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FOOD CONSUMPTION BEHAVIOUR OF URBAN FOOD STAMP RECIPIENTS IN SRI LANKA

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SUMMARY. Nearly half the population in Sri Lanka are currently served by the food stamp programme initiated by the government in 1979 to protect the nutritionally vulnerable, poorest segment of the population. The programme is essentially an income transfer scheme enabling those eligible to receive free stamps encashable against a basket of food.

A socio-economic survey (by means of a questionnire) and a dietary survey (24 hour recall) were carried out on 87 out of 572 registered food stamp recipient households in Mount Lavinia, to study food consumption and food expenditure patterns.

The study findings clearly suggest that the current operational efficiency of the food stamp programme is low, largely due to the poor targeting of programme benefits. Although the officially specified income cut-off point for eligibility is Rs. 700 per month/household, only about 20% of the sample households were shown to be within the limit.

For nearly 80% of the sample households investigated, the food stamps provide only a marginal contribution to the the total household budget. The largest benefit is accrued to the poorest20% of the sample households in which the income from food stamps account for about a tenth of their total household budget. In the two highest expenditure quintiles of the study sample, the value of food stamps contributed only to 4% and 2% of the total household expenditure. The average value of food stamps received per household varied around Rs. 60.00 per month. The rapid escalation of food prices in the recent years has resulted in a marked reduction in the real purchasing capacity of the food stamps issued to the beneficiaries.

At the household level income is the major determinant of nutritional intake. The estimated energy adequacy ratios showed that the energy consumption of the sample households in the poorest expenditure quintile is about 67% of the recommended per capita consumption. In the second and third quintiles, the corresponding ratios are about 77% and 85% respectively. Energy consumption of households in the last two quintiles, representig the highest income groups, is near the recommended level. In the case of proteins, however, the intake was nearer the recommendation than energy intake. This suggests that malnutrition among food stamp recepients is more due to energy inadequacy than protein inadequacy.

Key words: Food consumption, Food stamps, Energy adequacy, Protein adequacy

INTRODUCTION

Malnutrition is a chronic problem affecting many human communities in most parts of the world. The problem is relatively more acute in the developing countries and has attracted serious attention of all concerned. The causes of malnutrition are numerous and include economic, cultural, social and geographic factors. Although poverty is a leading factor causing malnutrition, it may also result from causes such as lack of education, poor sanitation and living standards. Greater availability of food alone does not necessarrily lead to higher consumption levels. Another key factor that determines the level of consumption is the pattern of distribution of food within as well between households.

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Emergence of the Food Stamp Scheme

Mainly because of its political significance, all successive governments in Sri Lanka during this century have adopted wide-ranging policy measures, both direct and indirect, to improve the nutritional status of the population. Among the public policies, those with a direct impact were basically designed to (*a*) increase and stablilize the domestic food supply by expanding domestic production and by importation, (*b*) strengthen the food commodity distribution mechanism to reach all segments of the population, (*c*) supply essential food commodities at subsidized prices, (*d*) provide free food to specified target groups such as school children and others who are nutritionally vulnerable, and (*e*) increase the income/purchasing capacity of the economically disadvantaged groups through various direct, income transfer programmes. Among these direct policy measures, the operation of a food subsidy programme has been a key feature in Sri Lanka's past economy.

The food subsidy policies, introduced after the achievement of independence, basically involved the supply of essential food commodities to all consumers at low prices through a food ration system. Under this system, every individual was entitled to receive specified quantities of rice and other essential food items at substantially cheaper rates. The food ration was distributed through an intricate network of consumer cooperatives scattered throughout the country. The food ration system, providing food at concessionary rates to the entire population, has been a major component of the social welfare system in Sri Lanka until the late 1970s.

