

## **Socio-Economic and Environmental Dimensions on Health: A Study on the Santals of West Midnapore and Bankura**

<sup>1</sup>Samik Roy

**Abstract:** The most interesting feature of the tribal economy is that the majority of the tribals depend on agriculture, but they do not depend on it exclusively. Their economy is also based on forest collection and daily labour work; it is considered as a significant occupation among the tribals. Collection of forest products is a very common practice among the Santal tribes residing mostly in the eastern part of India. They not only collect different food items from the forest, but also earn through it when the surplus items are sold at the local markets. The tribal health is also connected directly or indirectly to their economic and socio-cultural conditions and environmental situation, particularly the forest ecology. This paper attempts to explore the implications of socio-economic factors and forest on health on the Santals of West Midnapore and Bankura Districts of West Bengal.

### **Introduction**

The World Health Organisation (WHO, 1997) has defined health as a “state of complete, physical, mental and social well-being and not merely the absence of disease or infirmity”. In all aspects of human existence health is a much broader domain. It has wider implications for social, economic and political life of an individual and indeed cannot be fully understood within the limitations of medical models. It is broadly conventional that social problem and well-being is reflected on Health.

Social dimension of health includes socioeconomic contaminants of health, health services and systems, health care practices and health attitudes and perceptions (Dalal and Ray, 2005). Many Social scientists have been actively engaged in empirically examining the social factors, which contributes significantly in promoting good health and controlling diseases. The component of studying health is socio-economic status and its measures like poverty, income, material deprivation, education, occupation etc. (Braveman et. al, 2005) may be positively or negatively associated with health status. Along with all these factors

---

<sup>1</sup> Research Scholar, Department of Anthropology, West Bengal State University

the concept of disease and treatment differ with the culture of specific community. The customs, norms and beliefs are related with the concept of health and disease and treatment is guided by particular culture of that particular area. During 80s Chaudhuri made some interesting studies in the context of tribal health and medicine. Chaudhuri (1986; and 1992) noted in his study that the link between the illness and nature of treatment among the Mundas. He also focused on the socio-cultural dimensions of diseases and treatment and specifically the nature of interaction of traditional and modern health facilities in the tribal villages. In another study Chaudhuri *et.al* (1989) revealed that health and treatment also reflect the social solidarity. Khera (1994) and Singh (1994) observed that various influencing factors are responsible for their diseases; and ecology gives the shape of tribal health. Bodding (1925) also highlighted the correlation between the culture of Santals and their diseases.

Health and disease are the two significant functions of human being. In every human culture complexity and simplicity have its own belief, practices regarding wellbeing, and develop their own social system of medicine to manage with diseases in its own way. Every known human society has developed its own way of magico-religious or scientific practices. Every society has cultural objective to prove whether or not there is a cause of illness and whether or not individual is healthy.

The Santals are comparatively independent group. They have their own cultural system and medical system is one of the important systems of the Santal society. The tribal social structure has its own structural and ethnic specificity and the disease that inflict upon the tribals. The knowledge of disease and their classification is a part of their cultural system and they develop methods and ways of curing their disease.

Considering the above facts three different types of villages were selected for field work in three socio-economic conditions. In a number of studies it has been pointed out that the tribals health status are correlated with various issues including socio-economic and ecological condition. The present study attempts to find out the impact or the variation of their health due to socio- economic and environmental values.

### ***Area and People***

According to Census of India, 2011, the Scheduled Tribes occur 8.6 per cent of the total population in India and 5.1 per cent in West Bengal. West Midnapore and Bankura districts are one of the major regions of West Bengal having a tribal concentration. The area is largely dominated by the tribals and forests. In West Bengal, there are 40 scheduled tribes covering 5.5 per cent of the total population. Among the 40 notified scheduled tribes communities of West Bengal, the Santal represented more than half of the totals scheduled tribes population. The Santal are distributed in the state of West Bengal, Jharkhand, Bihar,

Orissa, and Tripura covering 51.8 per cent of the total scheduled tribe population in the state. In this study Total 1477 individuals were studied covering 743(50.31per cent) males and 734(49.69 per cent) females. All subjects belonged to the Santal community.

The present study was conducted in West Midnapore and Bankura district of West Bengal, India. Villages were selected on the basis of location- I) closeness to or within forest area and far away from urban areas, II) not very far from the forest and urban areas and III) closeness to urban areas and far from forest area. The villages were selected according to the nature of location like urban villages of Bishnupur Block, rural villages of Garbeta II Block, Jamboni Block and forest inhabiting village of Garbeta II Block, Midnapore Sadar Block that comes under the Rupnarayan Forest Division.

