

Nutritional Status of the Oraon Tribes of Jashpur District, Chhattisgarh

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Abstract- The present study concentrates on the nutritional status of the Oraon tribe of Jashpur district of Chhattisgarh. They heavily depend on their traditional agriculture for nutritional food stuffs. Their food is rich in carbohydrate but deficient in protein and vitamins and iron content, leading to poor nutritional status and poor health. Further, their nutritional status is directly related to the size of landholdings. The land ownership is qualification not only for access to different institutions facilitating agricultural development but also to nutrition availability.

Index Terms- Landholdings, Food Availability, Consumption Pattern, Nutritional level

I. INTRODUCTION

Nutritious food is a basic human necessity for proper functioning of human body. It energizes not only the physical power but also the mental, psychological and moral power in the human body. The process of digestion, assimilation and absorption of food and its usage by minute biological and chemical processes is called 'nutrition'. Good nutrition means getting necessary and balanced diet and also consuming it. Mostly the food we consume daily is usually not balanced and according to our requirements; as a single food doesn't have all nutrients present in it. Each food has a dominance of only one element. For example oil and ghee have fat, sugar has carbohydrates, and milk has carbohydrates, fat, protein, vitamin and minerals in different ratio. Generally food constitutes cereals, pulses, fruits, vegetables, oilseeds, milk and meat which contain some nutritive elements. These nutritive elements are present in each food but in different ratios. On the basis of present proportion of nutritive elements the food substances are kept in different categories in which protein, fat and carbohydrates are main groups. Several scholars as (Sukthamey, P.V. 1955; Swaminathan, M.S. 1968; Gopalan, C. 1983 and Narayan, S. 1990) have done seminal work in the field of nutrition and various organizations like ICMR, WHO and FAO have calculated per day requirements of nutrients for different categories of population. This paper is a part of U.G.C. Sanctioned M.R.P. Project ; an original work conducted by me.

II. THE STUDY AREA

District Jashpur is located between 22°16'38" and 22°15' North latitudes and 83°23'36" and 83°08'38" East longitudes in the north-western part of the Chhattisgarh state. Total area of the district is 6088 sq.km which is 4.5 percent of the total state's area. It is hilly and dissected area widely covered by the forests.

As per the Census of India, 2011 the District has a total Population of 8, 51, 669, which is 3.33 percent of the total population of the State. The district predominantly has tribal population (62.28 percent of total population and of the total tribal population 86.9% is Oraon), characterized by illiteracy (illiterates 32.1% in total population and 33.1% of tribes) and poverty prevailing among the people, pursuing traditional agriculture leading to poor nutritional status. The present work is an attempt to analyze the nutritional and health conditions of the Oraon tribes living in this district.

Objectives-

The aim of the paper is to analyze the availability of food and level of nutrients Status among Oraon tribes living in different parts of the Jashpur district.

Data Collection and Methodology

Present study is based on primary data. From each of the 8 development blocks of the district two villages are selected on the basis of purposive methods and so, in all 16 sample villages are selected for detailed survey. The Primary data is collected through Schedule Survey of the heads of the 465 households. On the basis of data and information thus collected, the evaluation of nutritional status of the Oraon Tribes of Jashpur district is done by the recommendation of ICMR. The nutritional level of the sample villages has been computed on basis of per capita per day consumption of different food stuffs. While considering the norms given by Indian Council of Medical Research (ICMR) the nutritional level has been computed for determining the quantity of nutrients against per 100 gm of Constituents. Whereas, the Secondary data for land use was collected from Land Records Office, Jashpur and information of area and production of crops is collected from the Patwaries of the sample villages. The collected data is analyzed and presented in the form of tables, maps and diagrams.

III. RESULTS AND DISCUSSION

Size of landholdings in sample population-

As seen in 'Table- 1' and 'Fig. 1.1 A' there has been seen a considerable disparity in the size of landholdings among the surveyed sample of 465 households of Oraon tribes.

The total samples of the districts have been categorized according to the size of landholdings- landless, marginal (below 1 ha), small (1-2 ha), medium (2-4 ha) and large (above 4 ha). Out of the total sample 465 households, landless households are 3.6%; marginal and small farmers 80.4%; medium farmers 10.9% and large farmers are only 5.1%. The size of land holding

is the major determinant of the adoption of agricultural innovations and its productivity. Thus the low economic condition of the Oraon farmers is the reflection of marginal and small operational holdings.

Production of Crops

In the sample villages regarding the Kharif crops Mundadih village has 97%, of its total cropped area under Paddy cultivation; it is the largest area dedicated to paddy among the sample villages. The terrain of Mundadih is a level irrigated plain, but with majority of area dedicated to paddy its contribution to other Kharif crops such is minimal. Where the village Sakardih has 47% of its total cropped area under paddy cultivation, this village is not only located on high altitude of above 750 mt. but also has dense forest coverage.

Other than paddy in Kharif season pulses and oilseeds are also grown in the sample villages. The village Basen (Bagicha Block), has the highest area under pulses (15.9%); it is mainly due to the area being irrigated by Ghughiri river (a tributary of Maini) and a favorable altitude. Whereas the village Baighama (Jashpur Block) has the lowest percentage under pulses (6%); but this village is not only situated on a high altitude but also is irrigated by the rainfed Sank river.

Similarly for oilseeds village Sakardih (Mnora Block) has the highest percentage under (33.5%); whereas Mundadih has the lowest (0.1%).

It is remarkable in the Kharif cropping pattern the interchangeable situations of village Mundadih (Farsabahar Block) and Sakardih. Mundadih is committed to paddy and does to have under considerations any other crop, even pulses and vegetables have a negligible area. While Sakardih (Manora Block) give less than half of its total cropped area to paddy and has a moderate area under to variety of pulses, oilseeds, vegetables and other cereals.

In the Rabi season paddy is not grown in half of the sample villages of namely – Mundadih, Basen, Ambachuwa, Bemtatoil, Chiknipani, Jamchuwa, Semarkachhar and Barjor. Of the remaining villages Ghogha (Bagicha Block) has the highest (66%) under Rabi paddy, while Kukurbhukka (Pathalgoan Block) has only lowest (1.4%). Regarding area under pulses Semarkachhar (Kansabel Block) has the highest area (59.4%) indulged, whereas Ambachuwa (KunKuri Block) has lowest (1.4%). In oilseeds Ambachuwa has the highest (75.4%) and Barjor (Kansabel Block) has lowest (4.7%). The cropping in Rabi season is directly related to irrigation, but many a sample villages do not have proper irrigational facilities. These are backward tribal villages irrigated by tributaries of rain fed rivers. The tribal also plant low maintenance crops like Jatangi (Ram Til) and groundnut whose oil is consumed by them. The Rabi crops have a wide variety but small individual area of crops due to inability to irrigate large patch altogether; thus the farmers raise crops in small patches of irrigated or water available area.