Mainly as a consequence of the rapidly growing budgetary burden, resulting from the operation of food subsidy, the government in late 1970s made sweeping changes in its food subsidy policies. These changes were made under the new economic reforms introduced in 1977. The new policies did away with the food ration scheme, and introduced a new income transfer programme, the food stamp scheme. The new scheme was primarily designed to focus on the nutritionally vulnerable groups of the population. The beneficiaries of the food stamp scheme were expected to be those deemed 'needy', i.e. those belonging to low income categories, who are unable to satisfy their basic needs. By 1988, the beneficiaries of the scheme amounted to about eight million, nearly half the country's population. Of the total number of food stamp recipients in the country, the rural sector recipients make up 57%, the urban sector 32% and the estate sector 11%(1).

The eligibility for food stamps is based on the criterion of household income. In the initial stages of the programme, all households earning less than Rs. 300 per month were considered as eligible for receiving benefits. However, in the subsequent period, due to large increases in the cost of living, Rs. 300 per month was considered inadequate and the cut-off point was raised to Rs. 700 per month.

Study objectives

The main purpose of this investigation was to examine the food consumption be-behaviour of a sample of food stamp recipients in an urban area in detail, with a view to identifying their specific food intake and food expenditure patterns. More specificially, the investigation was aimed at studying the differences in household food consumption patterns among different income groups of the food stamp recipients and to examine the relative contribution made by the food stamps to the economy and the nutrition of the food stamp recipient households.

The analysis was based on the hypothesis that the consumption behaviour of the different income groups within the food stamp recipient households show significeant differences and such differences would be reflected in their levels of food intake and expenditure.

STUDY LOCATIONS AND DATA BASE

Study area

The specific study site selected for the investigation involves three Grama Sevaka divisions in Mount Lavinia and is located just outside Colombo city limits and 12km away from Colombo. It is a rapidly growing suburb and has shown a fast change from semi-urban to urban conditions in the recent years. The study area falls within the limits of Dehiwala-Mount Lavinia Municipal Council, which is divided into 29 wards. Of this, wards 17, 18, 19, 22 and parts of 23 and 24 constitute Mount Lavinia. According to information gathered from Food Commissioner's data, of the 5,529 households in Mount Lavinga, 572 households (10%) received food stamps during the first quarter of 1988.

Sampling

The analysis is based on consumption data from a sample of 87 households in the study area. This corresponds to about 15% of the total number of food stamp recipient households in Mount Lavinia.

Initially, a list of all food stamp recipients in the three study locations were obtained from the Food Commissioner's Department, primarily with a view to collecting information from all concerned. However, due to the civil disturbances prevailing at that time and cancellation, and also due to lack of cooperation of some of the food stamp recipient households, only 90 households could be reached for the purpose of recording data. Of the 90 households, information from 3 was rejected on account of unreliability, leaving 87 households as the effective study sample.

Data Collection Methodology

Cross section data, gathered using two types of surveys, formed the basis of analysis in this investigation. The first survey involves a single visit, socio-economic survey and the second, a dietary survey.

Socio-economic Survey : This survey was designed to collect information on the basic social and economic aspects of the sample households. A structured, pre-tested questionnaire was used for the purpose. The enumeration of the sample households was undertaken with the assistance of two enumerators who were given a prior training.

The questionnaire covered a wide range of information such as demographic features, educational aspects, employment status, income, expenditure patterns, household asset ownership, living standards and sanitation of the household. The regularity or irregularity of employment was determined by the number of days worked during the previous month.

The total income of the household included direct incomes from all employment activities of the members of the household as well as indirect incomes from food and kerosene stamps, "triposha" etc. Expenditure on items such as clothing per month was estimated from expenses incurred yearly. In the case of food, the data gathered included the day's expenditure.

Dietary Survey : In the dietary survey, specific data was collected on the kind and quantity of foods consumed by the household during the previous 24 hour period. Because of the possibility of wide variations that is likely to occur in the daily food intake, it would have been preferable to collect dietary information for a number of days. For practical reasons, however, collecting dietary data in this study was confied to a single day.

The dietary survey was conducted over a period of about one month in the latter part of 1988. Given the relatively large sample size and the fairly long period through which the data gathering was done, it was assued that any daily variations of household consumption would be averaged out to a reasonable degree.