### **Research Methodology**

The study was conducted during the year of 2011-2013, on eight tribal villages of Garbeta II Block, Jamboni Block, and Midnapore Sadar Block of West Midnapore District and Bishnupur Block of Bankura District. The study design is cross-sectional. It is an ex-post-facto research, which is based on one time research both qualitative and quantitative. Data on age and sex, marital status, place of birth, education, occupation, income, expenditure, household possessions, household information, and information regarding domestic animals were collected through household schedules. The data on fertility were collected by getting information from married female i.e. age of marriage, live births, family planning, etc. Age of younger generation was usually estimated through the official records of *anganbadi* or Primary Health Centre (PHC). Age of adult was calculated through the official records or by recall method i.e. in relation to the specific festival or to some important local events, natural calamities etc. Both structured (open and closed) household scheduled were used for taking data from the traditional and modern health personals, view on forest preservations and different forest related programmes from the tribals as well as from the officials. Case studies were taken through the structured (open and closed) interview. For getting more information, group interviews were taken during the fieldwork on different issues of health and forest. As per types of data, it is mostly primary in nature however; secondary data collected from existing literature, books, journals, government's records etc.

Major parts of data collected through Case Studies, more importance given on qualitative analysis. According to nature of data, qualitative data interpreted as per researcher impression, on the other hand qualitative data analyzed through statistical ways. All the data analyzed and tabulated with the help of SPSS 16.0

**Result and Discussion**

In Type I, villages, there are four villages, located in close proximity, except one. In Type II, villages there are two villages, which are separately located. Moreover, in the Type III villages there are two close proximity villages. Among the 318 families consisting 1477 population, 50.31 per cent males and 49.69 per cent females. Only in Type III, village's male percentage is 52.6 per cent and female percentage is 47.3 per cent. In the Type I and Type II villages female percentage is higher than male. One issue may be mentioned here, there is no special choice of child in respect of their sex and Girl child is not neglected which is also reflects in high sex ratio in the context of forest villages and the Type II villages. Interestingly the sex ratio is much lower in the Type III villages near urban area and away from forest area, this indicate that both male and female participate equally in the economic activities of the forest based villages.

Table 1: Age and Sex Composition of the Studied Area

Age Group (in years)		Up to 14	15-34	35-59	60+	Total
Type I	Male	72 26.58	109 40.22	72 26.56	18 6.64	271 100.00
	Female	74 26.42	111 39.64	84 30.00	11 3.92	280 100.00
Total		146 26.50	220 39.92	156 28.31	29 5.26	551 100.00
Type II	Male	66 24.35	110 40.59	79 29.15	16 5.90	271 100.00
	Female	89 32.60	94 34.43	76 27.83	14 5.12	273 100.00
Total		155 28.50	204 37.5	155 28.50	30 5.51	544 100.00
Type III	Male	68 33.83	77 38.30	47 23.39	9 4.48	201 100.00
	Female	57 31.50	65 35.91	42 23.20	17 9.40	181 100.00
Total		125 32.72	142 37.18	89 23.30	26 6.80	382 100.00

**Economic condition**

The distribution of population based on labour force and non-labour force category among the studied population of different set up is given below. The percentage of the labour

force was higher in Type I villages (68.23 per cent), and Type II (65.99 per cent) villages followed by Type III villages (60.47 per cent), In the Type I villages, the ratio between working force and non working force is 12.77, in Type II villages 8.5 and in Type III villages 9.61. The ratio between working force of Man and Women of the Type I villages is 11.31 and 14.55, in the Type II villages 10.20 and 7.3 and in Type III villages 8.5 and 11.13. It shows that in the Type I villages there are no discrimination of sex in the economic activity. Moreover, the women are more involved in the economic activity of the studied population. In case of Type II villages the Women working ratio was slightly down from Man working ratio, it shows that Man ratio is more dominating in this type of villages. Moreover the forest based economic activity is higher in the Type I (14.67 per cent) villages than the other two types of villages, incidentally there is no forest based economic activity in Type III villages.

Table 2: The distribution of population based on labour force and non-labour force category among the studied population

Age Group (in years)		Up to 14 NLF	15-60 LF	61 & above	Total
Type I	Male	72 26.58	181 66.78	18 6.64	271 100.00
	Female	74 26.42	195 69.64	11 3.92	280 100.00
Total		146 26.50	376 68.23	29 5.26	551 100.00
Type II	Male	66 24.35	189 69.74	16 5.90	271 100.00
	Female	89 32.60	170 62.27	14 5.12	273 100.00
Total		155 28.50	359 66.00	30 5.51	544 100.00
Type III	Male	68 33.83	124 61.69	9 4.47	201 100.00
	Female	57 31.49	107 59.11	17 9.40	181 100.00
Total		125 32.72	231 60.47	26 6.80	382 100.00