Food Availability and Consumption Pattern-

The main source of food availability in the district as a whole is its production of agricultural crops, especially in the tribal regions where Oraon tribe resides. Rice is the major food stuff because of the dominance of paddy cultivation. The rice is consumed in the form of cooked rice (*Bhaat*) and also in

different other forms, such as '*Baasi*', '*Penj*' (Rice Starch) and '*Chawalki Roti*' (Rice Chappti). In the sample Oraon households the average per capita per day rice consumption is 368.3 gm. The 'Table No. 3' shows the Average Consumption of different Foodstuffs in Oraon Tribes by their size of landholding.

The highest rice consumption within the sample villages is among large farmer households of village Basen (606.4 gm. per capita per day); the main factor being high yield of paddy due to irrigation from river Ghurmundi a tributary of river Maini. The lowest rice consumption is in landless households of village Ghoghar (225 gm. per capita per day), the main contributing factors being irrigated cropping with dense forest cover and location on Upper Pat Region.

In the sample households the average per capita per day consumption of pulses is 13.6 gm. For an average man 76 gm pulses are required. Thus there is acute deficiency of pulse consumption among Oraons of this district. The highest consumption is large farmer households of Baighima village (24.6 gm. per capita per day).

The green leafy vegetables are consumed in the district throughout the year and the Oraon households access it through gathering from nearby forests and self cultivation. Per day per capita consumption is 39.3 gm which is much lower than the normal requirement of 100 gm. The consumption is highest in Mundadih (70.5gm) of Pharsabahar Block; while lowest in Ambachua of Kunkuni block.

Jatagni also known as Ramtil is the widely used oilseed in the district. Other than this mustard, groundnut and other oilseeds are also used. The average oilseeds consumption per capita per day is 11.1 gm. The lowest is found among landless households of Ghoghar (4.2 gm.) while the highest is in Sakardih and Ambachuwa villages (both 6.7 gm.), which is also quite low.

The highest consumption of meat is seen in large farmers of Patwakona phasabahar Block (30.6 gm.) and considerably high among middle class farmers of Mundadih (26.8). The overall per capita per day consumption of total meat, fish and eggs was found to be only 11.6 gm.

Nutritional Level-

The nutritional level of the sample has been computed on basis of per capita per day consumption of different food stuffs. While considering the norms given by Indian Council of Medical Research (ICMR) the nutritional level has been computed for determining the quantity of nutrients against per 100 gm. of Constituents. The 'Table No. 3' shows the Balanced Diet Composition and Actual Intake of Nutrients by the sample villages.

Calorie Intake-

Calorie has a significant place in food, as it helps to gain energy to human body. The calorie requirement differs for adult (different for men and women) and children. The average calorie per day per capita in sample was found to be 1712 which less than the norm of 2400 (kcal). This disparity is gradually a result of difference in their size of landholdings. There is wide variation in per day per capita calorie intake among households of different size classes of landholding (Table 1). It ranges from 971 among landless households to 2173 among big farmers. It is evident from the 'Table 1' that the size of landholdings plays

very crucial role in calorie intake of food. The highest intake is in village Basen of Bagicha block (2693), higher than the recommended. The 'Fig. 1.1 B' shows the graphical representation of Calorie consumption according to the size of landholdings of the sample villages.

Protein-

Protein is an important component of our diet as a human being can live for days without fat and carbohydrates but not without protein. Continuous supply of protein is necessary for development of human brain and new cells in human body. The norm for protein is 55 gm per day per capita and the sample surprisingly has an average of 40.2 gm per day per capita. The landless households of village Chiknikpani (Pathalgaon block) have the lowest per day per capita intake of protein (Fig. 1.2 A). Marginal and small landholders also have comparatively lower per day per capita intake of protein.

Calcium

Calcium is not necessary only for growth but also for bones and teeth and it also keeps the water balance of human body. Human body needs calcium more than any other minerals and it is received from milk and milk products; green leafy vegetables; small fishes in abundant quantity while in cereals and meat is also found in small traces. It is relevant here that in the Oraon households the use of milk is negligible. The average per capita per day consumption of calcium arrives at 136 mg which is very low in comparison of recommended amount of 400 mg. It is (243.4mg) in village Mundadih (Pharsabaha block) which is still much lower than the recommended amount. Consumption of calcium also shows direct relationship with size of landholdings (Fig. 1.2 B).

Vitamin "A"-

Every person needs 3000 International Unit of Vitamin "A" in his daily diet; which is obtained from eggs, meat, milk, mango, papaya, carrot, spinach, leafy vegetables like chaulai and lettuce, etc. It helps in development of human body, eye health, making of tissues and glow of skin. In the surveyed sample households the average per day per capita 1746 iu of Vitamin "A" is observed which is quite less than the recommended amount of 3000 iu. This lower level of Vitamin "A" has been observed in all the sample villages of the district. This is due to lack of balanced diet as well as greater use of cereals and lesser use of fruits, milk and vegetables in the diet. Highest value of Vitamin "A" is seen in Basen village (2532 iu) while the lowest is in village Ambachuwa (1457 iu). (Fig.1.2 B)

Vitamin B₁ (Thymine)

The water soluble Vitamin "B₁" is also called as Thymine. Its deficiency causes Beriberi. Vitamin "B₁" is also called as anti-beriberi or anti-neurotic in earlier days. In all Vitamins it has an important place. The average per capita per day intake among sample households arrives at 0.82 mg, which is less than the normal value of 1.2 mg. Situation is worst among landless Oraons who, on average, consume 0.5 mg of Vitamin B₁ per day; while marginal and the small farming households have the average of .085 and 0.97 mg. Mundadih, Basen, Barjor,

Pandripani, Ghamharia and Sakardih have the average of 1.1 mg per day per capita (Fig. 1.3 B).