In estimating household food intake and expenditure, meals taken outside by any member of the household and visitors entertained at a meal etc., were also taken in to account. For items such as coconut oil, condiments, milk, sugar and tea, which are usually purchased on a weekly or monthly basis, the daily intake was estimated. In instances where left over meals are consumed appropriate adjustments were made.

Method of Analysis

Income is a critical variable in analyzing consumption data, and therefore, the determination of the actual incomes earned by the sample households was given special attention in the study. The collecton of household income information was found to be a tedious task. Therefore, with a view to supplement and double check the income data, information on household expenditure was also gathered in the survey.

The survey experiences showed that it was easier to check the expenditure data for accuracy than the data on income. Therefore, in analyszing the data, expenditure was used as a proxy for income and purchasing capacity. Based on the household expenditure data reported, the sample was categorized into five expenditure quintiles, the first representing the lowest income group and the last quintile the highest income category.

The assessment of the levels of adequacy of energy and protein intake were based on the daily allowances for adults recommended by the Medical Research Institute, Colombo, namely 9.20 MJ and 48 gms respectively.

Study Limitations

The estimates of the percapita food consumption and expenditure in this analysis is based on the assumption that the food consumed was equitably distributed within the household (2). Because of the tediousness of collecting consumption data within the family members, no attempt was made in this study to collect information on intra-family distribution of food.

SOCIO-ECONOMIC PROFILE OF THE FOOD STAMP RECIPIENTS

Primary information that would help to establish the socio-economic status of the sample households are presented in this section. Although factors such as employment and income show a large influence on the household consumption pattern, others such as the demographic features, religion etc., also exert a significant influence on household consumption patterns.

Demographic features

Of the total populaton of 498 in the sample a majority (86%) were Sinhalese with 12% Moors and Malays and 2% Tamils and Burghers.

Age-wise composition the sample population indicate a relatively large proportion of younger age categories. Nearly a third of the population (31%) was 14 years or less and 65% were in the 15 to 64 year old group. According to this data the child dependency ratio (defined as the ratio of the number of individuals aged 14 years and younger expressed as a percentage of the individuals aged between 15 and 64 years) is about 48%. The proportion of adults of age 65 years and above are relatively small, about 4%.

The average household was composed of 5.7 persons. About 40% of the households had families larger than 6 members. The distribution of households by size was as follows:

Persons/Household (No.)	*Households %*
1—4	31
5	28
6—7	20
8—10	15
11 and over	6
All	100

Educational level

Of the total sample population, 44% had already left school while about 25% were still attending school. There were about 18% pre-schoolers and 13% had never attended school.

Information on the grade at which school leavers left school was also investigated. This showed that the highest proportion, 38% left school at grades 6—8. About 29% left school at grades 9 and 10 and only about 5% had attended the 11th and 12th grades. The percentage of the school leavers leaving between grades 1 and 5 was about 29%.

Employment Status

The average household expenditue increased as the number employed per household increased. The average number of income earners per household was about 1.5. Nearly 80 % of the labour force was employed in temporary type of employment activities.

Nearly 26% of the population reported as employed and the type of occupations varied widely. Of the employed, 81% was casual labourers. Nearly 6% were engaged in their own trading activities and another 3% were self employed in other ventures.

The survey information suggested that households with regular employment oppor tunities usually tend to be associated with higher expenditure. This may be because a regular type of employment, in general, ensures a steady income which in turn would lead to higher expenditure.

Housing and Sanitation

About 25% of the sample of households surveyed were living in one-roomed houses. The number of one -roomed houses decreased with increase in expenditure.

Of the 87 houses surveyed, 21% had temporary types of roofing, 42% did not have brick walls, 40% did not have a separate kitchen and cooking was done in the living room itself.

There was no electricity supply in 43% of the houses, 36% had no access to pipe borne water either inside or immediately outside the house. In 38% of the households, the members of households were sharing a latrine with more than 2 other families.