Table 3: Types of occupation of the studied villages

Primary Occupation	Type I			Type II			Type III		
	Male (%)	Female (%)	Total	Male (%)	Female (%)	Total	Male (%)	Female (%)	Total
Cultivator	94 34.68	83 29.64	177 32.12	68 25.09	52 19.04	120 22.05	27 13.43	23 12.70	50 13.08
Business man	0	0	0	2 0.73	0 0.00	2 0.36	5 2.48	0	5 1.34
Daily Labour	30 11.07	28 10.00	58 10.52	38 14.02	29 10.62	67 12.31	64 31.84	49 27.07	113 29.58
Agricultural Labour	9 3.32	6 2.14	15 2.74	54 19.92	44 16.11	98 18.01	12 5.97	17 9.39	29 7.59
Service	9 3.32	2 0.71	11 1.99	0	1 0.36	1 0.18	9 4.47	1 0.55	10 2.61
Household Work	2 0.73	12 4.28	14 2.53	4 1.47	4 1.46	8 1.46	0 0.00	11 6.07	11 2.87
Student	62 22.87	63 22.5	125 22.68	59 21.77	57 20.87	116 21.35	61 30.34	54 29.83	115 30.10
Forest Related	23 8.48	52 18.58	75 13.62	10 3.69	31 11.35	41 7.56	0	0	0
Unemployed	35 12.91	26 9.28	61 11.06	22 8.11	36 13.18	58 10.66	18 8.95	13 7.18	31 8.11
Others	7 2.59	8 2.85	15 2.75	14 5.16	19 6.95	33 6.06	5 2.48	13 7.18	18 4.71
Total	271 100.00	280 100.00	551 100.00	271 100.00	273 100.00	544 100.00	201 100.00	181 100.00	382 100.00

The major sources of income were cultivation in all types of villages. The percentage of day labour is the highest in the Type III villages as urban area is very close to this type of villages that's why people of this type of villages are more engaged in Labour related activity. However, in the Type I villages people are mainly engaged in forest related economy like collecting different types food, different type of fuel, sal leaves and very essential medicinal plants. From this collected items, they sell the surplus item to the nearest market.

Table 4: Family wise Annual income of the studied villages

Annual Income (in Rs)	Up to 10000	10001-20000	20000-30000	30001-40000	40001-50000	Above 50000	Total
4 3.33	27 22.50	48 40.00	35 29.16	4 3.33	2 1.68	2 1.68	120 100.00

1 0.85	39 33.33	54 46.15	20 17.09	1 0.85	2 1.70	2 1.70	117 100.00
0	5 6.17	43 53.08	21 25.94	3 3.70	9 11.11	9 11.11	81 100.00
5 1.57	71 22.32	145 45.59	76 23.89	8 2.55	13 4.08	13 4.08	318 100.00

Average income of the studied villages depends upon the number of people engaged in occupation. Table-4 shows that the annual income of Rs. 30,001-40,000 category is greater in Type I (29.16per cent) villages Even in Rs. 40,001-50,000 category these are households which is less than 3.33per cent. Type III villages (i.e. 3.70per cent) this is because of the fact that the Type I Villagers utilize the source of forest related activity more. The average incomes of the villagers were higher when the greater number of service holder was recorded. However, majority of the families belonged to lower income group (up to Rs.2500/- per month). It is mentionable that may be the income category 50,000> is lower in the type I villages but the ratio is higher in 30,001-40,000 category which indicate a balancing economy in type I villages.

### ***Educational Condition***

Educational condition is also a crucial indicator to measure socio economic condition. Appropriate education conveys the knowledge towards many issues related to health. In the three types of studied villages, educational status differs for many reasons, one of that is socio economic condition. The data shows that female literacy rate (54.29 per cent in Type-I, 58.55 per cent in Type-II and 51.65 per cent in Type-III) were found to be low in comparison to the male literacy rate (65.68 per cent in Type-I; 72.87 per cent in Type-II and 68.00 per cent in Type-III). In respect of literacy type II villages are more literate (men 72.32per cent women 58.97per cent) followed by type III (men 67.66per cent women 51.38 per cent) and type I (men 65.68 per cent and women 54.29 per cent) Trends of going for higher education are more or less same in three types of area. It was remarkable that the formal education is gradually becoming an important feature among the young villagers. But the depressing fact is that the female literacy rate is low comparison to the male literacy of the studied villages.

