NUTRITION AVAILABILITY PATTERN OF SCHEDULED TRIBE POPULATION IN UTTARAKHAND (INDIA) BUKSHA : A CASE*

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Abstract

An attempt has been made here to highlight the socioeconomic condition, housing environment, dietary habits, hygiene pattern and nutrition status of Buksha tribal society of Uttarakhand. It reveals that the economic as well as the nutrition status of the people is very low. More than eight essential nutrients, energy, fat, protein, carbohydrates, calcium, carotene, vitamins B1, B2 and C) fall short by 15.33, 66. 94, 21.95, 6.91, 69.25, 70.12, 2.22, 51.33, and 95.68 percent from the normal requirement. The housing environment of the village was very bad. The sanitation conditions within and around the houses of the households were very filthy.. Approximately 10 percent heads of the households were aware about of the aspect of malnourishment. At the end, the study suggests that there is an urgent need of training and awareness compaign among the rural tribal society.

Introduction

On an average every Indian's per day food availability was 395 grams in 1951 which was significantly increased upto 511 grams per head per day in 1991. Various schemes have been launched for agricultural development during the last four decades, but the impact of these schemes is not visibly reflected in the improvement of the socio-economic well being of the rural people. One third of the Indian rural population was below the poverty line in 1987-88. The Indian poor are continually living under the vicious circle of poverty from generation to generation. According to the economic survey, 1992-93, the percentage of population below the poverty line decreased from, 51.5 percent in 1972-73 to 27.9 percent in 1987-88 and rural poverty declined from 54,1 percent to 33.4 percent while a report of the NSS (National Sample Survey) reveals that the poverty line figure was closer to 48 percent in villages and 37 percent in towns as against the official figures 32 and 19 percent, respectively (Pant, 1995). With the reduction of poverty in quantitative terms, the decline in quality seems to have taken over and washing away the percentage improvement (Khusro, 1993).

Recent advances in the study of the relation of diet to health have shown how dietic deficiency gives rise not only to certain specific diseases but to the conditions favourable to prevalence of a wide range of illness. It is held that barring infectious diseases and accidents nearby 75 percent of human ailments may be traced to food deficiency (Gangulee, 1939).

Similar to Indian poor, the Uttarakhandi poor are also continuing to live in the vicious circle of poverty from generation to generation. Small and marginal land holders (87% of the total holdings have below 2 ha land), agricultural labours (6.4%) scheduled castes (16.7%), and scheduled tribes (3.54%) constitute the bulk of rural poor, rural unemployed and under employed. These weaker sections of rural community are the lowest income group people living in abject conditions inviting several diseases including deficiency related diseases.

An attempt has been made here to highlight the socio-economic structure, housing environment, dietary habits, hygienic pattern and nutritional conditions of the scheduled tribes population (Buksha Tribe) in Tarai region of Uttarakhand Himalaya.

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Location & Methodology

The Buksha dominated villages are located in the western part of Nainital district. Tharu village, the largest Buksha village lies where 29° 16'25" N latitude meets 79° 1'42" E longitude, in the Tarai belt of Uttarakhand region. It has been purposely selected for the present investigation. The village comprises 117 households of which 59 households are Bukshas and the rest belong to other castes (Sikhs, Chatriya, and Nepali). Out of the total 59 Buksha households 47 percent have been randomly selected. Data pertaining to demographic structure, socio-economic base, housing environment, hygiene pattern, food and nutrition consumption etc. were collected with help of well structured questionnaires in 1991-92. Per head per day intake of food was worked out from the total consumption of the year. Each food stuff taken by the people has been converted into various nutrients with the help of food composition tables prepared by ICMR (Indian Council of Medical Research) and then percentage departure (surplus or deficient) was compared with the standard requirement (Gopalan et al; 1985).

Geographical Background of the Scheduled Tribes

Out of the total Scheduled Tribe population in the state of Uttar Pradesh, about 72.89 percent live in Uttarakhand Himalaya, i.e. eight hill districts of U.P., namely, Uttarkashi, Pauri, Chamoli, Tehri, Dehradun, Nainital, Almora and Pithoragarh. About 3.54 percent of the total Uttarakhand population belongs to scheduled tribes : the highest 8.2 percent living in the Dehradun district, 5.82 percent in the Nainital . The tribes include Tharu, Buksha, Bhotia, Raji and Jaunsari while the Tharu and Buksha are confined to the Tarai-Bhabar belt of Nainital district. The Bhotia live in Northern confined to Chakrata tehsil in the Dehradun district. The average literacy among the scheduled tribes is 23.56 percent and the sex ratio is 930 females to 1000 males. The main working population is 38 percent, the highest 47.6 percent being in the Dehradun district and the minimum 28.53 percent in the Nainital district (Pant, 1995) (Table 1).