Household Asset Ownership

Information gathered in respect of households assets owned by sample households indicated the ownership of a relatvely small range of items. Ownership of bicycles were reported by 17% of the sample, radios by 40%, sewing machines 20%, cassette recorders 24% and television sets 11%. The data sgguested that the number of households owing such items tend to increase with increase in household expenditure. In the highest income category, 9 families had electrical appliances ranging from irons to fans and refridgerators. Although these assets do not provide a full picture of the present wealth or lack of it, they to some extent provide an insight into living standards.

Income and Expenditure Levels

In most households, the income was derived from more than one source. The survey data showed that in most households, the reported incomes were lower than the reported expenditure (Table 1). The difference was particularly large except in the third expenditure quintile. Such a difference could perhaps be explained on the basis of the short-term nature of the incomes and expenses reported by the respondents. However, the typical tendency of the households to underestimate their incomes and to over-estimate expenses may also explain the disparity, to some extent.

TABLE 1. Average income and expenditure reported per household, classified by expenditure quintiles.

Expenditue Quintile	Av. No. Employed Per Household	Av. Income Per Household (Rs/Month)	Av. Expenditure Per Household (Rs/Month)
1	1.0	421	478
2	1.1	572	838
3	1.6	1178	1146
4	1.5	1074	1503
5	2.3	2079	2327

The monthly income and expenditure data presented in Table 1 show a wide variation between different expenditure quintiles. In the lowest expenditure category, the average income reported was Rs 421 per month while in the highest expenditure group it was almost five times, Rs. 2,078 per month.

The income variation between these categories is partly attributed to the number of income earners per household. The lowest expenditure group, on the average, is associciated with about 1.0 employed per household whereas the highest expenditure quintile shows about 2.3 individuals employed per household . This data also shows that the income differential between the expenditure groups is also attributable to the monthly income per income earner. In the lower expenditure categories, the income earned per employed is substantially low (Rs. 20/ employed), in comparison to that of higher expenditure quintile (Rs. 903/ employed).

A significant point of interest emerging from this data is that, although the cut-off point for eligibility for food stamps is set at Rs. 700 per month, it was only in the first quintile that both the stated income and the average household expenditure were less than Rs. 700 per month. In the second poorest group (2nd quintile), the stated average household income was less than Rs. 700 per month, while the average houshold expenditure exceeded Rs. 700. In the other three income groups of the food stamp recipients, representing about 80% of the sample population, the stated average household income as well as the expenditure exceeded Rs. 700 per month. In fact, the highest income group reported an average monthly income as high as Rs. 2,079, which is almost three times the cut-off point set for food stamp recipients. This shows that about 60% of the sample households earn incomes much higher than Rs. 700 per month, indicating that there are considerable weaknesses in the process of targeting of the food stamp scheme.

In the five expenditure categories investigated, the average value of food stamps received per household varied from Rs. 51—69 per month, indicating a relatively small variation between the different expenditure groups (Table 2).

TABLE 2. Average value of food stamps received per household and relative significance among different expenditure quintiles

Expenditure Quintile	Av. Value of Food Stamps Received Per Household (Rs/Month)	Value of Food Food Stamps as % of	
		Household Food Expenditue %	Total Household Expenditure %
1	51.50	10.8	13.1
2	55.50	6.6	8.2
3	69.40	6.1	8.0
4	64.90	4.3	5.4
5	53.80	2.3	3.2

Food stamps contributed to about 13% of the household food expenses in the lowest expenditure quintile of the food stamp recipients. In the highest quintile of the sample, however, the food stamps provided only a marginal contribution (2.3%). In the remaining three quintiles, the value of food stamps accounted for about 5–8% of the food expenditure of the food stamp recipient households.

Results of the analysis of the relative contribution of the food stamps to the total household budget given in Table 2 show that the food stamps contributed only to about 11% of the total household budget in the poorest quintile of the study sample. In the higher expenditure quntillies, the contribution of the food stamps is substantially lower, ranging from 7½—2%.