Table 5: Educational Background on the basis of male and female

Types		Non literate (%)		Literate (%)		Total
Type I	Male	93	34.32	178	65.68	271
	Female	128	45.71	152	54.29	280

Type II	Male	75	27.13	196	72.32	271
	Female	112	41.02	161	58.97	273
Type III	Male	65	32.33	136	67.66	201
	Female	88	48.61	93	51.38	181
Total		561	37.98	916	62.02	1477

Table 6: Educational Status of the studied population

Educational Level	Type I			Type II			Type III		
	M (%)	F (%)	Total	M (%)	F (%)	Total (%)	M (%)	F (%)	Total (%)
Can Not Sign	102 37.63	144 51.42	246 44.64	66 24.35	106 38.82	173 31.80	61 30.34	81 44.75	142 37.17
Can Sign	11 4.05	4 1.42	15 2.7	8 2.95	6 2.19	13 2.38	5 2.48	7 3.86	12 3.14
Below Primary	15 5.53	9 3.21	24 4.4	7 2.58	19 6.95	26 4.77	10 4.97	14 7.73	24 9.16
Class(I-V)	51 18.81	58 20.71	109 19.78	87 32.10	86 31.50	173 31.80	80 39.80	49 27.07	129 33.76
Class(VI-VIII)	34 12.54	27 9.64	61 11.1	51 18.81	27 9.9	78 14.33	29 14.42	18 9.94	47 12.30
Class(IX-X)	30 11.07	20 7.14	50 9.1	29 10.70	9 3.29	38 6.98	8 3.98	6 3.31	14 3.66
Class(XI-XII)	5 1.84	4 1.42	9 1.6	10 3.70	2 0.73	12 2.20	-	-	-
Graduate	7 2.58	2 0.71	9 1.6	3 1.10	2 0.73	5 0.91	3 1.50	1 0.55	4 1.04
Technical & Non Technical Degree	1 0.36	-	1 0.2	-	-	-	-	-	-
Not Applicable	15 5.53	12 4.28	27 4.9	10 3.70	16 5.86	26 4.77	5 2.48	5 2.76	10 2.61
Total	271 100.00	280 100.00	551 100.00	271 100.00	273 100.00	544 100.00	201 100.00	181 100.00	382 100.00



**Living conditions**

Living condition of the people reflects the health and hygiene condition of the population. The Type I villages are far away from the main road and situated inside the forests. All the houses are made by mud and 83.85 per cent of the houses are single storied. About 35.44 per cent of the 79 families are keeping their animal inside the house and 31.64 per cent of the 79 families keeping their animal in cow shed in separate places, the villagers have the knowledge of using soap and oil but rarely do they use it generally for their poor economic condition. The villagers wash their hand before taking food. Majority of the population use *Neem Stick* to clean their teeth and very few of them use brush and toothpaste. They use to cooking and eating in their small space beside the room or so called *Baranda*. Smoking *Bidi* among the aged group is very common of this population.

Surrounding of the houses is clean in the type II villages;. Almost all houses are made by mud and there are 94.89 per cent houses are single storied and 25.81 per cent of 67 families are keeping their animal inside the houses and 44.77 per cent keeping their animal in separate places or have cow shed. Practice of regular bathing and washing was noticed. Usually they make their cooking outside the space of room or in veranda, they don't have separate kitchen.

The Type III village was situated near the town of Garbeta II just behind the railway station which have lots of air pollution. 70.37 per cent of the families have domestic animal and keep their animal and most of them keep their animal in separate places as their economic condition is little bit better. They cook in separate *Baranda* and have proper ventilation. Only 2.46 per cent houses have sanitation facility. But use of soap and personal hygiene is noticed. Probably these kinds of villages are closed to urban area that's why they are used to this kind of habit.

Table 7: House type

House type		Type I		Type II		Type III	
		Frequency	Total	Frequency	Total	Frequency	Total
Structure	Single	103 (85.83)	120	111 (94.89)	117	72 (88.89)	81
	Double	17 (14.17)		4 (3.41)		9 (11.11)	
	Multi-storeyed	0		2 (1.70)		0	
Ownership	Owned	120 100.00		117 (100.00)		81 100.0	
	Rented	0		0		0	

		0.00	120		117		81
Roof	Asbestos	23 (19.16)	120	27 (23.07)	117	10 (12.34)	81
	Concrete	0		0		3 (3.70)	
	Straw	34 (28.34)		61 (52.13)		10 (12.34)	
	Tiles	0		0		0	
	Tin	63 (52.5)		29 (24.78)		58 (71.62)	
Wall	Bamboo	0	120	0	117	0	81
	Concrete	0		0		0	
	Tin	0		0		3 (3.70)	
	Mud	120 (100.0)		117 (100.0)		78 (96.3)	
Floor	Concrete	0	120	0	117	3 (3.70)	81
	Mud	120 (100.0)		117 (100.0)		78 (96.30)	
	Wood	0		0		0	

