Demographic and Expenditure Profiles of Zambian Households: Evidence from the June 1991 Zambian Household Expenditure and Income Survey

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Staff Report 93-SR 63
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ABBREVIATIONS

CARD - Center for Agricultural and Rural Development

CPHA - 1990 Zambian Census of Population, Housing, and Agriculture

CSA - Census Supervisory Area

CSO - Central Statistics Office

HEIS - 1991 Zambian Household Expenditure and Income Survey

GRZ - Government of the Republic of Zambia

PIC - Prices and Incomes Commission

UNDP - United Nations Development Program

USAID - United States Agency for International Development

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ABSTRACT

The HEIS's linkage of household-level demographic and expenditure data for Zambia provides the foundation for an analysis of household expenditure patterns. For this report, total household expenditure was composed of two broad expenditure classifications, food and nonfood. An analytical emphasis was placed on developing the food expenditure patterns of household groups identified by various socioeconomic characteristics. In general, within the various household classifications, there were three important economic variables: the availability of food items within specific markets, household income, and relative prices that appeared to contribute to the development of the observed food group expenditure patterns. Directly observable, absolute differences in total expenditure, shares of total expenditure, and shares of total food expenditure were used to distinguish groups of households. For example, it was found that households in rural areas of Zambia have distinctively different levels of total expenditure and food group expenditure patterns than those in urban areas. Rural households spent, on average, a larger proportion of total expenditure on food than did urban households. Moreover, rural households spent a relatively larger share of their total food expenditure on lower priced cereal grains, while urban households spent a relatively larger share of their total food expenditure on higher priced meat, poultry, and fish items.

DEMOGRAPHIC AND EXPENDITURE PROFILES OF ZAMBIAN HOUSEHOLDS: EVIDENCE FROM THE JUNE 1991 ZAMBIAN HOUSEHOLD EXPENDITURE AND INCOME SURVEY

Introduction

The 1991 Zambian Household Expenditure and Income Survey (HEIS) was designed and conducted by the Prices and Incomes Commission (PIC)[1] of the government of the Republic of Zambia (GRZ) with cooperation from Zambia's Central Statistics Office (CSO), the United Nations Development Program (UNDP), the U.S. Agency for International Development/Lusaka (USAID) and the Center for Agricultural and Rural Development (CARD) at Iowa State University. The HEIS was conducted in June and July 1991, and was designed to collect data from Zambian households on individual and household characteristics, expenditure, income and income sources, and participation in the mealie meal coupon program.

Prior to conducting the survey, the GRZ identified the major objectives for the economic analysis of the HEIS data:

- provide background information for the revision of the poverty datum line (PDL) in Zambia by identifying the characteristics of Zambia's "vulnerable" household groups;
- identify the vulnerable household groups and their pattern of consumption expenditure and sources of income;
- classify the household population by sources of income and expenditure categories in rural and urban areas and examine their expenditure pattern by commodity group;
- identify the sources of and access to basic commodities consumed by the vulnerable household groups;
- assist in the revision of Zambian consumer price indices by developing up-to-date household commodity expenditure shares; and
- evaluate the effectiveness of the mealie meal coupon system in terms of its coverage, accessibility, and the income effect of targeted households.

This report provides some of the descriptive information necessary to define and refine the policy issues implied by these analytical objectives. This introduction provides a brief discussion of the HEIS design and sampling frame, as well as information on the involvement of various Zambian

institutions in the data collection process. The remainder of the report is divided into two major sections. The demographic profile provides a descriptive demographic analysis based on a tabular analysis of individual and household characteristics of the HEIS data. This section also includes a background discussion of the national, rural, and urban representativeness of these data. The expenditure profile develops a descriptive tabular analysis of household expenditure at the national, rural, and urban levels. The expenditure profile also includes several subsections: (1) a detailed discussion of the consumer maize subsector of the Zambian food economy; (2) a review of the most popular food items; and (3) several estimates of the household expenditure elasticity of major food groups and selected food items.

Survey Design, Sampling Frame, and Data Collection

The HEIS was designed to collect current information on household expenditure, transfer transactions, income, business expenses, and mealie meal food assistance program participation. This household information was collected from each sample household during four consecutive weeks in June and July 1991. The survey design called for one enumerator visit per week to the household, with each visit occurring seven days apart. Given this short time for data collection (less than one month), the HEIS was fundamentally a cross-section household survey. The survey's use of multiple visits per household, spaced at consistent time intervals, enhanced the data quality of such economic flow variables as food expenses, individual incomes, and business expenses and resulted in better estimates of household expenditure.

The HEIS instrument was divided into six major sections, each emphasizing a different subject:

1. The *household section* included the specific location and type (rural/urban) of household and characteristics of each household member such as relationship to head, age, sex, educational level, marital status, employment status, and occupation.
2. The *household consumption expenditure* included information on the price, quantity, and value of goods and services produced for the household's own consumption, purchased in the market, bartered into or out of the household, and exchanged as gifts. Each item was identified by a code.
3. *Nonconsumption expenditures* contained household information on direct taxes; gifts and contributions to institutions and persons outside of the household; purchase of savings certificates; payments made to saving clubs, life insurance programs, annuities, superannuation, pension funds, or other retirement plans; dues paid to trade unions or friendly societies; betting stakes; and capital sums or mortgage payments.
4. *Sources of income* included information on the income of household members from wages and salaries, including bonuses, subsistence allowances, and commissions; entrepreneurial

income from self-employment activities in the formal and informal employment sectors; property income including interests, dividends, rents, and royalties; and cash and the cash value of in-kind transfers, scholarships, or other gifts.

5. The *operational expenses of self-employment activities* section included information obtained on business operating expenses that were paid in cash or in-kind.
6. The *mealie meal food coupon* section contained information on whether or not a household was entitled to receive coupons and the reasons for nonentitlement for those households not receiving coupons.

All of the HEIS sections were not repeated by the enumerator during each visit to the household. For example, the household section information was obtained only during the first visit, while most of the household's nonfood expenditure and the mealie meal food coupon information was collected during the fourth visit. However, the household's food expenditure and household members' income data for the previous seven days were reported during each of the enumerator's visits. There were different reference periods that pertained to other types of household expenditure and income data, and several of the HEIS sections had more than one subsection for collecting similar information. The survey instrument's subsections were distinguished by the type of information to be recorded and by the reference period for which the data were to be reported. The complete survey instrument, along with the editing and coding manual, provide the best information on the type of data collected by the HEIS and the original reference periods for the reported information.

The original sampling frame of the HEIS was developed by the CSO as a multistage, stratified randomized-cluster design. The first stage required the selection of 17 of 54 administrative districts from the nine Zambian provinces.[2] The selected districts were divided among three strata: an Eastern province stratum with 3 districts with rural and urban households; a rural stratum of 10 districts from the rest of Zambia (exclusive of districts from the Eastern province) with primarily rural households; and an urban stratum for the rest of Zambia with 4 districts with primarily urban households. The HEIS sampling frame was designed to have at least one district represented from each province.

Within the sampled districts there were several thousand rural and urban census supervisory areas (CSAs) identified.[3] The CSAs for the HEIS were the same as those defined for the 1990 Census of Population, Housing, and Agriculture (CPHA), and each had been previously designated as either rural or urban. The second stage of sampling required the selection of a probability sample of rural and urban CSAs (sampling clusters) based upon the number of households within each stratum. This selection of CSAs was intended to be self-weighting at the stratum level. However, there were

some urban CSAs selected from the rural stratum districts, and some rural CSAs were selected from the urban stratum districts. All households within 293 selected CSAs were prelisted prior to the final stage. The final stage of the sample selection process was to select at random from within each of the selected CSAs 10 of the prelisted households for enumeration.

The HEIS's stratified, randomized-cluster sample design yielded 2,930 (10 x 293) sample households: 860 rural and 60 urban households within the Eastern province; 940 rural and 70 urban households within the rural stratum; and 160 rural and 840 urban households within the urban stratum. There were 1,960 rural households and 970 urban households. Table 1 shows from which provinces, districts, and strata the number and type of CSAs were selected.

Based upon results of the 1990 Census of Population, Housing, and Agriculture (CPHA), the proportion of HEIS sample households from the Eastern province was far greater than the actual percentage of Eastern province households in the Zambian household population. From the CPHA, the Eastern province contained 14.2 percent of the nation's households; however, 31.3 percent of the HEIS sample households were drawn from this province.[4] Household weights were used to correct for this disproportionate sampling.

For the rest of Zambia (all CSAs outside of the Eastern province), approximately 32 percent of the households were urban and 68 percent rural according to the CSA maps. From the original HEIS sampling frame there were to be 910 urban and 1,100 rural households selected from outside the Eastern province, or approximately 45 percent and 55 percent of the household sample.[5] Therefore, to establish the national, rural, and urban representativeness of the HEIS data, it is necessary to apply household weights to the sample data in order to make population estimates.

The prelisting and selecting of sample households were the responsibility of the PIC. The PIC's staff also provided training and supervision of CSO field staff, who were responsible for the actual data collection. This included specialized training in interviewing techniques for the HEIS, as well as the coding and recording of the questionnaire responses. In order to facilitate these activities, each CSO enumerator was given an editing and coding manual that described in detail the procedures for recording HEIS information. The CSO's field staff were used in the HEIS data collection phase because of their familiarity with the sampling frame and because it was cost effective to use their survey experience and training.

The initial editing of the HEIS data was made by the CSO field staff during the enumeration process, mostly by using interviewing techniques that prompted and probed the respondent for information. In addition, there were several quality control measures implemented during the field

operations. These included following the oral and written training instructions for preventing recording errors and completing the implicit, data consistency cross-checks. These field editing operations were followed by additional manual and computer-assisted editing at the PIC offices in Lusaka.

In addition to the CSO's manual data review and quality control measures, the PIC also implemented questionnaire review techniques for hand editing of the reported data. These manual revisions were made by reviewing the questionnaires before data entry. The major objectives of this manual review were to ensure the correct household identification of the survey information, to ensure that all entries were legible, to verify that numeric fields were properly recorded, to classify all literal responses as numeric codes, to manage the number of responses for each question, to eliminate extraneous marks and entries, to check that responses were recorded in the appropriate spaces, to nullify blank survey pages, and to manage the control counts of pages from the data-entered questionnaires.

The Analytical Sample and Household Weights

The number of unweighted sample households used in the analyses of HEIS data presented in this report was less than the 2,930 households of the original sample design. The number of sample households selected for the analytical data set was dependent upon several criteria. First, it was necessary for each household to have been consistently and properly identified during the enumeration process, and for all of the identifying information for each household with respect to the known sampling frame to have been coded correctly. Second, only households with a designated household head older than 13 years of age were used. Third, only households with at least one food item transaction reported during all four of the enumerator's visits to the household were included. In general, this third criterion was ad hoc, but necessary, in an attempt to screen the households for complete enumeration. Because the HEIS instrument lacked any direct information regarding the completeness of each household's survey information, this last criterion was used to determine that each household in the analytical sample had received and completed the four planned enumerator visits.

Serving as a "filter," the household screening criteria resulted in an analytical sample of 2,439 unweighted household observations or approximately 84 percent of the number of households from the original sample design. This analytical sample of 2,439 households consisted of 1,682 rural and 757 urban unweighted sample households. When weighted, these sample households were to

represent a population of 1,025,083 rural and 405,840 urban households.[6] Household weights, using the 1990 CPHA information on various population characteristics, were developed by the Statistical Laboratory at Iowa State University. The household weights were applied in all of the analyses that were based on this specific household sample. Information on the household population characteristics as well as the nonlinear regression procedure used for calculating the household weights for this analytical sample of households is described in Loughin, Fuller, and Carriquiry (1992).

The National Representativeness of the HEIS

When weighted, the HEIS sample data should represent the population of Zambian households at the national, rural, and urban levels. The CPHA population figures in Table 2 provide the basic information on the types of households and the average household sizes in Zambia by location. Therefore, the weighted number of urban and rural HEIS households should represent the actual total population and subpopulations of these households.

However, the CSO has processed very little of the demographic data collected by the CPHA, and much of the published CSO household and population demographic statistical estimates come from much earlier census information that would be too dated for validating the HEIS demographic profile. Therefore, it was not possible to determine whether any design-induced sampling errors may have introduced severe enough bias in the weighted analytical sample to cause the estimates of descriptive statistics to be nationally unrepresentative for any specific household-level characteristics (e.g., rural/urban location, marital status of head, employment status of head). However, whenever such household characteristics were highly correlated with the control variables used in the weighting procedure, the estimates should be nationally representative.

Given that many of the descriptive characteristics were delineated at extremely broad levels and that the selected household sample was based upon a stratified, randomized-cluster design,[7] there is little reason to believe that the descriptive information provided in the demographic profile is unrepresentative of the characterized subpopulations. As is the case with most data samples generated from this type of sample design, the likelihood of producing a biased (unrepresentative) descriptive statistic increases as subpopulations are more narrowly defined because possibly important population characteristics are not considered in the sample selection process (cluster selection) or in the weighting of the sample data. Nevertheless, it is believed that the national, rural, and urban

household descriptive statistics provided in this report are highly representative of their respective populations.

Demographic Profile

In Table 2 the weighted number of households and the average household sizes from the HEIS analytical sample were compared with those from the CPHA. Since the HEIS household weights were designed to reflect the national, rural, and urban population of households, identified by the CPHA's CSAs, the distributions were quite similar. The HEIS weighted sample of Zambian households consisted of approximately 70 percent rural and 30 percent urban households. Table 3 compares the estimated number of males, females, and total population in the HEIS to the estimates made from the CPHA. For these characteristics the HEIS survey weights were designed to bring the HEIS estimates to the CPHA population levels.

Table 4 shows the average household composition of male- and female-headed households. Households with male heads were on average larger by more than one person per household than those households with female heads (5.7 and 4.5 persons). Urban households were on average slightly larger than rural households. As shown in Table 4, the smaller average household size of female-headed households compared with male-headed households was the result of fewer children less than 12 years of age and fewer males 18 to 55 years of age present in those households. This result appeared to be consistent for households in both rural and urban areas. For many of the female-headed households, the absence of a male wage earner may have a significant impact on the overall income level and economic well-being of those households.

Age Groups

In Table 5 the HEIS households were delineated by rural and urban area and the age of the household head. All of the household heads were reported as being more than 18 years of age. Table 5 shows that a greater percentage of urban household heads were younger than those in rural areas. The differences between the rural and urban percentage of young and elderly household heads were most likely due to a combination of several social and economic factors: there may be limited income opportunities for the elderly in urban areas; the phenomenon of migration to urban areas may be fairly recent and not have involved as many households with heads over 55; and/or the elderly may be actively participating in the government's rural development and resettlement programs by returning to rural farming areas after retiring from urban employment. For additional descriptive

information about Zambian households categorized according to the sex of the household head, see Tables A.1 through A.3.

Tables 6 through 10 provide several distributions of the Zambian population by age group, rural and urban area, and sex. Figure 1 shows the percentage distribution of the estimated national, rural, and urban populations by age groups. From Table 6, more than 88 percent (268,350/303,669) of those over 55 were residing in rural areas; the population in rural areas had a much larger percentage of children less than 12 and a much smaller percentage of teenagers and adults compared with the population of urban areas. This could characterize a "tidal" migration that carries rural young adults into urban areas and the elderly away.

