “**Health** is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity” (WHO 1948). This definition, which was ratified during the first World Health Assembly, has not been modified since 1948. Therefore Health may be regarded as a balance of physical, mental and social aspects of life in a being. There are three main factors, which determine the health condition of a person such as **genetics, environment and life styles**. Individuals and societies have long considered various definitions of health. In doing so, they usually fell into three areas. The first, the perception of health, is either seen as a subjective or objective phenomenon, and in terms of whether it extends beyond the physical domain. The second includes the means of improving and maintaining health. The third, considers the value and aim of health, how it allows one to function. These three areas are usually considered together in historical and contemporary definitions.

Prior to the Second World War, Sigerist, a well known public health professional, expressed the view that "health is, therefore, not simply the absence of disease; it is something positive, a joyful attitude to life, and a cheerful acceptance of the responsibilities that life puts upon the individual... A healthy individual is a man who is well balanced bodily and mentally and well adjusted to his physical and social environment"

DISEASE: According to modern medical science a **disease** is an abnormal condition of an organism that impairs bodily functions. It is also defined as a way of the body harming its self in an abnormal way, associated with specific symptoms and signs.

The mode of being healthy includes, as defined by the World Health Organization, "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" (WHO, 1946). When these conditions are not fulfilled, then one can be considered to have an illness or be ill. Medication and the science of pharmacology are used to cure or reduce symptoms of an illness or medical conditions.

In human beings "disease" is often used more broadly to refer to any condition that causes extreme pain, dysfunction, distress, social problems, and / or death to the person afflicted, or similar problems for those in contact with the person. In this broader sense, it sometimes includes injuries, disabilities, disorders, syndromes, infections, isolated symptoms, deviant behaviors, and atypical variations of structure and function, while in other contexts and for other purposes these may be considered distinguishable categories.

MEDICINE: The word *medicine* is derived from the Latin *ars medicina*, meaning *the art of healing*. In this sense Medicine is the science and art of healing. It encompasses a variety of health care practices evolved to maintain and restore health by the prevention and treatment of illness. In modern medical science a drug is any chemical substance other than a food or device that affects the function of living things. Drugs can be used to treat illness, or they can be used recreationally to alter behavior and perception. Medications are typically produced by pharmaceutical companies and are often patented. Those that are not patented are called generic drugs. Some physicians can prescribe over when the homeostasis of a living organism, causing severe illness or death. Essentially it is a type of poisoning. In the context of biology, poisons are substances that can cause illness. Contemporary medicine applies health science, biomedical research, and medical technology to diagnose and treat injury and disease, typically through medication, surgery, or some other form of therapy.

Santal notion of health, disease and medicine:

In every culture there is a repository of values and beliefs built around important life experiences like birth, illness, death, disease etc. Every traditional society has its own method of conceptualization, diagnosis and treatment of disease based on the rational principles and objective factors in a scientific manner within the socio-cultural background of particular rural or tribal communities. Simple, safe, inexpensive, non-toxic and time-tested remedies existed for the alleviation of diseases and disabilities. To obtain the secrets of traditional medicine, every community irrespective of its simplicity and complexity has its own beliefs and practices regarding health and disease. In tribal societies the concept of health, fitness, illness and diseases varies between different tribal groups. In a tribal habitat, a person is usually considered to be afflicted with some diseases if he/she

is incapable of doing the routine work, i.e., incapacitation from work is the universal index of poor health. Thus the concept of ill health becomes a functional one and not clinical.

Though the tribe Santal bears a huge stock of traditional medicine from the very beginning but they were not so conscious about health and basic hygiene in the modern sense of the terms. The particular group of Santals with whom the present paper is concerned are well exposed, among other things, to the forces of modern health care system. By the influence of modernization they now give much more attention to keep the body fit through sports, dances, archery and other recreational elements. But Santals bother a very little about basic hygienic practices. For examples; their oral health is not so good. Many skin diseases like scabies, mycoses, boils are also seen very often. Most of the people are little conscious of the utility of cleanliness. They are habituated to use the field and the village ponds to finish up the morning duties as well as the same water they use to wash their clothes and utensils, for bathing etc. generally they use ashes from the hearth or the twig of neem (*Azadirachta Indica*), babla (*Acacia Karoo*), varenda, or sonajhuri to brush their teeth. They usually do not use soap to clean their skin. Now-a-days as a reason of availabilities of commercial goods, they are using tooth pest, soap, coconut oil, skin cream, talcum powder etc. But the usage of these commodities is not very common among all the people. Only a few young villagers who work in the urban areas or study in schools are found to use them. I have observed very carefully that most of the people never clean their tongue and they seldom clean their sex organs Santals generally explain that their body (*hormo*) is like a '*kol gari*' (train). As the train moves by the power of engine and stops due to the failure of a machine, in the same way their body is also run by some kind of machinery which is composed of *mayang* (blood), *shir* (vain), *baha* (head) etc. P.O. Bodding shows in this regards that according to these tribal people "*when any part of a machine is out of order, the machinery will not move, but stand still, until it is repaired. In the same way, if any of the sirs of the body gets out of order, we first feel out of sorts, we stretch ourselves and say 'today I feel unwell in my body'*". While working with the Santals I felt that their basic notion of the Body divided into two parts (a) social body, (b) physical body. They consider this physical body as a part of social body. They always treat the physical phenomena in the context of society as a whole. Though they can not conceptualize Health as a biological phenomenon, but they have an idea that '*a man who does not follow the social code of conduct is not considered normal or healthy*'. They think that there is a strong relationship between health and death. Health is a condition of capabilities to do the daily work properly on the other hand Death is situation of incapacitation from work. Disease may cause to lead to death but they never consider death as the end of the life or as the absolute. In the matter of disease Santals conceptualize that disease or illness is a natural phenomena. But there is always a suspicion that the natural cause is not the original one, but that evil influences are at work in the first instance (Bodding '25).

In daily life, santal people interpret illness as a kind of '*hasu*'/ '*rua*'/ '*dukh*', lit. pain / unhappiness / fatal event. Among the santals illness is conceptualized as a disorder which breaks the harmony, that usually exist between the body ('*hormo*') and spirit ('*mon*'). According to santals, a disease free life is possible if there is a congenial relationship between human beings, natural and supernatural beings. Any sinful act or infringements of social customs are believed to be the based for creating illness. In addition to it, the innumerable evil spirit also causes illness. The Bongas and witches cause illness and disharmony. The santal priests (*naeki/paranik*) are then entrusted to look after the propitiation of spirits. Traditional medicine men (*ojha*) are involved in the act of naturalization of the effect of sorcery, evil eye and witchcraft.

In most societies there dose exist a rich body of scientific knowledge based on the demands of the concerned societies. In the past, that knowledge was based on oral and almost always transmitted verbally from one generation to other. Traditional way of treatment is inevitable among the tribal people although modern treatment is applied in different circumstances. Traditional medicine can be stated as the sum total of all knowledge and practices, whether explicable or not used in diagnosis, prevention and elimination of physical, mental or social imbalance. It relies especially on practical experiences and observation handed down from generation to generation, whether verbally or in writing. Such knowledge is in fact still used today in many areas all over the world in the day to day living of many indigenous people.

'Traditional health care system depends both on herbal and the psychosomatic lines of treatment. While plants, flowers, seeds, animals and other naturally available substances formed the major basis of treatment, this practice always had a touch of mysticism, supernatural and magic, often resulting in specific magico-religious rites' (R.S.Balgir, 1997).

.Apart from the professional medical practitioners, every grown up santal know little bit of the application of herbal medicine and he/she first tries to handle the situation by using this knowledge. He/she seeks help of the professionals when he/she fails in his attempts and proceeds step by step from very simple remedies to most complicated practices of divination and witchcraft. The common people however, lack the knowledge about the invocation, incantations spell and magical formula, which are prerogative of the *ojha*.

Some diseases and their traditional treatments

Traditional or indigenous medicines encompass knowledge and practices used for diagnosis prevention and cure. A greater part of indigenous knowledge refers to the properties of natural materials especially medicinal plants, animal parts and minerals. Due to the extensive use of plant materials, traditional medicine is associated with harbalism (Kibet A.Ng'etich 2005). Here in this chapter I am going to show some diseases that generally occur among the villagers and their home remedies which the people naturally use.

1. **Gitil Jam** (Mycoses)- It is skin disease caused by water, mud, sand etc. It is generally found among the young santal men and women who work in the agricultural field or any where else with sand, water or mud for long time. Person who does not wash off the dirt for long time may also affected by this disease. There will be the gangrene (*bill*) and red marks between two fingers (*katup*) both in hands and legs. There may or not be any irritation.

Treatments: Two different methods are very popular among the people. After washing the effected areas -

- a) They apply the pest (*richkidei*) of *loukisori* (small medicated bush) leaves (*sakham*) on the affected area for 3 to 4 hours.
 - b) They also apply the pest of boiled *gabladhari* (acacia) leaves mixed with a pinch of salt.
2. **Uju** (Boil)- It is an inflamed pus-filled (*bill*) swelling under the skin. It is mostly found on the legs, under arms, back and buttock of the grown up children some times among the adults also. Santals do not know the actual cause of boil. There must be horrible pain on boil and surrounding areas.

Treatments: A pest (*richkidei*) of *Jakhashakham* (leaves and twigs of a kind of small medicated plants) mixed with salt (*bulung*) in appropriate proposition are applied around the boil. After three four days all the rotten pus and blood will come out from the boil and it will recover.