Vitamin B₂ (Riboflavin)

Riboflavin constructs the red cell in human body and helps in digestion process and also protects the skin. Its main source is milk and milk products, sprouted grains and pulses, oilseeds, green leafy vegetables, meat and eggs. The recommended quantity per capita per day of Vitamin B₂ is 1.32 mg where as in the sample it is found to be 0.9 mg. It ranges from 0.5 mg in landless farming households to 1.0 mg among marginal, small and medium classes of farmers and 0.9 mg in large farming households. But it is 1.4 mg for the large farming households in Baighama (Jashpur Block). The highest is seen in village Tempu (Manora Block) and Ghoghar (Bagicha Block) 1.3 mg and lowest in Chiknikpani (Pathalgaon Block) 0.6 mg (Fig. 1.4 B).

Vitamin "C"

Vitamin "C" is necessary for proper functioning of human body and for it 50 mg per day per capita is needed. It not only helps against contagious diseases but also aids in case of injuries. It is an important nutrient for teeth, gum health, bone strength and respiratory functions. Scurvy is caused by its deficiency. It is obtained from citrus fruits and green vegetables. Amla (Indian Gooseberry) is an important source of Vitamin "C" in the sample region which is obtained from nearby forests. The highest value of average per capita per day consumption of Vitamin "C" is seen in Mundadih village (69.8 mg) which is quite higher than the recommended value of 19.8 mg (Fig. 1.4 B). All sample villages have higher average consumption of Vitamin "C" than the norm requirement as it is easily available in seasonal fruits like Amla, Ber (Indian Plum), Mango, Guava, etc.

Iron

Iron is quite important for human body as it transports oxygen from lungs to organs and is found in intestine in liquid form. Of the whole human body 0.004% is iron. For a healthy human 20 gm per day of iron is necessary. In the sample households it has been found to be 16.03 gm per day per capita; this being due to lesser intake of pulses and green vegetables. The highest value was seen in large farming households of village Baighama (26.5 gm.) and lowest in landless households of village Semarkachhar (13.1 gm) (Fig. 1.5 A)

Nutrients Deficiency

It is seen that consumption of cereals is sufficient in the district. But in terms of nutrients, most of the households have deficient in Calorie, Protein, Vitamin "A" Vitamin "B", Vitamin "C" and Iron intake. This is because the intake in a particular region depends mostly on the production of food crops in that region. Most of the rural people rarely supplement their food by purchasing food stuffs from outside. While purchasing different products, at past the forest materials collected by these Oraon tribes Amla which contains vitamin "C", different medicinal plants and also some seasonal fruits are collected by these tribes. But in present all the timbers from trees are cut and used for fuel by human beings. The forest is also controlled by the government hence, in present they are deprived of that nominal amount of nutrients from the trees. . The purchasing power of rural people

usually depends on the size of land holdings and only people of medium and large farmers can afford to purchase supplementary food items from markets. It indicates that the size of land holding and therefore income of household can be positively be correlated with all the nutrients intake. Perhaps the most important nutrition problem that is still not fully solved is that of meeting all the nutrients Calorie, Protein, Vitamin A, B₁, B₂, C, Calcium and Iron are requirements of man. The above all the nutrients for women, young children is the main nutritional problem of the region and causes malnutrition, if both its direct and indirect effects are consider, is major source of ill health . Here, in these households the calcium deficiency is there because the Oraon tribes have an imagery ideas that the milk produced by the cow is to be fed-up for the calf and not for themselves. As far as nutritional deficiency is concerned the poverty and ignorance of rural area.

IV. CONCLUSION

The Oraon households of Jashpur district principally depend on their own production of food stuffs. Because of lacking socio-economic condition the Oraon tribes is indulged in traditional agriculture characterized by lack of irrigation, modern agricultural technology and machinery. Weak economic status and low literacy and low awareness result in low productivity and production. It directly manifests in food consumption pattern. Rice dominated diet is rich in carbohydrates but deficient in other nutrients. Intake of nutrients is directly related to the size of landholdings and usually increases with the increasing size of landholding. The large farming households have access to more diversified food stuffs than landless or marginal farmers. For the development of Oraon tribes government should facilitate their upliftment through educating them about various agricultural technologies and provide cheap affordable resources. Irrigation facilities should be created through constructing of tanks and ponds. The major problem in the region is that the tribals are unknown of the modern medicines and ignorant of modern agricultural practices and are non-trusting outsiders. Thus the government should post the educated and trained tribals in their regions as they can get to teach and help the tribals in their local language.

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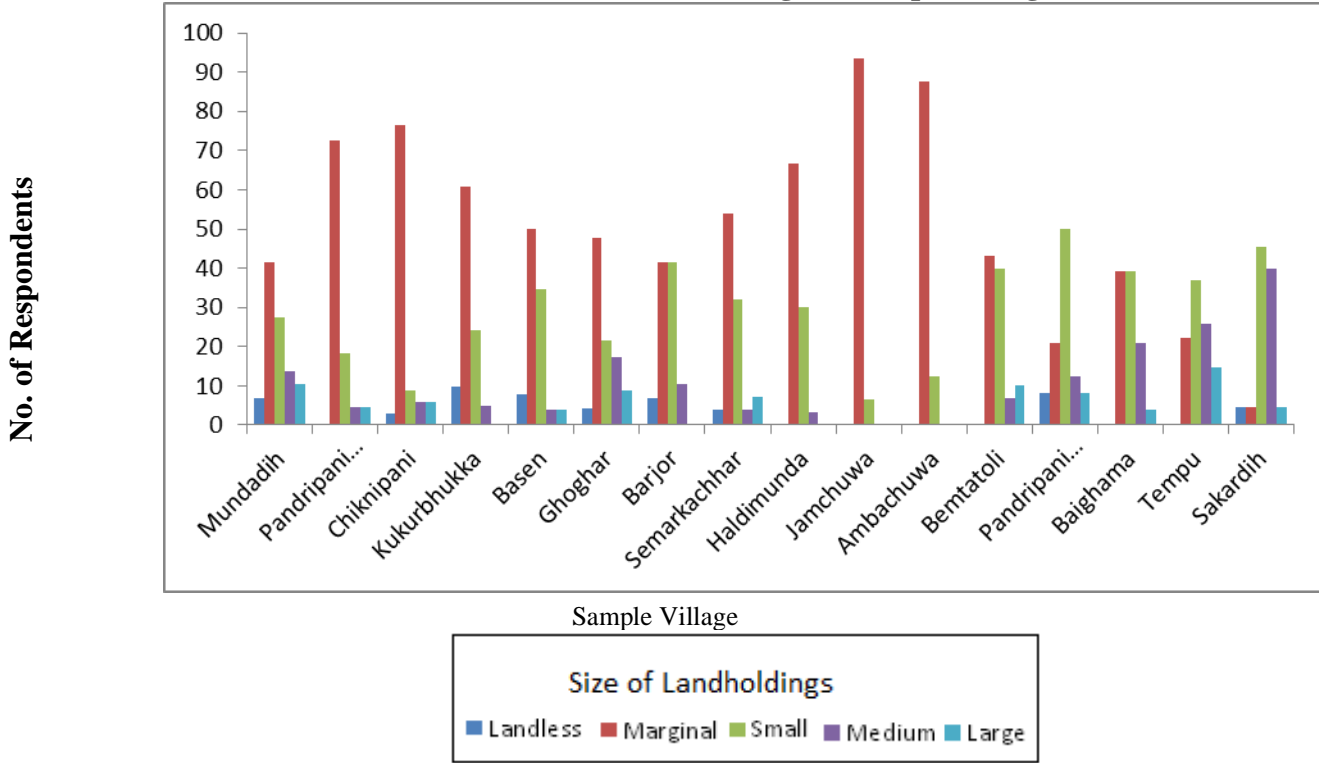
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JASHPUR DISTRICT Size of Landholdings in Sample Village

