HOUSEHOLD LEVEL FOOD SECURITY OF A FARMING COMMUNITY: CASE IN MIHINTALE DIVISIONAL SECRETARIAT AREA, ANURADHAPURA DISTRICT

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Economic and physical access to sufficient quantities of nutritious food for all people at all time is known as food security. A situation where a household fails to secure adequate dietary intake of family members is known as food insecurity. Food availability is highly sensitive to factors such as climate, environment, demography, agricultural practices and trade[1]. Food Availability Decline (FAD) and the Food Entitlement Decline (FED) models are used to enumerate food security[2]. The dietary diversity indices of household's coping strategies, capacity and capability of the household, chronic, acute and transitory vulnerability are some of the other factors that are related to food insecurity and famine[3]. Food insecurity can lead to social, health and economic issues such as stunting and chronic malnutrition among children, absolute poverty among urban dwellers and numerous other social and economic crises[4]. Sri Lanka is one of the 14 countries that are facing food insecurity[5]. Achieving self sufficiency in basic food items; promoting public transportation systems and welfare programs are the food security strategies adopted by Sri Lanka[6]. It was found that 23% of the population in Sri Lanka is undernourished in 2002 and approximately 51% of the population has received less dietary energy than the minimum requirement announced for that year.

Secondary data extracted from the Food Balance Sheet, Food Composition Database and primary data collected from a sample of 50 households were used. Physical and socio demographic factors and food consumption during a 24 hour period were measured and data were analyzed using the Food Base software. The AHFSI was computed as:

$$AHFSI = 100-[\{H(G+(1-G)I^P)\}+0.5\sigma\{1-H(G+(1-G)I^P)\}]100$$

Where: H = head count of the proportion of undernourished individuals of the sample, G= a measure of the extent of the food gap of the average under nourished, I^P = a measure of inequality in the distribution of individual food gap of undernourished that was calculated based on the Gini-coefficient and σ= the coefficient of variation in dietary energy supply. The Body Mass Index (BMI) was used to identify undernourished individuals. The BMIs were computed separately for adults; teens and children. BMIs of adults were computed disregarding their sex while that difference was taken into consideration when the BMIs of teens and children were computed. The Center for Disease Control and Prevention's classification individuals based on their BMI indicesis presented in Table 1.

Table 1: BMI based classification of nutritional status of individuals

Category of individuals	Nutritional status according to BMI						
	Under-nourished	Normal weight	Obese	Under weight	Healthy	At a risk of overweight	Over weight
Adults	<18.5	18.5 -24.9	25-29.9	>30	-	-	-
Teens & children	-	-	-	<5th percentile	<5th-85th percentile	85th - <95th percentile	>= 95th percentile

In the next step of data analysis, it was attempted to identify factors contributing to the value of

recall method. Calorie intakes of undernourished and normal individuals were calculated separately. Calculated BMIs are presented in Table 1.

Table 2: Classification of food security levels based on the AHFSI

Food security status	AHFSI
Critical level of food security or insecurity	<65
Low level of food security	65-75
Sufficient level of food security	75-85
High level of food security	>85

Values of H,G,I^P and σ were used to compute the AHFSI and computed values of H,G I^P and σ were 0.28, 0.43, 0.14 and 0.18 respectively. The value of AHFSI calculated was 81.20. The overall food security l of the sample is sufficient. A value of 0.43 in G indicates a food gap of 43%. Despite the low food availability, the amount of food available to household is assured. The computed value of the Gini-coefficient is 0.14 and it means that whatever the amount of food available is distributed among households in a more or less equitable manner. Though the accessibility to food is secured and food is equitably distributed among households, 21% of adults and 27% of teens and children were underweight. The balance of the adults was either overweight or obese while the balance of the teens and children were at the risk of overweight. While the daily calorie requirement per capita is 2,030 kcal, the average intake per day is 2,000 kcal per person. Further, it was revealed that 52% of the sample has consumed fewer than 2,000 kcal per day per person. The AHFSI value of the group that has consumed low levels of calorie is 81.05 and that their access to available sources of calorie is high. The AHFSI values of the households who have utilized credit above and lower than the average value are 86.83 and 84.12, respectively and credit use is positively related with food security status of the household. Results revealed that household size and food security status, and the dependency ratio and food security status are negatively related. The food security and the level of education of the household head are negatively related. Male:female ratio of the sample is 51:49 and the percentage of undernourished females is less than that of the males. Food gap of undernourished teens and children was high. Households have either reduced or curtailed investments on children's education during the lean income periods. Of the respondents, nearly 63% have met their monthly food expenditure with credit and about 16% have skipped one meal a day and curtailed household expenses during low income periods.

Though the overall food security is at a satisfactory level, it is difficult to comment on food security status at the household level because the AHFSI is an index that measures food security at the aggregate level. Only 57% of the food requirement of the community is satisfied. The undernourished individuals were with a critical level of food security and have consumed low amounts of food. The availability of calorie was at a low level, though the access to calorie is high. Credit use was positively related with food security while household size and dependency ratio and literacy rate were negatively related. Credit use, skipping a meal a day, reduction or curtailing investment on children's education, curtailing the consumption of non food items as well as expensive items and controlled consumption of non essential items were the common survival mechanisms adopted by the households during the low income periods.

REFERENCES

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