3. **Ghao** (Scabies)- It is a contagious skin disease. Santals believe that if any part of the body become wounded or if there is a cut and it faces all the dirt and oils, it will become rottened and scabiesed.

Treatments: In this case people generally apply calcium carbonate and turmeric on the effected area.

4. **Baha hasu** (Headache)- Continuous pains occur in any part of the head. According to the villagers many kind of Headache can be seen.
- a) Hemicranias / Megrim (*Misa chendi hasu*) - violent headache affecting one side of the forehead may be on the left side or on the right.
 - b) Pain on the forehead (*Chendi*) - chronic pain on the frontal bone.
 - c) Pain on the bregma (*Tala baha*) - chronic pain on the top of the head.
 - d) Occiput (*Totka*) pain - Back head pain.

Treatments: The villagers use two types of methods to reduce the headache –

- a) They apply wet clothes (socked in cold water) on the forehead or affected area.

- b) Roots of *baja* (a root looks like ginger) mixed with coconut oil can be applied on forehead or on the affected area.
- 5. **Diarrhoea-** It is a condition of excessively frequent and loose bowel movements. It causes loose stool (some times with blood), chronic stomachaches weakness, aversion of foods etc. According to the santal villagers this type of loose motion may be of two types such as –
 - a. **Tandi teida** (Amebiasis)
 - b. **Mayangi Tandi teida** (Dysentery)

Treatments

- a) Water, salt and sugar, mix these three together properly and take continuously in a hour gap.
- b) Tender leave of guava (*sappare sakham*) can be chew and take the juice.
- c) Pest of green leave of thankuni (*guddulutu arha*) can be take with rice.
- 6. **Ambul** (Acidity)- Young ladies who work out side of the house for long time mostly faced this problem. As they cannot maintain the time to take food and work for long in the sun, in the rain may owing to indigestion. In the cases of aged persons it occurs due to the lack of digestive power. The villagers now used to take the medicine prescribed by the allopathic doctors or from the medicine shop but there is a homely remedy to reduce acidity.

Treatments: 7 or 8 leaves of thankuni (*Guddulutu arha*), pinch of salt (bulung) and 3 or 4 black paper. These three can be grind together and should take in empty stomach (<ekenlary).

- 7. **Chalsa** (Cataract)- It is a condition of eyes in which the lenses becomes progressively opaque. In this case the inner portions of the eye both the white area (*Jurul*) and eye ball (met epil) become discolored or become gray. The tribal people do not know the exact cause of cataract but they do think that it occurs because of ageing. They also think that there is a connection between the nails (*rama*) and the eyes (*meth*). If the nails are unclean it may be the cause of monocularous (*kanrha*).

Treatments: According to the santal people there is no treatment of cataract but it may prevent. If someone can make a habit of applying mustered oil after cleaning the nails (*rama*) (both in hands and legs) every day before go to bed at night, it will be a prevention from occurring cataract.

- 8. **Meth hakani** (Ophthalmia)- It is a condition of inflammation of the conjunctiva. The tribal people do not know the exact cause of this disease but sometimes consider as the effect of catch cold (*mandu*). They also think that if some one makes continuous eye contact with the diseased person, it may contagiously effects.

Treatments

- a) The fluid of a snail (*guguli*) can be squeezed out with two fingers and dropped on to the effected eye.
 - b) Juice of *kukuruchuti* leaves can be applied on to the eye.
 - c) Pure honey can also dropped on to the effected eyes.
- 9. Jaundice rua kenay** (Jaundice) – It is a condition of excess amount of billirubin pigment in blood causing yellow eye, skin and urine. It is mainly occurred due to liver disease, bile disorder, etc.

Treatments

There is no home remedy to recover from jaundice. In this case villagers used to seek protection from *ojha* who gives them a herbal garland (*jaundice mala*) sanctified with some mantras. The *ojha* collects the secret plant and cut the twigs into small pieces. After that day at the very first morning he makes the garland for the patients before all his morning duties. Then he ties the garland around the patient's neck tightly sanctified with some mantras. If the person has the disease surely the *jaundice mala* becomes longer as time passes. After wearing the rosary the patient has to maintain at least three days rituals strictly. During this period the patient can not take bath or use soap or oil. He/ she must take the boiled foods and boiled water. The patient will be forbidden strictly to go through the cohabitation with their mates during this time. After three days the patient gets down to a pond or river and put off the rosary from the lower part of the body and immerse the thing into the water. They have a strong belief that all the germs will flow with the *jaundice mala* into the water. But now-a- days the patients can also take the medicine from the allopathic doctors with the kind permission of the *ojha* in this period.

- 10. Manda** (Cold and Cough)- It occurs due to the unseasonal rain, continuous change of water etc. if suddenly take chilled water after moving in the sun it may occur.

Treatments

- a) Curry or fry of sajina (*munga arha*) can take with rice.
 - b) Mustered oil (*iti sunum*) is a great medicine in this case. Black leguminous seeds (*shut karai*) and garlic (*rusun*) will fry in mustered oil. When the colour of the oil will change, this hot oil can be applied on the palm (*ti talka*) and feet *Qatar jangha* before going bed at night.
 - c) Mustered oil can also put in the nostrils (*muvuge*) also in cold & cugh.
- 11. Uup-nur** (Hair-fall)- Santals do not consider this problem as a disease. It is a very natural phenomena occurs due to ageing, avoiding hair oil for ling, tied up of wet hair, carelessness, dandruff, lice etc. This incident mostly happens with the young women and pregnant women. But they do not know why it occurs in pregnancy.

They also do not know why an aged man face this problem more than an aged women.

Treatments

So many local methods are there to reduce hair fall. Two of them are most popular in my studied village.

- a) Pest of *loukishori* leaves can be applied on the root of the hair.
 - b) They make a pest of the tiny leaves ucaliptus and onion. Then it will be mixed with coconut oil and this pest can be applied on all over the hair.
- 12. Pinias** (Dandruff)- Flakes of dead skin in the hair are called as dandruff. It occurs as a reason of avoiding hair oil, unclean hair etc.

Treatments

Santals believe that if someone can use the black soil (*nakrha asha*) of river bed as a substitute of shampoo to wash of the hair, dandruff can be reduced.

- 13. Si** (Lice)- It is a parasitic insect that can spread by the close contact of head from a effected person. Santals do not consider it as a disease.

Treatments:A very simple but effected method is very much popular among the santal girls, which a pest of custard apple leaves (*sitafall/ madargam*) can be applied on all over the hair, give up for one hour and wash off.

- 14. Ekshire** (Hydrocele)- It is a condition of dropsy of the scrotum. Both or one of the scrotums become bigger and fluid will be enrapted. The cause of occurrence of Hydrocele is not known to the general villagers. *Ojha*, the traditional medicine men admitted that he knows the reason but he did not disclose it to me.

Treatments

In this case the *ojha* provides them a secret medicine (*run*) that is sanctified by some *Mantras*. The head of a turtle (*kachim*) will be dried up in the sun. Then this dried head will be roasted. The ash of the head will be mixed with some secret roots (*rehet*) and will be provided as the medicine of hydrocele.

Conclusion

In the present discourse an attempt has been made to broadly describe some of the ideas and practices of the Santals in a village of Birbhum in the contexts. It is observed the people have indigenous views of health, disease, and medicine that can be hardly disassociated from their concept of life and death. They conceive life as omnipresent and death is just a transitory phase in the circuit of life. All material, non- material objects,

events, temperaments and dispositions, health, medicine etc are presided over by some supernatural entities. They all together form a complex of culture. Their general division of their world into noapuri (this world) and hanapuri (celestial world) are closely connected by life (jiu) and form a morally bounded world.

They are aware of the modern health care system only partly and use it along with their traditional health care world of socio-cultural communication.

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The Syncretism of Mazar Pahad in Great Andaman

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ABSTRACT

The Andaman Islands are known to outside world as the abode of surviving Negrito population with their distinct hunting and gathering mode of living. Slowly their population was dwindled due to man-made and natural causes and are restricted to demarcated areas. At the same time it is also popularly known as the melting pot of diverse ethnic as well as cultural backgrounds. In post Independent India, many other ethnic populations immigrated at these islands due to various reasons and living together. The contact of multi cultures reflects pan Indian identity and it is exhibited in socio-cultural performances of Port Blair city which is a capital for Andaman and Nicobar Islands. Here the diverse cultural traditions overlap and fuse together as a result of day to day contact and close inter personnel relations in a geographically isolated territory. This is a unique situation, which can be understood not by comparison rather by micro level study on the nature of syncretism that prevails in these Islands.

With this backdrop, the present study made an effort to understand the functioning of Hindu-Muslim syncretism which represents the characteristic feature of Andaman where ethnic communities observe and follow diverse traditions. Besides this, an attempt is also made to highlight the formation of a syncretic centre, observation of mixed sacred performances and its psychological impact on the surrounding as well as visiting population that underlies the mutual coexistence of diverse traditions.

INTRODUCTION

Religious faith is a matter of belief that combines the people of different regions to lead an orderly social life. Of course diversity of beliefs and practices may exist in a particular given territory, but it does not restrain the people from practicing traits of other religious faiths. As a result of this amalgamation, both religious syncretism and conflicts are taking place very often through out the world. In the present context of development of civilizations, the rate of synthesis, assimilation or adjustment is higher in the case of groups that are territorially close rather than alien cultures. This stage of coming together of civilizations make popular of the syncretic religious faiths especially in developing countries like India. Furthermore it is catalytic in building national character with the composite culture

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that developed as a result of mutual co-existence of diversity. As such, the word ‘syncretism’ got significance in understanding the social realities in the belief pattern of the toiling masses; in turn those realities permit a peaceful social coexistence among discrete entities. Though this process may be an unconscious, but it has highly philosophical as well as popular expressions.