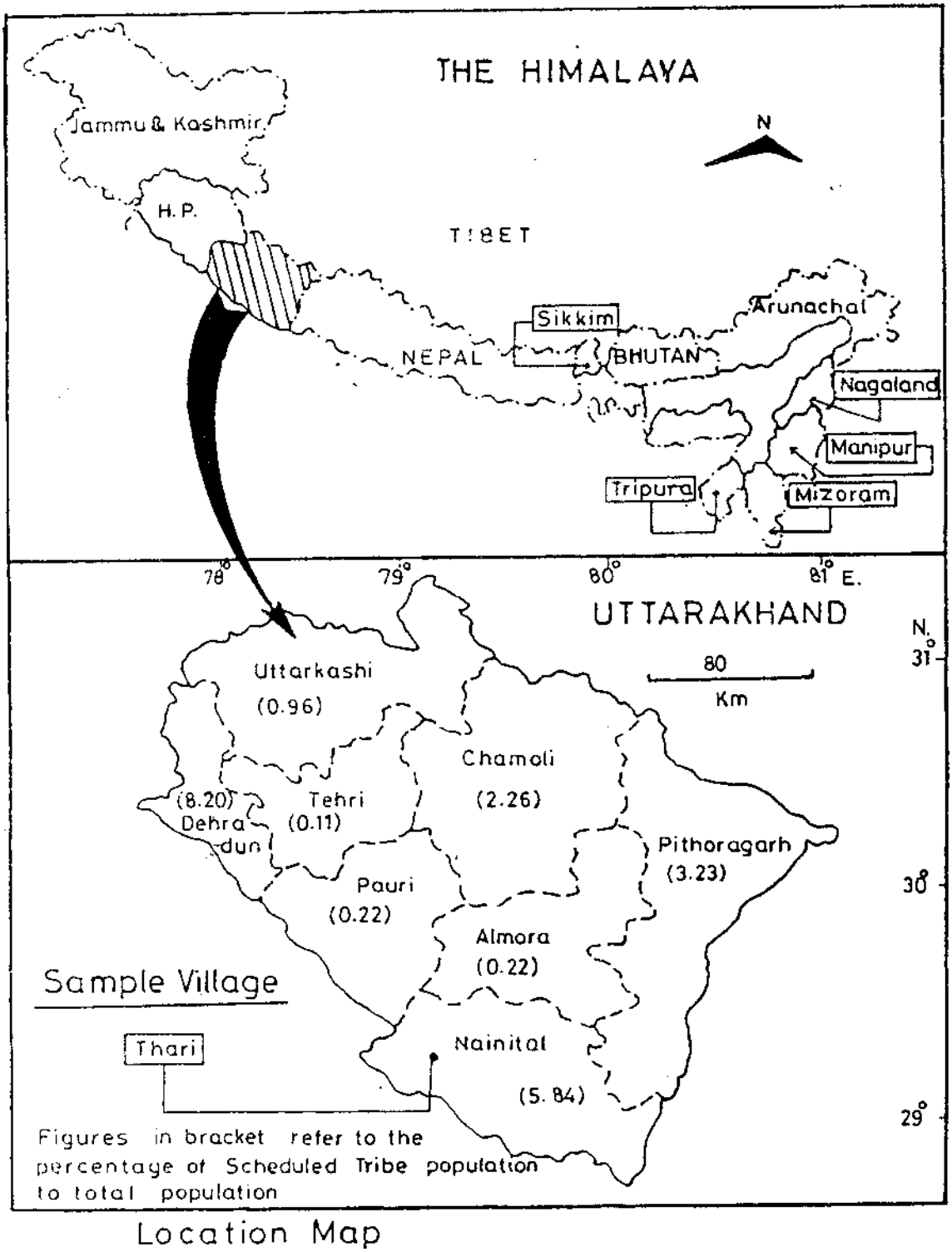
Case Study

The preceding discussion has provided a bird's eye view of the scheduled tribe population living in the Uttarakhand which is based on secondary sources. However, an attempt is further made to evaluate the village level situation of Buksha schedule tribe which is selected from Nainital district. The sample village is of mixed caste : Sikh, Brahmin, Chatriya, Scheduled castes and scheduled tribes.