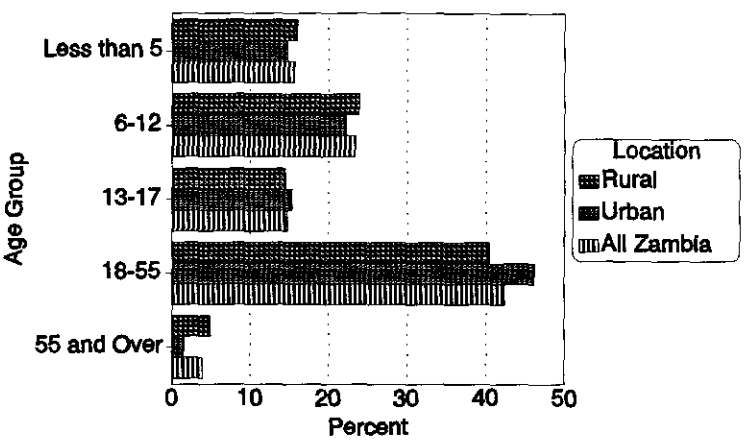

Figure 1. Percentage distribution of the estimated population

Tables 7, 8, and 9 show several distributions of the Zambian population by sex and age. The adult population (those over 18) consisted of approximately 8.2 percent more females than males. This result is consistent with an overall shorter life expectancy for males than females in Zambia.[8] However, within the elderly population (those in the 55 and older group), as depicted in Table 8, males were a larger percentage of the population in both rural and urban areas. This phenomenon may result from different health risks associated with older or elderly males and females (such as earlier deaths of women due to the effects of childbirth), and/or a greater capability of elderly men to obtain life-sustaining health care once they are old. Table 9 shows a much larger percentage of males 18 to 55 years old residing in urban areas than rural areas, 46.3 percent compared with 38.09 percent of the respective populations. This characteristic of a rural to urban migration of working age males is normally associated with perceived employment and income opportunities (jobs, criminal activities) of urban areas.

Household Size

In Tables 10 and 11 (Tables A.4 and A.5) the weighted HEIS household sample was distributed by rural and urban areas, the size of household, and the sex of the household head. In general, for both rural and urban areas, the larger the household size, the greater the likelihood of having a male head. The smallest percentage of all households with male heads occurred for households with 4 or fewer members, and the largest percentage of all households with male heads occurred for households with 11 or more members. Table 10 shows that there was a larger percentage of households with 9 or more members in urban areas, which is consistent with the larger average size of urban households.

Education

Tables 12 and 13 (Tables A.6 and A.7) provide some descriptive information for the households according to rural and urban areas, the educational level of the household head, and the sex of the household heads. Approximately 80 percent of all household heads reported some primary education. In general, male household heads were better educated than female household heads, and urban household heads were better educated than rural ones. Almost 14 percent of the male heads of households had no formal schooling, compared with more than 42 percent of the female heads (Table A.7). Moreover, at any level of formal education the percentage of educated male heads exceeded their overall percentage in the population, while the percentage of formally educated female heads was consistently less than their overall percentage of the population. At one extreme, as shown in Table 13, male rural household heads with "higher" levels of education outnumbered similarly educated female heads by nearly 45 to 1 (30,031 to 758).

Employment Status

Tables 14 and 15 (Tables A.8 and A.9) provide distributions of the weighted HEIS households by rural or urban area, and by employment status and sex of the household head. Table 14 shows that most of the heads of rural households were self-employed, and that most heads of urban households were employed by the formal sector (the employed category of the tables). In both rural and urban areas the percentage of formal sector employment of male household heads was far greater than the formal sector employment of female household heads (Table 15). This indicates that in Zambia there were probably more opportunities for men than women for formal sector employment

and most of these opportunities existed in urban areas. In contrast, the large number of self-employed rural household heads indicates the importance of the informal sector in the rural Zambian economy. The household head unemployment rates indicated that slightly more than 3 percent of all male household heads and 5 percent of all female household heads reported they were unemployed (Table A.9). The most troubling employment problem was an almost 8 percent unemployment rate of female household heads in urban areas.

Marital Status

The weighted HEIS household sample was distributed by rural and urban areas, the marital status of the head of household and the sex of the head of household in Tables 16 and 17 (Tables A.10 and A.11). Table 16 shows that there was a larger absolute number as well as a greater percentage of divorced and widowed household heads located in rural than in urban areas, even though urban households had a larger percentage of single heads. In both rural and urban areas, females became single heads of households as a result of being either widowed or divorced, and it was very unlikely to observe a female household head who was married.

Household Expenditure Groups

In Tables 18 and 19 (Tables A.12 and A.13) the weighted HEIS household sample was distributed by rural and urban areas, household expenditure class, and the sex of the household head. Table 18 shows that households in rural areas had significantly lower levels of total expenditure than urban households. When the percentage of households in the two lowest expenditure classes were summed, 51.8 percent of the rural households and 9.31 percent of the urban households had expenditures of less than 30,000 kwacha (K) annually. Table 19 shows that in rural areas the expenditure class mode for both male- and female-headed households occurred in the K15,000 to K30,000 range, and in urban areas the expenditure class mode for male-headed households was K45,000 to K60,000 and for female-headed households it was in K60,000 to K75,000 range. The distribution of households by expenditure class indicates that female-headed households were much closer in total expenditure levels to male-headed households in urban areas than in rural areas. The distributions of "calculated" annual expenditure for the households (Tables 18 and 19) show two common distributional characteristics: (1) each distribution is skewed to the right; and (2) the rural household distributions appeared to be more skewed than the urban household distributions.

Expenditure Profile

A descriptive expenditure profile of the Zambian household was developed from the HEIS data and it is provided in Tables 20 through 45. These tables were designed to describe household expenditure patterns for food and nonfood items based upon household expenditure and per capita expenditure. For the purpose of this profile, expenditure was defined as being either the reported purchase value and/or the home-production value of the reported items acquired by the household during the survey period. The profile includes a detailed discussion of the consumer maize subsector of the Zambian food economy. Another subsection of the profile identifies the most popular household food items. The last subsection provides information on the expenditure elasticities for several item groups and some selected food items.

Household Expenditure

Tables 20, 21, and 22 show, for the national, rural, and urban sample of households the estimated average annual expenditure and expenditure shares for various items and item groups. For the expenditure analysis, the items were initially classified into eight major, mutually exclusive item groups:

1. Total Food (including beverages and tobacco)
2. Clothing and Footwear
3. Rent, Fuel, and Light
4. Furniture and Household Goods
5. Medical Services, Drugs, Other Related Items
6. Transport-Communications
7. Recreation-Education
8. Other Goods and Services

Two additional aggregate groups were also defined:

9. Total Nonfood
10. Total Expenditure

Total nonfood expenditure was the sum of expenditure in groups 2 through 8, and total expenditure was the sum of all expenditure [the sum of total food (1) and total nonfood (9) expenditure]. Within these eight major item groups, several smaller subgroups of items were defined (see tables) so that more detailed information could be provided.

Tables 20, 21, and 22 are each divided into two sections. The first one shows the estimated allocation of average annual expenditure of households among various food items and food item

groups. The annual household expenditure for the food item groups was used to calculate expenditure shares of total food and total expenditure. The second section shows the allocation of average household expenditure among the nonfood item groups. The average annual household expenditure for the nonfood item groups was used to calculate expenditure shares of total nonfood and total expenditure.

The average Zambian household's expenditure share for food, beverages, and tobacco (FBT) was estimated to be 68.61 percent of total expenditure (Table 20); the average rural household's expenditure share for FBT was estimated to be 74.95 percent of total expenditure (Table 21); and the average urban household's expenditure share for this category was 61.13 percent of total expenditure (Table 22). The cereals food group had the largest share of the average rural household's food budget, 30.24 percent, while fresh meat had the largest share, 21.41 percent, of the average urban household's food budget. On average, rural households allocated most of their FBT budgets to cereals, fresh meats, fresh vegetables, fruits, and roots and tubers, while urban households allocated most of their FBT budget to fresh meat, preserved meat, fresh fish, preserved fish, milk and eggs, oils and fats, fresh vegetables, sugar, tea and coffee, nonalcoholic beverages, and tobacco.

The nonfood item expenditure shares were estimated at 25.05 percent and 38.87 percent of total expenditure for the average rural and urban household. For the average rural household, the largest expenditure share of total expenditure, 8.81 percent, was for clothing and footwear. For the average urban household, the largest share of total expenditure, 11.83 percent was for rent, fuel, and light.

Table 23 shows that the average *monthly* total food expenditure of rural households, K2,656.93, was almost K2,000.00 less than the average total food expenditure of urban households, K4,637.35. Within the nonfood item groups, the estimated average group expenditure for rural households was consistently less than the average for urban households.

For these item groups, the average monthly household per capita expenditure estimates for rural, urban, and all households are shown in Table 24. Even though rural households were, on average, smaller in household size, the average per capita expenditure of rural households was estimated to be consistently less than the average household per capita expenditure of urban households within all item groups. Overall, the average monthly per capita total expenditure of rural households was estimated to be K659.68, while for urban households the average monthly per capita total expenditure was estimated to be K1,332.71. Urban households, on average, had more than twice as much total expenditure per person as rural households (Figure 2).

Household Per Capita Total Expenditure Decile Groups

Household per capita total expenditure decile groups were determined by rank-ordering the weighted number of sample households by total per capita expenditure from lowest to highest and then grouping the rank-ordered sample households into 10 groups (labeled D1,D2,...,D10 in the tables) with approximately an equal number of households in each group. For example, the first decile (D1) contained 10 percent of the weighted number of households with the lowest total per capita expenditure. In addition to the decile groups for the entire household sample, similar decile groups for the urban and rural subsamples of households were obtained by using the method described above.

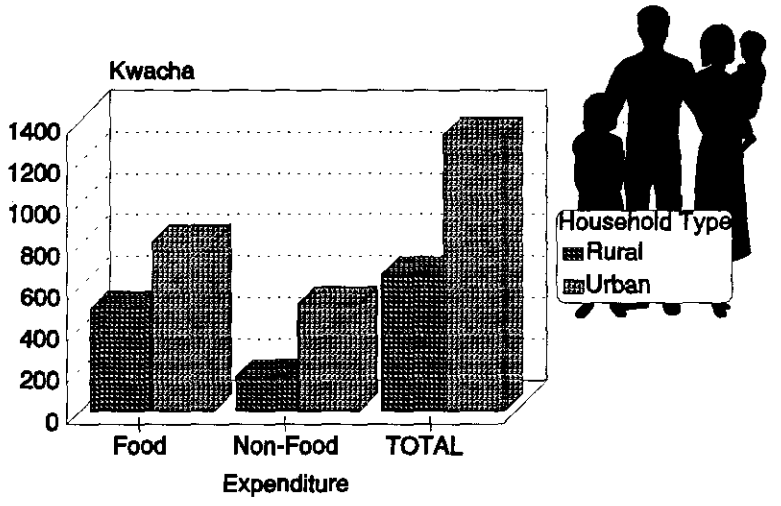

Figure 2. Average monthly per capita food and nonfood expenditures

The average food, nonfood, and total expenditure for rural, urban, and all households by household per capita total expenditure decile groups are shown in Table 25. In general, when comparing expenditures of households within the same decile groups, households in urban areas spent more on both food and nonfood items than those in rural areas, except for the food expenditure by households in the lowest and highest decile groups. Moreover, as average household per capita total expenditure increased, from the lowest decile group (D1) to the highest decile group (D10), several general observations were made: (1) household average monthly total expenditure increased steadily; (2) the number of rural households decreased, while the number of urban households increased; and (3) the average nonfood expenditure shares increased steadily. For households in rural and urban areas, the estimated average monthly total household expenditure were K3,544.99 and K7,585.80.

Table 26 provides information, in a format similar to that of Table 25, on the average per capita food, nonfood, and total expenditure by household per capita total expenditure decile groups. Average rural household per capita food expenditure was greater than that for urban households in all decile groups, except for D9. Moreover, household per capita expenditure for nonfood items was

always greater in urban areas, except for the highest decile group. For all households, the average monthly per capita total expenditures in the lowest and highest decile groups were K195.03 and K3,658.76.

In Tables 27 and 28, the household per capita total expenditure decile groups were defined within both the rural and urban subsample of households. Table 26 provides estimates of average monthly household food, nonfood, and total expenditure for the decile groups. Comparing the estimated expenditure values within the same decile groups for urban and rural households, the average monthly expenditures for food and nonfood items were consistently higher for the urban households, particularly for nonfood. Table 28 provides additional information on the per capita food, nonfood, and total expenditure for the rural and urban household decile groups.

Table 29 shows the average monthly household per capita expenditure for the 10 item groups listed above by household per capita total expenditure decile groups. For the majority of these item groups the average per capita expenditure increased steadily with increased per capita total expenditure. The average monthly household per capita total expenditure of K858.53 for all households lies between the sixth and seventh deciles, indicating that between 60 and 70 percent of the household population had less than the average household per capita total expenditure.

Food Group Expenditure

Tables 30 through 43 provide a more detailed analysis of household food, beverage and tobacco expenditure for various items and food group aggregations. Food items were assigned to rather broad food groups based upon the similarity of item characteristics and an implicit substitutability among the items. Tobacco products and alcoholic beverages were considered part of total food expenditure because of the similarities with respect to the frequency of purchase. In several of these tables, estimates for total food, total nonfood, and total expenditure have been provided as a comparison.

For rural, urban, and all households Tables 30 and 31 show the average monthly household and per capita expenditure for the following 16 food groups:

1. Cereals
2. Fresh Meat
3. Preserved Meat
4. Fresh Fish
5. Preserved Fish
6. Milk and Eggs
7. Oils and Fats
8. Fresh Vegetables
9. Fresh Fruit
10. Roots and Tubers
11. Sugar
12. Tea and Coffee
13. Other Foods
14. Nonalcoholic Beverages
15. Alcoholic Beverages
16. Tobacco

For both rural and urban households (Figures 3 and 4), the three largest average household expenditure values were for the cereals, fresh meat, and fresh vegetables food groups, which together accounted for slightly more than 50 percent of the household average total food expenditure. For the average rural household, the per capita expenditures for cereals, fresh fruit, and roots and tubers were estimated to be greater than those of urban households. However, for the rest of the food groups, urban households had much larger per capita expenditures.

For Tables 32 through 38, the food groups for cereals, fresh vegetables, and fresh fruit were the same as those listed above; the fresh and preserved meat and fish group included the food items from the fresh meat, fresh fish, preserved meat, and preserved fish groups as a single group; and the rest of the food items were combined into the all other foods group.

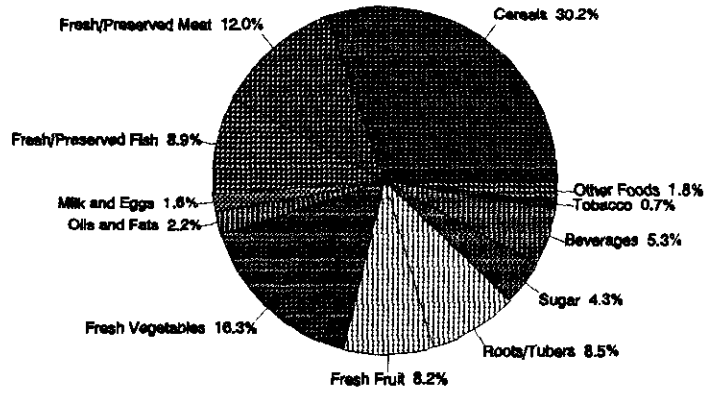

Figure 3. Food expenditure shares of rural households

Table 33 shows that among these five aggregated food groups rural households had the largest average monthly per capita expenditure on cereals, while urban households had the largest average monthly per capita expenditure for the fresh and preserved meat and fish group. Figure 5 depicts the rural and urban average household monthly per capita expenditure for these five food groups.

Tables 34 through 38 show the average monthly per capita expenditures for these five food groups by household per capita total expenditure decile groups. Table 34 shows that the average monthly per capita expenditure for each of these food groups steadily increased as household per capita total expenditure increased, with the exception of the fresh fruit group. For urban households, primarily, the average monthly per capita expenditures for fresh fruit did not show a definite trend.