A



Calorie Consumption Per Capita Per Day

B

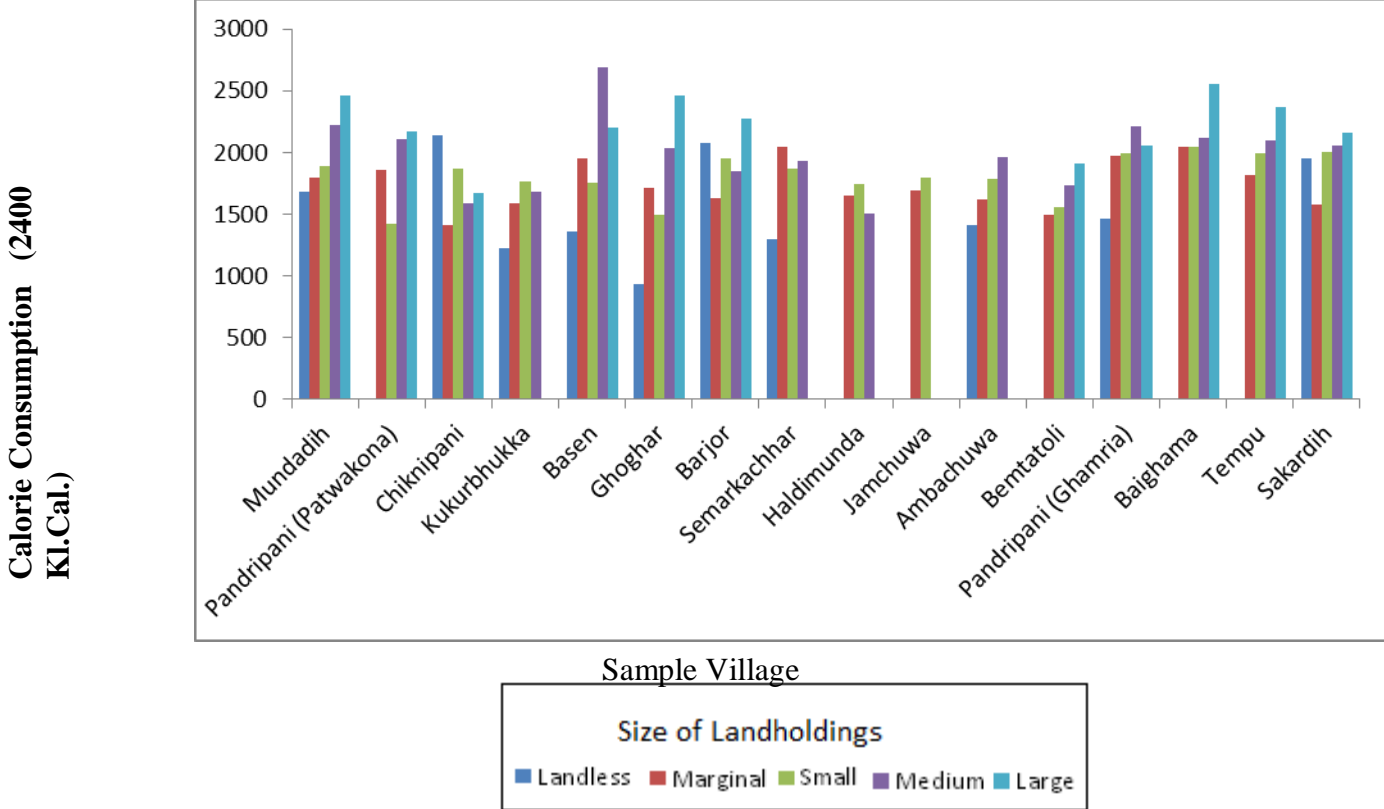
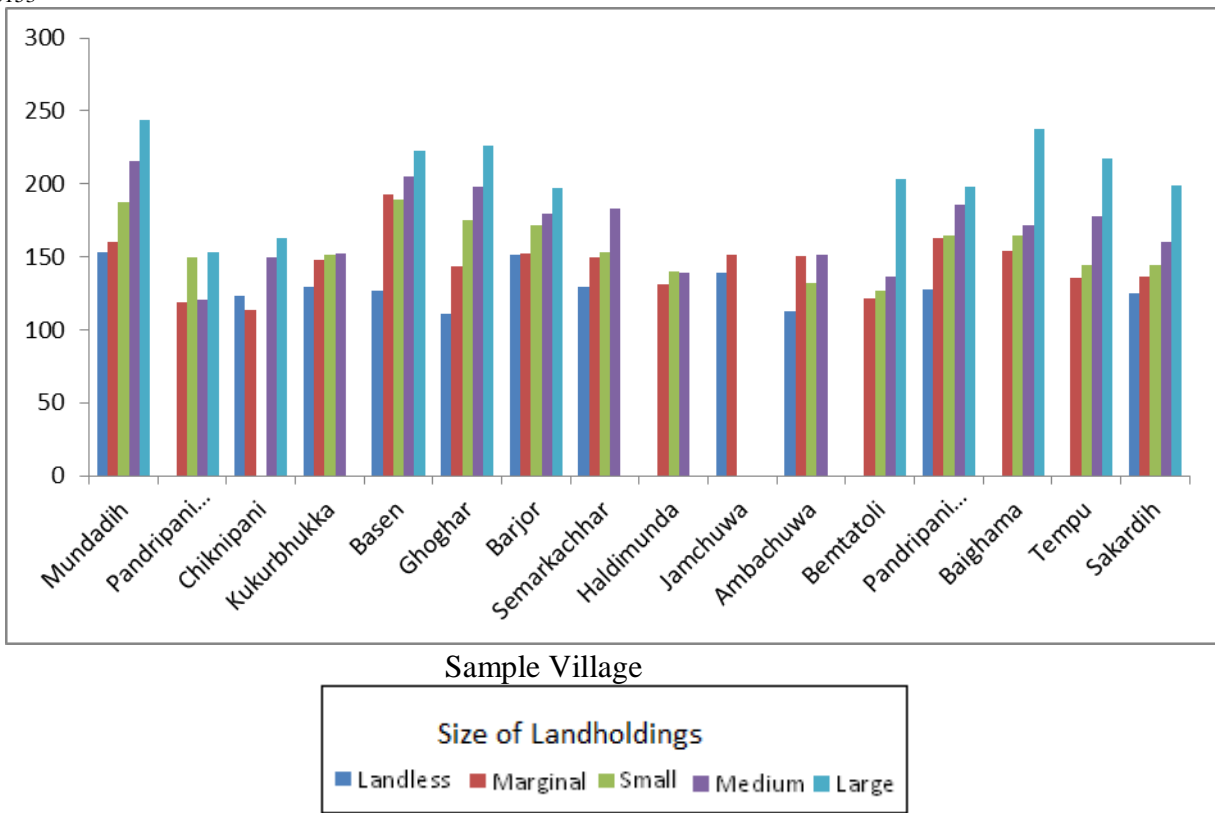


