

Food Security of the Schedule Tribe (ST) Women: A Case Study of Lakhimpur District of Assam

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Abstract- Food is one of the most important basic necessities of human life. Hence, a healthy and well-nourished population is imperative for building a strong nation. Therefore, food security should ensure both adequate food availability and desired nutrition. There is a strong link between food security, good nutrition and gender. A gender approach to food security can enable shift in gender power relations and assure that all people, regardless of gender, benefit from, and are empowered by development policies and practices to improve food security and nutrition. Rural women (especially among ST community) have a significant role in the four pillars related to food security; availability, accessibility, utilization and stability. Food security is a major problem of the state like Assam, because of shortage of food grain production, poverty and lack of nutritional knowledge. In this study, an attempt has been made to assess the status of food security among the ST women of Lakhimpur district of Assam. For finding out the level of food security Per Capita per day Calorie Intake (PCCI) and Food Insecurity Gap (FIG) analysis have been employed. Calculated calorie intake of sample women have been compared with 2230 kilocalories, which is recommended by Indian Council of Medical Research for an adult women doing moderate activity (NIN, 2010). For obtaining final sample, multistage mix-sampling technique has been used. It has been found that out of 152 sample women only 50.66 percent has been found as food secure and another 49.34 percent is found as food insecure.

Index Terms- Food Security, Women, ST Community, Per Capita per day Calorie Intake, Lakhimpur.

1.INTRODUCTION

Ensuring the food security continues to be a challenging issue of vital importance for the developing countries like India. The Millennium development goals provide us with the starting point to assess the level of food security and prioritize our efforts to achieve it. Removal of malnutrition and hunger from the country is not only socially desirable but also necessary for improving overall economic development, as healthy people contribute more to the economy with their relatively higher level of productivity and efficiency. Hunger and malnutrition put enormous cost burden on the society. A World Bank Report states that malnutrition brings down 3 percent of countries GDP annually. The Indian planners, right from the beginning, realized the need to attain self-sufficiency in food grains as one of the important goals of planning (Singh, 2013).

Food security refers to a household's physical and economic access to sufficient, safe and nutritious food that fulfils the dietary needs and food preferences of that household. The Universal Declaration of Human Rights in 1948 recognized right to food as a core element of an adequate standard of living. Following this, and more especially from world food crisis of 1972-74, food security became an important "organizing principle" in development. Following are the some important definitions of food security:

World Development Report (1986) defined food security as "access by all people at all times to enough food for an active, healthy life."

The 1996 World Food Summit redefined food security as "Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life."

In 2001, the FAO Expert Consultation on Food Security gives a working definition of food security: Food security exists when all people, at all times have physical, social and economic access to sufficient, safe and nutritious food which meets their dietary needs and food preferences for an active and healthy life.

Food insecurity exists when people do not have adequate physical, social or economic access to food as defined above. Food insecurity, thus, is just an opposite situation of food security.

Worldwide around 852 million people out of 6.35 billion are chronically hungry due to extreme poverty, while up to 2 billion people lack food security intermittently due to varying degrees of poverty (FAO, 2003). At the global level, the South Asian region is home to more chronically food insecure people than any other region in the world and Global Hunger Index (2008) placed India in 94th rank among 119 countries.

As like national scenario, the situation of Assam is almost similar. Hence the level of food security among different section of the society of Lakhimpur district is found not satisfactory. Most of the ST population of the district inhabits on river banks and their educational level is also very poor. Agriculture is the main livelihood source, but due to heavy flood frequently coming to the district, the agricultural productivity is not sufficient. It is a major supply side challenge of food security of the community. According to BPL census 2002, the percentage of poverty in Assam is very high (Handique, et. al 2016). On the other hand, food grain production of the state is not self-sufficient. Although, the Public Distribution System of the country is a large food security mechanism and it covers a huge portion of the population. But its performance is still to be questioned, especially the level of food security of the BPL families are not satisfactory.