Participation Rates

Participation rates measure the percentage of the household population that reported a purchase transaction or a value of home production for the food item or group during the four-week survey period. These measures are useful in interpreting the average item expenditure, which may include zeros, and in indicating how much a specific subsample of households may spend on a specific food item.

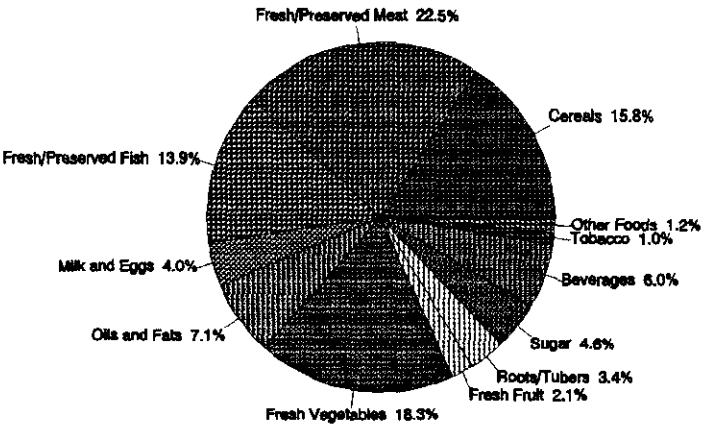

Figure 4. Food expenditure shares of urban households

Tables 39 through 41 provide population participation rates by total per capita expenditure decile groups. As these tables show for five food groups, almost all of the rural and urban households reported acquisitions of at least one of the food items within these groups sometime during the four-week survey period, and the participation rates were larger for the households in higher decile groups. Moreover, 100 percent of the lowest deciles of households in urban areas reported some expenditure on the meat and fish group (Table 41).

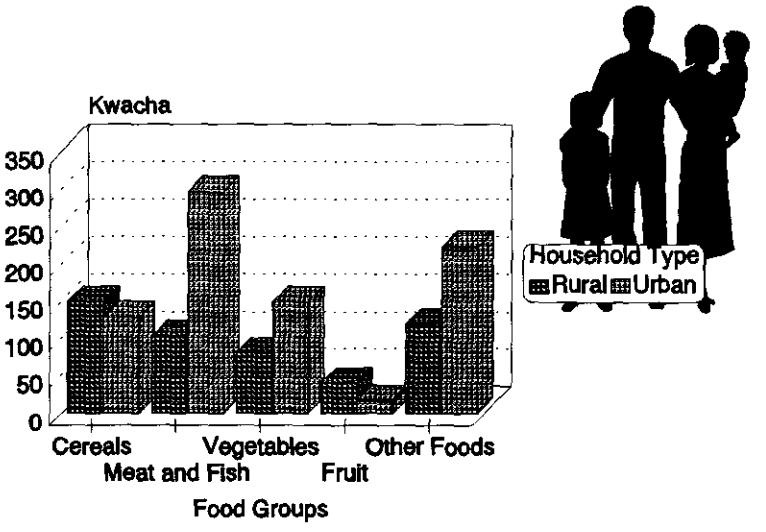

Figure 5. Average monthly per capita food group expenditure

Household Maize Subsector

Because of its importance to Zambia as a food staple and the recent importance of domestic policy actions to affect both the demand for and supply of maize, a more detailed analysis of the household maize subsector is necessary.

In recent years (from 1985 to the present), the Government of the Republic of Zambia (GRZ) has attempted to revise a long-standing national food policy of providing general price subsidies (GPS) to the consumers of factory-milled maize meal. By developing and implementing a food policy that integrated targeted subsidies in conjunction with the gradual removal of general price subsidies, the GRZ has moved toward a more liberalized, free market pricing system for the maize items produced by state-owned factories.

The government's GPS on maize meal—as well as other staple foods—have been provided for decades and were primarily targeted to urban consumers. When initiated, these GPS served as inducements for unskilled rural laborers to migrate to urban areas in support of industrial development policies. But more recently, the government's maize meal policy has served as a mechanism of social stabilization in Zambia. Moreover, the consumer subsidies have been available for decades, reinforcing the urban consumers' expectations of low prices for maize. Naturally, the GRZ has found the maize subsidies to be some of the most difficult ones to abandon.

In its altering of the general price subsidy programs, the GRZ introduced a targeted consumer subsidy program for maize, the *mealie meal* coupon program. This targeted program was initiated as a partial response to the World Bank/IMF structural adjustment package that began in the mid-1980s. The coupon program was designed to provide a protective cushion for the poorest of the urban consumers during the adjustment period, as the general price subsidies for maize meal were removed. In addition to this safety net feature, an important effect of the policy change was to reduce the large budget deficit that had developed in part from the GPS. Even though the coupon program was designed to reduce government food subsidy costs and, in turn, the budget deficit, the GRZ began almost from the inception of the program to be very concerned about its own cost, efficiency, and effectiveness, as well as the capacity of the program to counter the generally worsening economic condition of low-income urban households. Ultimately, the coupon program was discontinued during the fall of 1991 after approximately three years of operation and only several months after completion of the HEIS.

This period of structural adjustment has challenged the GRZ with a number of economic and social problems, including exchange rate devaluations, import restrictions, inflationary pressures

(currently more than 100 percent annually), and even food riots. Within this fragile economic and social environment, eliminating the consumer maize subsidies could have destabilizing effects. As of June 1991, the government was continuing to reduce the subsidies on the urban retail price of maize food items, while continuing to remove the GPS. These actions resulted in substantial increases in the government-controlled market prices for roller and breakfast meal during the latter part of 1991.

Maize is consumed by almost all Zambians, although it is not as important in the northern provinces of Zambia, such as Northern and Luapula. Maize items primarily appear in Zambian households in four forms: maize meal (hammermilled), maize grain, breakfast meal, and roller meal. Among these items there were considerable differences in the prices, product characteristics such as milling quality and extraction rates, and the item's availability in specific markets.

For the purpose of this report's tabular analysis of maize expenditure and availability, the following categories were defined: Total Maize, which includes only the four maize items above; Cereals, which includes all of the prelisted items of the HEIS's bread and cereal group; and Total Food, which includes all of the HEIS food items. Population participation rates, expenditure, quantity, and nutrient availability were estimated for each of the maize items. The associated analysis shows that the maize expenditure and availability patterns of Zambian households vary according to household location and the level of household per capita total expenditure. This could be useful information for redesigning Zambian food assistance policies.

Participation Rates. The preferences of households for specific maize items are indicated by population participation rates in Tables 42 through 44. These participation rates are defined as the percentage of the household population that reported availability of the maize item during the four-week survey period, indicating that the household had acquired the item by either purchasing or consuming the item from home production. It is important to note that the estimated quantity availabilities of the maize items were not used in developing the population participation rates. However, it was assumed that the recall period for the survey was of sufficient duration to adequately reflect maize consumption behavior.

From Table 42, as per capita total expenditure increased, the population participation rates increased for breakfast meal, remained relatively stable for roller meal, and decreased for maize meal and maize grain. There was a 46 percent participation rate for breakfast meal by the highest per capita total expenditure households (D10 decile group), and an approximately 60 percent participation rate for maize meal (hammermilled) by the lowest decile of households. It was uncertain what possible effects the June-July survey period (the maize harvest period) might have had on the

estimated participation rates. Maize meal is almost entirely home produced, so it was possible that the participation rates for this item were likely to be somewhat higher during the survey period than for other times during the year.

The participation rates for rural households by rural household per capita total expenditure decile groups are shown in Table 43. In rural households, the availability of maize by per capita total expenditure decile groups was stable at between 60 and 70 percent participation. It was highest among the nonpurchased maize items, meal and grain. For many of the decile groups only a small percentage of the rural population reported the availability of breakfast meal. The exception was for the highest decile group of households (the wealthier households) in which 23.41 percent of the population indicated that breakfast meal was available. Overall, for the rural household population, there were reported participation rates of 65.34 percent for maize meal, 5.01 percent for breakfast meal, 17.98 percent for roller meal, and 20.88 percent for maize grain during the four-week survey period. This relatively large participation rate for maize meal indicated its importance in the diet of many rural Zambians.

Table 44 shows that for urban households 45.25 percent of the population reported breakfast meal as available, while only 12.82 percent reported roller meal available during the survey period. The highest participation rate for breakfast meal was 61.06 percent, which occurred in the highest household decile group, while the highest participation rate for roller meal occurred in the lowest decile group. In general, the population participation rates in urban areas for maize meal and maize grain availability were much smaller than those of breakfast and roller meal.

Expenditure. Tables 45 through 53 present information on monthly household expenditures (in kwacha), expenditure shares, and per capita expenditure for maize items by rural and urban area and household per capita total expenditure decile groups. In Tables 45 through 47 household expenditure information for maize items is provided, Tables 48 through 50 show the maize item and cereal expenditure shares, and Tables 51 through 53 show information about household per capita expenditure.

Table 45 shows for the entire sample of households that maize meal had the highest average monthly (the four-week survey period) household expenditure within each of the expenditure decile groups, except for the highest. Since the majority of the higher per capita total expenditure households were in urban areas, it was likely that these households spent more on breakfast meal than any of the other maize items. For all households the average expenditure for maize meal was found to be K254.24 per month or approximately 59 percent of the total maize expenditure. Breakfast meal

had the second largest average expenditure, K75.77, followed by roller meal, K66.81, and maize grain, K36.24. The household's average maize (all items) expenditure was K433.06 per month. In general, total expenditure on maize increased as per capita total expenditure increased, except from the ninth to the tenth decile groups, when it decreased slightly.

Maize expenditures for rural households are presented in Table 46. It shows that the average monthly household expenditure for the four maize items, total maize, and cereals increased steadily as household per capita total expenditure increased. However, the average household expenditure for maize meal and cereal items by households in the highest decile group were slightly less than the expenditure of the households in the ninth decile group. For rural households, the overall maize meal expenditure of K347.95 was approximately 70 percent of the total maize expenditure of K499.59. Maize meal expenditure was primarily reported at self-valued amounts because almost all of the household availability came from home production.

In Table 47 the maize item expenditures for urban households are provided. In general, urban household maize expenditure was dominated by the expenditure on breakfast meal. For each decile breakfast meal represented the largest percentage of total maize expenditure. The decile group expenditures for all of the other maize items were all less than the expenditure for breakfast meal. Total maize expenditure for the lowest decile of households was approximately 43 percent of the total maize expenditure of the highest decile of households, but a consistent expenditure pattern across the decile groups was not discernible.

From Table 48, both the total maize and cereal shares of total food expenditure decreased as household per capita total expenditure increased. This was also the general trend for maize meal, maize grain, and roller meal. However, breakfast meal shares of total food expenditure showed a definite upward trend as household per capita total expenditure increased. The maize meal shares of total food expenditure were highest (21.53 percent) for the lowest decile of households, while the breakfast meal shares of total food expenditure were highest (3.48 percent) for the ninth decile of households.

Table 49 shows that for rural households total maize and cereal expenditures as shares of total food expenditure decreased with increased household per capita total expenditure. The average total maize expenditure for rural households was almost 19 percent of total food expenditure and nearly 64 percent of total cereal expenditure. The maize meal shares of total food expenditure for rural households showed a definite trend across decile groups; as household per capita total expenditure increased, the maize meal expenditure shares decreased.

Table 50 shows that for urban households the maize item and cereal expenditure shares of total food were much smaller compared with those for a similar decile of rural households (Table 49). In general, this indicated that the maize items and cereals were less important in the diets of urban Zambians than to the rural population, at least from the perspective of relative household expenditure shares. For all urban households, only a very small proportion of total food expenditure, 1.46 percent, was for maize meal, maize grain, and roller meal combined, while the breakfast meal expenditure share of total food expenditure was nearly three times as large, 4.26 percent.

Information in Table 51 indicates that Zambian households increased per capita breakfast and roller meal expenditures as household per capita total expenditure increased, and that substantial increases in per capita maize item expenditure occurred between the ninth and tenth deciles of households. The relatively large per capita expenditure for maize meal indicates its importance as a food staple. This information also shows no identifiable trends in the per capita expenditures for maize meal and maize grain, relative to increased household per capita total expenditure.

Table 52 provides information about rural household average monthly per capita expenditure on maize items by household per capita total expenditure decile groups. In general, the average household per capita expenditures for each maize item increased steadily as household per capita total expenditure increased. Moreover, the relatively larger per capita maize expenditures of the highest decile of households indicated that average maize consumption per person was more for these households than for households in the lower decile groups.

Table 53 shows that for all of the per capita expenditure deciles, urban households had the largest monthly per capita maize expenditure for breakfast meal. However, this revealed preference for the more expensive breakfast meal (Table 54) was perhaps more closely associated with its relative availability in urban retail markets than any other reason. For urban households the average monthly per capita total maize expenditure was K46.55.

Prices. Table 54 provides information on the imputed prices for 25-kilogram (kg) bags of the four maize items by rural and urban areas and transaction type (home-produced and purchased household acquisition). The prices paid for items purchased by households were not directly enumerated for the HEIS. However, the unit of measure, the number of units in terms of the unit of measure, and the item expenditure value were to be reported.

In calculating a representative price for each maize item, the 25-kg bag was chosen to represent a standard unit of measure because it was the most frequently reported unit of measure for maize items. It also provides a common basis for price comparisons (see the technical appendix for the

procedure used to impute these prices). The calculated prices per 25-kg bag ranged from a low of K169.00 for home-produced maize meal in rural areas to a high of K256.00 for purchased breakfast meal in rural areas. These derived prices appeared to reflect marginal commodity price differences due to the relative milling quality, point of sale, and transportation costs from urban to rural markets. For example, from Table 19, consumers would be expected to pay higher prices for purchased breakfast and roller meal in rural areas than in urban areas, and these price differences would most likely reflect the additional costs of trading these items to rural households.

Quantity Availability. Quantities of the maize items as well as other HEIS food items used by the households were reported by a myriad of units of measure and number of units. The units of measure reported could have been as precise as 10-, 25-, or 50- kg bags, or as imprecise as a heap, a plate, or unknown. In each case, the unit of measure was associated with a number of units, such as .5, 1, 2, 3. In many situations, the reported unit of measure and number of units appeared to be inconsistent with the associated expenditure or a reasonable consumption amount. For example, a number of the HEIS sample households reported purchasing 25, 25-kg bags of breakfast meal. This would have been very unlikely, and it could have been the result of either a miscoding, misenumeration of the unit of measure or the number of units (see Appendix B). Regardless of the source of these errors, some of the reported maize quantity data appeared questionable.

Therefore, a screening approach was used to estimate the quantities of maize available to the households. This method used the household reported maize expenditure and/or production value for a month and divided it by the appropriate representative price per 25-kg bag (Table 54). Therefore, the computed household quantities of each maize item were originally expressed in standard 25-kg bag equivalents, which were then converted to kilograms of availability.

Table 55 shows the household average monthly quantity availability of the maize items by household per capita total expenditure decile. The lower decile households appeared to have larger quantities of maize meal and maize grain available, while higher decile households had more breakfast meal and roller meal available. This dichotomy most likely reflected the differences in the level of rural and urban per capita total expenditure and access to these commodities. For all households, there were approximately 55 kg of total maize available per month. This was slightly more than 10 kg per person per month (based on an average of 30 days per month and 5.5 persons per household) and appears reasonable. Maize meal was approximately 64 percent of total maize available, breakfast and roller meal were each about 13.6 percent, and maize grain was about 8 percent.

Table 56 shows the maize quantity available in rural households by rural household per capita total expenditure decile. Not surprisingly, the rural household maize item quantity availability patterns by decile group were quite similar to those for the entire sample. However, there were approximately 10 additional kilograms of total maize available per household for the rural household subsample (65.13 kg) when compared with the entire household sample (54.99 kg). For all rural households, maize meal was 73 percent, maize grain was 9 percent, breakfast meal was 4 percent, and roller meal was 14 percent of total maize consumption. Within each decile of households, maize meal was the most available of the maize commodities. The available quantity of total maize was considerably less in the lower decile of households than in the higher decile of households. Moreover, only in the highest decile of households was breakfast meal quantity availability greater than 15 percent of total maize availability. For the other decile groups, breakfast meal was, on average, less than 4 percent of total maize consumption. Even though the other maize items were certainly available, wealthier rural households in rural areas had revealed preferences for breakfast meal.