Thus the concept of syncretism has become significant in the present scenario of globalization and has different connotations in terms of the context. From the meaning of it, one cannot limit the syncretism merely to a word, as it encompass social phenomenon. Though the word syncretism got momentum in recent past, it is widely prevalent before the rise of Christianity in the world. The factors like trade, invasion, migration, inter marriages, missionary activity of the mystics and mendicants, positive role of the state, drive for independence etc., motivate the local people towards the reverence of dominant group or mutual exchange of their cultural traits.

Conceptual framework

It is so that this phenomenon varies according to socio-political and geographical factors. As such it is imminent to review the conceptual definitions that are derived from the empirical studies to derive the suitable framework of the phenomena of the present study *Mazar* in Great Andaman, since this sacred place is worshipped by the cross section of people from Andaman Islands not limiting the caste, creed and religious boundaries.

The scientific study of religious beliefs and practices are being carried out by anthropologist since from the beginning of the discipline. It is Emile Durkheim (1915) who did the first systematic study of religion through encyclopaedic treatise of pre-modern religions. The subsequent works on religion is based on functionalist approach and failed to address the issues of modern religion. One of the causalities of this approach is the study of syncretism.

The word syncretism has been derived from Greek words ‘*syn*’ means ‘with’ and ‘*krasis*’ means ‘mixture’ which combined to form ‘*synkrasis*’ a mixing together (quoted in Shaw and Stewart 1994). Later on it became syncretism means fusing or binding of elements. But from social science point of view, it is defined as phenomena rather than a synthesis. In Encyclopaedia of Religion and Ethics, James Moffatt (1921) described syncretism as “*unconscious, wide-spread tendency, due to or fostered by some readjustment of political relationships or by some clash of civilizations*”. It is possible by a new philosophical synthesis as well as by a political rearrangement, but the ultimate goal is the unification of deities. This statement reveals that any particular form of religion is no longer continued to remain same, but there is a possibility of integration of superior cultural features without changing the original principles of the particular religion in question. Cutting across the political boundaries, Asad (1983) compared syncretism with ‘natural religion’, which according to him is “*...a belief in and worship of a supreme power which is found among all human beings*”. But it is too broad and very general in nature.

The Dictionary of Sociology (1944) termed syncretism as “*the process of amalgamation of conflicting, or at least different, parties or principles of cultures. More specifically assimilation...*” In this definition assimilation is taken as an important parameter in understanding the syncretism. However this does not explain the matrix of economic and

political aspects involved in it. The canvas of syncretism widens perceptively if these parameters are taken into consideration. Syncretism refers to the mutual acceptance of elements of two religions – textual or other (Roy Burman, 2002). The ‘other’ in the sense that socio or political processes accompanied with it.

From these definitions, syncretism is projected as fusion or blending of religious beliefs and practices either through the identification of gods, taking over of observances or selection and reinterpretation of traits of one culture by another. Obviously it can only happen if the two cultures are in regular and day-to-day contact. This contact is being facilitated by popular sacred places of Hindu, Muslim and Christian and others. Beside this popularity, the factors like associated beliefs, migration, acculturation, geographical isolation, assimilation and so on facilitate the mutual acceptance or respect of each other’s religious traits. The case studies on syncretic shrines in India undertaken by scholars reveals that day to day interaction between the different religious people are catalytic in the maintenance of syncretism (Roy Burman, 2002 and Das, 2003.)

Whereas in the case of *Mazar*, it is combination of several factors underlying in maintaining the syncretism in Island situation and is unique. It is the disciplined and pious life of a prisoner led to the formation of syncretic religious pilgrim centre in this archipelago. Before going into the details of this syncretic shrine, it is pertinent to understand settlement pattern of the island, as it manifesting the characteristics of pluralistic society. Altogether there are four tribal communities namely Great Andamanese, Jarawa, Onge, and Sentinelese are considered as autochthones of this archipelago and their origin is still not confirmed scientifically. Apart from them, many people were coming and settling Andaman Island for various reasons in pre and post Independent era. The most important of outsiders who first settled on this island were the British to control over the sea routes to Bengal or Malaya from their base in Madras.

The plan of settlement of the island came to materialised after the so-called Sepoy Mutiny was crushed by the British in 1857. They felt the need of a place where they could safely incarcerate the large number of freedom fighters that fell in their hands after the first war of independence of India. It would not have been prudent at all to keep them in ordinary prisons on the mainland where they would have received sympathy from their jailors and wardens. Andaman appeared to be an ideal place for this purpose as it is separated from the mainland by the sea. Thus people from mainland India irrespective of caste, creed, community, religion or social status were incarcerated to this island and released to stay on this island after serving their sentence.

During this period, the British transported two other groups from the mainland viz. the Moplas and the Bhantus. The Moplas came from present day Kerala and the Bhantus from present day Uttar Pradesh. At the time of transportation the Moplas were Muslims and the Bhantus Hindu. Beside them, who were thus transported to this place belonged to various religions, class, caste, creed, and linguistic group and belonged to all age groups. But they had one thing in common viz. love for the motherland. For her they were ready to make the supreme sacrifice and were destined to spend the rest of their life on this penal island. Later they were joined by other groups i.e., Bengali refugees of East Bengal, Tamil refugees of Sri Lanka, Telugu fisher folk of Andhra Pradesh, Oran and

other tribal groups of Ranchi etc., who were either transported from the mainland either for settlement package or to serve for the development of Andaman. It is followed by the migration and settlement of diverse groups on account of government service, business, wage labour and so on.

What ever may be the reason for the coming of the various groups to the Island; a pluralistic society was thus finally formed. But one point must be kept in mind that none of those who live in Port Blair today are autochthones of Andaman. They are all outsiders and have come to *kalapani* under duress. Today they are laying the foundations of a new 'Mini India' where an individual will be recognised for his intrinsic worth not for his pedigree. It is in such situations of culture contact where different religions historically having been brought together to get a chance of affecting each other that syncretism can come about.

As such people from diverse ethnic as well as cultural backgrounds come to this place and living together. In this case contact of multi cultures can be seen in day to day life which reflects pan Indian identity i.e., *Local*. Here not the only two cultures instead many cultures fuse together as a result of observance of varied traditions within a limited territory. This is a unique situation, which can be understood not by comparison rather by micro level study on the nature of syncretism that prevails in these Islands. Thus the present study made an effort to understand not only the functioning of Hindu-Muslim syncretism but the cultural fault line of Andaman Island in particular.

Objective of the study

The present study mainly intended to understand why and how this particular *Mazar* (tomb of a Muslim patriot) is still revered by the residents of this island irrespective of caste and creed. An attempt also been made to understand the factors causing syncretism, cultural admixture and its impact on its hinterland Port Blair and vice versa. Further the process of adjustment that is taken place in the study area also attempted to exhibit the spirit of tolerance to outer world.

Methodology

For the present study, primary data has been collected from the intensive fieldwork at *Mazar Pahad* in South Point of Port Blair town in different phases by using qualitative anthropological techniques. They are mainly participant observation, case studies of knowledgeable and aged people, schedules, and interviews by using structured questionnaires. Besides this, door-to-door random household survey was conducted (100 samples) in the surrounding of *Mazar* settlement to understand people's perception about the sacred place. Secondary data has been collected from the records of Andaman Wakf Board, available Urdu scriptures, published books and articles.

The study area

For the present study, *Mazar* of South Point is purposively selected for understanding the process of syncretism. This shrine is just eight kilometers away from Port Blair and located on the way to famous tourist place i.e., Caribees Cove. Around the *Mazar* there are a few trees and the ground is covered with sand. In the front of the *Mazar* structure

is the sea. By the side there is a big *nalla* (drainage), flowing towards the sea. Previously it was simply a graveyard. Only fishermen and cattle herders used to come to this place and this area used to remain vacant. In the course of time surrounding area of *Mazar* is occupied people of diverse communities and settled. As such, this area known as *Mazar Pahad* in local parlance.

The physical structure of *Mazar* consists of three separate tombs surrounded by a compound wall. At the entrance main mausoleum of Khairabadi is located followed by Liyakat Ali. A Peepal (*Ficus religiosa*) tree is present besides the Liyakat Ali's tomb, which is used by the visitors to tie the sacred knots. The grave of Rahmatiya (earlier care taker of *Mazar*) is present underneath of this Ficus tree. One interesting thing is that a Mosque is also established in the precincts of *Mazar* compound for the purpose of *namaz* by the visitors as well as the settlers.

Historical Background of Mazar

The first war of Independence was fought in the sub-continent of India in 1857 against British imperialism. Though not directly involved, Andaman also soon came into its purview when the victorious British started moving the patriot designated convicts to the penal settlements of these islands. One such detenue was Hajrat Allama Fazul Haque Khairabadi, who belonged to the court of the last Mughal Emperor Bahadur Shah Zafar of Delhi. To really appreciate the history we have to go back about 150 years when the East India Company was ruling India. India was seething under its mis-rule on the one hand and craze for acquisition of native kingdoms by the top officials of the Company on the other. The antagonism towards British is exploded in the form of a revolt in 1857, which has been called the 'Sepoy Mutiny' by the British and the 'First War Of Independence' by the Indians of Independent India.