2. OBJECTIVES

The present study has its general objective is to assess the level of food security of the schedule tribe women of Lakhimpur district of Assam and to identify and assess the factors effecting the level of food security and its challenges. The specific objectives of the study are-

- (1) To assess level of food security of ST women of the Lakhimpur district.
- (2) To recommend suitable policy measures for improvement of the level of food security on the basis of findings of the study.

3. AREA OF THE STUDY

Lakhimpur District is located in the north-east corner of Assam and lies between 26⁰45' and 27⁰53' northern latitude and 93⁰42' and 94⁰20' east longitude (approx). The district lies on north bank of the mighty river Brahmaputra. It is bounded by Siang and Papumpare district of Arunachal Pradesh on the north and on the east by Dhemaji district and Subansiri river, Majuli district, the largest river-island is on the southern side and Gahpur subdivision of Sonitpur district is on the west. As per 2011 census, the district covers an area of 2277 sqkm out of which 2257 sqkm is rural and 20 sqkm is urban.

According to the Population Census in 2011, the total population of Lakhimpur district is 1,042,137; out of which 529,674 are male 512,463 are female population. The population of the district constituted 3.34 percent of total population of Assam. Sex ratio of the district is 968. Child population in the age group of (0-6) years is 1,56,739. Again, in terms of rural-urban division, 950,804 are rural and 91,333 are urban population. Percentage of urban population of the district is 8.76 and it is almost half of the all Assam average (14.1 percent). Density of population of the district is 458 persons per sq/km. Decadal growth rate of population is 17.22 percent. Out of total population ST and SC population of the district are 23.93 percent and 7.85 percent respectively. The literacy rate of the district is 77.20 percent, among this male literacy rate is 83.52 percent and female literacy rate is 70.67 percent. The total literates in Lakhimpur District were 697,526 of which male and female were 383,026 and 314,500 respectively. The literacy rate of females are found to be lower that the male counterpart.

4. DATABASE AND METHODOLOGY

The information regarding the present study has been collected from both primary and secondary sources of data. The main sources of secondary data are the publications of government agencies such as National Sample Survey Organization; Office of the Census of India, Directorate of Food and Civil Supplies; Agriculture and the Economic and Statistics; Government of Assam and Government of India; District Census Handbook of Lakhimpur.

Since the study area is Lakhimpur district, the micro level analysis has been made mainly based on primary data collected by carrying out field survey from the district. The sample has been selected through a process of multistage mix-sampling. As per 2011 census, there are 9 development block in the district. Among these 9 blocks, 3 have been selected purposively on the basis of BPL households and two ST villages from each block have been taken for household survey. Lastly, a number of representative ST women, i.e. 15 percent of total women population have been selected randomly from each village and finally 152 ST women have been surveyed. A structured schedule has been used to collect the necessary information about food security level. For finding out the level of food security from primary information the Per Capita per day Calorie Intake (PCCI) and Food Insecurity Gap (FIG) analysis have been employed. The survey has been conducted as per the guideline prepared by Smith and Subandoro (2007) of International Food Policy Research Institute. For analysing the level of food security per consumer per day calorie intake has been calculated for each ST women, based on average nutritive value of Indian food (Gopalan, et al, 2000). Calculated per capita calorie intake of sample women has been compared with the 2230 kilocalories, which is recommended by Indian Council of Medical Research for an adult women doing moderate activity (NIN, 2010). The calorie intake above the recommended level has been considered as food secure and food insecure otherwise.

5. DISCUSSION AND FINDINGS

5.1 Level of Food Security of Schedule Tribe (ST) Women in the Study Area:

By using Per Capita per day Calorie Intake (PCCI), the detail analysis of level of food security of ST women has been shown in Table 5.1. It is clear from the table that across the area 50.66 percent ST women are found with intake above the recommended level, i.e. they are food secure and another 49.34 percent are found with intake below the recommended level, hence they are food insecure. Per Capita per day Calorie Intake across the area has been found 2143 kcal, where the same is found as 2512 kcal for the food secure ST women and 1774 kcal for the food insecure. Among the three blocks, highest (2155 kcal) per capita per day calorie intake has been found in Narayanpur block and lowest (2108 kcal) per capita per day calorie intake has been found in Dhakuakhana block. Again, highest percentage (56.90 percent) of food secure ST women has been found in Dhakuakhana block and lowest, i.e., 44.64 percent food secure ST women have been found in Ghilamara block.