Table 57 shows the available quantity of maize items for urban households by the urban household per capita total expenditure decile groups. In general, the average available quantity of total maize was much lower for urban than for rural households, and there was a less defined pattern of total maize quantity availability across the decile groups for urban households than for rural households. With the lowest decile of urban households excluded, the household availability of the maize items demonstrated neither a clear upward or downward trend. Reviewing the average quantities available for all urban households, it was found that 86 percent of the total maize available was breakfast and roller meal. Moreover, breakfast meal was consumed in the largest quantities by each decile of households except for the lowest decile.

Macronutrient Availabilities. The average monthly macronutrient availabilities of kilocalories (food energy) and protein by household per capita total expenditure decile group are provided in Tables 58 through 63. The amount of nutrient availability was estimated by using the household's imputed quantity availabilities for each of the maize items and the food composition information from Table 64. There were not too many differences in the nutrient composition of the maize items, except for perhaps the somewhat lower level of protein in breakfast meal. What differences there were in the nutrient compositions were primarily based on the different milling extraction rates for the various meals.

Moreover, because of the differences in household composition, the likely unequal distribution of available maize among household members, and the fractional contribution of maize to total food availability, there was no attempt to assess the dietary status of either the households or individuals. Although several important nutritional issues, such as protein energy malnutrition (PEM), could not be directly addressed with these data, the analysis does provide an important basis for comparison among different types of households with respect to protein and food energy availabilities.

The translation of the maize quantity information to nutrient availabilities for each sample household was straightforward. First, the number of 100-gram edible portions of each maize item was calculated from the quantity data by multiplying the kilograms of available maize item by 10—no adjustments were made for waste—then the number of 100-gram portions was multiplied by the appropriate kilocalorie and protein values (Table 64) to yield the monthly kilocalorie and protein availabilities for the quantity of the maize item.

Table 58 provides information on available kilocalories for the complete household sample. From Table 58, the lower deciles of households (D1 to D5) received a larger percentage of their total maize kilocalories from maize meal and maize grain than did the higher decile households (D6 to D10). This implies that wealthier households received a relatively larger proportion of their energy requirements from breakfast and roller meal. The amount of kilocalories from breakfast meal increased steadily as household per capita total expenditure increased. In general, the available kilocalories per household from total maize remained at a relatively stable level, approximately 200,000 kcal per month, from about the third through the tenth decile of households. For all households the average availability of kilocalories from total maize was approximately 1,200 kcal per person per day (based on an average of 30 days per month and 5.5 persons per household).

Table 59 provides information on kilocalorie availability for rural households. The available kilocalories from total maize increased steadily from 135,000 kcal per household per month in the lowest decile to 344,000 kcal per household per month in the ninth decile, with only a slight decrease from the ninth to the tenth decile of households. For all rural households, an average 234,911 kcal per household per month was available from total maize. This yielded approximately 1,550 kcal per person per day (based on an average of 30 days per month and 5.4 persons per household). The largest percentage, approximately 74 percent of these kilocalories, was from maize meal.

The kilocalorie availability for the urban household subsample is reported in Table 60. In each decile group, except for the lowest, breakfast meal provided the largest percentage of total maize kilocalories, and breakfast meal and roller meal together contributed in the range of 88 to 95 percent

of the total maize kilocalories. In the lowest decile of households, the average household also had the smallest availability of kilocalories from total maize, 61,401 kcal per household per month. This amount was remarkably low when compared with the average availability for all urban households of 104,483 kcal per household per month, or approximately 620 kcal per person per day (based on an average of 30 days per month and 5.7 persons per household). Moreover, for urban households there appeared to be no definite pattern in the kcal availability from the maize items by decile groups.

The average household's monthly protein availability from maize items by household per capita total expenditure decile groups is shown in Table 61. Total protein availability from total maize increased slightly from the lowest to the third decile households, then remained stable at approximately 5,250 grams per month from the third through the tenth decile groups. The importance of breakfast meal as a source of protein, as per capita total expenditure increased, is demonstrated by the comparison of the percentages of total maize protein, 2.1 percent and 39.6 percent, for the lowest and highest decile of households. However, for each decile except for the highest, maize meal contributed the largest percentage of total maize protein. For all households, there was about 32 grams per person per day (based on an average of 30 days per month and 5.5 persons per household) of protein available from total maize.

The average rural household's protein availabilities from maize items are shown in Table 62. Generally, protein availability from total maize was greater as the rural household's per capita total expenditure increased. The highest decile of households received almost 2.5 times the protein from total maize as the lowest decile of households. The largest percentage of protein availability from total maize—more than 50 percent—came from maize meal in each decile. For rural households, about 39 grams per person per day (based on an average of 30 days per month and 5.4 persons per household) of protein were available from total maize.

Table 63 shows the availability of protein from the quantity of available maize items for urban households. There were no identifiable patterns of protein availability by household per capita total expenditure decile groups. In fact, the somewhat erratic changes in decile protein availabilities for the maize items were expected to be similar to the movements of the other maize consumption indicators for urban households. On average, protein available from maize was much less in urban households than in rural households. The average protein availability from total maize was approximately 16 grams per person per day for urban households, indicating an average maize protein availability of less than 50 percent of the maize protein availability of the average rural household.

Important Food Items

From the analysis of the HEIS, 27 food items were identified as important in the Zambian diet. The identification of these important food items was based on the population participation rates and the average household food expenditure shares. The final list of the food items, those shown in Table 65, was developed by combining the results from two lists that were developed independently for rural and urban households.

The participation rates in Table 65 indicate that the majority of the listed items were more available in urban households than in rural households. This was particularly true for bread, beef, fish, chicken, milk, eggs, cooking oil, and rape. Of the listed items, those that were more available to the rural households were the following: maize meal, roller meal, maize grain, cassava flour, sweet potatoes, cassava, pumpkin, and groundnuts. For the most part, these food items were home produced by rural households. One particularly interesting result, shown in Table 65, was the relatively greater availability of several vegetables—cabbages, onions, rape, tomatoes, and beans—in urban households. This greater availability of vegetables in urban households could have been indicative of the efforts of rural households to market agricultural produce in urban areas and/or urban households growing their own vegetables.

For the samples of all, rural, and urban households, Tables 66, 67, and 68 present the 27 food item expenditure, total food expenditure, and the 27 food item shares of total food expenditure by household per capita total expenditure decile. The expenditure shares for these 27 food items consistently accounted for between 75 and 80 percent of household total food expenditure for each decile of households. In other words, for most rural and urban households the largest portion of food expenditures was for these food items, and they were a relatively stable proportion of the total food expenditure within each decile group. The below average expenditure shares for the tenth decile of both rural and urban households indicated that these households probably had high enough incomes to consume a greater variety of food items.

Other ways of evaluating the relative importance of different foods was by identifying the most popular foods. Popular foods can be identified so that the measures of popularity reflect differences in the availability of specific foods within the population of households. The two methods presented here use ranking schemes to determine popularity.

The first method (Tables 69 and 70) used the ranking of the average household ranks of the individual food item expenditure shares *within* each household to find the ten most important food items. By this method, maize meal, groundnuts, and sweet potatoes were ranked as the three most

popular food items in rural areas while beef, cooking oil, and rape were identified as the three most popular food items in urban areas (Table 70).

The second method used the rank order of the average per capita food item expenditures in identifying the five most popular foods. For example, the average household per capita expenditure on maize meal was compared with the average household per capita expenditure on beef, and the food item with the larger average per capita expenditure was ranked higher than the other. By this method, the three most popular food items in rural areas were maize meal, groundnuts, and cassava flour (Table 71), and the three most popular food items in urban areas were beef, chicken, and cooking oil (Table 72).

Expenditure Elasticities for Food Groups, Selected Cereal Products, and Nonfood

The general Engel relationship states that as total household expenditure increases, the proportion of total expenditure spent on food decreases. The HEIS was used to compute a set of expenditure elasticities based upon three different functional forms that are theoretically grounded in this general Engel relationship. The three types of relationships estimated were:

linear

$$\frac{c_i}{m} = a_i + B_i * (\frac{y}{m}), \tag{1}$$

semilogarithmic

$$\frac{c_i}{m} = a_i + B_i * \ln(\frac{y}{m}), \tag{2}$$

double-logarithmic

$$\frac{c_i}{m} = a_i * (\frac{y}{m})^{B_i}, \tag{3}$$

where c_i was the household's monthly expenditure on the i^{th} food or nonfood group; y was the household's total monthly expenditure; and m was a household composition parameter, household size. Specifically, the household's food group expenditure and total expenditure have been scaled as per capita expenditure. The estimated expenditure elasticities for the linear and semilog depend upon the specific levels of expenditure, while the elasticities for the double-log specification are constant. These are important differences, since it may be that the assumption of constant expenditure elasticity over all levels of total expenditure is unrealistic. The constant elasticity may be more appropriate over relatively more homogeneous income (total expenditure) groups.

The three relationships were estimated separately for rural and urban households. The estimated expenditure elasticities for five aggregated food groups, seven selected cereal items, and nonfood are provided in Tables 73 through 75. The specific food items and groups were:

1. Fresh/Preserved Meat and Fish
2. All Other Foods
3. Cereals
4. Maize Meal
5. Breakfast Meal
6. Roller Meal
7. Maize Grain
8. Bread
9. Rice
10. Cassava Flour
11. Fresh Vegetables
12. Fresh Fruits
13. Nonfood

Expenditure elasticities were estimated with two different data sets. The first used the weighted and unweighted *mean* expenditure values from the household per capita expenditure deciles to estimate expenditure elasticities for rural and urban locations. These estimated elasticities are reported in Tables 73 and 74. The second procedure used unweighted expenditure data reported by the individual households; only households that reported expenditures for the specific item being analyzed were included. These expenditure elasticities are shown in Table 75 for rural and urban households. Each table provides estimates of expenditure elasticities for the three functional forms described above. The expenditure elasticities for the linear and semilog models were evaluated at the mean food item/group expenditure values.

In general, there is variation in the elasticity estimates of the different models. However, as would be expected with group means, the first set of decile estimates appear to show less variation than the elasticity estimates calculated from the household-level data. Differences between the weighted and unweighted decile estimates appear to be small, with similar magnitudes and most of the signs consistent (except for estimates of cassava expenditure elasticity in urban areas). The elasticity estimates that show the smallest variation across functional form are likely to be the most reliable, emphasizing consistency among the forms.

The estimated elasticities in Tables 73 and 74 show that in rural areas, the expenditure elasticities for meat, all other foods, breakfast meal, bread, rice, and nonfood were relatively higher than the other expenditure elasticities. Most of the functional forms estimated the elasticities for these groups to be close to or greater than 1, indicating the superior nature of these goods in the rural

household's budget. For the rest of the food groups the estimated elasticities indicated that these were normal commodities.

In urban areas the all other food, bread, rice, and nonfood groups have expenditure elasticities estimated as close to or greater than 1 (Tables 73 and 74). For three food items—maize meal, maize grain, and cassava flour—the estimated expenditure elasticities were slightly negative, indicating that for urban households, these food items were inferior (elasticity estimates for cassava flour have too much variation to be reliable). For the alternatives to maize meal and maize grain in urban areas, breakfast meal and roller meal had estimated expenditure elasticities that indicated these commodities were normal goods.

Similar patterns, although with somewhat lower elasticity estimates, were estimated using household-level data for only those households that reported expenditure on the item or group (Table 75). These elasticity estimates show response to income only for households already purchasing the item, but not the entrance into or exit from the market of households with changes in income. Differences also occur between the decile and participating household elasticity estimates for several of the cereal products. In part, these differences are due to the participating households having mean total expenditure different from that of all households. For example, the estimated bread expenditure elasticity in rural areas and estimated elasticity for roller meal in urban areas are different between the two sets because the first set was estimated over all household groups and the second set (Table 75) was estimated only for households with expenditure. The expenditure elasticities that show the greatest consistency in terms of magnitude and sign across the different functional relationships are recommended because they are also appropriate to the question at hand. In Tables 73 and 74, the elasticity estimates were based upon aggregate measures that included all sample households; Table 75 provides elasticity estimates only for households that had acquired the food item or group during the four-week survey period.

Summary and Conclusions

The descriptive tabulations of household demographic characteristics of the HEIS sample match very closely those of the CPHA, primarily because the HEIS household sample weights were constructed upon findings of the CPHA. This linkage of known CPHA household population characteristics to the HEIS data provides the desired degree of demographic consistency between the two data sets. Moreover, given these demographic similarities, the expenditure patterns of Zambian households would be more accurately represented.

Households in Zambia do appear to have distinctively different levels and patterns of expenditure that were based upon specific sociodemographic characteristics, geographic location, household income, the availability of items, and the prices of items. This, in itself, was not surprising, but the degree to which differences exist between various household groups sometimes was alarming. For instance, urban households were found to have, on average, more than twice the total expenditure of rural households. This is strong evidence toward explaining the rural-to-urban migration of its young adults that Zambia has experienced. It also helps to explain why urban households spent a larger share of their total food budgets on more expensive meat, poultry, and fish items than on cereals, and why rural households' expenditure behavior was just the opposite. Results from the descriptive analysis as well as the more rigorous expenditure elasticity estimates indicate that much of the expenditure and consumption behavior of the household groups could be explained by differences in income levels and these expenditure patterns were entirely plausible given the economic theory.

Market availabilities of food items, such as breakfast and roller meal, were also explained by the food expenditure patterns. Breakfast and roller meal were not purchased by most rural households. However, wealthier rural households, those that could possibly afford the cost or had their own transportation to urban markets, purchased these maize items. Another food item, fresh meat, was more available in urban households. Even though livestock production was an important source of agricultural income for many rural households, the results suggest that livestock was more likely raised by rural households for income purposes rather than for their own consumption. Therefore, the livestock marketing behavior of rural households may help to explain urban food consumption patterns. It is completely plausible that fresh meat was sold in areas where income levels were much higher, demand was likely greater, and therefore, higher prices could be obtained.

The sociodemographic characteristics and household expenditure patterns presented in this report provide important information on the consumption behavior of Zambian households. International organizations and governmental ministries responsible for developing and influencing the various social assistance programs for households and individuals in Zambia should find this information useful.

Table 1. Number of rural and urban CSAs selected for the HEIS sample by province, district, and stratum

Province	District	Stratum Code[a]	CSA		
			Rural	Urban	Total
Eastern	Chadiza	3	10		10
	Chipata	3	38	6	44
	Petauke	3	38		38
Central	Kabwe Rural	1	17		17
	Mkushi	1	8		8
Luapula	Mwense	1	8		8
	Samfya	1	11	1	12
	Mansa	2	15	6	21
Northern	Chilubi	1	4		4
	Mporokoso	1	5	1	6
Northwestern	Zambezi	1	6		6
Southern	Choma	1	11	3	14
	Kalomo	1	14		14
	Livingston	2	1	6	7
Western	Mongu	1	10	2	12
Copperbelt	Kitwe	2		24	24
Lusaka	Lusaka Urban	2		48	48
	Total		196	97	293

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).
[a]1-Rural; 2-Urban; 3-Eastern Province.

Table 2. Number of households and the average household size by area

Area	HEIS Number of Weighted Households	CSO Number of Weighted Households[a]	HEIS Estimated Average Household Size	CSO Estimated Average Household Size[a]
All Zambia	1,430,923	1,430,932	5.464	5.5
Rural	1,025,083	1,025,082	5.373	5.4
Urban	405,840	405,841	5.692	5.7

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).
[a]1990 Zambia Census of Population, Housing and Agriculture's Rural and Urban CSA Designation.