One of the innocent victims of this conflagration was a gentle soul attached to the Court of last Mughal Empire in Delhi. In this discourse Hajrat Allama is variously referred to and today in Port Blair he is referred to as *Mazar baba*. As he belonged to Khairabad district in present day Utter Pradesh, he was colloquially known as Khairabadi. After the fall of Delhi, he also fell in the hands of the British. He was possibly protected from the gallows by his frail health and advanced age but these could not protect him from transportation to the Penal Colony of Andaman for life.

His pious personality and extensive knowledge soon brought him in the limelight even in the dark surroundings of the penal settlement of Andaman. The fellow convicts used to turn to him to get at least mental peace from the harsh conditions of the penal settlement. The saintly personality of Khairabadi was soon noticed by his British captors and being impressed by the same they allowed him limited freedom. With this, Khairabadi stayed on at Ross Island, which was a sort of capital of the Penal Settlement and where the British officials lived. On this island he settled in a hut. His daily requirements were met by people nearby his settlement.

Almost simultaneously another compatriot who was also captured around another centre of Sepoy Mutiny viz. Lucknow by the name Janab Liaquat Ali had also been freed by the British and was passing a mendicants life in Port Blair. He had first settled what is

now known Aberdeen jetty. He is attracting handsome gathering due to his pious life at this place and blocking whatever traffic there was during this period and he was shifted to near by Fire Brigade. There also his presence created similar problems and ultimately he had to shift again. This time he shifted to a rather lonely place near South Point where he settled and made a small hut near which he planted a peepal tree.

Janab Khairabadi was continued to live a hard and difficult life in Ross Island. In due course his life came to an end. His body was allowed by the authorities to be taken to Port Blair for burial. Oral history reveals that when his son reached Port Blair with the release order to take his father back to the mainland he saw his father's coffin being off loaded from a boat. Whatever may be the case; Liaquat Ali took possession of the body and buried it by observing all Islamic rites below the *Ficus* tree, which is very near to his hut. Out of reverence and love for his departed friend, Liaquat Ali maintained the grave of Khairabadi clean and well cared for during his lifetime. When he died he was also buried next to his friend. For some time people around took good care of the twin graves but soon these became a couple of dilapidated structures.

The whole picture of the *Mazar* reveals that it has no great historical significance. It is not the *Mazar* of a prophet or a great saint who is known to the whole world in general or even Muslims in particular. It does not figure in the holy places of Muslims or does not even find a place even in the holy places in India. Still it has definitely built its own place in the mindset of people of this island. People pay homage to a great saint rather than a freedom fighter because the people say that they have a great faith on this place. Hence the people visit this place in large numbers along with their families and offer prayer.

Even the inanimate graves of the patriots seemed to give this place a halo. For the visitors and settlers either of them singly or collectively is *Baba* a term by which an elderly respectable person is to be addressed or referred to. Not many of the locals are really even aware of whose grave which one is. They refer it as '*Baba ka Mazar*' and when anybody plans to perform any ritual at the *Mazar*, it is simply performed at the *Mazar* without any reference to who's *Mazar*. So it is observed that the people no longer referred to the grave yard in general or to the grave of Khairabadi or Liyakat Ali in mundane terms. They used to refer these graves with due respect and soon they were referring to *Baba ka Maqbara* or *Baba ka Mazar* which was soon shortened to *Mazar* and in time. The hillock at the base of which the graves are located became known as *Mazar Pahad*. Over the passage of time the *Mazar* has retained its importance in the mindset of the local people. Thus, today also a good number of people visit the *Mazar* regularly. What is interesting is the reverence that this *Mazar* gets from Hindu, Muslim, Sikh and other religious faiths.

The devotees came with the sacrificial animal and food materials and cooked near the *Mazar*, which was served to the guests after first offering to the *Baba*. The person who held the feast went to the neighbouring areas and invites the people to participate in the feast. At that time no organisation took care of the *Mazar* neither was anybody residing in there. The *Mazar* compound was without a boundary. The local people used to put on an oil lamp in the evening. They used to offer a prayer at the *Mazar* before going back home. The devotees who held the feasts clearances the surrounding of the *Mazar*.

It is in this ambiguity that the present study has to identify the first kernel of syncretism and when probed the situation in depth interesting points come out. A point worth mentioning at this juncture is that the graves of a couple of Muslim patriots have become a place of reverence and social gathering in just about a century. Though it is very difficult to prove one way or the other possibly the fact that both Khairabadi and Liaquat Ali were convicted prisoners of the British won them a place in the psyche of the local people who were by and large Hindu. The sentiment of patriotism perhaps won over the sentiment of narrow religious feelings. This sentiment was further strengthened by various stories and rumors regarding the miraculous powers of Baba, which soon started floating.

Formative period of *Mazar* and its present status

Since its inception (in the closing years of the 19th century), *Mazar* has undergone various changes both in terms of people looking after it and the physical structure. In fact the miraculous powers of Baba and the popular stories associated to him brought a metamorphosis of these destitute graves into almost a place of pilgrimage along with the change in the socio-political scenario of latter settlers in its surrounding over a period of just more than fifty years is itself an interesting point to study.

In the initial years, maintenance of *Mazar* was taken over by Muslim clerics who were associated with the Aberdeen Bazaar Mosque. With the gradual development of pilgrimage to this sacred place from distant places in Andaman, internal management problem was cropped up regarding deployment of workers, sharing of donations and maintenance of the *Mazar*. The matter is sternly dealt with the *Mullahs* (religious elders), the local administration and other concerned people. As a result of mutual discussions, it was decided that the responsibility be vested with the Wakf Board, which is nominally under the Administration control.

This land over which the entire built up structure of the *Mazar* Durga Complex stands is in South Point. It was never formally allotted to the erstwhile *Mazar* Durga management committee, which was functioning earlier to maintain *Mazar*. Despite the fact that the majority of the opinion was for the Wakf Board to take over the *Mazar*. There were some individuals who felt that their interest would be hampered if control of *Mazar* was taken away from their hands. Of course the committee claimed statutory status and request to the administration for allotment of the land. But it is not materialized by the administration. Finally, the *Mazar* Durga committee voluntarily hands over the power to *Wakf* board on 2nd June 1998. On subsequent request from the *Wakf* Board for allotment of the land, after revenue survey by the administration, it was duly notified in the Official Gazette and registered with the *Wakf* Board under the Act of 1954. According to that notification, *Mazar* Durga is located on a land measuring only 0.08 Hect. (800 square meters).

Though Administration officially allotted the plot of land in the name of the *Mazar*, a suit was filed in the court of law claiming the right over the place by the descendants of the original land-holder who are residing around. They claim that the present land was allotted to their father by the administration as a part of settlement package when they were repatriated. Hence, now they are demanding their legal rights over the maintenance of *Mazar*. As such the matter is in the court and is presently sub-judice. Due to this problem, the *Wakf* Board is unable to undertake any further development of the structure.

Sacred Performances at *Mazar*

This place is never used as a place of rendezvous for young boys and girls because this place is very lonely and isolated. On the other hand police patrolling is rather regular for the protection of the *Mazar* as well as the safety and security of the tourists. So no case was found of such any antisocial activities around the *Mazar*. So we can say that the local persons treat the *Mazar* as a holy place. By association with the dead bodies of two saintly personalities, the area has acquired a holiness of its own. Though illicit liquor brewing and drinking is quite prevalent in the nearby *basti* (settlement area), nobody enters the *Mazar* while in intoxicant state. The devotees come to pay regards and receive blessing of *Mazar Baba*.

It is worth mention to state that several religious performances are celebrated at this place ranging from simple prayer salutation to ritual activities, from offerings of new cloth (*chaddar*), incense sticks, sandal paste, offering of sweets, offerings of goat and fowls, knotting of cloth to the peepal tree, distribution of amulets, talisman and ritual shave etc. Thus the sacred performances observed at *Mazar* can be organised into the following categories for holistic understanding of the *Mazar*. They are mainly

- ÿ *Mundan* (Tonsure Ceremony)
- ÿ *Dawat* (feast after fulfilment of vows)
- ÿ Other performances

Mundan:(Offering of first hair)

Of the performances stated above, *mundan* is considered as significant as it display the syncretic practice of both Hindu as well as Muslim performances simultaneously at *Mazar*. The process of removing first hair is observed according to the Hinduistic tradition of hair offering to the god. Once this process completes, the remaining offerings are held as per Islam and it is usually performed under the guidance of *Moulvi* (Muslim priest). When the practice started is anybody's guess. It is quite possible that some father and mother who was Hindu wanted to perform the *Mundan* ceremony for their child and finding no suitable place on the island 60 years ago did it here without a Hindu priest performing sanskritic rituals. Since then at least for the residents of *Mazar Pahad* that has become the norm.

Today the practice has got further associated with the case of non-fertile couples. With a view to attain children, they keep a secret vow at *Mazar* and tie a piece of cloth to the peepal tree hoping to be blessed by the Baba that will fulfill their desire by giving them a child. After fulfillment of their desire, they perform the *mundan* at *Mazar* with utmost devotion.