These results therefore suggest that, in both absolute and relative terms, the contribution of the food stamps to the sample of beneficiaries is small. In the case of the highest income group, the contribution of the food stamps to total household budget is virtually

insignificant. If the food stamp scheme is to continue as a mechanism to help the poor households, the relatively small contribution of the food stamp programme to its intended beneficiaries is an issue that requires attention.

PATTERNS OF HOUSEHOLD FOOD CONSUMPTION

Major features associated with the food intake behaviour of the sample households are presented in this section. It is divided into three main parts. The first deals with the overall expenditure patterns and the second focuses on the consumption of specific food items by the sample housholds, classified by expenditure groups. The third section deals with actual food intake, analyzed in terms of energy and protein consumption and their level of adequacy.

Expenditure on Food and Non-food Items

In all food stamp recipient households studied, expenditure incurred on food purchases accounts for nearly three quarters of the total household budget (Table 3). The proportion, however, is highest (82%) in the poorest income group and is lowest (76%) in the highest income group. As the incomes of the food stamp recipients rise, the proportion of income spent on food therefore shows a decrease. This income-consumption relationship, in general, is in conformity with the pattern stated in Engel's law.

This data also show that, in terms of the absolute amount of expenses incurred for food, households in different income quintiles show remarkable differences, The poorest category of food stamp recipients studied, for instance, spent about Rs. 392 per household per month whereas those in the highest income category spent more than four times, about Rs. 1852 per household, per month.

Data given in Table 3 show that the more significant non-food household expenditure items were transport (4—7%), fuel viz, wood and kerosine (5—8%). The proportion of expenditure spent on non-food items increases with rising household expenditure. The per capita expenditure on food in the lowest expenditure quintile amounted to Rs. 115 per month per household (Table 4), It is interesting to note that in the uppermost expenditure quintile, the per capita expenditure incurred on food is nearly twice that of the lowest quintile (Rs. 210 per month). The middle 60% of the sample households incurred per capita expenditures ranging from Rs. 158—174 per month.

TABLE 3. Composition of household expenditure of food stamp recipient households, classified by expenditure groups

Item	Expenditure Quintilesa					
	1	2	3	4	5	Al
	(%)	(%)	(%)	(%)	(%)	(%)
Food	82.0	80.6	76.0	79.1	71.2	75.8
Transport ..	4.8	3.5	6.7	6.2	6.4	5.9
Fuel ..	7.3	8.1	6.8	4.9	4.7	5.7
Electricity ..	0.3	0.4	0.4	0.7	2.9	1.6
Cothing ..	0.7	1.8	2.2	2.0	4.3	2.8
Rent ..	0.5	0.7	2.6	0.7	0.4	0.9
Education ..	0.1	0.8	1.4	1.8	1.0	1.9
Recreation ..	0.2	1.0	0.9	1.5	2.7	1.7
Other ..	4.1	3.1	3.0	3.1	4.4	3.7
All : (%)b	100.0	100.0	100.0	100.0	100.0	100.0
(Rs.) ..	(478)	(838)	(1146)	(1503)	(2327)	(1283)

(*a*) The first quintile represents the smallest expenditure group.
(*b*) Parenthesis indicates the total household expenditure per month.

TABLE 4. Household food expenditure classified by income groups

Expenditure Quintile	Monthly per capita Expenditure on Food (Rs.)
1 (lowest)	115
2	162
3	158
4	174
5 (highest)	210

Quantities of Food Consumed

Analysis of food consumption data in the sample households indicated that between the five expenditure quintiles examined, substantial differences exist in the types and quantities of food consumed (Table 5). The food stamp recipients in the higher expenditure categories consume significantly higher levels of rice, sugar and animal products in comparison to the poorer categories.

In all households the major starchy staples consumed by the food stamp recipients are rice and wheat flour, the dominant being rice. Yams, mainly manioc and sweet potato, have contributed to less than 10% of total household consumption of staples.