Table 3. Estimated number and percentage of males and females of the population from the CPHA and the HEIS

Source	Estimated Number of Males	Percent Male	Estimated Number of Females	Percent Female	Estimated Total Population
CPHA	3,843,433	49.2	3,975,014	50.8	7,818,447
HEIS	3,880,597	49.6	3,938,033	50.4	7,818,463

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).

Table 4. Estimated average number of individuals within male- and female-headed rural, urban, and all households by the age/sex group

	Rural		Urban		All	
Age/Sex Group	Male Head	Female Head	Male Head	Female Head	Male Head	Female Head
Females < 5	0.478	0.283	0.389	0.239	0.451	0.273
Males < 5	0.460	0.297	0.506	0.318	0.473	0.302
6 < = Females < = 12	0.622	0.552	0.688	0.554	0.642	0.553
6 < = Males < = 12	0.696	0.615	0.621	0.499	0.673	0.589
13 < = Females < = 17	0.371	0.406	0.463	0.395	0.399	0.403
13 < = Males < = 17	0.394	0.409	0.423	0.396	0.402	0.406
18 < = Females < = 55	1.173	1.226	1.209	1.747	1.184	1.343
18 < = Males < = 55	1.177	0.420	1.470	0.615	1.264	0.464
Females > 55	0.087	0.238	0.029	0.085	0.070	0.203
Males > 55	0.177	0.015	0.058	0.000	0.141	0.012
Total Members	5.635	4.461	5.856	4.848	5.701	4.548

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).

Table 5. Number and percentage of rural, urban, and all households by age group of household head

Age Group of Household Head	Rural		Urban		All	
	Number	Percent	Number	Percent	Number	Percent
(years)						
18 - 55	845,240	82.46	384,841	94.83	1,230,081	85.96
55 and Over	179,843	17.54	20,999	5.17	200,842	14.04
All Zambia	1,025,083	100.00	405,840	100.00	1,430,923	100.00

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).

Table 6. Estimated number and percentage of rural, urban, and all population by age group

Age Group	Rural		Urban		All	
	Number (estimated)	Percent	Number (estimated)	Percent	Number (estimated)	Percent
(years)						
Less Than 5	879,579	15.97	340,996	14.76	1,220,575	15.61
6 - 12	1,316,486	23.90	514,176	22.26	1,830,662	23.41
13 - 17	795,553	14.44	353,353	15.30	1,148,906	14.69
18 - 55	2,248,621	40.82	1,066,197	46.15	3,314,818	42.40
55 and Over	268,350	4.87	35,319	1.53	303,669	3.88
All Zambia	5,508,589	100.00	2,310,041	100.00	7,818,630	100.00

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).

Table 7. Estimated number of male and female rural, urban, and all population by age group

	Rural		Urban		All	
Age Group	Male	Female	Male	Female	Male	Female
(years)			(estimated number)			
Less Than 5	434,050	445,529	192,863	148,133	626,913	593,662
6 - 12	694,706	621,780	243,852	270,324	938,558	892,104
13 - 17	407,090	388,463	169,774	183,579	576,864	572,042
18 - 55	1,033,926	1,214,695	540,067	526,130	1,573,993	1,740,825
55 and Over	144,481	123,869	19,788	15,531	164,269	139,400
All Zambia	2,714,253	2,794,336	1,166,344	1,143,497	3,880,597	3,938,033

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).

Table 8. Percentage of males and females within rural, urban, and all areas by age group

	Rural		Urban		All	
Age Group	Male	Female	Male	Female	Male	Female
(years)			(percent)			
Less Than 5	49.35	50.65	56.56	43.44	51.36	48.64
6 - 12	52.77	47.23	47.43	52.57	51.27	48.73
13 - 17	51.17	48.83	48.05	51.95	50.21	49.79
18 - 55	45.98	54.02	50.65	49.35	47.48	52.52
55 and Over	53.84	46.16	56.03	43.96	54.09	45.91
All Zambia	49.27	50.73	50.49	49.51	49.63	50.37

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).

Table 9. Percentage of rural, urban, and all male and female population by age group

	Rural		Urban		All	
Age Group	Male	Female	Male	Female	Male	Female
(years)			(percent)			
Less Than 5	15.99	15.94	16.54	12.95	16.16	15.08
6 - 12	25.59	22.25	20.91	23.64	24.19	22.65
13 - 17	15.00	13.90	14.56	16.05	14.87	14.53
18 - 55	38.09	43.47	46.30	46.00	40.56	44.21
55 and Over	5.32	4.43	1.70	1.36	4.23	3.54
All Zambia	100.00	100.00	100.00	100.00	100.00	100.00

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).

Table 10. Number and percentage of rural, urban, and all households by size of household

	Rural		Urban		All	
Size of Household	Number	Percent	Number	Percent	Number	Percent
1 - 4	432,913	42.23	151,169	37.25	584,082	40.82
5 - 6	268,034	26.15	101,773	25.08	369,807	25.84
7 - 8	216,765	21.15	84,971	20.94	301,736	21.09
9 - 10	62,301	6.08	50,279	12.39	112,580	7.87
11 and More	45,070	4.40	17,648	4.35	62,718	4.38
All Zambia	1,025,083	100.00	405,840	100.00	1,430,932	100.00

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).

Table 11. Number of male- and female-headed rural, urban, and all households by size of household

	Rural		Urban		All	
Size of Household	Male Head	Female Head	Male Head	Female Head	Male Head	Female Head
1 - 4	317,416	115,497	118,903	32,266	436,319	147,763
5 - 6	199,668	68,366	83,587	18,186	283,255	86,552
7 - 8	182,124	34,641	76,159	8,812	258,283	43,453
9 - 10	54,720	7,581	44,783	5,496	99,503	13,077
11 and More	43,342	1,728	16,354	1,294	59,696	3,022
All Zambia	797,270	227,813	339,786	66,054	1,137,056	293,867

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).

Table 12. Number and percentage of rural, urban, and all households by educational level of household head

Educational Level of Household Head	Rural		Urban		All	
	Number	Percent	Number	Percent	Number	Percent
No School	253,020	24.68	24,816	6.11	277,836	19.42
Primary	581,901	56.77	147,242	36.28	729,143	50.96
Secondary	146,293	14.27	174,283	42.94	320,576	22.40
Higher	30,789	3.08	57,307	14.12	88,096	6.16
Not Reported	13,080	1.28	2,192	0.54	15,272	1.07
All Zambia	1,025,083	100.00	405,840	100.00	1,430,932	100.00

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).

Table 13. Number of male- and female-headed rural, urban, and all households by educational level of household head

Educational Level of Household Head	Rural		Urban		All	
	Male Head	Female Head	Male Head	Female Head	Male Head	Female Head
No School	140,232	112,788	13,571	11,245	153,803	124,033
Primary	493,049	88,852	124,313	22,929	617,362	111,781
Secondary	127,247	19,046	152,222	22,061	279,469	41,107
Higher	30,031	758	48,385	8,922	78,416	9,680
Not Reported	6,711	6,369	1,295	897	8,006	7,266
All Zambia	797,270	227,813	339,786	66,054	1,137,056	293,867

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).

Table 14. Number and percentage of rural, urban, and all households by employment status of household head

Employment Status of Household Head	Rural		Urban		All	
	Number	Percent	Number	Percent	Number	Percent
Not Applicable	20,997	2.05	6,793	1.67	27,790	1.94
Self-employed	831,272	81.09	93,644	23.07	924,916	64.64
Employed	138,898	13.55	288,404	71.06	427,302	29.86
Unemployed	33,916	3.31	16,999	4.19	50,915	3.56
All Zambia	1,025,083	100.00	405,840	100.00	1,430,932	100.00

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).

Table 15. Number of male- and female-headed rural, urban, and all households by employment status of household head

Employment Status of Household Head	Rural		Urban		All	
	Male Head	Female Head	Male Head	Female Head	Male Head	Female Head
Not Applicable	12,487	8,510	6,793	0	19,280	8,510
Self-employed	628,616	202,656	67,366	26,308	695,952	228,964
Employed	132,015	6,883	253,911	34,493	385,926	41,376
Unemployed	24,152	9,764	11,746	5,253	35,898	15,017
All Zambia	797,270	227,813	339,786	66,054	1,137,056	293,867

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).

Table 16. Number and percentage of rural, urban, and all households by marital status of household head

Marital Status of Household Head	Rural		Urban		All	
	Number	Percent	Number	Percent	Number	Percent
Single	61,067	5.96	51,602	12.71	112,669	7.87
Married	778,196	75.92	308,738	76.07	1,086,934	75.96
Widowed	81,712	7.96	20,303	5.00	101,915	7.12
Divorced	104,208	10.17	25,197	6.21	129,405	9.04
All Zambia	1,025,083	100.00	405,840	100.00	1,430,932	100.00

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).

Table 17. Number of male- and female-headed rural, urban, and all households by marital status of household head

Marital Status of Household Head	Rural		Urban		All	
	Male Head	Female Head	Male Head	Female Head	Male Head	Female Head
Single	39,724	21,343	31,836	19,766	71,560	41,109
Married	724,797	53,399	296,098	12,640	1,020,895	66,039
Widowed	7,969	73,643	4,147	16,156	12,116	89,799
Divorced	24,780	79,428	7,705	17,492	32,485	96,920
All Zambia	797,270	227,813	339,786	66,054	1,137,056	293,867

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).

Table 18. Number and percentage of rural, urban, and all households by annual household expenditure

Annual Household Expenditure	Rural		Urban		All	
	Number	Percent	Number	Percent	Number	Percent
Below K15,000	166,051	16.20	2,718	0.67	168,769	11.79
K15,000-30,000	364,880	35.60	35,082	8.64	399,962	27.95
K30,000-45,000	202,321	19.74	51,967	12.80	254,288	17.77
K45,000-60,000	94,486	9.22	58,168	14.33	152,654	10.67
K60,000-75,000	83,815	8.18	57,407	14.15	141,222	9.87
K75,000-90,000	34,376	3.35	52,028	12.82	86,404	6.04
K90,000-105,000	24,961	2.44	33,279	8.20	58,240	4.07
K105,000-120,000	15,119	1.47	33,161	8.17	48,280	3.37
K120,000-135,000	10,035	0.98	21,218	5.23	31,253	2.18
K135,000 and Above	29,039	2.83	60,812	14.98	89,851	6.28
All Zambia	1,025,083	100.00	405,840	100.00	1,430,923	100.00

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).

Table 19. The number of male- and female-headed rural, urban, and all households by annual household expenditure

Annual Household Expenditure	Rural		Urban		All	
	Male Head	Female Head	Male Head	Female Head	Male Head	Female Head
Below K15,000	109,159	56,892	2,107	548	111,329	57,440
K15,000-30,000	268,162	96,718	31,001	4,081	299,163	100,799
K30,000-45,000	169,100	33,221	43,429	8,538	212,529	41,759
K45,000-60,000	83,159	11,327	48,989	9,179	132,148	20,506
K60,000-75,000	71,305	12,510	44,202	13,205	115,507	25,715
K75,000-90,000	28,834	5,542	44,205	7,823	73,039	13,365
K90,000-105,000	23,068	1,893	29,528	3,751	52,596	5,644
K105,000-120,000	11,748	3,371	29,223	3,938	40,971	7,309
K120,000-135,000	8,286	1,749	15,155	6,063	23,441	7,812
K135,000 and Above	24,449	4,490	51,884	8,928	76,333	13,518
All Zambia	797,270	227,813	339,786	66,054	1,137,056	293,867

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).

Table 20. Distribution of household annual expenditure

Item Group	Annual Expenditure	Percent Share of Food Expenditure	Percent Share of Total Expenditure
	(kwacha)		
Food, Beverages, and Tobacco	38,623.44	100.00	68.61
Cereals	9,403.92	24.35	16.71
Maize Meal	3,050.90	7.90	5.42
Breakfast Meal	909.20	2.35	1.62
Roller Meal	801.76	2.08	1.42
Maize Cobs	31.68	0.08	0.06
Maize Grain	434.92	1.13	0.77
Wheat Bread	1,108.42	2.87	1.97
Wheat Flour	134.48	0.35	0.24
Rice	534.47	1.38	0.95
Millet	241.56	0.63	0.43
Sorghum	117.93	0.31	0.21
Cassava Flour	1,493.97	3.87	2.65
Biscuits	35.29	0.09	0.06
Pasta	0.93	0.00	0.00
Other Cereals	508.39	1.32	0.90
Fresh Meat	6,109.39	15.82	10.85
Preserved Meat	172.07	0.45	0.31
Fresh Fish	1,406.30	3.64	2.50
Preserved Fish	2,829.60	7.33	5.03
Milk and Eggs	999.56	2.59	1.78
Oils and Fats	1,622.30	4.20	2.88
Cooking Oil	1,499.67	3.88	2.66
Other Fats/Oil	122.63	0.32	0.22
Fresh Vegetables	6,621.90	17.14	11.76
Fresh Fruits	2,198.22	5.69	3.90
Roots/Tubers	2,472.04	6.40	4.39
Sugar	1,700.50	4.40	3.02
Tea and Coffee	79.80	0.21	0.14
Other Foods	601.45	1.56	1.07
Nonalcoholic Beverages	246.82	0.64	0.44
Alcoholic Beverages	1,841.14	4.77	3.27
Tobacco	318.42	0.82	0.57

Table 20. (continued)

Item Group	Annual Expenditure	Percent Share of Nonfood Expenditure	Percent Share of Total Expenditure
	(kwacha)		
Nonfood	17,669.18	100.00	31.39
Clothing and Footwear	4,696.75	26.58	8.34
Men's Clothing	1,232.65	6.98	2.19
Women's Clothing	1,530.77	8.66	2.72
Children's Clothing	498.43	2.82	0.89
Other Clothing	462.08	2.62	0.82
Footwear	962.82	5.45	1.71
Rent, Fuel, and Light	3,232.99	18.30	5.74
Rent Expense	1,395.43	7.90	2.48
Fuel Expense	1,837.56	10.40	3.26
Furniture and Household Goods	4,818.75	27.27	8.56
Furniture	467.47	2.65	0.83
Textiles	368.10	2.08	0.65
Appliances	433.19	2.45	0.77
Kitchen Tableware	306.87	1.74	0.55
Paper/Foil Products	117.19	0.66	0.21
Cleaning Materials	1,895.80	10.73	3.37
Household Services	155.63	0.88	0.28
Other Household Goods	1,074.50	6.08	1.91
Health, Medical Services	288.90	1.64	0.51
Transport and Communication	1,121.19	6.35	1.99
Personal Transportation	213.29	1.21	0.38
Purchased Transportation	788.75	4.46	1.40
Communication	119.15	0.67	0.21
Education, Recreation	1,543.09	8.73	2.74
Education	919.72	5.21	1.63
Recreation	620.52	3.51	1.10
Equipment Repair	2.85	0.02	0.01
Other Goods and Services	1,967.51	11.14	3.50
Personal Care	1,448.22	8.20	2.57
Nonconsumption	519.29	2.94	0.92
Total Expenditure	56,292.61		100.00

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).

