Extent of Food Security among Other Backward Class (OBC) Households: A Case Study of Lakhimpur District of Assam

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ABSTRACT-
Food is one of the most crucial basic requirements of human life. Food and Nutritional Security are very much important for a healthy and active life. Therefore, food security should assure both adequate food supply and the nutrition that can fulfill demand of the people. It 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 OBC community 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) has been employed. For final assessment of the level of household food security, calculated calorie intake of sample households have been compared with the calorie requirements for household members on the basis of their age, sex and physical activity as recommendedby theIndian Council of Medical Research (ICMR, 2010). For obtaining final sample, multistage mix-sampling technique has been used. It has been found that out of 170 sample households only 51.76 percent household has been found as food secure and among the food insecure households 36.29 per cent households are far off from minimum level of calorie requirement.

INDEX TERMS- Food Security, OBC Community, Per Capita per day Calorie Intake,Lakhimpur.

I.INTRODUCTION

India has seen an impressive economic growth in the recent years. But the country still struggles with widespread poverty and hunger.Removal of malnutrition and hunger is not only socially desirable but also necessary for improving overall socio-economic development of a nation. Because, healthy people can contribute more to the economy with their relatively higher level of productivity and efficiency.Hunger and malnutrition impose a huge financial strain on society as well as on the economy. A World Bank Report states that malnutrition brings down three per cent of countries GDP annually (Singh, 2013). A total of 811 million people in 2020, or around one in three people in the world were estimated to be suffering from chronic hunger regularly and not getting enough food to conduct an active life due to

poverty (FAO, 2020). The South Asian region is home to more chronically food insecure people than any other region in the world and Global Hunger Index (2021) placed India in 101st rank among 116 countries.

World Food Summit (1996) defined 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 defined food security as "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.

As per the NSSO 68th round data, the food availability status in Assam is the lowest among all the states of the country, with only 934 households per thousand getting enough food against the all India average was 972. Moreover, the estimate shows that poverty head count ratio in the state stands at 32 per cent. Due to deficiency of required food supply and extreme poverty food security status of the state has been worsened. According tothe India State Hunger Index (ISHI) percentage of undernourished population in Assam was more than 40 per cent in 2021 and placed among the "serious" states (Khan et al., 2021).

Initially, Assam was a surplus State in respect of food grains production during the pre-independence period. With the gradual increase in the size of population, the increase in the production of food grains has failed to keep pace with it leading to fall in per capita availability of food. The state maintained near self-sufficiency level in food supply until 1960's. Thereafter, the State started to face the problem of food deficit continuously and the quantum of deficit has reached to such an extent in recent years that it is estimated to be more than 30 per cent of the self-sufficiency level (Dhar, 2009).As like state scenario, the situation of Lakhimpur District is almost similar. It has found that the status of food security among different caste community of the society of Lakhimpur district isnot satisfactory. Most of the OBC population of the district inhabits on river banks and their educational level is also 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.

II. OBJECTIVES
The objectives of the study are-
(1) To assess the extent of food security among Other Backward Class households 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.

III. DATABASE AND METHODOLOGY

The present study has been conducted based on both primary and secondary 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 intensive 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 blocks in the district. Among these 9 blocks, 3 have been selected purposively on the basis of blocks having the highest percentage of BPL family. In the second stage two OBC villages from each block has been taken for household survey. Lastly, a number of representative families, i.e.20percent of total households have been selected randomly from each village and finally 170 households have been surveyed. A structured schedule has been used to collect the necessary information on household food security status. For finding out the extent of food security from primary information the Per Capita per day Calorie Intake (PCCI) and Food Insecurity Gap (FIG) has 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 extentof household food security per capita per day calorie intake has been calculated for each household, based on average nutritive value of Indian food (Gopalan, et al, 2016). For final assessment of the extent of household food security, calculated calorie intake of sample households have been compared with the calorie requirements for household members on the basis of their age, sex and physical activity as recommended by the Indian Council of Medical Research (ICMR, 2010). The households' calorie intake above the recommended level has been considered as food secure, if it is below the recommended level than considered as food insecure household.

IV. DISCUSSION AND FINDINGS

4.1Extent of Food Security among Other Backward Class (OBC) Households:

Extent of food security among other Backward Class (OBC) households is depicted in Table 1. These households are found with an intake of 2491 kcal per capita per day across the study area with 52.35 per cent food secure households. Narayanpur block shows the highest percentage (65.12 per cent) of food secure households among the OBC community. It has been found that it is because of high average contribution of self-producing rice. Moreover, per capita monthly family income of OBC households in the block is found high. On the other hand in Dhakuakhana block the percentage of food secure households is found lowest.

Table 1:Extent of Food Security among Other Backward Class (OBC) Households.

Blocks		Food Secure Households	Food Insecure Households	Overall
Dhakuakhana	Per capita per day calorie intake	3076	1922	2458

	Number & Percentage	30(44.78)	37(55.22)	67(100)
Narayanpur	Per capita per day calorie intake	2974	1896	2405
	Number & Percentage	28(65.12)	15(34.88)	43(100)
Ghilamara	Per capita per day calorie intake	3088	1852	2537
	Number & Percentage	31(51.67)	29(48.33)	60(100)
Overall	Per capita per day calorie intake	3069	1857	2491
	Number & Percentage	89(52.35)	81(47.65)	170(100)

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

4.2Food Security among different Occupational Categories of OBC Households:

Table 2 reveals that the level of food security is different among the sample OBChouseholds with different occupation of the household head. From the table it is clear that the level of food security among daily wage labour is lowest, i.e. 31.58 percent, with compared to it, the level of food security is slight better among the agricultural labour (33.33 percent). The highest level of food security has been found among government employee (90 per cent). Although, more than 65 percent of the sample households have been involve with cultivation as their primary occupation, but among them only 52.25 percent households are food secure, another 47.75 percent households are food insecure. It is a severe problem for economic efficiency and productivity.