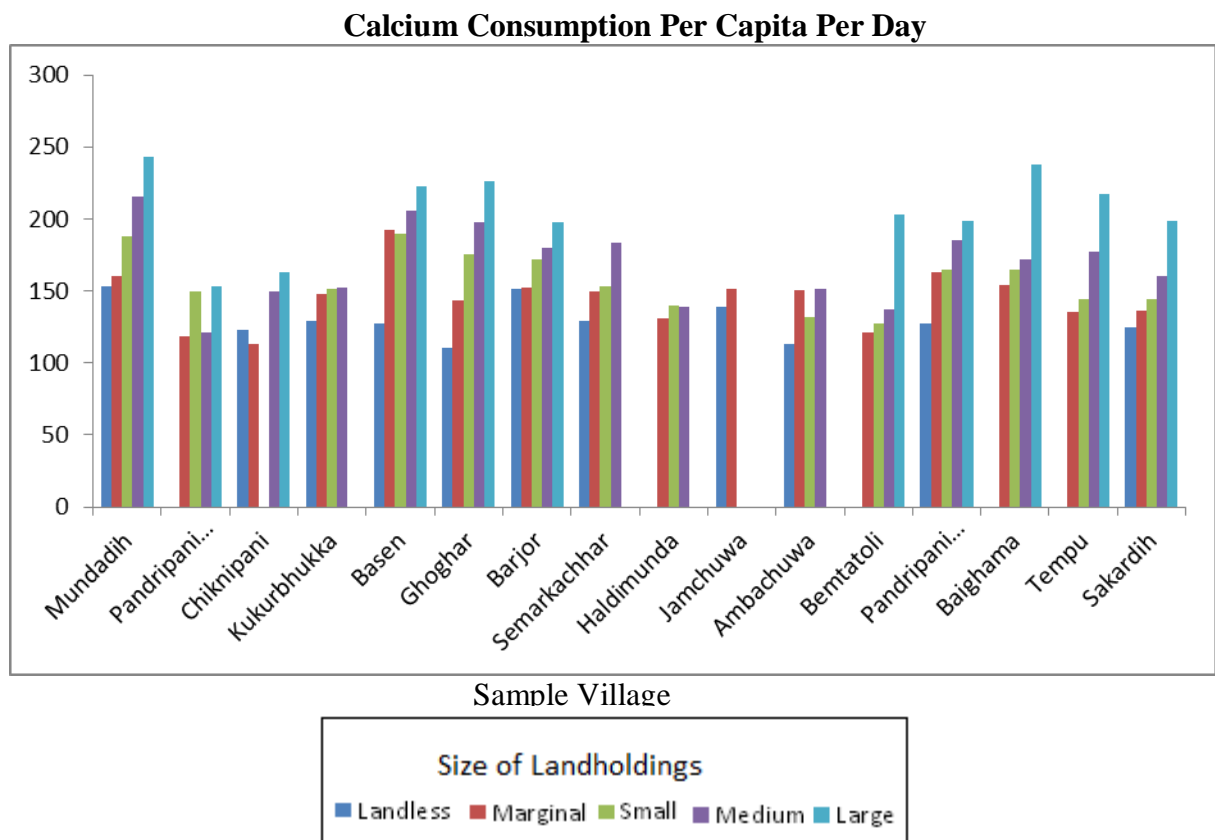
Fig. 1.1
 Protein Consumption Per Capita Per Day

A

Protein Consumption (55 gram)



Calcium Consumption(400 Mg.)