When a worshipper performs *mundan*, first the child is given special bath before the hair is barbed. The parents select a plot of land either under the *Ficus* tree or besides the Baba's grave. Then turmeric water is sprinkled on the ground for purification and draw *rangoli* (colorful sketch) where the child is supposed to sit. A brass container filled with turmeric water, mango leaves and coconut (resembles *purnakumbam* of Hindus which

is kept as auspicious symbol during worship) is placed in midst of the drawn *rangoli*. They arrange two wood pieces for sitting the child as well as barber. A new white cloth is kept under seating portion of the child. Then mother's sister holds the *atta* paste in two palms and wraps from time to time to prevent the fall of removed hair on the ground. The mother and her sister (*masi* of the child) assist the barber in removing the hair by holding the child. Then barber smears the head of the child with a kind of paste, which is made up of turmeric (*haldi*) mixed with clarified butter or oil. After completion of hair removing, the barber collects hair into *atta* paste and tells the parents to dispose in the open sea. After this ritual act, feast giving party sacrifice a goat to *Mazar* Baba as a part of their promise.

At the time of sacrifice the *moulvi* who actually does the ritual part of severing the jugular vein of the sacrificial animal according to the Muslim tradition. Where in people assists *moulvi* in the *halal* (half-cut according to Muslim slaughtering rules) sacrifice by holding the animal properly. Then *moulvi* utter chantings for sometime and cut the throat of the animal. Then the Muslim butchers make ready the sacrificial meat for the proposed feast which is followed by prayer. When the meal is ready, then they come in procession to offer first serving to Baba and *moulvi* who conducts prayer for *mundan* child. Then the child is taken to inside the first saintly grave along with family members for worship. Then *moulvi* puts his hand on child's head and prays for sometime. After the prayer, elderly male relatives drop some money in the donation box as per their wish. This is followed by grand feast on its premises to the present gathering. Besides this, invitees of the concerned party and from the settlement area, *Mazar* committee members and even passers also participates in such feasts. There is no restriction in common dinning. The belief is that they have to exhaust the cooked food there itself and not supposed to take back to their residence.

Dhawat (feasting)

The followers generally kept secret vows at *Mazar* on various tasks ranging from seeking of employment, marriage proposal, recovery from sickness, purchase of new motor vehicles and opening of commercial outlets etc. Some of the women also vow by tying a knot to the Ficus tree for conception which is a common tradition followed by Hindus. In case those vows are fulfilled, then the followers fulfil their promise by offering sacrifice and grand feast in the premises of *Mazar*. Whenever the devotees intend to arrange feast at *Mazar* first they approach *mutavalli* (*Mazar* worker) regarding booking of dinnin hall and kitchen that are attached to *Mazar*. Before confirmation of the feast date, *mutavalli* thoroughly verify the booking register to check whether any other person reserve the hall on that particular day or not. In case somebody reserves on the proposed date, then *mutavalli* suggest next available date for the convenience of staff and place. In case hall is vacant on the proposed day, *mutavalli* enter their name in the register and allot the date on their choice. Soon after completion of these formalities, then the entire staff i.e. butcher (Muslim), Safaiwala (Tamil), helpers (Hindu) makes their presence to help in making necessary arrangements for the proposed feast by extending all sorts of help.

On that particular day, the concerned party come to this place with their promised animals to offer sacrifice at *Mazar* early in the morning hours. Women and aged people are engage

in preparatory works for the feast. Where as men busy in offering and slaughtering of the feast animal at *Mazar*'s slaughtering ground. Not only the feast giving party, but all the invitees also offer prayer separately in front of tomb by lightening incense sticks and candles. The person concerned of the secret oath is then performs special worship inside the tomb and offer first serving to *Baba*.

There are some rules and regulations observed at *Mazar* regarding the feast. No body is allowed to carry out the feast items or utensils outside the premises of the *Mazar* Durgha for consuming. They have to eat only in the dinning hall. The main intention behind this inter-dinning may attribute to coexistence of people irrespective of their personnel identity i.e. caste, creed, sex and religion.

Other performances

Apart from *Mundan* and *Dawats*, the *Mazar* is a hub of various liturgical activities that are performed daily as well as on certain auspicious occasions. It is already stated that a Mosque is established within the same compound of *Mazar* in a separate room. Where in Muslims of South Point area frequent to perform *namaz* (formal prayer) daily as per the Islamic schedule (5 times in a day). Thus both religious performances are held concurrently and the reading of holy Quran does not disturb the ongoing activities of *Mundan* and other Hindu rites.

After undertaking of Wakf Board, the musical performance like *quavvali* (an artistic devotional singing) and other performances are observed once in a blue moon. These celebrations attract handsome gathering from South Point as well as from other parts of the Island. Regarding the performance of birth and death anniversaries of the pious personalities (*Urs*), on enquiry it is found that no such anniversary functions are observed at *Mazar*. The staff of *Mazar* stated, “*Since everyday festivity functions are common and hence no such separate birth or death anniversaries are observed at Mazar*”.

Socio-religious significance of *Mazar*:

Interestingly syncretism transcended the religious sphere in this particular case of *Mazar* and went into such mundane sphere as patriotism for which the two main actors were transported to this place, the then penal colony. The first point that comes to the mind of even the most casual observer of the *Mazar* in this island is that in the universally believed Muslim mythology there is no mention of any saint or holy person by the name of *Khairabadi*. The maximum credit we can possibly give him is that he was a patriot par excellence who sacrificed his best years and ultimately died in a distant land away from his kith and kin. The metamorphosis of a couple of uprooted patriots into a supernatural being thereafter emerging syncretism is an interesting phenomenon in Andaman Islands.

Of course at least to start with Liyaqat Ali's devotion to the memory of *Khairabadi*, his loving care to the grave of his friend gave this place a halo. The pious way of life of Liyaqat Ali and the subsequent burial alongside *Khairabadi*'s grave on his death possibly raised the supernatural image of the graves further. Subsequently miracles of these saintly personalities for curing of prolonged illness to those who removed the carcasses of dead dog from the grave and lighted lamps every evening as a mark of respect.

As a matter of historical evidence of the deposition of sacred tombs of these two pious personalities, the people of South Point visit often to this place to offer worship as they feel a sense of possession. One can simply understand that people come here to pay a homage to a great saint rather than a freedom fighters because still the people say that “... *they have a great belief of this place because it is a miracle place and people's desire fulfill here*”. This belief is crucial for attracting people of diverse religious backgrounds.

The syncretism is being facilitated further by the settlement of multi-ethnic people in the study area. The socio-economic survey revealed that 77% of non-local settlers and 23% of local settlers are visiting the *Mazar* in a week. This participation level can be shown from their linguistic background.

Table 1: Linguistic division of devotees visiting to Mazar

Sl.No.	Community	Devotees	Percentage
1	Tamil	28	36.36
2	Bengali	16	20.77
3	Malayalam	12	15.58
4	Telugu	9	11.68
5	Utter Pradesh	5	6.49
6	Punjabi	4	5.19
7	Haryanvi	1	1.29
8	Rajasthani	1	1.29
9	Bihari	1	1.29

A further analysis of the data shows that among the non-locals the largest number of visitors constitutes Tamil origin. They represent 36.36 percent of the total devotees visiting the *Mazar*. The people of West Bengal, Kerala and Andhra origin visiting *Mazar* constitute around 20.77%, 15.58%, and 11.68% respectively of total non-local community. On the other hand people from Haryana, Rajasthan and Bihar are the least in number (only one from each state) or only 1.29 percent each. From the foregoing analysis of data, it becomes clear that people of South Indian origin constitute the largest group i.e. 63.56% which goes to the *Mazar* to pay respect to the *Baba*. Among these the Tamil business class people form the majority.

A few points are obvious to even a casual but observed that these are playing crucial role in peaceful co-existence and mutual respect of different communities at *Mazar*. The first point that comes to the notice is that, it is a *Mazar*, which by definition is a Muslim graveyard. Today, at least, it is located in an area where the majority of the populations are non-muslims viz. Hindu. It is surprising that even in such a situation the *Mazar* has been able to retain its popularity.

Table 2: The settlements in *Mazar Pahad* area (South Point)

SI.No.	Creed	H.Hs.	Population					
			Male	%	Female	%	Total	%
1.	Hindu	71	154	53.2	135	46.7	289	67.8
2.	Muslim	19	61	63.1	36	37.9	97	22.8
3.	Christian	10	23	57.5	17	42.5	40	9.4
	Total	100	238	55.9	188	44.1	426	

*H.Hs: Households

The above table reveals out of 100 households 71% of them were Hindu households while 19% and 10% are respectively Muslim and Christian families. The total population of these one hundred households is 426. The Hindu population is 289 individuals including 154 males and 135 female. Muslims are 97 individuals of which male number 61 and females 36 individuals. The third community i.e. is of Christians who constitute 49 individuals of which 23 are males and 17 are females. These figures compare very well with the population statistics of Port Blair in general where the Hindu is in majority. Predominance of Hindu population over the rest of population in the South Point area illustrates the characteristics of recessive syncretism in the region.

Though it is not always crowded in terms of crowds at places of worship or pilgrimage in the mainland, it is often crowded in terms of crowds at Port Blair. As has already been said offering feasts at the *Mazar* is quite popular both among Hindus and Muslims. Here lies the unifactory role of the *Mazar* that is revered equally by members of the major religious groups of the Islands of Andaman and Nicobar.