Table 21. Distribution of rural household annual expenditure

Item Group	Annual Expenditure	Percent Share of Food Expenditure	Percent Share of Total Expenditure
	(kwacha)		
Food, Beverages, and Tobacco	31,883.16	100.00	74.95
Cereals	9,640.43	30.24	22.66
Maize Meal	4,175.36	13.10	9.82
Breakfast Meal	329.91	1.03	0.78
Roller Meal	925.45	2.90	2.18
Maize Cobs	35.86	0.11	0.08
Maize Grain	564.39	1.77	1.33
Wheat Bread	114.94	0.36	0.27
Wheat Flour	87.75	0.28	0.21
Rice	470.80	1.48	1.11
Millet	335.53	1.05	0.79
Sorghum	163.38	0.51	0.38
Cassava Flour	2,059.96	6.46	4.84
Biscuits	15.32	0.05	0.04
Pasta	0.00	0.00	0.00
Other Cereals	361.78	1.13	0.85
Fresh Meat	3,810.89	11.95	8.96
Preserved Meat	10.66	0.03	0.03
Fresh Fish	966.95	3.03	2.27
Preserved Fish	1,876.66	5.89	4.41
Milk and Eggs	505.61	1.59	1.19
Oils and Fats	691.13	2.17	1.62
Cooking Oil	649.31	2.04	1.53
Other Fats/Oil	41.82	0.13	0.10
Fresh Vegetables	5,201.74	16.32	12.23
Fresh Fruits	2,613.25	8.20	6.14
Roots/Tubers	2,707.50	8.49	6.36
Sugar	1,364.80	4.28	3.21
Tea and Coffee	48.14	0.15	0.11
Other Foods	570.19	1.79	1.34
Nonalcoholic Beverages	73.12	0.23	0.17
Alcoholic Beverages	1,579.89	4.96	3.71
Tobacco	222.19	0.70	0.52

Table 21. (continued)

Item Group	Annual Expenditure	Percent Share of Nonfood Expenditure	Percent Share of Total Expenditure
	(kwacha)		
Nonfood	10,656.77	100.00	25.05
Clothing and Footwear	3,746.29	35.15	8.81
Men's Clothing	973.61	9.14	2.29
Women's Clothing	1,456.42	13.67	3.42
Children's Clothing	491.18	4.61	1.15
Other Clothing	318.25	2.99	0.75
Footwear	506.83	4.76	1.19
Rent, Fuel, and Light	503.85	4.73	1.18
Rent Expense	452.17	4.24	1.06
Fuel Expense	51.68	0.48	0.12
Furniture and Household Goods	3,420.70	32.10	8.04
Furniture	276.79	2.60	0.65
Textiles	369.27	3.47	0.87
Appliances	296.07	2.78	0.70
Kitchen Tableware	291.95	2.74	0.69
Paper/Foil Products	13.47	0.13	0.03
Cleaning Materials	1,219.07	11.44	2.87
Household Services	0.60	0.01	0.00
Other Household Goods	953.48	8.95	2.24
Health, Medical Services	217.95	2.05	0.51
Transport and Communication	631.54	5.93	1.48
Personal Transportation	36.67	0.34	0.09
Purchased Transportation	576.02	5.41	1.35
Communication	18.85	0.18	0.04
Education, Recreation	750.50	7.04	1.76
Education	510.22	4.79	1.20
Recreation	240.28	2.25	0.56
Equipment Repair	0.00	0.00	0.00
Other Goods and Services	1,385.94	13.01	3.26
Personal Care	1,327.94	12.46	3.12
Nonconsumption	58.00	0.54	0.14
Total Expenditure	42,539.93		100.00

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).

Table 22. Distribution of urban household annual expenditure

Item Group	Annual Expenditure	Percent Share of Food Expenditure	Percent Share of Total Expenditure
	(kwacha)		
Food, Beverages, and Tobacco	55,648.22	100.00	61.13
Cereals	8,806.55	15.83	9.67
Maize Meal	210.72	0.38	0.23
Breakfast Meal	2,372.38	4.26	2.61
Roller Meal	489.36	0.88	0.54
Maize Cobs	21.13	0.04	0.02
Maize Grain	107.92	0.19	0.12
Wheat Bread	3,617.78	6.50	3.97
Wheat Flour	252.51	0.45	0.28
Rice	695.30	1.25	0.76
Millet	4.21	0.01	0.00
Sorghum	3.12	0.01	0.00
Cassava Flour	64.39	0.12	0.07
Biscuits	85.75	0.15	0.09
Pasta	3.31	0.01	0.00
Other Cereals	878.69	1.58	0.97
Fresh Meat	11,915.00	21.41	13.09
Preserved Meat	579.76	1.04	0.64
Fresh Fish	2,516.02	4.52	2.76
Preserved Fish	5,236.54	9.41	5.75
Milk and Eggs	2,247.17	4.04	2.47
Oils and Fats	3,974.28	7.14	4.37
Cooking Oil	3,647.51	6.55	4.01
Other Fats/Oil	326.77	0.59	0.36
Fresh Vegetables	10,208.99	18.35	11.22
Fresh Fruits	1,149.94	2.07	1.26
Roots/Tubers	1,877.32	3.37	2.06
Sugar	2,548.42	4.58	2.80
Tea and Coffee	159.78	0.29	0.18
Other Foods	680.40	1.22	0.75
Nonalcoholic Beverages	685.55	1.23	0.75
Alcoholic Beverages	2,501.02	4.49	2.75
Tobacco	561.50	1.01	0.62

Table 22. (continued)

Item Group	Annual Expenditure	Percent Share of Nonfood Expenditure	Percent Share of Total Expenditure
	(kwacha)		
Nonfood	35,381.34	100.00	38.87
Clothing and Footwear	7,097.45	20.06	7.80
Men's Clothing	1,886.92	5.33	2.07
Women's Clothing	1,718.58	4.86	1.89
Children's Clothing	516.74	1.46	0.57
Other Clothing	860.63	2.43	0.95
Footwear	2,114.59	5.98	2.32
Rent, Fuel, and Light	10,126.31	28.62	11.12
Rent Expense	4,789.52	13.54	5.26
Fuel Expense	5,336.79	15.08	5.86
Furniture and Household Goods	8,349.97	23.60	9.17
Furniture	949.08	2.68	1.04
Textiles	365.16	1.03	0.40
Appliances	779.54	2.20	0.86
Kitchen Tableware	344.54	0.97	0.38
Paper/Foil Products	379.16	1.07	0.42
Cleaning Materials	3,605.12	10.19	3.96
Household Services	547.23	1.55	0.60
Other Household Goods	1,380.15	3.90	1.52
Health, Medical Services	468.13	1.32	0.51
Transport and Communication	2,357.97	6.66	2.59
Personal Transportation	659.37	1.86	0.72
Purchased Transportation	1,326.07	3.75	1.46
Communication	372.53	1.05	0.41
Education, Recreation	3,545.05	10.02	3.89
Education	1,954.05	5.52	2.15
Recreation	1,580.96	4.47	1.74
Equipment Repair	10.04	0.03	0.01
Other Goods and Services	3,436.46	9.71	3.78
Personal Care	1,752.01	4.95	1.92
Nonconsumption	1,684.45	4.76	1.85
Total Expenditure	91,029.56		100.00

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).

Table 23. Average monthly expenditure for rural, urban, and all households for item groups

Item Group	Rural Household Expenditure	Urban Household Expenditure	All Household Expenditure	
		(kwacha)		
Total Food	2,656.93	4,637.35	3,218.62	(3,314.80)
Clothing and Footwear	312.19	591.45	391.40	(1,178.23)
Rent, Fuel, and Light	41.99	843.86	269.42	(908.49)
Furniture and Household Goods	285.06	695.83	401.56	(1,109.34)
Medical Services, Drugs	18.16	39.01	24.08	(132.98)
Transport-Communication	52.63	196.50	93.43	(969.82)
Recreation-Education	62.54	295.42	128.59	(504.91)
Other Goods and Services	115.49	286.37	163.96	(793.91)
Total Nonfood	888.06	2,949.44	1,472.43	(3,093.91)
Total Expenditure	3,544.99	7,585.80	4,691.05	(5,525.39)
Average Household Size	5.374	5.692	5.464	(3.098)

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).
Note: Numbers in parentheses are standard deviations.

Table 24. Average monthly per capita expenditure for rural, urban, and all households for item groups

Item Group	Rural Per Capita Expenditure	Urban Per Capita Expenditure	All Per Capita Expenditure
		(kwacha)	
Total Food	494.42	814.71	589.05
Clothing and Footwear	58.09	103.91	71.63
Rent, Fuel, and Light	7.81	148.25	49.31
Furniture and Household Goods	53.05	122.25	73.49
Medical Services, Drugs	3.38	6.85	4.41
Transport-Communication	9.79	34.52	17.10
Recreation-Education	11.64	51.90	23.53
Other Goods and Services	21.49	50.31	30.01
Total Nonfood	165.26	518.00	269.48
Total Expenditure	659.68	1,332.71	858.53

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).

Table 25. Average monthly food, nonfood, and total expenditure for rural, urban, and all households by household per capita total expenditure decile

Household Decile	Rural				Urban				All			
	Food Expenditure	Nonfood Expenditure	Total Expenditure	Number of Weighted Households	Food Expenditure	Nonfood Expenditure	Total Expenditure	Number of Weighted Households	Food Expenditure	Nonfood Expenditure	Total Expenditure	Number of Weighted Households
		(kwacha)				(kwacha)				(kwacha)		
D1 (lowest)	1,118.89	131.66	1,250.55	140,219	1,095.35	245.64	1,340.99	2,493	1,118.48	133.65	1,252.13	142,712
D2	1,603.78	249.28	1,853.05	131,386	1,901.97	535.31	2,437.27	11,919	1,628.58	273.07	1,901.65	143,305
D3	1,964.11	382.87	2,436.98	129,382	2,050.66	544.33	2,595.00	13,157	1,972.10	397.77	2,369.87	142,539
D4	2,392.27	506.72	2,898.98	117,945	2,512.76	1,072.46	3,585.22	25,589	2,413.75	607.58	3,021.32	143,534
D5	2,512.48	569.50	3,081.98	112,996	3,176.39	1,349.24	4,525.63	30,033	2,651.89	733.23	3,385.12	143,029
D6	2,852.53	811.30	3,663.83	101,680	3,827.65	1,553.18	5,380.84	41,324	3,134.31	1,025.68	4,160.00	143,004
D7	3,027.57	1,104.18	4,131.75	98,657	4,185.42	2,371.37	6,546.78	44,270	3,386.20	1,493.58	4,879.78	142,927
D8	4,101.58	1,527.24	5,628.82	80,404	4,537.70	2,451.10	6,988.79	62,196	4,291.79	1,930.19	6,221.98	142,600
D9	4,447.29	2,453.71	6,901.00	70,153	4,977.84	3,034.21	8,012.05	73,541	4,718.82	2,750.80	7,469.62	143,694
D10 (highest)	7,223.77	4,711.52	11,935.30	42,261	6,693.60	5,627.52	12,321.12	101,318	6,849.65	5,357.91	12,207.56	143,579
All Households	2,656.93	888.06	3,544.99	1,025,083	4,637.35	2,948.44	7,585.80	405,840	3,218.62	1,472.43	4,691.05	1,430,923

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).

Table 26. Average monthly food, nonfood, and total expenditure for rural, urban, and all households by rural/urban household per capita total expenditure decile

Rural/Urban Household Decile	Rural				Urban			
	Food Expenditure	Nonfood Expenditure	Total Expenditure	Number of Weighted Households	Food Expenditure	Nonfood Expenditure	Total Expenditure	Number of Weighted Households
		(kwacha)				(kwacha)		
D1 (lowest)	1,020.94	99.77	1,120.71	102,186	2,036.84	733.04	2,769.88	40,167
D2	1,430.38	223.33	1,653.71	102,276	2,997.74	1,174.08	4,171.82	40,704
D3	1,841.21	325.77	2,166.98	103,029	3,770.24	1,555.42	5,325.66	40,495
D4	1,952.92	349.09	2,302.01	101,881	4,176.81	2,314.73	6,491.53	40,616
D5	2,443.57	552.12	2,995.69	102,520	4,473.90	2,297.55	6,771.45	40,764
D6	2,359.67	485.66	2,845.33	102,933	4,631.54	2,507.90	7,139.44	40,644
D7	2,846.56	852.32	3,698.88	101,843	4,904.53	2,827.89	7,732.41	40,610
D8	3,066.64	1,022.34	4,088.98	103,183	5,647.20	3,674.19	9,321.39	40,377
D9	4,511.43	1,733.48	6,244.91	102,079	6,221.76	4,346.03	10,567.80	40,664
D10 (highest)	5,080.20	3,221.78	8,301.98	103,153	7,477.10	8,011.28	15,488.39	40,779
All Households	2,656.93	888.06	3,544.99	1,025,083	4,637.35	2,948.44	7,585.80	405,840

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).

Table 27. Average monthly per capita food, nonfood, and total expenditure for rural, urban, and all households by household per capita total expenditure decile

Household Decile	Rural				Urban				All			
	Per Capita Food Expenditure	Per Capita Nonfood Expenditure	Per Capita Total Expenditure	Average Household Size	Per Capita Food Expenditure	Per Capita Nonfood Expenditure	Per Capita Total Expenditure	Average Household Size	Per Capita Food Expenditure	Per Capita Nonfood Expenditure	Per Capita Total Expenditure	Average Household Size
		(kwacha)				(kwacha)				(kwacha)		
D1 (lowest)	174.28	20.51	194.79	6.420	170.33	38.20	208.53	6.431	174.21	20.82	195.03	6.420
D2	271.03	42.13	313.15	5.917	253.31	71.29	324.60	7.508	269.20	45.14	314.33	6.050
D3	332.17	64.75	396.92	5.913	306.33	81.31	387.64	6.694	329.50	66.46	395.96	5.985
D4	406.91	86.19	493.11	5.879	351.75	150.13	501.88	7.144	395.41	99.53	494.94	6.104
D5	487.31	110.46	597.77	5.156	423.47	179.88	603.35	7.501	469.51	129.82	599.33	5.648
D6	570.23	162.18	732.41	5.002	520.08	211.04	731.11	7.360	551.46	180.46	731.92	5.684
D7	654.12	238.56	892.69	4.628	586.69	331.00	917.69	7.134	626.55	276.36	902.91	5.404
D8	859.38	320.00	1,179.38	4.773	760.31	410.69	1,171.01	5.968	810.67	364.59	1,175.86	5.294
D9	983.23	542.48	1,525.71	4.523	1,012.01	616.86	1,628.87	4.919	998.56	582.11	1,580.67	4.726
D10 (highest)	2,470.53	1,611.34	4,081.88	2.924	1,907.76	1,603.91	3,511.67	3.509	2,052.93	1,605.83	3,658.76	3.337
All Households	494.42	165.26	659.68	5.374	814.71	518.00	1,332.71	5.692	589.05	269.48	858.53	5.464

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).

Table 28. Average monthly per capita food, nonfood, and total expenditure for rural, urban, and all households by rural/urban household per capita total expenditure decile

Rural/Urban Household Decile	Rural				Urban			
	Per Capita Food Expenditure	Per Capita Nonfood Expenditure	Per Capita Total Expenditure	Average Household Size	Per Capita Food Expenditure	Per Capita Nonfood Expenditure	Per Capita Total Expenditure	Average Household Size
		(kwacha)				(kwacha)		
D1 (lowest)	159.19	15.56	174.74	6.413	284.54	102.40	386.94	7.158
D2	236.14	36.87	273.01	6.057	415.14	162.59	577.74	7.221
D3	295.15	52.22	347.37	6.238	509.45	210.18	719.63	7.401
D4	350.50	62.65	413.15	5.572	574.90	318.60	893.50	7.265
D5	403.03	91.06	494.09	6.063	717.13	368.28	1,085.41	6.239
D6	485.18	99.86	585.04	4.863	840.59	455.17	1,295.76	5.510
D7	541.24	162.06	703.29	5.259	1,010.10	582.41	1,592.51	4.856
D8	647.91	216.00	863.91	4.733	1,202.77	782.55	1,985.32	4.695
D9	866.27	332.86	1,199.13	5.208	1,625.12	1,135.18	2,760.30	3.828
D10 (highest)	1,516.69	961.86	2,478.54	3.350	2,696.82	2,889.48	5,586.30	2.773
All Households	494.42	165.26	659.68	5.374	814.71	518.00	1,332.71	5.692

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).