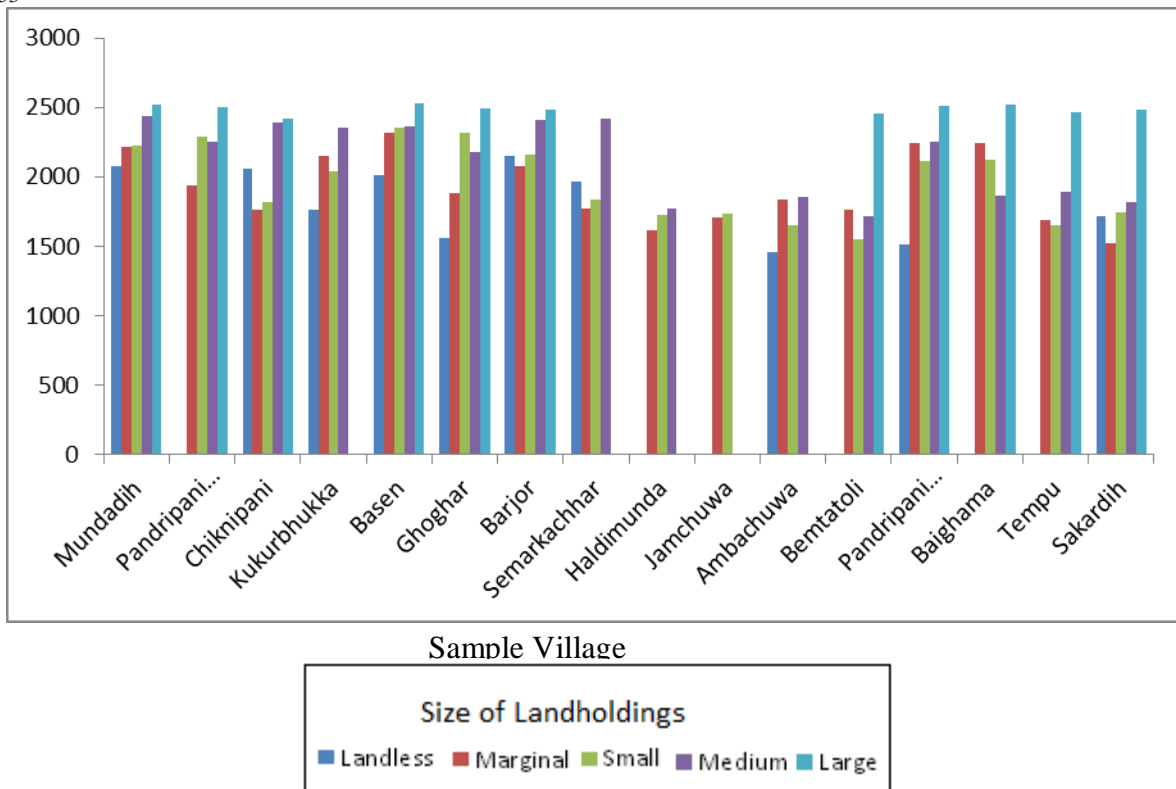


B

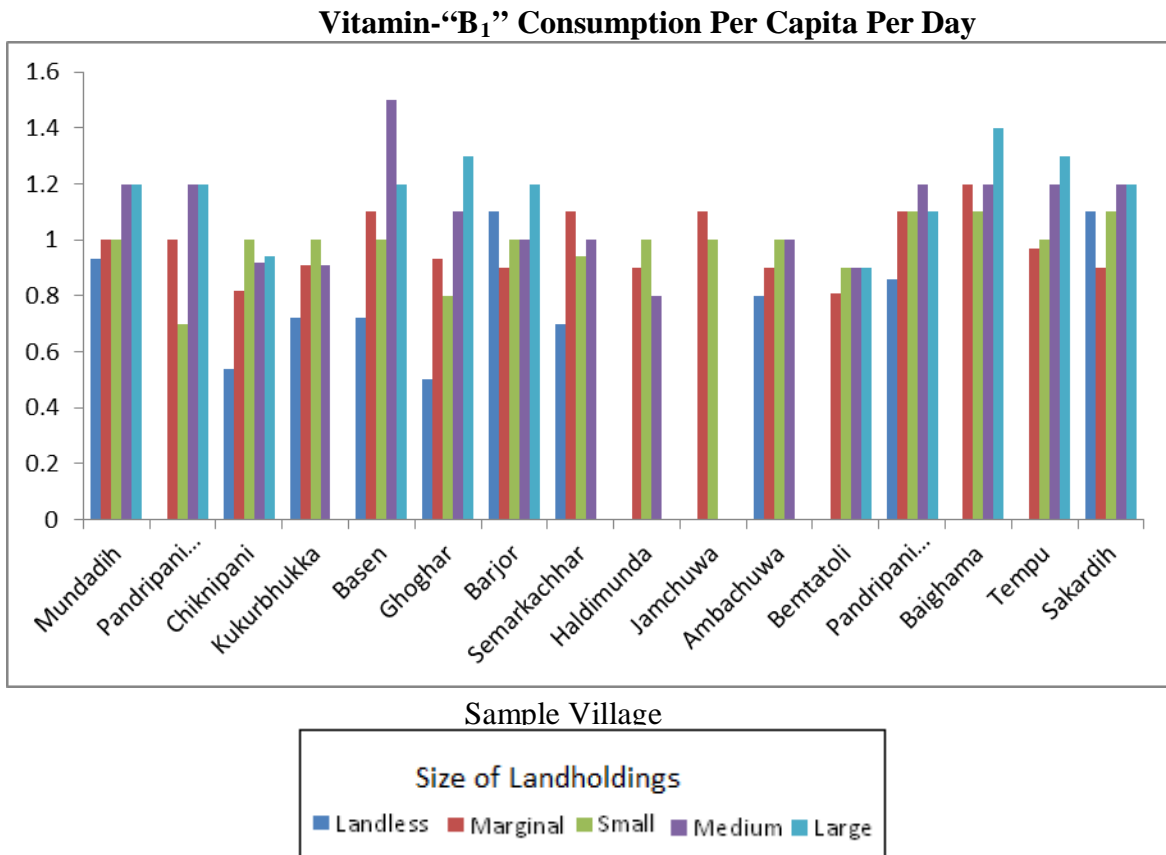
Fig. 1.2
 Vitamin-“A” Consumption Per Capita Per Day

A

Vitamin-A Consumption (3000Iu)



Vitamin-B₁ Consumption (1.2 Mg)