Table 3: Frequency of visits to *Mazar* by local households

Name	Daily	Weekly	Fortnight	Monthly	Annually	Never	Total
Hindu	5 (7.04%)	32 (45.07%)	8 (11.26%)	21 (29.57%)	1 (1.4%)	4 (5.63%)	71
Muslim	—	10 (52.63%)	1 (5.26%)	6 (31.57%)	—	2 (10.52%)	19
Christian	1 (10.0%)	—	—	—	—	9 (90.0%)	10
Total	6 (6.0%)	42 (42.0%)	9 (9.0%)	27 (27.0%)	1 (1.0%)	15 (15.0%)	100

From the above table it is obvious that out of 100 households among the Hindu, members of 5 households (7.04%) visit the *Mazar* daily, members of 32 (45.07%) households visit the *Mazar* weekly, members of 8 (11.26%) households visit the *Mazar* at least once a fortnight, members of 21(29.57%) households do so once a month and one household (1.4%) is visiting *Mazar* annually, while members of 4 (5.63%) households never visit the *Mazar* as they have no faith in the Baba. Among Muslim community out of 19 households none goes to the *Mazar* daily, 10 (52.63%) households are visiting the *Mazar* weekly, 1 household (5.26%) is visiting *Mazar* fortnightly, while 6 households (31.57%) visit the *Mazar* only once a month. Only 2 households (10.52%) claim to have no faith in *Mazar* Baba.

Among the 10 Christian families in the area only one family (10%) is visiting *Mazar* and that too daily and the rest of the families (90%) are not visiting due to their attachment to the Church. It is obvious from the foregoing account that though the *Mazar* belongs to a Muslim, today is the property of the *Wakf* board, it is more popular among the Hindu than among the Muslim.

Peoples Attitude towards *Mazar*

Though people of South Point are belonging to different religious faiths and following their own calendrical festivals, most of them have great respect towards *Mazar Baba*.

Table 4: Expression of faith in *Mazar Baba* (community-wise)

Particulars	Hindu	Muslim	Christian	Total
Have Faith	67 (94.36%)	17 (89.47%)	1 (10%)	85
Have No Faith (New settlers)	4 (5.64%)	2 (10.53%)	9 (90 %)	15

Out of 71 Hindu households, 94.36% had faith on *Mazar* and 5% had no faith; where in case of Muslims, out of 19 households, 89% had faith and 10.53% had no faith. Christian households are having less belief as per the figures shown in the table when compared to other groups. By and large majority of the local settlers had faith (85%) in *Mazar* where as few households (15%) had no faith may be attributed to their new settlement in the area.

Features of Syncretism

One interesting point is according to Hindu tradition that the head of the sacrificial animal is slaughtered at a one stretch and placed before the god as a part of propitiation. Where as at *Mazar* it is performed according to Muslim tenets i.e., half cut (*halal*) of the animal to facilitate the flow of blood. It is performed by *Imam* otherwise in his absence some other staff of the *Mazar*, did the sacrifice according to the Islamic tenets. Since the sacrifice is done inside the premises of the *Mazar*, the Muslim tenet is strictly followed and the goat is actually slaughtered by the *moulvi*. Surprisingly the Hindu invitees do not object to eating this meat when it is served in feasts inside the *Mazar* though it is slaughtered in Muslim fashion by a *moulvi* and also cooked by a Muslim.

According to Hindu order, use of turmeric, vermillion, and sandal wood paste is common in image worship. The present study *Mazar* has showed a great capacity of incorporation of these sacred items notwithstanding Muslim. One such Hindu religious trait was incorporated into the daily worship at *Mazar* is the use of sandal wood paste. As Islam is a religion, which is totally against, image worship there is no place in the philosophy of this religion for sandal wood paste. On the other hand, it is extensively used in Hindu religion both in worship as well as part of ritual decoration. It will not be wrong to say that no Hindu ritual can be performed without sandal wood paste. Consequently Hindus who constitute the majority of *Baba*'s followers in South Point tend to use sandal paste in the *Mazar* also though it violate the main tenets of Islam.

As a consequence in the sacred area, sandal wood paste is kept inside the tomb in a small vessel for the use of the devotees. After offering prayers to *Baba*, devotees dip their finger in the sandal wood paste and apply the same to their forehead, chest and neck. This practice is totally against the tenets of Islam but has been accepted by the officials of *Mazar* and may be said to be another manifestation of syncretism. Unlike the earlier situation where syncretism transcended the boundary of religious activity and entered the mundane sphere where Islam accepted a religious trait of the Hindus viz. the application of sandal paste without religious connotation. Followers of Islam rationalized it as a symbol of having visited the *Mazar*.

In fact use of sandal wood paste is not only confined to applying on the body. It is also used for worshipping of new vehicles. As per the prevailing system of worship at the *Mazar*, the new vehicle is brought there and parked outside. The owner then goes to the inside of the *Mazar* with incense sticks where he offers prayer as guided by the *moulvi*. On coming out, the vehicle owner alone performs *harati* of the vehicle with the same incense sticks. Afterwards the vehicle is driven over two citrus fruits (lemons). Furthermore a lightening lamp is made with the symbols of Islam and Hindu is kept in front of the first tomb where the visitors light incense sticks and the resultant ash is collected for smearing on forehead.

Possibly the most lively example of syncretism vis-a-vis the *Mazar* is seen when the Hindu followers of *Baba* perform the *mundan* of their children at the *Mazar*. *Mundan* is a typically a Hindu ritual involving the offering of first hair of the child. Traditionally it was performed for the child those who have kept a secret vow. To accomplish this task barber is called on and perform the *Mundan* in front of their kinsmen, relatives and friends. Even the removed hair was carefully disposed off ritually in sea. Kinsmen collected at the spot were duly given a feast. In the absence of traditional background at a new setting, many of the local residents of South Point have started performing a shortened version of this ritual without any incantation of mantras etc. Thus we find that the Hindus are ready to perform this ritual in a rather short cut method devoid of details and the Muslims controlling a *Mazar* are ready to allow at least that shortened form of ritual within the compound of a Muslim graveyard.

Adjacent to Rahmatiya's tomb, there exists a ficus tree, which is worshipped by the visitors by tying a sacred knot to this tree for the success of their secret vows. It is quite popular practice of little tradition of Hinduism rather than Islamic one. As such the prayers of the Mosque as well as the sacred knots of the people existing together in the same compound of *Mazar* even till today.

It is customary to offer first serving of feast food to *Baba* as there is no such hard and fast rule in Islam. The person offering the feast was required to supply seven servings of cooked food to the *Mazar* that in turn used to distribute the same to the staff and other destitute. The invitees will simply sit in different rows and be served from their respective kitchen. To somebody not used to this sort of sense of equality or egalitarianism it may appear very incongruous. No such practice was found during visit of *Mazar*. The sitting arrangement is very simple and absolutely on egalitarian principle. No tables or chairs are used. People sit on the ground on slightly raised cemented platform.

Thus the above mentioned factors supports the hypothesis of syncretism i.e., whenever two cultures come in contact or whatever may be the situation, the traits are always exchanged between the two cultures. As such this proposition gets reflected in the present study since both the Hindu and the Muslim have accepted traits from each other.

Conclusion

Before drawing any conclusion, one must keep in mind the fact that followers of various religions are unequally distributed in India in general and Port Blair in particular. If that statement taken into consideration, then one can find that the popularity of the *Mazar* is not religion or language specific. It shows that despite having religious, linguistic and cultural diversity, people of Andaman have mutual love and respect for each other and participate in each other's festivals and feasts. Their love and respect for *Mazar Baba* be it Janab Khairabadi or Liakat Ali transcends them from the narrow boundaries of personal religion. *Mazar* thus starts acting as a unifying factor.

Some times, it is very difficult to judge from the behaviour of the persons whether they belong to same family or caste or to different ones. Such unity of love and affection among different religions are rarely to be seen in any other place. This love and affection is also found in the *Mazar*. The fact that it is a Muslim *Mazar* never deters the people of other religions from visiting this holy place. It is so because they respect the holiness of Baba. So a large number of the devotees visit the *Mazar* every day both morning and evening to offer their prayers. It is high time that we try and find such unifying factors of pan-Indian applicability, which will in time help forge a unity of mind. In that situation the present generation no longer get bogged down by narrow boundaries of religion, language or geography.

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Finger Dermatoglyphics of the Gadaba tribe of Bastar, Chhattisgarh

D. K. Verma¹

ABSTRACT

Bilateral finger print of 200 unrelated individuals (100 males and 100 females) of Gadabas of Bastar in Chhattisgarh were collected. The analysis included qualitative and quantitative traits. Present study indicates the higher incidence of loops followed by whorls and arches in either sex with nonsignificant sex differences. The gradational order of finger pattern types is observed as L>W>A in both sexes, where as whorl is found to be higher in males than the females. The symmetry pattern including whors, loops and arches is much higher than the asymmetry pattern in both sexes of Gadaba tribe. The left hand is more monomorphic than the right hand in males and a reverse trend can be seen in females. The values of P.I.I. and Furuhata's index is found to be higher in males than the females. The mean digital ridge counts in both hands were found to be greater in females than males. The mean TFRC and ATFR values were also observed greater among females than the males. The comparison of Gadaba with other tribal populations indicates significant intertribal differences with Muria, Bhatra, Birhor, Gond, Binjhwar, Halba, Sabara and Binjhia tribal groups of India.

INTRODUCTION

The genetic analysis of dermatoglyphic characters help us in understanding the heredity aspect of traits characterised by the interaction of genes and environment. Cummins and Midlo, 1943 pointed out that dermatoglyphic is objectively heritable and the racial differences in dermalythic traits are real. They also emphasized that the geometric variability of finger patterns has attracted the attention of anthropologists since frequencies of pattern types vary from one population to another. Holt, 1968 stated that absolute finger ridge counts may be biologically more meaningful than that of total finger ridge count. Ghosh and Nanda, 1975 noticed that pattern intensity, index whorl-loop index and arch-whorl index are found to be greater in male than females.