Table 8: Place of keeping animals

Type	Cow shed No (%)	Baranda No (%)	Inside House No (%)	Total
I	25(31.64)	26(32.92)	28(35.44)	79
II	30(44.77)	20(29.42)	17(25.81)	67
III	34(59.64)	15(26.31)	8(14.30)	57

### ***Drinking water and sanitation***

Drinking water and proper sanitation are the major indicators of health, in the studied villages Tube-well, well are the major sources of drinking water in Type I villages; there are 46.67 per cent of families who access tube well and 47.50 per cent of families access well for their daily needs. Again 5.83 per cent of families access pond water for drinking purpose. In the Type II villages 28.20 per cent families use tube well and 69.24 per cent family uses well and only 2.56 per cent families use pond water for their regular needs. And in case of Type III villages 90.12 per cent families access tube well and 6.17 per cent

families access well and 1.23 per cent use pond water and additionally 2.48 per cent use pump water for regular basis.

Generally the studied population are habituated with open ground to their daily natural work. There is no latrine facility in Type I and Type II villages; they access open ground for the same. In the Type III villages there are only 2.46 per cent having toilet facility but they do not practice it regularly. They felt uncomfortable with it.

Table 9: Source of Drinking Water

Source of drinking Water	Tube Well No. of Family (%)	Well No. of Family (%)	River/Pond No. of Family (%)	Pump No. of Family (%)	Total
Type I	56(46.67)	57(47.50)	7(5.83)	-	120
Type II	33(28.20)	81(69.24)	3(2.56)	-	117
Type III	73(90.12)	5(6.17)	1(1.23)	2(2.48)	81
	162(50.94)	143(44.96)	11(3.45)	2(0.62)	318

Table 10: Sanitation Facilities

Sanitation facilities	Absent	Present	Total
Type I	120	0	120
	100.0	0.00	
Type II	117	0.00	117
	100.0	0.00	
Type III	79	2	81
	97.54	2.46	
	316(99.37)	2(0.63)	318

### **Food Habits**

Proper Food habit is very important for good health; health status is dependent on what kind of food they Intake. Regarding food, the studied community consume *chawal* (rice), *Arah* (Vegetables) *dal* thrice or twice daily. Occasionally they take meat or vegetables in their diet. A young infant survives only on mother's milk till the fifth or sixth month after

birth. The major problem which was quite apparent among the children was malnutrition. Though they are getting carbohydrate content from rice but in protein consumption it is relatively undernourished since they are not taking milk, fish and other protein items in their regular diet.

Besides this, the main cause was their poverty, hence the type I villagers get more variety of food from forest. But now it is not so much available, however, still they get food from forest.

Consumption of *hanria* and other alcoholic drinks was the daily habit of more or less all the studied villagers including the women and children above 15 years. It is in their custom to drink *hanria* and serve it to other people also. According to them, *hanria* keeps the body cool in summer and hot during winter. There are also some instances of taking of *Mahua* as liquor. Many of them opined that drinking *hanria* cannot be harmful but in case of *mahua* it may happen.

For better understanding the environmental dimensions on health; food security and nature of availability of food from forest and items collected in three different types of villages are given below in the following tables:

Table 11: Item collected from forest of Type I villages

Item	No. of Variety	Name of Variety and Number of Families
Fruits	12	Kedh(17)Bonkhejure(14)Vuru(13)Amra(15)Bahora(4)Vala fal(7)Ata(8)Kul(11) Bel(10)Kachra(6)Sang fal(7) Bech fal(8)
Leafs	3	Sal(49)Mahul(35)Kedh(36)
Tuber	3	Babla Alu(62)Ranu Sikor(32)Bon Ol(26)
Mushroom	4	Kurkuri(56)Jhor Chatu(42)Muchi Chatu(16)Sik Chatu(6)
Fuel	2	Sal(65) Kurachi(55)
Wood	1	Sal(78)
Medicine	9	Kalmegh(24)Bonpiyaj(20)Bon Rasun(21)Bon Kumro(12)Basak(7)Satmul(6)Iswar Mul(2)Ananta Mul(2)Bontulshi(3)
Vegetable	6	Bon Ol(12)Bon Kudri(17)Bon Pui(34)Kadyara(22)Jejora(24)Bikalia(5)
Hunting	4	Korgos(28) Bon Sukor(18)Idur(7)Satna(15)
Honey		

Oil	3	Kachra(10) Neem(7) Kusum(7)
Dhuna	1	Sal(15)
Flower	2	Mahul(43) Sal Ful(50)

The above table shows almost 50 forest items were found and the villagers depend on forest to collect such kind of item for their needs. They collected most of their food item, few of which were consumed and others were sold in the nearest market, in this table the local term has been used. From the collected items they uses some medicinal plants like *kalmegh*, *Bonpiyaj*, *Bon Rasun*, *Bon Kumro*, *Basak*, *Satmul*, *Iswar Mul*, *Ananta Mul*, *Bontulshi* etc.