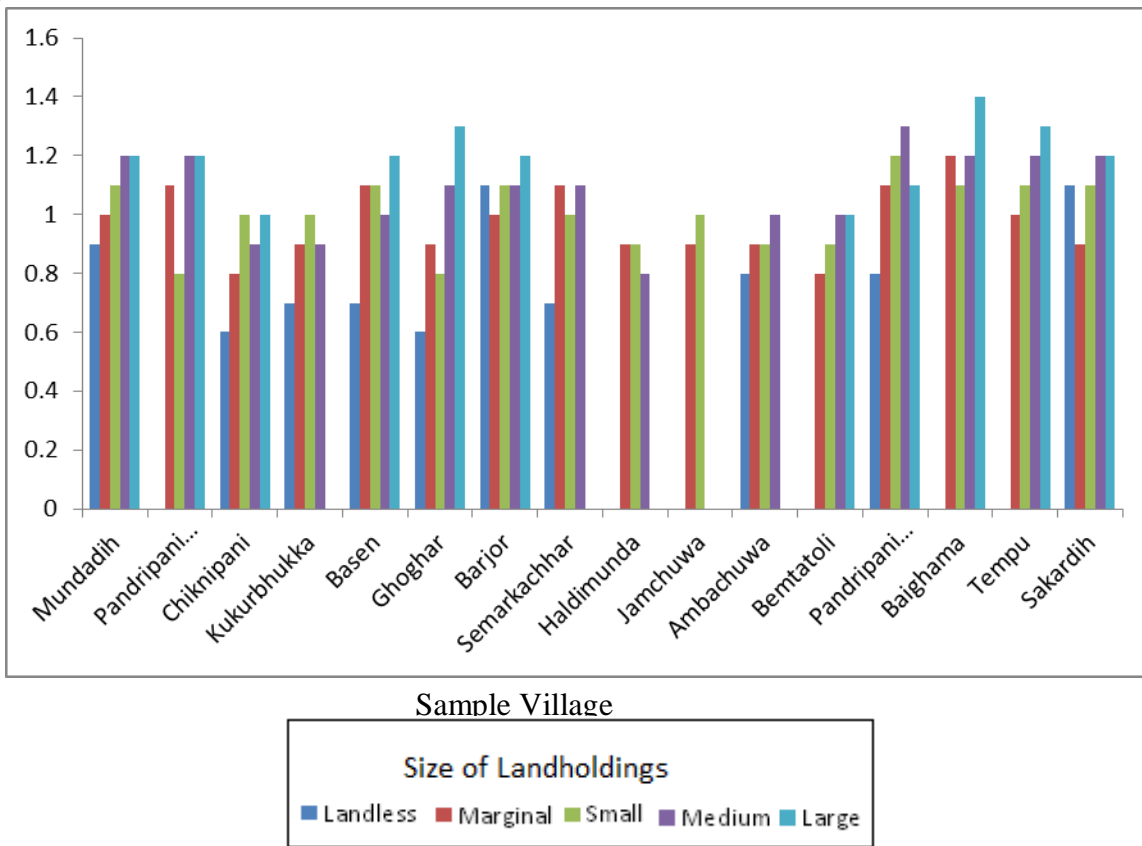


B

Fig. 1.3
Vitamin-“B₂” Consumption Per Capita Per Day

A

Vitamin-B₂ Consumption (1.32Mg)



Vitamin-“C” Consumption Per Capita Per Day

B

Vitamin-C Consumption (50 Mg)