Socio–Economic profile

Out of the total (117 households), 28 (24%) Buksha households have been selected for the present investigation. Buksha is the major category of scheduled tribes. Like Brahmin or Chatriya (Rajput) among the Buksha there are also a number of subcastes including Rana, Thakur, Dhingra, Buksha etc. Buksha are Hindu by religion. But the traditional customs etc, are quite different from those of other castes which belong to that region. Subcaste wise superiority or inferiority also prevails among the Buksha families. Out of the total 28 sample households, approximately 95 percent were living independently (Single) while a negligible proportion (appro.5%) were classified as joint (combined) families. Out of the total population (128) of sample households, the proportion of males and females was 53.12 and 46.88 percent, respectively. The average sex ratio was 882 females /1000 males. It is quite lower than that of other castes because of the female mortality was higher in this tribe. It presents a male dominating society (Pant, 1993)

The total population of the sample households is categorised into five age groups. The highest 28.12 percent of the total population was concentrated in the age group of 5-14 years and lowest 9.38 percent in the age group of above 60 years. The age groups of 15-29 years consists of 25 percent and 24.22 percentage found in between the age of 30-59 years. It presents more than half of the total population (50.78%) considered as non



Location Map

working age groups (below 14 and above 60 years), and burden upon the working force is quite considerable (Table 2). The average households size was 4.6 persons per household, lower than that of the whole village (4.8 person/household).

A level of education is considered as a mark of social progress. Of the total Buksha population,25 percent was literate while 53.12 and 21.88 percent were illiterate and below 6 years, respectively. Out of the total females only 8.3 percent were literate, while 40 percent males were literate. Only 96.88 percent literates have an education level upto primary and rest 3.12 percent persons have upto Junior level education. It shows the apathy of this tribes towards education on the one hand and ignorance of the education department on the other.

Agriculture is the basic source of livelihood not only of the Buksha population but also of the people of India as a whole. Likewise the whole occupational scenario of the Himalayan society, the Buksha tribal population is also engaged in more than one occupation because none of the occupation provides self reliant base. Out of the total active population more than 85 percent were found as cultivators, animal breeders and part time labourers. Negligible proportion of the active population was found in lower level job inthe nearby factories. It is worth explaining that actual land owners of the Tarai and Bhabar region were Tharu and Buksha. It was noticed that Buksha had sold their land to the Sikh and other migrants to fulfil their heavy drinking (wine of liquors) requirement and they were working as landless labourers under them. Buksha gave their land in two ways, first on contract basis, i.e. annual payment by the tenant to the land owner, and second, on rent basis i.e. tenant would pay a required amount to the land owner (Buksha) and when the owner would return this amount then tenant would return the occupied land. However, in practice, the Buksha were not able to return this amount and became landless and finally working as labourers for survival. Generally economic status of the population certainly depends on the occupational composition. The annual output (income) per house and per capita is worked out after summing up the total output (income) from all sources of income. Sources are divided into five categories, such as, 1) Cultivation, horticulture and social forestry, 2) animal husbandry, 3) service and money order, 4) labouring, and 5) others. The average per annum per household output of this tribe was found Rs. 15,835/ while per capita output came to Rs. 3,464/- in the village Thari which is far below from the national and regional income. Out of the total income 74.22 percent was received from cultivation, horticulture and social forestry while 19.48 percent of the income was gained from money orders and other sources, respectively. Approximately 88 percent households have less than 2 acres per capital land. It shows the small and marginal landholding size pattern of the region.

Food And Nutrition

Table 3 shows that per capita daily consumption of rice was 448.2 grams while the intake of wheat flour in the Buksha was 273.73 grams The consumption of cereals seems to be more than enough as compared to normal requirement of 400 grams which is suggested by ICMR. The per capita intake of pulse was only 12.48 grams which falls short by 80 percent from the standard requirement of 70 grams. It is clear from the table that vegetables, ghee and edible oil, meat product, sweets and fruits were very inadequate. The per capita daily consumption of milk product was 45.16 grams which was inadequate by 73 pecent from the standard requirement of 170 grams. The village of the region grows a lot of cereals but its population particularly Buksha tribe is not aware of the essential intake of other food items such as pulses, vegetable, fruits etc. Because of this ignorance they consume more cereals than other easily available items.