Table 12: Items Collected from Forest in type II villages

Item	No. of Variety	Name of Variety and Number of Families
Fruits	8	Kedh(17)Vuru(13)Amra(15)Bahora(8)Vala fal(15)Ata(8)Kul(21) Bel(20)
Leafs	2	Sal(49)Kedh(36)
Tuber	1	Bon Ol(15)
Mushroom	2	Muchi Chatu(26)Sik Chatu(24)
Fuel	2	Sal(45) Potash/Akashmuni(30)
Wood	1	Sal(79)
Medicine	5	Kalmegh(24)Bonpiyaj(12)Basak(7)Satmul(6)Bontulshi(3)
Vegetable	4	Bon Ol(12)Bon Kudri(17)Bon Pui(34)Kadyara(22)
Hunting	2	Bon Sukor(18)Idur(7)
Oil	2	Neem(7) Kusum(7)
Dhuna	1	Sal(15)
Flower	1	Sal Ful(50)

It is noticed that 31 type of variety of forest items were found in the type II villages. The villagers collected some forest item but very little variety of items was found because of the forest largely degraded in nature in the last few decades.

Table 13: Items Collected from Forest in type III villages

Item	No. of Variety	Name of Variety and Number of Families
Fruits	5	Amra(20)Bahora(18)Ata(18)Kul(8) Bel(17)
Leafs	2	Sal(34)

Mushroom	1	Sik Chatu(4)
Fuel	2	Sal(26), potash/akashmuni(35)
Medicine	3	Kalmegh(24)Basak(7)Satmul(6)
Vegetable	3	Bon Oi(12)Bon Kudri(17)Bon Pui(34)
Oil	2	Neem(7)
Dhuna	1	Sal(15)
Flower	1	Sal Ful(50)

This type of villages is situated close to urban area and far way from forest. But due to daily necessity the villagers have to go forest which was too far and very time consuming. However, the villagers had access to the forest and through it; villagers collected 20 of items from forest.

Therefore, from the above discussion clear relation of environment as well as forest with nutrition can be notified. The various roots and tubers available in the forest or small animals they can hunt supply a balanced nutrition to them. There is no doubt that deforestation or environmental imbalance is likely to affect the nutritional status of the tribals as most of the roots and tubers are not available. There is no doubt that any disturbance in the eco-system is likely to affect the balance. The mode of utilization of available natural resources often decides the long-term impact on health.

On the other hand the Santal as well as the Tribal communities habitually depend on environment or forest for fuel. They gather brushwood and leaves from the forest for this purpose. Due to forest degradation, the collection of fuel has become more time consuming uncertain, mainly for the women, because they are mainly responsible for fuel collection and utilization of fuel. In many areas in the context of forest degradation, there is large-scale plantation programme where commercial trees like Eucalyptus are mostly planted.

Table 14: Collection of Items from Forest

Collected Items	Purpose of Collection	Uses
Honey	To sell in the market	As food.
Roots and tuber	For consumption	As food
Medicinal Herbs	To sell in the market	As medicine.
Sal leaves	To sell in the market	Plates
Mahua fruit	For consumption and sell	Liquor
Wood	For consumption and sell	House construction and fuel.
Fuel wood	For consumption and sell	Fuel

This table shows that the collection of different types of non-timber forest produces like *mohua*, *sal*, etc. Out of these products *sal* plates were made in particular for their own use

and sometime for selling purpose in less quantity. People sold as well as kept these collected items for domestic consumption. The NTFP that were collected by the tribals were mostly from the better preserved forest areas. In such places it is a supplemented form of tribal economy for the poor tribal people. The women in the studied areas prepared country liquor from *Mahua* and sold it in the market as an alternative source of income.

***Nature of disease among the studied villages***

There are twenty three types of diseases found in the three types (Type I, Type II, Type III) of villages. Various type of diseases were identified with the help of the description collected from the affected person and their family members, medicine men, and local doctor, It is noticed that diarrhoea, high fever and malaria are the common disease among the Type II and Type I villages because unsafe drinking water and so on Skin disease are totally absent in Type I and Type III villages, Ulcer also absent among the Type I villages, Polio is totally absent in three types of villages. Diseases pattern reflects the existing health care practice, sanitation facilities, food habits of the studied population.