Table 29. Average monthly per capita expenditure on item groups for all households by household per capita total expenditure decile

Household Decile	Total Food	Clothing and Footwear	Rent, Fuel,and Light	Furniture and Household Goods	Medical Services, Drugs	Transport-Communications	Recreation-Education	Other Goods and Services	Total Nonfood	Total Expenditure
						(kwacha)				
D1 (lowest)	174.21	2.64	1.57	8.31	0.46	0.04	1.82	5.98	20.82	195.03
D2	269.20	9.69	5.69	13.48	0.39	3.19	2.86	9.83	45.14	314.33
D3	329.50	14.98	7.48	19.47	1.02	3.70	5.58	14.21	66.46	395.96
D4	395.41	16.35	18.95	35.93	1.64	5.94	6.70	14.01	99.53	494.94
D5	469.51	32.24	22.32	32.17	1.78	9.61	14.73	16.95	129.82	599.33
D6	551.46	50.09	34.00	48.31	4.05	9.55	12.60	21.86	180.46	731.92
D7	626.55	69.06	47.62	73.14	2.19	16.17	29.72	38.46	276.36	902.91
D8	810.67	96.48	72.36	100.32	4.48	17.36	28.72	44.87	364.59	1,175.26
D9	998.56	147.34	100.61	177.41	13.24	30.99	51.46	61.06	582.11	1,580.67
D10 (highest)	2,052.93	478.32	314.69	395.07	26.27	125.99	140.89	124.61	1,605.83	3,658.76
All Households	589.05	71.63	49.31	73.49	4.41	17.10	23.53	30.01	269.48	858.53

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).

Table 30. Average monthly expenditure for rural, urban, and all households on various food item groups

Food Item Group	Rural Household Expenditure	Urban Household Expenditure	All Household Expenditure
		(kwacha)	
Cereals	803.37	733.88	783.66
Fresh Meat	317.57	992.92	509.12
Preserved Meat	0.89	48.31	14.34
Fresh Fish	80.58	209.67	117.19
Preserved Fish	156.39	436.38	235.80
Milk and Eggs	42.13	187.26	83.30
Oils and Fats	57.59	331.19	135.19
Fresh Vegetables	433.48	850.75	551.83
Fresh Fruit	217.77	95.83	183.19
Root/Tubers	225.62	156.44	206.00
Sugar	113.73	212.37	141.71
Tea and Coffee	4.01	13.32	6.65
Other Foods	47.52	56.70	50.12
Nonalcoholic Beverages	6.09	57.13	20.57
Alcoholic Beverages	131.66	208.42	153.43
Tobacco	18.52	46.79	26.54
		(number)	
Average Household Size	5.374	5.692	5.464

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).

Table 31. Average monthly per capita expenditure on several food item groups for rural, urban, and all households

Food Item Group	Rural Household Per Capita Expenditure	Urban Household Per Capita Expenditure	All Household Per Capita Expenditure
		(kwacha)	
Cereals	149.50	128.93	143.42
Fresh Meat	59.10	174.44	93.18
Preserved Meat	0.17	8.49	2.62
Fresh Fish	14.99	36.84	21.45
Preserved Fish	29.10	76.67	43.15
Milk and Eggs	7.84	32.90	15.24
Oils and Fats	10.72	58.19	24.74
Fresh Vegetables	80.67	149.46	100.99
Fresh Fruit	40.52	16.84	33.53
Root/Tubers	41.99	27.48	37.70
Sugar	21.16	37.31	25.93
Tea and Coffee	0.75	2.34	1.22
Other Foods	8.84	9.96	9.17
Nonalcoholic Beverages	1.13	10.04	3.76
Alcoholic Beverages	24.50	36.62	28.08
Tobacco	3.45	8.22	4.86
Total Food	494.42	814.71	589.05

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).

Table 32. Average monthly expenditure on five food item groups for rural, urban, and all households

Food Item Group	Rural Household Expenditure	Urban Household Expenditure	All Household Expenditure
		(kwacha)	
Cereals	803.37	733.88	783.66
Fresh/Preserved Meat and Fish	555.43	1,687.28	876.45
Fresh Vegetables	433.48	850.75	551.83
Fresh Fruit	217.77	95.83	183.19
All Other Foods	646.88	1,269.62	823.50
Total Food	2,656.93	4,637.35	3,218.62
Total Nonfood	888.06	2,948.44	1,472.43
Total Expenditure	3,544.99	7,585.80	4,691.05

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).

Table 33. Average monthly per capita expenditure on five food item groups for rural, urban, and all households

Food Item Group	Rural Household Per Capita Expenditure	Urban Household Per Capita Expenditure	All Household Per Capita Expenditure
		(kwacha)	
Cereals	149.50	128.93	143.42
Fresh/Preserved Meat and Fish	103.36	296.43	160.40
Fresh Vegetables	80.67	149.46	100.99
Fresh Fruit	40.52	16.84	33.53
All Other Foods	120.38	223.05	150.71
Total Food	494.42	814.71	589.05
Total Nonfood	165.26	518.00	269.48
Total Expenditure	659.68	1,332.71	858.53

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).

Table 34. Average monthly per capita expenditure for five food item groups by household per capita total expenditure decile

Household Decile	Cereals	Fresh/Preserved Meat and Fish	Fresh Vegetables	Fresh Fruit	All Other Food	Total Food
			(kwacha)			
D1 (lowest)	74.54	21.77	35.45	19.64	22.81	174.21
D2	99.88	40.36	55.04	28.68	45.24	269.20
D3	115.44	56.84	67.13	29.24	60.85	329.50
D4	117.11	80.38	78.96	32.03	86.92	395.41
D5	132.56	94.69	88.92	36.41	116.93	469.51
D6	133.48	140.23	96.17	43.23	138.35	551.46
D7	140.72	171.46	112.51	42.05	159.82	626.55
D8	172.85	237.51	131.01	37.42	231.89	810.67
D9	212.88	313.10	169.11	31.89	271.58	998.56
D10 (highest)	346.60	762.84	276.22	40.33	626.93	2,052.93
All Households	143.42	160.40	100.99	33.53	150.71	589.05

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).

Table 35. Average monthly per capita expenditure on five food item groups for rural households by household per capita total expenditure decile

Household Decile	Cereals	Fresh/Preserved Meat and Fish	Fresh Vegetables	Fresh Fruit	All Other Food	Total Food
			(kwacha)			
D1 (lowest)	75.39	21.55	34.81	19.92	22.61	174.28
D2	108.58	37.10	52.61	28.40	44.34	271.03
D3	124.68	49.90	66.22	31.36	60.00	332.17
D4	137.80	70.12	74.68	37.34	86.97	406.91
D5	157.78	74.96	86.51	46.35	121.72	487.31
D6	172.93	117.95	92.51	53.86	132.97	570.23
D7	184.14	139.26	100.73	59.93	170.06	654.12
D8	218.38	205.26	117.93	62.43	255.37	859.38
D9	244.19	229.24	154.63	52.08	303.09	983.32
D10 (highest)	445.46	935.11	258.11	89.75	742.10	2,470.53
All Rural Households	149.50	103.36	80.67	40.52	120.38	494.42

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).

Table 36. Average monthly household expenditure on five food item groups for urban households by household per capita expenditure decile

Household Decile	Cereals	Fresh/Preserved Meat and Fish	Fresh Vegetables	Fresh Fruit	All Other Food	Total Food
			(kwacha)			
D1 (lowest)	26.79	33.98	71.59	3.68	34.29	170.33
D2	24.28	68.64	76.13	31.18	53.07	253.31
D3	35.26	117.08	75.01	10.76	68.21	306.33
D4	38.62	119.32	95.21	11.89	86.71	351.75
D5	67.36	145.73	95.13	10.71	104.54	423.47
D6	67.50	177.48	102.29	25.46	147.34	520.08
D7	77.93	218.01	129.54	16.19	145.02	586.69
D8	125.78	270.84	144.52	11.57	207.61	760.31
D9	185.41	386.66	181.81	14.18	243.95	1,012.01
D10 (highest)	312.24	702.96	282.52	23.15	586.90	1,907.76
All Urban Households	128.93	296.43	149.46	16.84	223.05	814.71

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).

Table 37. Average monthly per capita expenditure on five food item groups for rural households by rural household per capita total expenditure decile

Rural Household Decile	Cereals	Fresh/Preserved Meat and Fish	Fresh Vegetables	Fresh Fruit	All Other Food	Total Food
			(kwacha)			
D1 (lowest)	67.79	21.08	31.29	17.43	21.59	159.19
D2	102.94	27.06	45.07	29.08	31.98	236.14
D3	109.60	47.06	59.09	28.10	51.31	295.15
D4	132.96	51.24	68.18	32.08	66.05	350.50
D5	133.57	67.01	76.57	36.97	88.91	403.03
D6	167.51	78.38	82.24	47.19	109.86	485.18
D7	160.59	105.23	93.05	49.21	133.15	541.24
D8	182.63	132.76	99.72	60.20	172.61	647.91
D9	220.29	197.03	125.74	62.28	260.93	866.27
D10 (highest)	318.29	499.59	188.40	63.82	445.93	1,516.69
All Rural Households	149.50	103.36	80.67	40.52	120.38	494.42

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).

Table 38. Average monthly per capita expenditure on five food groups for urban households by urban household per capita total expenditure decile

Urban Household Decile	Cereals	Fresh/Preserved Meat and Fish	Fresh Vegetables	Fresh Fruit	All Other Food	Total Food
			(kwacha)			
D1 (lowest)	27.48	94.92	80.79	17.80	63.54	284.54
D2	63.77	140.91	97.85	10.17	102.44	415.14
D3	67.49	176.59	100.77	25.10	139.51	509.45
D4	73.87	215.27	127.25	17.50	141.00	574.90
D5	116.18	255.59	134.02	11.96	199.39	717.13
D6	149.86	298.85	159.74	10.11	222.03	840.59
D7	186.14	385.54	179.30	14.75	244.36	1,010.10
D8	208.17	446.24	241.20	14.99	292.18	1,202.77
D9	295.40	624.27	257.29	21.68	426.49	1,625.12
D10 (highest)	388.12	971.41	305.34	32.40	999.54	2,696.82
All Urban Households	128.93	296.43	149.46	16.84	223.05	814.71

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).

Table 39. Population participation rates for five food item groups by household per capita total expenditure decile

Household Decile	Cereals	Fresh/Preserved Meat and Fish	Fresh Vegetables	Fresh Fruits	All Other Food	Total Food
			(percent)			
D1 (lowest)	97.79	71.25	95.54	63.10	90.05	100.00
D2	93.66	84.35	97.77	74.78	95.18	100.00
D3	96.88	90.30	99.80	67.92	96.39	100.00
D4	96.42	91.64	98.30	77.31	98.05	100.00
D5	93.74	90.79	100.00	75.26	97.76	100.00
D6	93.56	95.39	97.85	74.81	98.28	100.00
D7	92.98	95.75	98.75	69.73	99.69	100.00
D8	96.83	99.06	99.86	77.89	99.97	100.00
D9	96.15	99.20	97.89	67.42	98.56	100.00
D10 (highest)	98.75	99.54	99.76	62.39	99.95	100.00
All Households	95.57	90.86	98.46	71.40	97.11	100.00

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).

Table 40. Population participation rates for five food item groups by rural household per capita total expenditure decile

Rural Household Decile	Cereals	Fresh/Preserved Meat and Fish	Fresh Vegetables	Fresh Fruits	All Other Food	Total Food
			(percent)			
D1 (lowest)	97.77	69.99	95.47	60.71	89.98	100.00
D2	98.41	74.65	96.25	73.04	91.71	100.00
D3	97.33	89.10	98.60	70.19	96.13	100.00
D4	100.00	89.65	100.00	70.93	96.74	100.00
D5	99.82	88.34	97.61	79.74	97.52	100.00
D6	95.87	86.56	100.00	77.13	97.08	100.00
D7	99.46	92.24	97.08	77.64	99.13	100.00
D8	99.53	93.96	97.74	81.16	97.70	100.00
D9	97.96	98.62	99.48	86.12	98.96	100.00
D10 (highest)	98.99	97.78	95.86	83.09	99.13	100.00
All Rural Households	98.49	87.14	97.81	75.21	96.10	100.00

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).

Table 41. Population participation rates for five food item groups by urban household per capita total expenditure decile

Urban Household Decile	Cereals	Fresh/Preserved Meats and Fish	Fresh Vegetables	Fresh Fruits	All Other Food	Total Food
			(percent)			
D1 (lowest)	70.54	100.00	100.00	69.95	98.84	100.00
D2	87.84	100.00	100.00	62.12	98.50	100.00
D3	85.24	100.00	100.00	71.34	100.00	100.00
D4	85.20	97.95	100.00	61.41	99.63	100.00
D5	89.76	100.00	100.00	66.83	100.00	100.00
D6	97.21	100.00	100.00	54.66	100.00	100.00
D7	98.34	100.00	100.00	56.03	98.98	100.00
D8	92.83	100.00	100.00	49.73	100.00	100.00
D9	97.40	100.00	100.00	59.10	100.00	100.00
D10 (highest)	98.28	100.00	100.00	63.46	100.00	100.00
All Urban Households	88.59	99.74	100.00	62.32	99.53	100.00

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).

Table 42. Percentage of household population reporting availability of selected maize items by household per capita total expenditure decile

Household Decile	Maize Meal	Breakfast Meal	Roller Meal	Maize Grain
		(percent)		
D1 (lowest)	59.53	2.90	10.22	12.68
D2	57.98	1.54	17.83	20.40
D3	61.38	7.42	17.97	25.59
D4	56.99	6.38	15.95	13.35
D5	49.81	14.99	15.05	17.13
D6	44.74	22.96	19.13	15.83
D7	36.08	19.10	19.04	18.81
D8	38.22	31.20	17.59	14.51
D9	35.52	36.80	15.33	11.13
D10 (highest)	20.57	46.24	17.60	8.84
All Households	47.89	16.90	16.46	16.22

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).

Table 43. Percentage of rural household population reporting availability of selected maize items by rural household per capita total expenditure decile

Rural Household Decile	Maize Meal	Breakfast Meal	Roller Meal	Maize Grain
		(percent)		
D1 (lowest)	59.68	2.29	6.35	9.19
D2	64.71	1.32	15.68	23.47
D3	65.30	1.43	17.67	20.55
D4	64.11	5.47	18.94	28.58
D5	68.14	2.20	14.57	14.60
D6	62.72	1.79	17.44	20.19
D7	70.11	6.21	20.45	24.85
D8	65.51	5.11	23.01	28.44
D9	70.24	9.59	22.88	22.46
D10 (highest)	62.94	23.41	31.59	19.36
All Rural Households	65.34	5.01	17.98	20.88

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).

Table 44. Percentage of urban household population reporting availability of selected maize items by urban household per capita total expenditure decile

Urban Household Decile	Maize Meal	Breakfast Meal	Roller Meal	Maize Grain
		(percent)		
D1 (lowest)	9.12	18.59	19.02	10.20
D2	14.86	39.90	16.91	1.22
D3	5.48	55.42	13.95	5.52
D4	2.26	37.16	12.99	4.61
D5	3.82	50.05	10.97	4.15
D6	5.05	52.33	9.02	3.22
D7	6.66	57.26	8.71	7.96
D8	1.70	51.23	10.67	4.90
D9	6.31	48.29	8.61	6.03
D10 (highest)	0.89	61.06	11.31	2.45
All Urban Households	6.26	45.25	12.82	5.11

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).