The pattern of nutrition intake in the Buksha is shown in Table 3. Out of the total energy intake 70-80 percent was drawn from cereals. Remaining energy intake depends on other foods, pulses, meat, green vegetable and fruit which were consumed seasonally /occasionally.

It is clear from the Table 3 that the average energy intake in Buksha was 2057.56 kcal

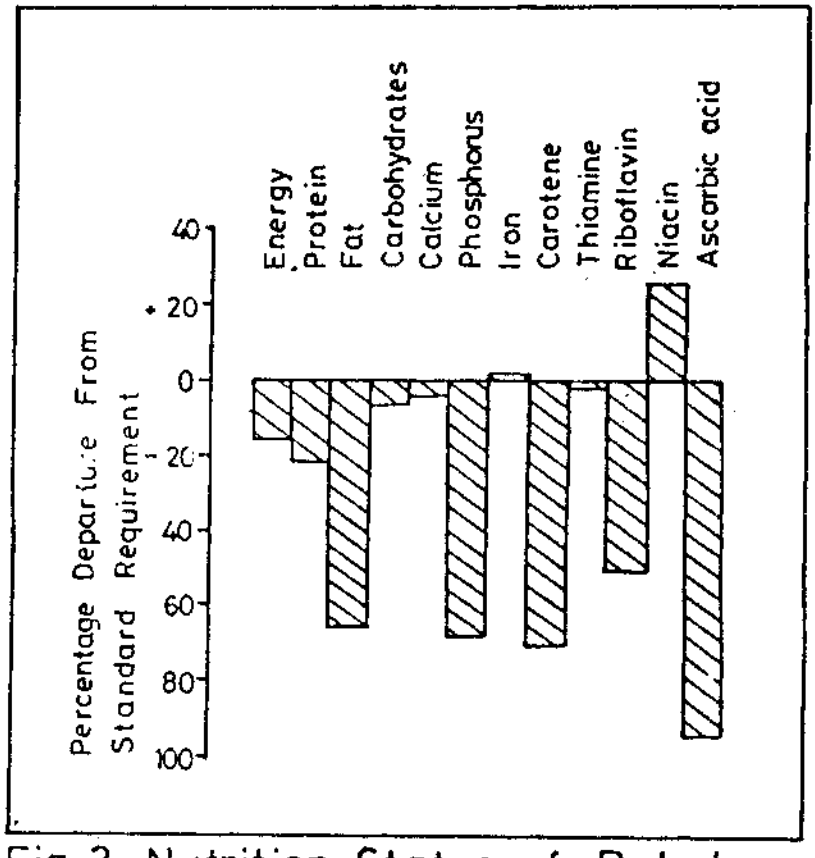


Fig. 2 Nutrition Status of Buksha Tribe in Village Thari

which was 15.33 percent deficient from the standard requirement of 2430 kcal. The consumption of protein falls short by 21.95 pecent from the standard requirement of 66 grams. The intake of fat, carbohydrates, phosphorus, calcium, carotene, thiamine, riboflavin, and ascorbic acid falls short by 66.94, 6.91,5.99, 70.14, 2.22, 51.33 and 95.68 pecent, respectively while the consumption of iron and niacin is surplus by 2.38 and 25.75 percent, respectively (Table 4).

Discussion :

The forgoing study shows that the nutrition status of the Buksha population is alarmingly lower than that of the standard suggested by the scientists of Indian council of Medical Research (Gopalan et al, 1985). It reveals that the food crops are inadequate to supply all essential nutrients on one hand and the consumption of various types of non-cereal items (fat, milk, vegetable, meat and fruits) is very limited on the other. It is because the inhabitants were not aware of the importance of nutrition and the pruchasing capacity of Buksha population is very low as compared to other castes. Consequently they seems to be very unhealthy and inactive.

The housing conditions around the house or within the house also largely influence the health status of its inhabitants. The grass, *Khaprail*, cement with iron rods are used as roof material of the house while the walls are made of grass, and bricks. Cattlesheds was thatched forms are generally found in all villages. Buksha households have no separate kitchen, toilet and bathroom facilities. All families cooked their food in the same room and they used cultivated fields and nearby water sources for toilet and latrine. This condition has also polluted the environment of the village which affects the health of the society. Overwhelming households have only one room house for every purpose (sleeping, cooking, drawing and store etc.).