Table 15: Nature of Disease among the studied population (last one year)

Diseases	Type I			Type II			Type III		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Arthritis	2 3.07	3 6.52	5 4.50	1 0.68	2 1.83	3 1.17	2 1.92	3 3.48	5 2.63
Anemia	1 1.53	1 2.17	2 1.80	1 0.68	4 3.66	5 1.95	-	1 1.16	1 0.52
Asthma	-	1 2.17	1 0.90	5 3.40	2 1.83	7 2.73	-	-	-
Cough and Cold	12 18.46	8 17.39	20 18.01	18 12.24	9 6.12	27 10.54	9 8.65	7 8.13	16 8.42
Chicken Pox	-	-	-	-	-	-	1 0.96	2 2.32	3 1.57
Chest Pain	2 3.07	-	2 1.80	-	-	-	1 0.96	1 1.16	2 1.05
Hypertension	2 3.07	1 2.17	3 2.70	2 1.36	4 3.66	6 2.34	2 1.92	2 2.32	4 2.10
Diabetes	-	-	-	-	2 1.83	2 0.78	4 3.84	2 2.32	6 3.15

Socio-Economic and Environmental Dimensions on Health: A Study on ..... Bankura

Diarrhoea	14 21.53	7 15.21	21 18.91	17 11.56	11 10.09	28 10.39	10 9.61	9 10.46	19 10.00
Eye Problem	-	-	-	1 0.68	-	1 0.39	15 14.42	6 6.97	21 11.05
Filaria	-	5 10.86	5 4.50	3 2.04	2 1.83	5 1.95	2 1.92	2 2.32	4 0.21
High Fever	6 9.23	4 8.69	10 9.00	28 19.04	21 19.26	49 19.14	32 30.76	25 29.06	57 30
Headache	1 1.53	1 2.17	2 1.80	5 3.40	8 7.33	13 5.07	4 384	3 3.48	7 3.68
Jaundice	8 12.30	5 10.86	13 11.71	9 6.12	6 5.50	15 5.85	4 3.84	5 5.81	9 4.73
Malaria	2 3.07	2 4.34	4 3.60	23 15.64	16 14.67	39 15.23	12 11.53	10 11.62	22 11.57
Mumps	-	-	-	3 2.04	1 0.91	4 1.56	-	-	-
Reproductive Diseases	-	2 4.34	2 1.80	2 2.04	4 3.66	6 2.34	-	3 3.48	3 1.57
Skin Diseases	-	-	-	6 4.08	3 2.75	9 3.51	-	-	-
Stomach Problem	9 13.84	3 6.52	12 10.81	5 3.40	4 3.66	9 3.51	3 2.88	2 2.32	5 2.63
Tuberculosis	5 7.69	3 6.52	8 7.20	8 5.44	7 6.42	15 5.85	2 1.92	1 1.16	3 1.57
Typhoid	1 1.53	-	1 0.90	6 4.08	3 2.75	9 3.51	-	1 1.16	1 0.52
Ulcer	-	-	-	2 1.36	-	2 0.78	-	1 1.16	1 0.52
Paralysis	-	-	-	2 1.36	-	2 0.78	1 0.96	-	1 0.52
Total	65 100.00	46 100.00	111 100.00	147 100.00	109 100.00	256 100.00	104 100.00	86 100.00	190 100.00

It shows the preferences of the treatment of the studied area. The preferences of the treatment choice of the family are given by the head of the family. In the Type I, villages 89.16 per cent prefer traditional treatment or go to the traditional medicine man, because of limited facilities of modern treatment only 9.16 per cent of Type I villages prefer modern



allopathic treatment. On the other hand, in Type II village, only 64.10 per cent of families prefer traditional treatment, 23.95 per cent of the families prefer allopath, and 6.83 per cent of the families prefer the quack doctor treatment. In Type III villages, 46.91 per cent of the studied population prefers traditional treatment and due to very near modern facility of treatment, in this type of village the variation of preference was observed.

So it is seen that in Type I villages, people depended more on traditional treatment while people living in close proximity to urban areas availed western treatment more than Type I villages.

Table 16: Treatment Preferences (Family Head wise)

	Methods of Treatment Prefer by family (head wise)					Total
	Traditional	Allopathic	Ayurvedic	Homeopathic	Quack	
Type I	107 89.16	11 9.16	2 1.68	0 0.00	0 0.00	120
Type II	75 64.10	28 23.95	6 5.12	0 0.00	8 6.83	117
Type III	38 46.91	31 38.27	4 4.95	3 3.70	5 6.17	81
Total	220 69.18	70 22.01	12 3.77	3 0.94	13 4.08	318

### ***Concluding Remarks***

Therefore, from the above discussion it is very clear that the socio-economic factors play an important role on the health of the Santal. Side by side, they are dependent on forest as a source of fuel is very important. There is no doubt that with the decreasing of forest area, it has become extremely difficult for the villagers to collect the fuel wood. Some of the villages of the West Midnapore and Bankura district of West Bengal, majority of the villagers depend on forest. Moreover, majority of the tribes depend their economy on forest resources that is interrelated with their health.