Table 5.1 Level of Food Security among Schedule Tribe (ST) women.

Blocks		Food Secure ST women	Food Insecure ST women	Overall
Dhakuakhana	Per capita per day calorie intake	2483	1722	2108
	Number & Percentage	33(56.90)	25(43.10)	58(100)
Narayanpur	Per capita per day calorie intake	2514	1796	2155
	Number & Percentage	19(50.00)	19(50.00)	38(100)
Ghilamara	Per capita per day calorie intake	2528	1746	2137
	Number & Percentage	25(44.64)	31(55.36)	56(100)
Overall	Per capita per day calorie intake	2512	1774	2143
	Number & Percentage	77(50.66)	75(49.34)	152(100)

Source: Calculated from primary data, (Figures in the bracket indicates percentage to total).

5.2 Level of Food Security among different Occupational Categories of ST women:

Table 5.2 reveals that the level of food security is different among the sample ST women with different occupation. From the table it is clear that the level of food security among daily wage labour is lowest, i.e. 29.17 percent, with compared to it, the level of food security is slight better among the agricultural labour (36.36 percent). The highest level of food security has been found among government service holders, i.e. 88.89 percent followed by Trading and self-employment (77.78 percent). Although, more than 60 percent of the sample ST women have been involve with cultivation as their primary occupation, but among them only 52.75 percent are food secure, another 47.25 percent are food insecure. It is a severe problem for economic efficiency and productivity.

Table 5.2 Level of food security among sample ST women of different occupational categories.

Occupation	No. & percentage of food secure ST women	No.& percentage of food insecure ST women	Total
Cultivator	48(52.75)	43(47.25)	91(100)
Agricultural labour	4(36.36)	7(63.64)	11(100)
Animal Husbandry	2(66.67)	1(33.33)	3(100)
Other daily wage labour	7(29.17)	17(70.83)	24(100)
Service	8(88.89)	1(11.11)	9(100)
Trading and self-employment	7(77.78)	5(41.67)	12(100)
Retired	1(50.00)	1(50.00)	2(100)
Total	77(50.66)	75(49.34)	152(100)

Source: Calculated from primary data, (Figures in the bracket indicates percentage to total).

5.3 Level of Food Security among Sample ST women with Different Educational Level:

The following Table 5.3 shows that incidence of food security is different among sample ST women with different educational level. From this Table 5.3, it is clear that there is a positive relationship between level of food security and level of education. In all the three blocks ST women with below primary and primary to high school level education shows low level of food security. On the other hand, ST women having graduate, post graduate or professional degree has shown high level of food security. But some of sample ST women having higher degree also have found to be food insecure because of underemployment. In all the three blocks, some post graduates and most of the graduates are involved with agriculture for their livelihood.

Table 5.3 Level of food security among sample ST women with different level of education.

Blocks	Education level	No. & percentage of food secure ST women	No. & percentage of food insecure ST women	Total
Dhakuakhana	Below Primary	1(20.00)	4(80.00)	5(100)
	Primary to High School	11(55.00)	9(45.00)	20(100)
	Matriculates and undergraduates	14(58.33)	10(41.67)	24(100)
	Graduate	4(66.67)	2(33.33)	6(100)
	Post graduate	2(100.00)	0(00.00)	2(100)
	Professional degree	1(100.00)	0(00.00)	1(100)
Narayanpur	Below Primary	1(25.00)	3(75.00)	4(100)
	Primary to High School	4(40.00)	6(60.00)	10(100)
	Matriculates and undergraduates	9(56.25)	7(43.75)	16(100)
	Graduate	4(57.14)	3(42.86)	7(100)

	Post graduate	1(100.00)	0(00.00)	1(100)
Ghilamara	Below Primary	0(00.00)	4(100.00)	4(100)
	Primary to High School	9(39.13)	14(60.87)	23(100)
	Matriculates and undergraduates	9(47.37)	10(52.63)	19(100)
	Graduate	6(75.00)	2(25.00)	8(100)
	Post graduate	1(50.00)	1(50.00)	2(100)

Source: Calculated from primary data, (Figures in the bracket indicates percentage to total).