The Buksha houses have thatched forms and are very compact, i,e,open space around the house is very limited. The ventilation and sanitation conditions of the houses were very bad. More than two thirds of the households were facing the problem due to rat, sparrows, birds, flies, bedbugs, mosquitoes and other insects which were always present in the houses. To combat the insects 40 percent households have used insecticides. About 12 percent of the total households have used treated water for drinking purpose through tap, and remaining population always fetched water from nearby streams, hand pumps etc., which is absolutly injurious to health. Consequently more than 80 percent of the total population were suffering from stomach and worms problems.

Generally the water is disposed on open space which also promotes the breeding of mosquitoes in the region. Likewise 81 per cent of total households were dumping the refuse out side the houses while only 3 percent were burning them. The garbage and street conditions of the houses were very bad. Few households have kitchen garden. The study shows the housing environment of this village is very serious. They are not aware of the importance of the housing conditions and they are living a very filthy condition.

Along with the housing environment, the hygiene pattern of the households determines the health status of its members. It is observed that most of the people do not brush the teeth or take bath daily and wash their hands before the meals. But each and every family use soap for washing clothes (Pant, 1993).

Approximately 90 percent of the heads of the households (respondents) were not aware of the nutritious food. Without knowing this serious aspect of food science one can not protect oneself from various diseases. The nutrition status of the people mainly depends on the prevailing dietary patterns. Approximately 70 percent of the total households took their food twice and rest thrice in a gastronomic day. Generally breakfast includes an almost full meal as they are often engaged in strenuous work. More than 85 percent Buksha family do not consume milk, curd and ghee daily. None of the tribal family was taking pulses daily, while more than 76 percent were taking them monthly. It is found that generally Buksha population was used to taking more rice (both the time) which is less nutritious as

compared to other cereals. Use of meat products was normal or occasional. Bukshas are more interested in catching fish in nearby ponds and streams. Green vegetables are important sources of various vitamins. The consumption of green or other vegetables was very low. Generally potato and onion were used as vegetables at both the meals. Some times they take salt and whey with rice.

The forgoing study of housing environment, hygiene pattern, dietary habits and awareness of the people clearly verified the low nutrition status and deteriorated health. Consequently about 25 percent of the total surveyed population were suffering from various water borne, nutrition deficiency, and other diseases (asthma, tuberculosis, goiter, rickets, kwashiorkor, night blindness, typhoid, malaria etc.). These diseases were confirmed from the hospital cards. It was observed that tribal dominated villages were more prone to various diseases.

Suggestions:

Thus from the forgoing study it can be concluded that there is an urgent need of awareness and training compaign in the tribal areas of Tarai and Bhabar belt of Uttara Khand Himalaya. The village level organizations (institutional building) should be established and training in nutrition essentially for good health, food sciences, health hygienic importance etc. should be organized and linked with the cultural heritage of the society. In these activities the participation of females should be compulsory as women are the backbone of rural society.

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Table 1 :

DEMOGRAPHIC CHARACTERISTICS OF SCHEDULED TRIBE POPULATION IN 1991.

District	Total Rural Urban	Total Population	% of Scheduled castes population to total Population	Density (persons / Km^2)	Sex Ratio (Females per 1000 males)	Literacy (%) (1981)			% of main Workers (1981)
						Persons	Male	Female	
Uttarkashi	T	2300	0.96	0.29	909	40.84	57.53	22.01	42.98
	R	2240	1.01	0.28	908	40.28	57.04	21.58	43.00
	U	60	0.35	3.53	935	59.61	71.88	40.00	42.31
Chamoli	T	10073	2.26	1.12	1062	45.88	63.11	29.43	36.84
	R	7939	1.92	0.87	1113	40.03	58.11	23.56	36.43
	U	2334	5.76	35.36	907	60.79	74.81	45.70	37.89
Tehri	T	615	0.11	0.14	1312	57.35	63.27	42.11	45.59
	R	548	0.10	0.13	1491	52.46	59.09	35.29	45.90
	U	67	0.20	1.40	456	100.00	100.00	100.00	100.00
Dehradun	T	84046	8.20	27.23	889	18.64	29.36	6.08	47.06
	R	81005	15.88	26.95	898	18.13	28.78	5.72	47.68
	U	3071	0.60	37.91	684	61.31	67.43	48.45	41.24
Pauri	T	1502	0.22	0.28	744	26.16	40.22	6.55	41.20
	R	1358	0.23	0.25	784	19.35	32.55	2.35	38.22
	U	144	0.18	2.12	440	80.99	87.64	62.5	65.29
Almora	T	2739	0.33	0.51	949	46.57	61.39	31.55	39.86
	R	2044	0.26	0.38	1018	44.55	60.76	27.87	40.53
	U	695	1.30	22.42	773	60.36	65.91	55.24	35.27
Nainital	T	90020	5.84	13.25	944	19.04	31.59	6.12	28.53
	R	88061	8.49	13.16	947	18.71	31.15	5.95	28.58
	U	1959	0.39	19.59	814	48.61	64.96	25.07	23.82
Pithoragarh	T	18313	3.23	2.07	995	47.62	62.41	32.51	36.99
	R	15140	2.89	1.71	982	44.66	59.96	29.07	37.69
	U	3173	7.53	151.09	1056	68.94	79.87	57.57	31.96
Uttarakhand	T	209838	3.54	4.10	930	23.56	35.64	10.43	38.10
	R	198335	4.27	3.91	935	22.03	34.06	9.03	38.21
	U	11503	0.89	26.57	843	62.27	73.79	48.28	32.52
Uttar pradesh	T	287901	0.21	0.98	914	20.45	31.22	8.69	36.88
	R	271028	0.24	0.94	920	18.96	29.66	7.33	37.10
	U	16873	0.06	3.39	820	50.69	60.26	38.12	32.30