The Gadaba is a minor tribal group comprises about 0.73% of total tribal population of Bastar.. They mainly earn their livelihood by cultivating crops like rice, kodon, kutaki,

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maize and other millettes beside these many Gadaba families engaged as labourer in agriculture, house-building and other works available in Jagdalpur town. They are divided into a number of exogamous clans named after plants and animals. Descent is reckoned in the male line and marriage between persons belonging to the same clan is prohibited, while cross-cousin marriage is socially permitted among them. The aim of the present paper is to investigate the dermatoglyphic features and to examine the degree of relationship with other tribal populations.

MATERIAL AND METHOD

The present study conducted among the Gadaba tribe of Bastar, Chhattisgarh. Bilateral finger prints of 200 unrelated Gadaba individuals (100 males; 100 females) were collected from tribal villages ; Jatem, Sergipal, Khutpadar and Tusel and analysed by following the methods given by Cummins and Midlo (1961). In present study finger patterns, monomorphic hands, finger indices and finger ridge counts are considered to report the Gadaba's features in respect of their finger dermatoglyphics.

RESULTS AND DISCUSSION

Finger pattern Types

The percentile distribution of finger pattern types among both the sexes of Gadabas is presented in Table 1. Whorls are observed most common pattern on digit-I, and IV among both sexes, while its bilateral distribution indicates the higher incident of whorl on the left hand than the right hand. However loops are noticed more frequent on right hand than the left hand in both sexes of Gadaba tribe. The three basic finger pattern types for fingers are observed as follow :

Males	Females
W : I > IV > II > V > III	I=IV > II > III > IV
L : V > III > II > IV > I	V > III > II > IV > I
A : II > I > III > IV > V	I > II > III > IV > V

It is evident from table that the loops are more common as compared to whorls and arches in either sex with non-significant sex difference. The incidence of whorls is relatively higher in males (41.10%) than females (38.80%), whereas loops are slightly more frequent in females (57.80%) than males (57.00%). The incidence of arches is relatively higher in females (3.40%) than males (1.90%). An overall, the gradational order of finger pattern types is observed as L > W > A in both sexes of Gadabas of Bastar.

Symmetry and Asymmetry

Table 2 indicates the percentile distribution of similarity on homologous digits of right and left hand in basic finger patterns. The incidence of a symmetry is higher in males (28.60%) than females (26.00%) while the incidence of symmetry including loop whorl and arch is much higher than asymmetry. The proportion of loop symmetry is higher in females (44.60%) than males (42.80%). However the gradational order of pattern symmetry

is observed as L > W > A in both sexes of Gadaba of Bastar. The digit wise total pattern symmetry is found to higher on digit V (86.00%) in females and on digit III (77.00%) in males.

Monomorphic Hands

The percentile distribution of monomorphic hands among the Gadabas of Bastar is presented in Table 3. Table reveals that females are more monomorphic than males on right hand ; while males indicate higher incidence of monomorphic hand on right hand. However when both hands considered for ten finger for the same pattern the frequency of monomorphic hand is reduced and it is found to be higher in females (11.00%) than males (9.00%). The incidence of monomorphic hand indicates non-significant bilateral difference in male samples and significant bilateral difference in females at 5% level of probability, while no statistically significant difference has been observed in sex-comparison.

Pattern Intensity Index

The pattern intensity'index is shown in Table 4 along with standard deviation. The pattern intensity index is the average number of triradii which depends on the incidence of finger patterns. It will be more if W > L > A. and it will be less when incidence of patterns will be A>L>W. The pattern intensity Index is found to be higher in males (13.71) than females (13.58).

Furuhata's Index : It is the ratio of total whorls to total loops. Table 5 shows the higher value of this index in males (72.10%) than females (67.13%) among the Gadabas of Bastar.

Dankmeijer's Index : The ratio of total arches to total whorls is known as Dankmeijer index and indicates higher value in females (8.76%) than males (4.62%).

Finger Ridge Counts

Table 6 indicates the distribution of mean digital ridge counts among both the sexes of Gadaba tribe along with standard errors. The highest mean on digit II in either hand or sex of the population, while the mean value of digital ridge counts is found to be higher on right hand than left in both sexes. The mean digital ridge count is observed higher in females than males in both hands. Digit wise finger ridge counts are observed as follows:

Hand	Males	Females
R :	I > IV > III > V > II	I > IV > III > V > II
L :	I > IV > III > V > II	I > V > IV > III > II

The combined values of finger ridge counts are observed in the order of I > IV > III > V > II among both the sexes of Gadaba population. Finger ridge count on right hand is found to be higher in females (66.53 ± 1.97) than males (66.04 ± 2.04) and on left hand the value of total finger ridge count is also higher in females (66.36 ± 2.03) than males (63.86 ± 1.95). However an overall, sex differences is noticed statistically non-significant.

Total Finger Ridge Count (TFRC) and Absolute Finger Ridge Count (AFRC)

Table 7 indicates the distribution of mean total finger ridge count and absolute finger ridge count among the Gadaba of Bastar. The mean TFRC is found to be higher in females (131.52 ± 2.97) than males (129.90 ± 1.62). Similarly the mean ATFR is also observed higher in females (179.85 ± 7.78) than males (177.65 ± 6.21). Sex differences for TFRC and ATFR are observed statistically non-significant among Gadabas of Bastar.

Digit wise distribution of Summed Ridge Counts.

Table 8 indicates the distribution of digit wise summed ridge counts (for whorls both counts summed) among both the sexes of Gadabas of Bastar. The digit wise summed ridge counts of left hands show higher mean values than right hand on digit II, III and IV in females. The digit I indicates the highest mean values followed by digit IV in both sexes. The digit wise mean summed ridge counts are occurred in order of I > IV > II > V in both sexes of Gadaba tribes of Bastar.

Comparison with some tribal population

Total finger ridge count of the present samples is compared with some of the tribal population in order to examine the interrelationship between them. The mean TFRC value vary from 122.17 to 151.65 in male tribal population and 128.30 to 136.16 in female tribal population. The TFRC values of Gadaba tribe (129.90 - 131.52) are observed closer to Tharu male, Bada Binjhwar females and Halba females-Intergroup variations are observed significant with Bada Binjhwar male and Halba males. (Table 9)

The percentile frequency of whorls ranges between 22.50-66.70% in male groups and between 24.70 to 51.90 in female groups of tribal population, while in present sample the proportion of whorls is observed 41.10% in males and 38.80% in females. The proportion of loops varies from 33.50 to 75.30% in males groups and from 42.70 to 67.40% in females group of tribal population, where as the proportion of loops in present sample is observed 57.00% in males and 57.88% in females. The frequency of arches varies from 0 to 7.00% in male groups and from 1.50 to 7.90% in female groups of tribal population, while present study reveals 1.90% arches in males and 3.40% in females (Table 9).

The present finding of whorl frequency in Gadaba tribe (M : 41.10% ; F : 38.80%) fall closer to Birhor, Sabara males, Khond males, Juang, Saora males, Lambodi males, where as on the basis of loop frequency Gadaba tribe (M : 57.00% ; F : 57.80%) indicate closer relation to Sabara males, Juang males, Lambadi males. The proportion of arches is relatively low among both the sexes of tribal populations. The incidence of arches among Gadaba tribe (M : 1.90% ; F : 3.40%) is observed similar to Bison Hornmaria males, Maria males, Halba males, Birhor males, Munda males, Sabara males, Gond males 2 ?

and Juang females. X test for intergroup variation indicates significant variation with Muria males, Bhatra males, Birhor males, Gond males and Sahara females (Table 9).

The mean values of pattern intensity index vary from 12.00 to 15.50 in male groups and from 11.70 to 14.80 in female groups in reported tribal population. In this context Gadaba (M: 13.71 ;F : 13.58) shows closer relation to Khond males, Juang and Lainbadi males (Table 9).