The total daily per capita cereal grain consumption (rice and wheat) of the lowest expenditure group amounts to about 243 gms, while in the highest expenditure quintile the consumption is about 380 gms. However, the lower level of consumption of cereal grains among the poorer income categories has been accompainted by higher levels of consumption of yams.

This data show that as the income of the food stamp recipients increase, more of rice and wheat flour products is consumed. However, it is only in the lowest expenditure quintile that wheat consumption has exceeded that of rice. This suggests that any policy that would result in income enhancement of the poorer categories of food stamp recipients would lead to substantial increases in rice consumption levels.

TABLE 5 Quantities of food items consumed per person classified by expenditure quintiles

Item	Expenditure Quintiles				
	1	2	3	4	5
	(g/capita/day)				
Cereals :					
Rice	117	210	207	235	237
Wheat	126	122	144	134	143
Sub Tot	243	332	351	369	380
Starchy Roots	19	3	6	21	6
Sugar	30	44	47	63	59
Pulses	32	24	38	27	23
Meat	—	—	—	17	27
Eggs	8	—	7	—	3
Fish/Dry Fish	1	32	46	57	40
Milk Products	5	9	11	13	16
Vegetables	85	88	46	71	138
All	423	532	552	638	554

The consumption of sugar also has shown a pattern of consumption similar to that of rice. Between the lowest expenditure quintile and the highest quintiles, the per capita sugar consumption has shown a doubling from 30 gms to about 60 gms per day.

Pulses form a major component in the food basket of all expenditure groups. The common types of pulses consumed were lentil, cowpea and green gram. The average quantity consumed varied from 24—38 gm/capita/day . Pulses, particularly cow pea and green gram, are relatively inexpensive and provide cheaper alternatives to more expensive animal proteins. The quantity of pulses consumed, however, falls with increase in total expenditure. The decline of pulse consumption at higher expenditure levels is offset by a marked increase in the purchase of fish, milk and meat, The consumption of vegetables also show marked increases with increase in expenditure.

In the case of coconut and coconut oil, per capita consumption levels show a similarrity in all expenditure categories, varying slightly around 0.2 nuts and 0.01 bottles per capita/day.

Energy Intake

The average per capita daily energy intake was about 8.19 M.J. (1958 kcal) and cereal grains provide nearly half the intake (Table 6). Of the total energy supplied by cereals, rice alone accounts for about a third and wheat accounts for a fifth.

TABLE 6. Per capita daily energy consumption classified by source and expenditure quintiles

Source	Expenditure Quintile									
	1		2		3		4		5	
	MJ	%	MJ	%	MJ	%	MJ	%	MJ	%
Cereals :										
Rice	1.69	28	2.92	41	2.91	37	3.38	38	3.31	36
Bread	1.49	24	0.92	13	1.34	17	1.26	14	1.56	17
Wheat Fl.	0.08	1	0.12	28	0.17	41	0.11	26	0.11	1
Sub Tot.	3.26	53	3.96	56	4.42	56	4.75	53	4.98	54
Sugar	0.49	8	0.73	10	0.74	11	1.05	12	0.99	11
Coco. Oil	0.32	5	0.57	8	0.57	7	0.75	8	0.78	8
Coconut	1.02	16	0.92	14	0.88	11	0.91	10	0.97	10
Others	1.08	18	0.87	12	1.21	15	1.48	17	1.56	17
Total	6.17	100	7.05	100	7.82	100	8.94	100	9.28	100

1 Megajoule (MJ)= 239 kcals

Between the five expenditure quintiles, the distribution of energy consumption showed a marked difference. The contribution of rice varied from 28% of the total energy consumption in the lowest quintile to 38% of the total in the highest quintile. The largest proportion, 41% was seen in the second quintile.

Bread and wheat flour contribution was highest in the lowest quintile (24% of the total energy supply). The relative importance of these two items appear to decline with the increase in household expenditure.