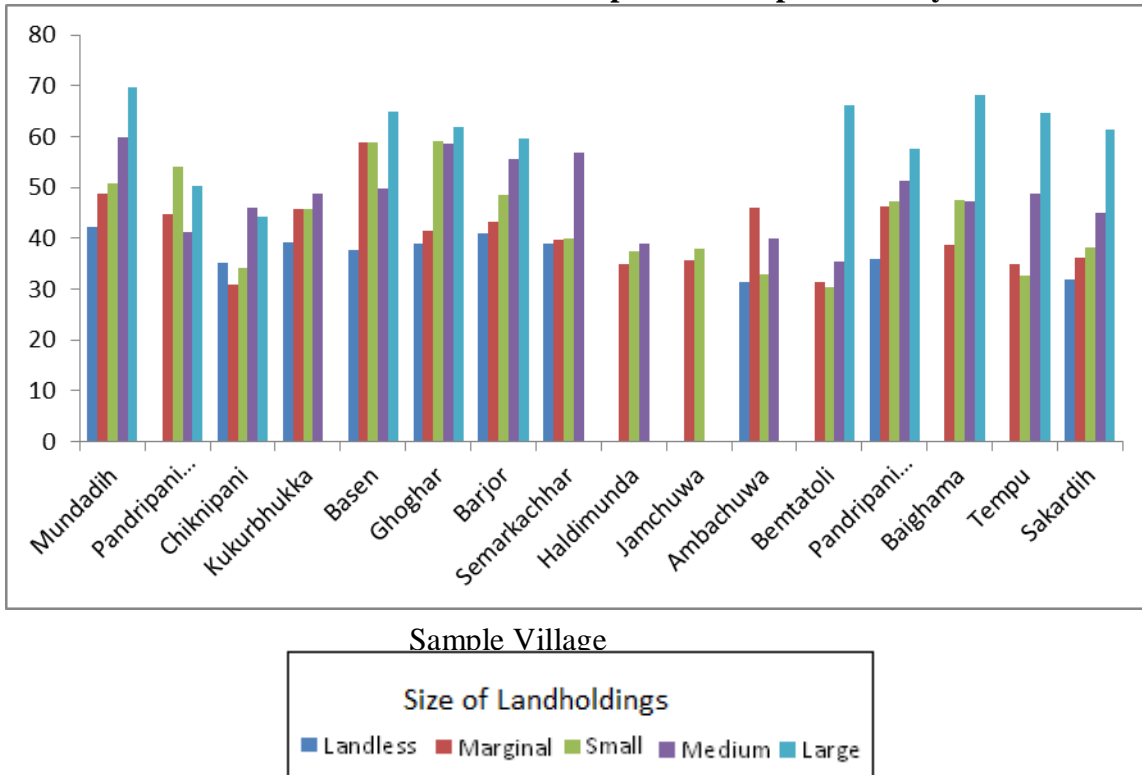


Fig. 1.4
 Iron Consumption Per Capita Per Day

A

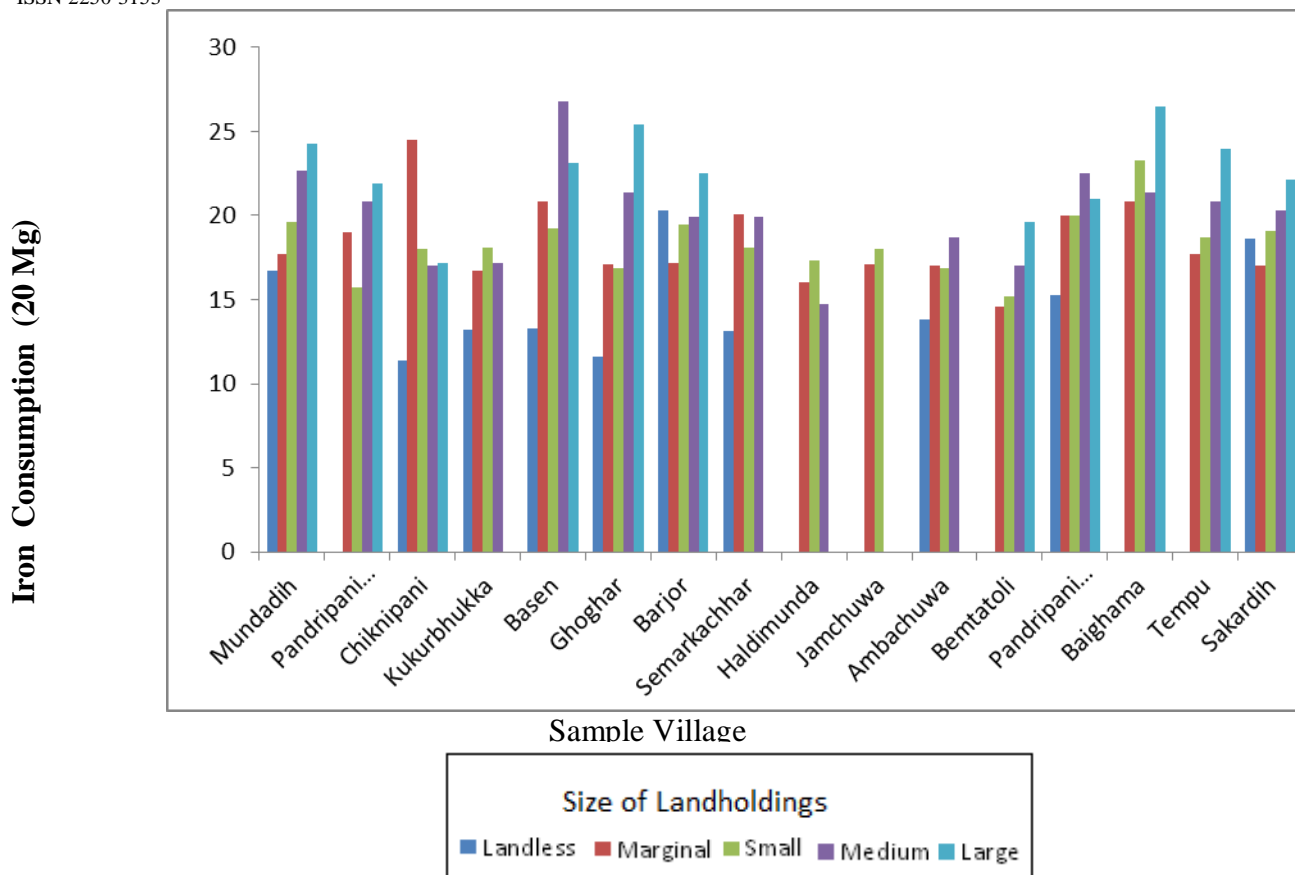


Fig. 1.5

Table No.1
District Jashpur- Size of Landholdings in Sample Village

S.No.	Sample Village	Size of Landholdings										Total No. of Holdings	
		Landless		Marginal (<1 ha)		Small (1-2 ha)		Medium (2-4 ha)		Large (>4 ha)		No.	%
		No.	%	No.	%	No.	%	No.	%	No.	%		
1	Mundadih	02	6.9	12	41.4	08	27.6	04	13.8	03	10.3	29	6.2
2	Pandripani (Patwakona)	-	-	16	72.7	04	18.3	01	04.5	01	4.5	22	4.8
3	Chiknipani	02	5.7	26	74.3	03	08.6	02	05.7	02	5.7	35	7.5
4	Kukurbhukka	04	9.8	25	60.9	10	24.4	02	04.9	-	-	41	8.8
5	Basen	02	7.8	13	50.0	09	34.6	01	03.8	01	3.8	26	5.6
6	Ghoghar	01	4.4	11	47.8	05	21.7	04	17.4	02	8.7	23	4.9
7	Barjor	01	3.6	15	53.6	09	32.1	01	03.6	02	7.1	28	6.0
8	Semarkachhar	02	6.9	12	41.4	12	41.4	03	10.3	-	-	29	6.2
9	Haldimunda	-	-	20	66.7	09	30.0	01	03.3	-	-	30	6.5
10	Jamchua	-	-	27	93.1	02	06.9	-	-	-	-	29	6.2
11	Ambachua	02	6.3	13	40.6	13	40.6	04	12.5	-	-	32	6.9
12	Bemtatoli	-	-	31	77.5	04	10.0	02	05.0	03	7.5	40	8.6
13	Pandripani (Ghamaria)	02	8.3	05	20.8	12	50.0	03	12.6	02	8.3	24	5.2
14	Baighama	-	-	05	17.9	11	39.3	11	39.3	01	3.5	28	6.0
15	Tempu	-	-	06	22.3	10	37.0	07	25.9	04	14.8	27	5.8
16	Sakardih	01	4.5	09	40.9	10	45.6	01	04.5	01	4.5	22	4.8
	Total	19	3.6	246	51.4	131	29.0	47	10.9	22	5.1	465	100

Calculated by author

Table No.-2
District Jashpur : Consumption of different Foodstuffs Per capita per day (in Gm.)

Food stuffs	Size of land holding					Average
	Land Less	Marginal	Small	Medium	Large	
Rice	213.0	422.5	427.7	439.0	339.3	368.3
Pulses	6.9	14.3	15.9	16.4	14.5	13.6
Jaggery/sugar	5.5	9.2	10.9	11.1	12.7	9.9
Meat/fish	6.3	10.9	15.1	12.5	13.4	11.6
Cooking Oil	7.3	10.5	12.2	13.5	11.8	11.1
Mixed vegetable	23.4	41.4	43.9	45.7	42.1	39.3

Calculated by author -Based on Household survey of 465 families.

Table No.- 3
District Jashpur: Balanced Diet Composition and Actual Intake per capita per day of Nutrients

Nutrients	Requirement	Size of Landholdings					Average
		Landless	Marginal	Small	Medium	Large	
Calorie	2400 k.cal.	971.4	1741.1	1808.7	1862.5	2173.3	1711.5
Protein	55 gm	23	45.7	46.4	47.8	38.2	40.2
Vitamin A	3000 iu	1142	1922	1958	1998	1712	1746
Thiamin	1.2mg	0.5	0.85	0.97	1	0.81	0.82
Rexoflobin	1.32mg	0.5	1	1	1	0.8	0.9
Vitamin C	50 mg	23.3	41.2	43.5	45.2	41.8	39
Calcium	400mg	86.26	145.12	146.4	158	141.29	136
Iron	20mg	9.21	18.33	18.35	18.81	15.47	16.03

Calculated by author-Based on Household survey of 465 families.