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Table - 1
Distribution of finger pattern types among both the sexes of
Gadaba tribe of Bastar

Digit	Side	Gadaba Males			Gadaba Females		
		W	L	A	W	L	A
I	R	63.00	35.00	2.00	48.00	48.00	4.00
	L	58.00	39.00	3.00	54.00	39.00	7.00
	R+L	60.50	37.00	2.50	51.00	43.50	5.50
II	R	41.00	56.00	3.00	43.00	53.00	4.00
	L	35.00	59.00	6.00	46.00	50.00	4.00
	R+L	38.00	57.50	4.50	44.50	51.50	4.00
III	R.	20.00	79.00	1.00	17.00	81.00	2.00
	L	32.00	66.00	2.00	37.00	59.00	4.00
	R+L	26.00	72.50	1.50	27.00	70.00	3.00
IV	R	51.00	48.00	1.00	49.00	50.00	1.00
	L	58.00	41.00	1.00	53.00	43.00	4.00
	R+L	54.50	44.50	1.00	51.00	46.50	2.50
V	R	24.00	76.00	0.00	16.00	83.00	1.00
	L	29.00	71.00	0.00	25.00	72.00	3.08
	R+L	26.50	73.50	0.00	20.50	77.50	2.00
Total	R	39.80	58.80	1.40	34.60	63.00	2.40
	L	42.40	55.20	2.40	43.00	52.60	4.40
	R+L	41.10	57.00	1.90	38.80	57.80	3.40

Table - 2
Symmetry and asymmetry of finger pattern types among both the sexes of Gadaba tribe

Digit	Male (n=100)				Symmetry	Females (n=100)				Asymmetry							
	W	L	A	Total		W	L	A	Total								
	I	II	III	IV	V	Total	28.00	42.80	0.60	71.40	28.60	28.00	44.60	1.40	74.00	26.00	
	45.00	23.00	1.00	69.00	31.00	42.00	30.00	2.00	74.00	26.00							
	25.00	39.00	1.00	65.00	35.00	31.00	34.00	1.00	66.00	34.00							
	15.00	61.00	1.00	77.00	23.00	15.00	57.00	2.00	74.00	26.00							
	42.00	31.00	0.00	73.00	27.00	38.00	31.00	1.00	70.00	30.00							
	13.00	60.00	0.00	73.00	27.00	14.00	71.00	1.00	86.00	14.00							
Total																	

Sex difference = Non-significant

Table - 3
Distribution of monomorphic hands among both the sexes of Gadaba tribe

Hand	Male (n=100)				Female (n=100)			
	W	L	A	Total	W	L	A	Total
R	8.00	18.00	0.00	26.00	5.00	25.00	0.00	30.00
L	14.00	17.00	0.00	31.00	11.00	16.00	1.00	28.00
(R+L)* combined	3.00	6.00	0.00	9.00	2.00	9.00	0.00	11.00

**10 fingers counts together : Sex-difference = Non significant*

Table - 4
Mean pattern intensity index among both the sexes of Gadaba tribe

	Male (n=100)			Female (n=100)		
	Mean+S.E.	S.D+S.E.	C.V.	Mean+S.E.	S.D+S.E.	C.V.
P.I.I.	13.71±0.34	3.35±0.24	24.43	13.58±0.36	3.60±0.26	26.51

Sex difference = Non-significant

Table - 5**Distribution of indices among both the sexes of Gadaba tribe**

Male (n=100)		Female (n=100)	
Furuhatas Index	Dankmeijer's Index	Furuhatas Index	Dankmeijer's Index
72.10	4.62	67.13	8.76

Table - 6**Mean digital ridge count among both the sexes of Gadaba tribe**

Digit	Male (n=100)		Female (n=100)	
	Mean±S.E.	S.D+S.E.	Mean±S.E.	S.D+S.E.
Ri	16.37±0.52	5.20±0.37	15.71±0.64	6.40±0.45
R2	11.35±0.45	4.46±0.32	11.96±0.49	4.94±0.35
R3	12.41±0.38	3.73±0.27	12.43±0.48	4.84±0.34
R4	13.72±0.49	4.87±0.35	14.31±0.48	4.80±0.34
Rs	12.19±0.38	3.77±0.27	12.12±0.45	4.50±0.32
Total R	66.04±2.04	20.37±1.44	66.53±1.97	19.78±1.39
Li	15.09±0.54	5.33±0.38	14.50±0.63	6.28±0.44
L2	11.10±0.49	4.89±0.35	11.68±0.51	5.11±0.36
L3	12.36±0.42	4.19±0.29	13.04±0.51	5.14±0.36
U	13.67±10.46	4.53±0.32	13.56±0.56	5.63±0.40
L5**	11.64±0.35	3.46±0.25	13.58±0.57	5.74±0.41
Total L	63.86±1.95	19.48±1.38	66.36±2.05	20.05±1.41

** Significant sex difference at 2% level of probability

Table - 7**Mean TFRC and ATFRC among both sexes of Gadaba tribe**

Ridge Counts	Male (n=100)		Female (n=100)		Sex Difference
	Mean±S.E.	S.D±S.E.'	Mean±S.E.	S.D±S.E.	
TFRC	129.90±1.62	16.18±1.14	131.52±2.97	29.75±2.10	0.49
ATFRC	177.65±6.21	62.13±4.39	179.85±7.78	77.89±5.51	0.22

Table - 8
Digit wise summed mean ridge count among both the sexes
of Gadaba tribe

Digit	Hand	Male (n=100)		Female (n=100)	
		Mean±S.E.	S.D.±S.E.	Mean+S.E.	S.D.±S.E.
I	R	24.73+1.09	10.98±0.78	23.17±1.25	12.42±0.88
	L	22.91 + 1.14	11.43+0.80	22.48±1.27	12.68+0.89
	R+L	23.78±1.02	10.19+0.72	22.67±1.19	11.95+0.85
II	R	15.49±0.85	8.50+0.60	16.85±0.98	9.73+0.69
	L	14.82±0.88	8.72±0.62	17.20±1.04	10.38+0.74
	R+L	15.15±0.77	7.70+0.55	17.09+0.93	9.27+0.66
III	R	14.82+0.76	7.60+0.54	14.53+0.79	7.83+0.56
	L	16.20+0.89	8.95±0.64	17.60+1.00	10.03±1.41
	R+L	15.50±0.76	7.56±0.54	15.80±0.84	8.37±0.59
IV	R	19.81+0.99	9.88+0.69	20.21+0.95	9.46+0.67
	L	20.60+0.98	9.87±0.69	20.30±1.13	11.24+0.79
	R+L	20.20±0.89	8.96±0.64	20.26+0.93	9.74+0.69
V	R	14.44+0.70	7.05±0.49	13.5710.68	6.79+0.48
	L	14.22+0.64	6.36+0.45	14.27+0.77	7.70±0.55
	R+L	14.33+0.59	5.96±0.43	13.92+0.68	6.74+0.48
Total	R	17.79±0.66	6.57±0.47	17.59±0.75	7.48±0.53
	L	17.72+0.73	7.28±0.52	18.36+0.87	8.69+0.62
	R+L	17.76+0.65	6.50+0.46	18.04+0.79	7.83+0.56

Table - 9
Comparison of Gadaba tribe with various tribal population with respect to finger patterns, PII and TFRC

S.No.	Population	Sex	Source	Pattern Type			PII.	TFRC	Intergroup Variation	TFRC
				W	L	A				
1.	Bison Horn Maria	M	Ghosh, 1977	46.10	52.20	1.70	-	-	n.s.	-
2.	Maria	M	Ghosh, 1977	52.80	45.90	1.30	-	-	n.s.	-
3.	Maria	F	Ghosh, 1977	47.90	50.60	1.50	-	-	n.s.	-
4.	Halba	M	Sharma, 1970	47.20	49.40	1.60	14.30	-	n.s.	-
5.	Muria**	M	Sharma, 1970	52.50	38.00	7.00	14.30	-	**	-
6.	Bhatra*	M	Sharma, 1970	54.50	45.50	0.00	-	-	*	-
7.	Birhor*	M	Gupta, 1970	57.30	42.70	-	15.50	-	*	-
8.	Birhor	F	Gupta, 1970	44.80	53.50	1.70	14.30	-	n.s.	-
9.	Munda	M	Tyagi, 1967	47.80	50.00	2.20	14.40	-	n.s.	-
10.	Munda	F	Tyagi, 1967	51.90	42.70	5.40	14.40	-	n.s.	-
11.	Binjhawar	M	Sen, 1975	50.00	46.15	3.85	14.61	151.65+1.95	n.s.	***
12.	Binjhawar	F	Sen, 1975	45.62	49.12	5.26	14.03	128.30+3.88	n.s.	-
13.	Sahara	M	Sarkar, 1957	42.40	55.90	1.70	14.10	-	n.s.	-
14.	Sabara*	F	Sarkar, 1957	24.70	67.40	7.90	11.70	-	*	-
15.	Khond	M	Sarkar, 1957	42.00	52.90	5.10	13.70	-	n.s.	-
16.	Santhal	M	Sarkar, 1957	45.50	54.50	-	14.50	-	n.s.	-
17.	Gond**	M	Sarkar, 1957	22.50	75.30	2.20	12.00	-	**	-
18.	Juang	M	Sarkar, 1957	42.00	56.60	1.40	-	-	n.s.	-
19.	Juang	F	Sarkar, 1957	38.80	57.70	3.50	13.50	-	n.s.	-
20.	Saora	M	Tripathi, 1965	42.50	54.00	3.70	14.90	-	n.s.	-
21.	Lamhadri	M	Gupta, 1961	38.30	56.20	5.50	13.30	-	n.s.	-
22.	Lamhadri	F	Gupta, 1961	30.10	62.30	7.60	12.20	-	n.s.	-
23.	Koya Dora	M	Rao, 1968	46.90	48.80	4.30	15.20	-	n.s.	-
24.	Koya Dora	F	Rao, 1968	49.90	48.30	1.00	14.80	-	n.s.	-
25.	Bhil	M	Malhotra et.al. 1978	-	-	-	134.57+5.15	-	n.s.	-
26.	Katkari	M	Malhotra et.al. 1978	-	-	-	122.17+4.65	-	n.s.	-
27.	Thara	M	Singh, 1961	-	-	-	130.61+2.30	-	n.s.	-
28.	Rana Tharu	M	Srivastava, 1963	-	-	-	135.23+3.75	-	n.s.	-
29.	Halba	M	Verma, 1988	-	-	-	143.23+3.75	-	***	-
30.	Halba	F	Verma, 1988	-	-	-	136.16+2.87	-	n.s.	-
31.	Binjhia	M	Sen, 1975	-	-	-	135.61+3.33	-	n.s.	-
32.	Binjhia	F	Sen, 1975	-	-	-	120.30+3.96	-	*	-

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