Sources : Anonymous, 1981. Census of India; U.P. Series 22 Part II.
A Primary Census Abstract Anonymous, 1991.
Primary Census Abstract. GISNIC, Nainital.

Table – 2
Socio Economic and Demographic Characteristics

Particulars	
Total Households in the Village (No.)	117
Total Buksha Households (No.)	50
Total Buksha Selected Households (No.)	28
Total Buksha Selected Households (%)	47.46
Total Population of selected Housholds (H.H.) (No.)	125
Male (%)	53.12
Female (%)	46.88
Sex Ratio (Females/1000 Males)	882
Household size (persons/H.H.)	4.6
Age Groups – (%)	
(i) Below 4 Years	13.28
(ii) 5-14 Years	28.12
(iii) 15-29 Years	25.00
(iv) 30-59 Years	24.22
(v) Above 60 Years	9.38
Literacy Total (%)	
(i) Male	39.71
(ii) Female	8.33
Educational Attainment (% of total literates)	
(i) Primary Level	96.88
(ii) Junior Level	3.12
Economic Scenario -	
(i) Per household Income (Rs.)	15837/-
(ii) Per capita Income (Rs.)	3464/-
Income from various sources (%)	
(i) Cultivation, Horticulture and Social forestry	74.22
(ii) Labouring	19.48
(iii) Service	4.06
(iv) Others	2.24

Sources. Personal Survery, 1991-92.

Table 3:
Per Head/Day Food Consumption (Grams).

S.N.	Food Stuff	Quantity
1.	Rice	448.20
2.	Wheat Flour	273.73
3.	Pulses	12.48
4.	Ghee & Vegetable oil	7.12
5.	Meat Products	7.33
6	Milk Products	45.16
7.	Sweets	27.54
8.	Fruits	9.20
9.	Other (vegetable, Garlic, Ginger, etc.)	101.74

Source : Personal survey, 1991-92.

Table 4:
PER HEAD PER DAY INTAKE OF NUTRITION.

S.N.	Nutrients	Standard requirement	Actual Intake	Deficiency (-) Surplus (+)	Percentage Departure
1.	Energy Kcal	2430.00	2057.56	- 372.44	-15.33
2.	Protein gm	66.0	51.51	- 14.49	- 21.95
3.	Fat gm	50.0	16.53	- 33.47	- 66.94
4.	Corbohydrates gm	430.0	400.28	- 83.81	- 6.91
5.	Phosphorus mg	1400.0	1316.19	- 83.81	- 5.99
6.	Calcium mg	800.0	246.0	- 554.00	- 69.25
7.	Iron mg	40.0	38.12	+ 0.95	+ 2.38
8.	Carotene mg	960.0	286.67	- 673.33	- 70.14
9.	Thiamine mg	1.8	1.76	- 0.04	- 2.22
10.	Riboflavin mg	1.5	0.73	- 0.77	- 51.33
11.	Niacin mg	16.0	20.12	+ 4.12	+ 25.75
12.	Ascorbic Acid mg	50.0	2.16	- 47.84	- 95.68

Note: Based on Table 3 and Gopalan et al.,1985.