Table 2:Extent of food security among sample OBChouseholds of different occupational categories.

Occupation	No. & percentage of food secure households	No.& percentage of food insecure households	Total
Cultivator	58(52.25)	53(47.75)	111(100)
Agricultural Labour	3(33.33)	6(66.67)	9(100)
Animal Husbandry	3(60.00)	2(40.00)	5(100)
Other Daily Wage Labour	6(31.58)	13(68.42)	19(100)
Govt. Employee	9(90.00)	1(10.00)	10(100)
Trading and Self Employment	7(58.33)	5(41.67)	12(100)
Retired	3(75.00)	1(25.00)	4(100)
Overall	89(52.35)	81(47.65)	170(100)

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

4.3 Food Security among OBC Households with Different Level of Education of the Household Head:

The following Table 3 shows that incidence of food security is different among household with different educational level of household head. From the table, it is clear that there is a positive relationship between level of food security and level of education. In all the three blocks household head with below primary and primary to high school level education shows low level of food security. On the other hand, household head having graduate, post graduate or professional degree has shown high level of food security. But some of the households 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 3: Extent of Food Security among Sample OBC Households with Different Level of Education of the Household's Head.

Blocks	Education level	No. & percentage of food secure households	No. & percentage of food insecure households	Total
Dhakuakhana	Below Primary	2(33.33)	4(66.67)	6(100)
	Primary to High School	11(45.83)	13(54.17)	24(100)
	Matriculates and undergraduates	9(45.00)	11(55.00)	20(100)
	Graduate	8(57.14)	6(42.86)	14(100)
	Post graduate	1(50.00)	1(50.00)	2(100)
	Professional degree	1(100)	0(00.00)	1(100)
Narayanpur	Below Primary	1(20.00)	4(80.00)	5(100)
	Primary to High School	8(44.44)	10(55.56)	18(100)
	Matriculates and undergraduates	8(53.33)	7(46.67)	15(100)
	Graduate	3(60.00)	2(40.00)	5(100)
Ghilamara	Below Primary	0(00.00)	4(100.00)	4(100)
	Primary to High School	10(47.62)	11(52.38)	21(100)
	Matriculates and undergraduates	13(54.17)	11(45.83)	24(100)
	Graduate	5(62.50)	3(37.50)	8(100)
	Post graduate	2(66.67)	1(33.33)	3(100)

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

4.4. Computation of Food Insecurity Gap:

For calculation ofthe food insecurity gap of the households, total food insecurity gap and squared food insecurity gap has been calculated separately.

Food insecurity gap (FIG_i): Food insecurity gap of i^{th}food insecure households is define as

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

Where TCR_i= Total per capita calorie requirement for i^{th} food insecure household
TCC_i=   Total per capita calorie consumption by i^{th} food insecure household
Total Food Insecurity Gap (TFIG), which indicates the depth of food insecurity among the food insecure households, is expressed as-

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

Here, m=total number of food insecure households.

In this study, ΣFIG_i= 29.4;   m=81
            TFIG=0.3629
Or, TFIG= 36.29%
Squared Food Insecurity Gap (SFIG), which indicates severity of food insecurity among the food insecure households, is given as-

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

In this study, $\Sigma(FIG_i)^2$=11.43;   m=81
            SFIG=0.1411
Or,   SFIG=14.11%

The food insecurity gap measures the mean depth of food insecurity among the food insecure households. It is the mean proportion by which the food security status of the food insecure households falls below the minimum level of calorie requirement. The result of the present study indicated that food insecure households are 36.29 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 households. Thus, it measures the squared proportional shortfall from the minimum level of calorie intake. Ithas been found that bottom 14.11 percent sample households are severely food insecure.

4.5 SOME SUGGESTIVE MEASURES:
For improvement of the level of food security, following recommendations can be considered-
➢ In order to solve the serious food crisis faced by the district as well as the state, the government should adopt technological measures to boost the agricultural production. Application of HYV seeds, organic fertilizer, pesticides etc. and farm mechanization

technique through the use of tractors, power-tiller, pump-sets, tube-wells, threshers, harvester combines etc.; all these technological measures have helped the farmers to raise the agricultural output considerably. Hence, growth of agriculture sector will provide direct sources for food and income for buying food.

➢ There is an urgent need for augmenting the physical and economic connectivity of farm to market, post-harvest operations including the role of food processing industries and ultimately enhancing farmer's income, rural employment security and inclusiveness. Reform should be taken up to encourage private sector investment in agriculture.

➢ Production of fruits and vegetables should be increased. But fruits and vegetables are highly perishable and have many post-harvest losses. To overcome this, they may require different infrastructure for handling, value-addition, processing and marketing. This will help in augmenting farm income, generating employment and in bring a number of additional stakeholders in the food-supply chain.

➢ Cooperative farming could be examined as an effective technique for enhancing agricultural productivity that will increase the supply of food-grains in the district and also will increase the farmer's income.

➢ The policy of Minimum Support Price for incentivizing farmers through fair value of their products should be implemented effectively.

➢ For ensuring economic accessibility of food, government should create stable income earning opportunities for the rural poor by developing rural non-farm activities on sustainable basis.

V. 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 OBC households of the study area is not good, i.e. only 52.35 per cent OBChouseholds are food secure. Again, it is found that 36.29 per cent food insecure households are far off from minimum level of calorie requirement and the severity of food insecurity among the sample households is about 14.11 percent. Although government of India as well as state government initiated the special scheme for the OBC 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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