On the other hand it has been observed that the people of Type I villages are directly linked to forest and forest based economy but in Type II and Type III villages people indirectly linked to forest. Traditional medicines are cheaper than western medicines and generally eagerly available in rural areas. It supplies a crucial source of income individuals or communities. There is noticeable relation between forest and nutrition. Various roots and tubers available in the forest or small animals they can hunt which can supply somewhat

balanced nutrition among them. In many cases, it has been noticed that certain diseases may be common in certain areas but they are controlled because of certain food habits based on vegetation availability. The studied group and the traditional healers in the present context used those plants provided they are available. They collected non-timber forests products like Sal seeds and leaves, Mahua flowers and fruits. This living subsistence level largely depended on forest mainly on non-timber forest produces. The diseases found among them were mostly. They are aware about health services but their attitude towards utilizing modern medicine is not so encouraging. Role of modern medical practitioners was very poor in the context of forest inhabiting villages. Inadequate facilities and infrastructure of modern health institutions are responsible for lack of dependency and faith towards the Western medical system. In the Type I, villages there are lack of formal education, unavailability of western medicine doctor, distance of the villages from medical centre traditional thoughts are the main reason that villagers have a faith in traditional medicine. In type II villages degraded forest was noticed and consequently decreasing rate of herbal medicine are noticed, the percentage of traditional methods of treatment falling from forest villages to urban villages and percentage of modern treatment was highest in urban villages and less in forest villages.

The studied population did not have access to pure and safe drinking water and the difficulty was more noted in the context of forest and rural areas. Total sanitation facilities were not implemented in the studied villages. Although a very few per centage of urban adjacent villagers realized the importance of sanitation. Further, due to economic limitation the studied villagers were not able to purchase the necessary materials for sanitation as prescribed by the government. The diseases found among them were mostly due to lack of personal hygiene, bad environmental condition, low socio-economic status, lack of safe drinking water.

**Acknowledgement:** Let me gratefully acknowledge to my Ph.D. supervisors respected Prof. Buddhadeb Chaudhuri, former Dr. Ambedkar Chair Professor in Anthropology, University of Calcutta and Dr. Subir Biswas, Associate Professor, Department of Anthropology, West Bengal State University for their continuous help and guidance to write this paper. I would like to thanks Dr. Samar Kumar Biswas for his valuable advice. I am also thankful to all the villagers of my study area for their heartiest welcome and continuous support.

**References**

- Braveman P.A., C. Cubbin, S. Egerter, S. Chideya, K.S. Marchi, M. Metzler, M., and S. Posner. 2005. Socio-Economic Status in Health Research: One Size Does Not Fit All. *JAMA* 294: 2879-2888.
- Bodding P.O. 1925. The Santals and Diseases. *Memories of the Asiatic Society of Bengal*. Calcutta: Asiatic Society
- Chaudhuri B. 1986a. Cultural Dimensions of Health: A Study on West Bengal Villages. In *Tribal Health: Socio-Cultural Dimensions*, ed. Buddhadeb Chaudhuri. New Delhi: Inter- India Publication.
- Chaudhuri, B. 1986b. Medical Anthropology in India with Special reference to Tribal Population. In *Tribal Health: Socio-Cultural Dimensions*, ed. Buddhadeb Chaudhuri. New Delhi: Inter- India Publication.
- Chaudhuri, B., D. Dasgupta, and K.K. Chatterjee (ed.). 1989. *Tribal Medicine*. Midnapore: Regional Research and Study Centre.
- Chaudhuri, B. 1992. *Health, Culture and Environment: The Tribal Situation in India, Continuity and Change in Tribal Society*. Shimla: Indian Institute of Advanced Study
- Census of India. 2011. New Delhi: Office of the Registrar General, Govt. of India.
- Khera, P.D. 1994. Ecology and Health: The Tribal Perspective. In *Tribal Health in India*, ed. Salil Basu. Delhi: Manak Publication Pvt. Ltd.,
- Dalal A.K., and S. Ray. 2005. Social Dimension of Health and Well-being: An Overview of Research Trends. In: *Social Dimensions of Health*, eds. Ajit K. Dalal and Subha Ray. Jaipur: Rawat Publications,
- Singh, B. 1994. Factor Influencing Health of Tribal Population Groups. In *Tribal Health in India*, ed. Salil Basu. Delhi: Manak Publication Pvt. Ltd.
- WHO. 1997. The World Health Report. Geneva: World Health Organisation.