Sugar and coconuts, taken together provide about a quarter of the energy supply in the diet in all expenditure categories. Sugar contributes 8% of the energy in the daily diet of the first expenditure quintile, and 10—12% in higher expenditure quintiles. Coconut provides 16% of the energy intake among the first quintile and the proportion falls to 10% in the fifth quintile. Assuming that all the coconut oil purchased and all the kernel from coconuts purchased are consumed, the total coconut fat intake is around 45g per head per day, which supplies about 18% of the total energy intake.

The analysis showed that the average energy consumption per capita per day in the lowest expenditure quintile was about 6.17 MJ (1475 kcal), whereas in the highest expenditure quintile the energy consumption was 9.24 MJ (2219 kcal) per capita per day. A chi-square test on the null hypothesis of no dependence of the per capita dietary energy consumption on the total monthly household expenditure was significant at 1% level, confirming that the energy intake is largely dependent on household income.

Protein intake

Among the five expenditure quintiles considered the average per capita protein intake per day varied widely, from 37 g/day in the first quintile to 58 g/day in the fifth expenditure quintile (Table 7). A chi-square test on the null hypothesis of no dependence of total daily household protein consumption on total monthly household expenditure was significant at 1%.

TABLE 7. Per capita daily protein intake classified by sources and expenditure quintiles

Source	Expenditure Quintile[a]									
	1		2		3		4		5	
	g.	%	g.	%	g.	%	g.	%	g.	%
Animal Products:										
Meat	—	—	1.2	4	—	—	1.7	3	4.0	7
Dry Fish	1.1	3	1.8	4	3.4	6	5.8	10	3.4	6
Fresh Fish	—	—	1.0	2	7.2	13	6.2	11	4.6	8
Milk	0.7	2	2.2	5	2.6	5	2.3	5	3.8	6
Eggs	1.3	3	—	—	1.1	2	—	—	0.5	1
Sub Tot.	3.1	8	6.2	15	14.3	26	16.0	29	16.4	28
Cereals :										
Rice	8.7	24	15.7	38	15.5	29	17.7	32	17.1	29
Wheat	11.9	32	7.8	19	11.9	20	9.6	17	12.6	22
Sub Tot.	20.6	56	23.5	57	26.5	49	27.2	49	29.7	51
Vegetab[b]	2.2	6	0.9	2	3.6	7	1.5	3	2.4	4
Pulses	7.2	20	4.6	11	6.0	11	6.1	11	5.2	9
Coconuts	2.2	6	2.3	6	2.2	4	2.2	4	2.3	4
Other[c]	1.7	4	3.5	9	1.4	3	2.0	4	2.0	3
Sub Tot.	13.2	36	11.3	28	13.2	25	11.6	22	11.9	20
Total	37.0	100	41.0	100	54.0	100	55.0	100	58.0	100

a The first quintile represents the lowest expenditure group
b A mixed basket of vegetables was included
c Include condiments and triposha (a supplement distributed by the Ministry of Health).

In all expenditure groups, cereals provide 50% or more of the protein intake. In the first and the last quintiles, bread and wheat flour supplied 32% and 22% of the total protein respectively. Rice accounted for 24% of the total protein supply in the lowest expenditure category while in the highest it accounted for 29% of the total. Contribution of pulses to the total protein intake is high (19.5%) in the first quintile and falls to 9% in the fifth quintile, whereas the intake of animal protein increases from 8% to 28% with increase in household expenditure. Animal products contributed to 8—29% in the five expenditure groups.

Energy and Protein Adequacy

To what extent does the consumption of energy and proteins reported by food stamp recipient households correspond to their actual physiological requirements? Information relating to this question is presented in Table 8.

TABLE 8. Levels of per capita energy and protein intake and their adequacy

Expenditure Quintile	Energy Intake		Protein Intake	
	Intake (MJ)	Intake as a % of Recommended Value[a]	Intake (g/Day)	Intake as a % of Recommended Value[b]
1	6.17	67	37	77
2	7.05	77	41	85
3	7.82	85	54	112
4	8.94	97	55	115
5	9.28	101	56	116
All	8.19	89	52	108

a 9.2 MJ for adults
b 48 g/capita/day, for adults

In estimating the adequacy of energy consumption by the households, an average per capita daily consumption level of 9.21 MJ (2200 kcal) was used as the standard minimum requirement of an adult male. Based on this measure, the the first two quintiles show marked deficiencies in energy intake, amounting to about 67 and 77% of the minimum requirement. This implies that nearly 60% of the study sample receive less than 80% of the energy requirement. In contrast, for those in the two highest expenditure quintiles, almost the entire energy requirement is satisfied.