5.4 Computation of Food Insecurity Gap:

For computing the extent of food security gap, food insecurity gap of the ST women has been calculated, i.e. total food insecurity gap and squared food insecurity gap has been calculated separately.

Food insecurity gap (FIG_i): Food insecurity gap of ith food insecure ST women is define as

$$FIG_i = \frac{(TCR_i - TCC_i)}{TCR_i} \quad (\text{Guja, 2012})$$

Where TCR_i= Total per capita calorie requirement for ith food insecure ST women

TCC_i= Total per capita calorie consumption by ith food insecure STwomen

Total Food Insecurity Gap (TFIG), which indicates the depth of food insecurity among the food insecure ST women, is expressed as-

$$TFIG = \sum_{i=1}^m \frac{FIG_i}{m}$$

Here, m=total number of food insecure ST women.

In this study, $\sum FIG_i = 19.12$;

m=75

TFIG=0.2533

Or, TFIG= 25.33%

Squared Food Insecurity Gap (SFIG), which indicates severity of food insecurity among the food insecure ST women, is given as-

$$SFIG = \sum_{i=1}^m \frac{(FIG_i)^2}{m}$$

In this study, $\sum (FIG_i)^2 = 8.36$;

m=75

SFIG=0.1114

Or, SFIG=11.14%

The food insecurity gap measures the mean depth of food insecurity among the food insecure ST women. It is the mean proportion by which the food security status of the food insecure women falls below the minimum level of calorie requirement. The result of this study indicated that food insecure ST women are 25.33 percent far off from the minimum level of calorie requirement, recommended by Indian Council of Medical Research. The square food insecurity gap measures the severity of food insecurity of the food

insecure ST women. Thus, it measures the squared proportional shortfall from the minimum level of calorie intake. It has been found that bottom 11.14 percent sample ST women are severely food insecure.

6. SOME SUGGESTIVE MEASURES

For improvement of the level of food security, following recommendations can be considered-

- For increasing food-grain production in the rural areas of the district, the farmers should try to modernize the agriculture sector by adopting modern implements, using high yielding variety of seed, applying adequate quantity of organic fertilizers, by adopting scientific rotation of crops and careful crop planning and finally through intensifying agricultural research and percolating the fruits of research to the farmers.
- Government should provide better storage facilities to the farmers, and thereby prevent from selling grains just because of loss during storage. It has been found that due to lack of storage facilities made the marginal poor farmers to sell their grains immediately after harvest. It will ensure the availability of food- grains at affordable price to the general consumer.
- Agricultural extension services are needed to disseminate knowledge on the income generating potential of rural people. They need to be advised on low labour requirement crops, and crops need minimum land preparation, weeding techniques and sources of irrigation.
- For increasing economic accessibility of food, employment guarantee schemes should be implemented successfully.
- Micro-credit facilities should be examined as an effective and sustainable strategy for supporting livelihood, which would have direct bearing on the nutritional status of the family.
- Community afforestation programmes could be an important policy measure to increase the availability of traditional food as well as firewoods.
- Edible oil and more amount of sugar should be made available under PDS like other states of the country.
- Moreover, problem of irregular supply, supplying bad quality PDS items in remote areas should be addressed properly.

7. CONCLUSION

Food security is described as the state when people have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life. Hence, a healthy and well-nourished population is imperative for building a strong nation. In the present study, it has been found that the food security status of the ST women of the study area is not good, i.e. only 50.66 percent ST women are food secure. The level of food security among agricultural labour and other daily wage labour has been found very poor. Although government of India as well as state government initiated the special scheme for the ST community by providing livelihood security and for enhancing agricultural productivity, still due to wrong implementation of the schemes the household food security is far away from the satisfactory level.

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