It is notable, however, that the actual energy consumed per adult male in the sample would be higher than the values estimated in this study because of the prescence of a larger number of women and children in the study population. Because of this, the energy inadequacy is likely to be over-estimated and a precise estimate of this can only be made using intra-household food consumption data. However, even if some allowance is given for this limitation, the results of this study data suggest a major energy inadequacy in the first quintile of the sample population.

The protein consumption levels of the different expenditure quintiles suggests that an inadequacy is reflected only in the first two expenditure quintiles. In other expenditure categories, protein intake is substantially above the minimum required.

These estimates of protein adequacy is based on the recommended allowance of 48 gms of protein/adult per day. From Table 8 it ocan be inferred that the protein intakes in these households were nearer the requirement than that of energy intake. Thus, in this

instance, malnutrition is more due to energy insufficiency than protein. insufficiency. Protein intake, like energy intake, is closely dependent on income. With the increase in income, a marked improvement in protein intake is seen, both from quantitative as well as qualitative aspects (Table 7).

SUMMARY AND POLICY IMPLICATIONS

The study findings presented here are based on a sample of 87 food stamp recipients located in an urban area close to the city of Colombo. The analysis is based on a cross section survey data collected in 1988 on the socio-economic status and the dietary intakes of the sample households.

The study results, in overall terms, are in conformity with the view that the pattern of food consumption is influenced by a wide range of factors such as income, socio-cultural factors, tradition, taste and availability of substitute foods, etc. However, the most critical factor determining the level and the patterns of food consumption is the income.

There is a wide variation of household incomes within the sample of food stamp recipient households examined. The poorest 20% of the sample showed an average income of Rs. 421 per month while the highest 20% reported an average income of Rs. 2079 per month. Nearly half the households studied have reported monthly incomes well exceeding Rs. 700, the cut-off point for eligibility for food stamps.

As a consequence of this wide variation of household incomes, the food consumption of the households also showed wide variability. The results suggest that the daily per capita energy intake could be used as a guideline to assess the actual needs for assistance through the food stamp scheme. If a cut -off point of 9.2 MJ (2,200 kcal) per capita per day is adopted. about 40% of the current recipients could be eliminated from the scheme.

These findings indicate major problems associated with the operation of the food stamp scheme and its efficiency of targeting to the intended beneficiaries. The results indicate a need to overhaul and re-define the eligiblility criteria. Periodic examination of the eligibility status of the programme beneficiaries, mainly for purposes of eliminating those households that have become ineligible and also to incorporate new, eligible households, would be critical for increasing the effectiveness of the scheme.

The study also shows that, in the sample investigated, the actual contribution of the food stamp programme to the beneficiary households was marginal. In the lowest income quintile, for instance, the value of food stamps received contributed only about a tenth of the total household budget. In the highest expenditure quintile, the contribution of the food stamps was insignificant, about 2% of the total household budget. The non-significance of the food stamps is due to two main reasons. First, the nominal value of food stamps given to a household has been kept at the same level for many years, from incep-

tion of the scheme, without any increase. Secondly, during the past few years food prices have increased sharply; greatly reducing the food purchasing capacity of the programme beneficiaries.

The operation of the food stamp scheme, nation wide, involves the utilization of a large amount of public funds. Therefore, given the inefficiencies of the current programme there appears to be a need for a systematic effort to re-examine these issues further. Such investigations should be designed to identify alternatives and should throw light on issues such as total operating cost of the scheme, its cost effectivencess, coverage, the the extent to which the needs of the recipients are catered, economic viability and the sustainability of the programme and operational feasibility.

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