Table 45. Average monthly expenditure on maize items, cereals, and total food for all households by household per capita total expenditure decile

Household Decile	Maize Meal	Maize Grain	Breakfast Meal	Roller Meal	Total Maize	Cereals	Total Food
				(kwacha)			
D1 (lowest)	240.76	20.64	8.85	29.48	299.74	478.58	1,118.48
D2	267.89	48.78	3.31	48.57	368.55	604.24	1,628.58
D3	299.66	42.87	22.44	65.97	430.94	690.94	1,972.10
D4	325.68	27.49	18.32	60.38	431.86	714.91	2,413.75
D5	273.51	44.73	53.29	66.01	437.54	748.74	2,651.89
D6	264.95	24.93	68.65	64.27	422.80	758.65	3,134.31
D7	229.23	54.83	70.96	94.06	449.07	760.51	3,386.20
D8	254.36	37.72	118.66	89.60	500.34	915.10	4,291.79
D9	236.55	27.83	164.14	74.10	502.62	1,005.99	4,718.82
D10 (highest)	50.15	32.68	228.18	75.70	486.70	1,156.45	6,849.65
All Households	254.24	36.24	75.77	66.81	433.07	783.66	3,218.62

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).
Note: Total Maize = Maize Meal + Maize Grain + Breakfast Meal + Roller Meal

Table 46. Average monthly expenditure on maize items, cereals, and total food for rural households by rural household per capita total expenditure decile groups

Rural Household Decile	Maize Meal	Maize Grain	Breakfast Meal	Roller Meal	Total Maize	Cereals	Total Food
				(kwacha)			
D1 (lowest)	235.24	17.61	8.36	18.15	279.36	434.78	1,020.94
D2	284.53	51.42	3.29	38.64	377.87	623.55	1,430.38
D3	311.55	44.55	2.74	54.39	413.24	683.69	1,841.21
D4	315.18	41.64	19.74	76.17	452.73	740.82	1,952.92
D5	388.90	30.49	8.75	60.83	488.97	809.83	2,443.57
D6	325.65	55.82	7.07	73.40	461.95	814.68	2,359.67
D7	372.24	38.61	19.99	71.67	502.50	844.60	2,846.56
D8	370.99	62.78	19.70	103.64	557.10	864.39	3,066.64
D9	495.32	57.37	35.89	146.11	734.69	1,147.25	4,511.43
D10 (highest)	379.88	69.64	148.71	127.83	726.06	1,068.35	5,080.20
All Rural Households	347.95	47.03	27.49	77.12	499.59	803.37	2,656.93

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).
Note: Total Maize = Maize Meal + Maize Grain + Breakfast Meal + Roller Meal

Table 47. Average monthly expenditure on maize items, cereals, and total food for urban households by urban household per capita total expenditure decile

Urban Household Decile	Maize Meal	Maize Grain	Breakfast Meal	Roller Meal	Total Maize	Cereals	Total Food
				(kwacha)			
D1 (lowest)	24.85	13.88	48.32	48.12	135.17	196.74	2,036.84
D2	44.41	2.66	176.38	67.83	291.28	460.51	2,997.74
D3	9.61	2.29	199.43	34.74	246.07	499.49	3,770.24
D4	7.15	17.61	178.47	35.84	239.07	536.71	4,176.81
D5	5.27	3.39	229.03	31.48	269.17	724.78	4,473.90
D6	17.31	17.87	212.50	33.15	280.83	825.70	4,631.54
D7	20.05	7.74	277.23	41.66	346.68	903.82	4,904.53
D8	5.19	16.74	222.45	29.37	273.75	977.41	5,647.20
D9	34.03	7.76	176.42	43.40	261.60	1,130.92	6,221.76
D10 (highest)	7.72	0.15	254.93	42.18	304.98	1,076.10	7,477.10
All Urban Households	17.56	8.99	197.70	40.78	265.03	733.88	4,637.35

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).
Note: Total Maize = Maize Meal + Maize Grain + Breakfast Meal + Roller Meal

Table 48. Maize item and cereal expenditure shares of total food for all households by household per capita total expenditure decile

Household Decile	Maize Meal	Maize Grain	Breakfast Meal	Roller Meal	Total Maize	Cereals
			(percent)			
D1 (lowest)	21.53	1.85	0.79	2.64	26.80	42.79
D2	16.45	3.00	0.20	2.98	22.63	37.10
D3	15.19	2.17	1.14	3.35	21.85	35.04
D4	13.49	1.14	0.76	2.50	17.89	29.62
D5	10.31	1.69	2.01	2.49	16.50	28.23
D6	8.45	0.80	2.19	2.05	13.49	24.20
D7	6.77	1.62	2.10	2.78	13.26	22.46
D8	5.93	0.88	2.76	2.09	11.66	21.32
D9	5.01	0.59	3.48	1.57	10.65	21.32
D10 (highest)	2.19	0.48	3.33	1.11	7.11	16.88
All Households	7.90	1.13	2.35	2.08	13.46	24.35

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).
Note: Total Maize = Maize Meal + Maize Grain + Breakfast Meal + Roller Meal

Table 49. Maize item and cereal expenditure shares of total food for rural households by rural household per capita total expenditure decile

Rural Household Decile	Maize Meal	Maize Grain	Breakfast Meal	Roller Meal	Total Maize	Cereals
			(percent)			
D1 (lowest)	23.04	1.72	0.82	1.78	27.36	42.59
D2	19.89	3.59	0.23	2.70	26.42	43.59
D3	16.92	2.42	0.15	2.95	22.44	37.13
D4	16.14	2.13	1.01	3.90	23.18	37.93
D5	15.92	1.25	0.36	2.49	20.01	33.14
D6	13.80	2.37	0.30	3.11	19.58	34.53
D7	13.08	1.36	0.70	2.52	17.65	29.67
D8	12.10	2.05	0.64	3.38	18.17	28.19
D9	10.98	1.27	0.80	3.24	16.29	25.43
D10 (highest)	7.48	1.37	2.93	2.52	14.29	21.03
All Rural Households	13.10	1.77	1.03	2.90	18.80	30.24

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).
Note: Total Maize = Maize Meal + Maize Grain + Breakfast Meal + Roller Meal

Table 50. Maize item and cereal expenditure shares of total food for urban households by urban household per capita total expenditure decile

Urban Household Decile	Maize Meal	Maize Grain	Breakfast Meal	Roller Meal	Total Maize	Cereals
			(percent)			
D1 (lowest)	1.22	0.68	2.37	2.36	6.64	9.66
D2	1.48	0.09	5.88	2.26	9.72	15.36
D3	0.25	0.06	5.29	0.92	6.53	13.25
D4	0.17	0.42	4.27	0.86	5.72	12.85
D5	0.12	0.08	5.12	0.70	6.02	16.20
D6	0.37	0.39	4.59	0.72	6.06	17.83
D7	0.41	0.16	5.65	0.85	7.07	18.43
D8	0.09	0.30	3.94	0.52	4.85	17.31
D9	0.55	0.12	2.84	0.70	4.20	18.18
D10 (highest)	0.10	0.00	3.41	0.56	4.08	14.39
All Urban Households	0.38	0.19	4.26	0.88	5.72	15.83

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).
Note: Total Maize = Maize Meal + Maize Grain + Breakfast Meal + Roller Meal

Table 51. Average monthly per capita expenditure on selected maize items for all households by household per capita total expenditure decile

Household Decile	Maize Meal	Breakfast Meal	Roller Meal	Maize Grain
		(kwacha)		
D1 (lowest)	37.50	1.38	4.59	3.22
D2	44.28	0.55	8.03	8.06
D3	50.07	3.75	11.02	7.16
D4	53.35	3.00	9.89	4.50
D5	48.42	9.44	11.69	7.92
D6	46.62	12.08	11.31	4.39
D7	42.41	13.13	17.40	10.14
D8	48.05	22.41	16.92	7.12
D9	50.06	34.73	15.68	5.89
D10 (highest)	45.00	68.39	22.69	9.79
All Households	46.53	13.87	12.23	6.63
		(percent)		
Participation Rate	47.89	16.90	16.46	16.22

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).

Table 52. Average monthly per capita expenditure on selected maize items for rural households by rural household per capita total expenditure decile

Rural Household Decile	Maize Meal	Breakfast Meal	Roller Meal	Maize Grain
		(kwacha)		
D1 (lowest)	36.68	1.30	2.83	2.75
D2	46.97	0.54	6.38	8.49
D3	49.94	0.44	8.72	7.14
D4	56.57	3.54	13.67	7.47
D5	64.14	1.44	10.03	5.03
D6	66.96	1.45	15.09	11.48
D7	70.78	3.80	13.63	7.34
D8	78.38	4.16	21.90	13.26
D9	95.11	6.89	28.06	11.02
D10 (highest)	113.41	44.40	38.16	20.79
All Rural Households	64.75	5.12	14.35	8.75

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).

Table 53. Average monthly per capita expenditure on selected maize items for urban households by urban household per capita total expenditure decile

Urban Household Decile	Maize Meal	Breakfast Meal	Roller Meal	Maize Grain
		(kwacha)		
D1 (lowest)	3.47	6.75	6.72	1.94
D2	6.15	24.43	9.39	0.37
D3	1.30	26.95	4.69	0.31
D4	0.98	24.56	4.93	2.42
D5	0.84	36.71	5.05	0.54
D6	3.14	38.57	6.02	3.24
D7	4.13	57.10	8.58	1.59
D8	1.11	47.38	6.26	3.56
D9	8.89	46.08	11.34	2.03
D10 (highest)	2.79	91.95	15.21	0.05
All Urban Households	3.08	34.73	7.16	1.58

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).

Table 54. Representative transaction prices of rural and urban households for 25-kg bags of maize meal, maize grain, breakfast meal, and roller meal

	Rural		Urban	
Maize Items	Home Produced	Purchased	Home Produced	Purchased
		(kwacha)		
Maize Meal	169	183	-	-
Maize Grain	191	-	-	-
Breakfast Meal	-	256	-	251
Roller Meal	-	227	-	171

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).
Note: The "-" indicates that there were either too few or no observations available to establish a representative price.

Table 55. Average monthly quantity availability of maize items for all households by household per capita total expenditure decile

Household Decile	Maize Meal	Maize Grain	Breakfast Meal	Roller Meal	Total Maize
			(kilograms)		
D1 (lowest)	32.97	2.70	0.87	3.32	39.86
D2	36.64	6.38	0.33	5.56	48.91
D3	41.08	5.61	2.20	7.44	56.33
D4	44.85	3.60	1.81	7.10	57.36
D5	37.66	5.85	5.29	7.64	56.45
D6	36.54	3.26	6.82	7.40	54.02
D7	31.42	7.18	7.04	10.67	56.31
D8	35.23	4.94	11.78	10.51	62.45
D9	32.47	3.64	16.28	8.70	61.09
D10 (highest)	20.83	4.28	22.58	9.43	57.12
All Households	34.97	4.74	7.51	7.78	54.99

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).
Note: Total Maize = Maize Meal + Maize Grain + Breakfast Meal + Roller Meal

Table 56. Average monthly quantity availability of maize items for rural households by rural household per capita total expenditure decile

Rural Household Decile	Maize Meal	Maize Grain	Breakfast Meal	Roller Meal	Total Maize
			(kilograms)		
D1 (lowest)	32.24	2.30	0.82	2.00	37.36
D2	38.90	6.73	0.32	4.25	50.20
D3	42.68	5.83	0.27	5.99	54.77
D4	43.15	5.45	1.93	8.39	58.92
D5	53.52	3.99	0.85	6.70	65.07
D6	44.81	7.31	0.69	8.08	60.89
D7	51.31	5.05	1.95	7.89	66.21
D8	50.80	8.22	1.92	11.41	72.35
D9	68.28	7.51	3.51	16.09	95.39
D10 (highest)	52.25	9.12	14.52	14.08	89.97
All Rural Households	47.79	6.16	2.68	8.49	65.13

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).
Note: Total Maize = Maize Meal + Maize Grain + Breakfast Meal + Roller Meal

Table 57. Average monthly quantity availability of maize items for urban households by urban household per capita total expenditure decile

Urban Household Decile	Maize Meal	Maize Grain	Breakfast Meal	Roller Meal	Total Maize
			(kilograms)		
D1 (lowest)	3.52	1.82	4.81	7.03	17.18
D2	6.40	0.35	17.57	9.92	34.23
D3	1.39	0.30	19.86	5.08	26.63
D4	1.05	2.30	17.78	5.24	26.37
D5	0.77	0.44	22.81	4.60	28.63
D6	2.56	2.34	21.17	4.85	30.91
D7	2.97	1.01	27.61	6.09	37.68
D8	0.76	2.19	22.16	4.29	29.41
D9	5.03	1.02	17.57	6.34	29.97
D10 (highest)	1.14	0.02	25.39	6.17	32.72
All Urban Households	2.56	1.18	19.69	5.96	29.39

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).
Note: Total Maize = Maize Meal + Maize Grain + Breakfast Meal + Roller Meal

Table 58. Average monthly kilocalorie availability from maize items for all households by household per capita total expenditure decile

Household Decile	Maize Meal	Maize Grain	Breakfast Meal	Roller Meal	Total Maize
			(kilocalories)		
D1 (lowest)	119,351	9,693	3,080	11,852	143,977
D2	132,637	22,904	1,168	19,849	176,558
D3	148,710	20,140	7,788	26,561	203,198
D4	162,357	12,924	6,407	25,347	207,035
D5	136,329	21,002	18,727	27,275	203,332
D6	132,275	11,703	24,143	26,418	194,539
D7	113,740	25,776	24,922	38,092	202,530
D8	127,533	17,735	41,701	37,521	224,489
D9	117,541	13,068	57,631	31,059	219,299
D10 (highest)	75,405	15,365	79,933	33,665	204,368
All Households	126,591	17,017	26,585	27,775	197,968

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).
Note: Total Maize = Maize Meal + Maize Grain + Breakfast Meal + Roller Meal

Table 59. Average monthly kilocalorie availability from maize items for rural households by rural household per capita total expenditure decile groups

Rural Household Decile	Maize Meal	Maize Grain	Breakfast Meal	Roller Meal	Total Maize
			(kilocalories)		
D1 (lowest)	116,709	8,257	2,903	7,140	135,009
D2	140,818	24,161	1,133	15,173	181,284
D3	154,502	20,930	956	21,384	197,771
D4	156,203	19,566	6,832	29,952	212,553
D5	193,742	14,324	3,009	23,919	234,995
D6	162,212	26,243	2,443	28,846	219,743
D7	185,742	18,130	6,903	28,167	238,942
D8	183,896	29,510	6,797	40,734	260,936
D9	247,174	26,961	12,425	57,441	344,001
D10 (highest)	189,145	32,741	51,401	50,266	323,552
All Rural Households	173,000	22,114	9,487	30,309	234,911

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).
Note: Total Maize = Maize Meal + Maize Grain + Breakfast Meal + Roller Meal

Table 60. Average monthly kilocalorie availability from maize items for urban households by urban household per capita total expenditure decile

Urban Household Decile	Maize Meal	Maize Grain	Breakfast Meal	Roller Meal	Total Maize
			(kilocalories)		
D1 (lowest)	12,742	6,534	17,027	25,097	61,401
D2	23,168	1,257	62,198	35,414	122,037
D3	5,032	1,077	70,304	18,136	94,549
D4	3,801	8,257	62,941	18,707	93,706
D5	2,787	1,580	80,747	16,422	101,536
D6	9,267	8,401	74,942	17,315	109,924
D7	10,751	3,626	97,739	21,741	133,858
D8	2,751	7,862	78,446	15,315	104,375
D9	18,209	3,662	62,198	22,634	106,702
D10 (highest)	4,127	72	89,881	22,027	116,106
All Urban Households	9,267	4,236	69,703	21,277	104,483

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).
Note: Total Maize = Maize Meal + Maize Grain + Breakfast Meal + Roller Meal

Table 61. Average monthly protein availability from maize items for all households by household per capita total expenditure decile

Household Decile	Maize Meal	Maize Grain	Breakfast Meal	Roller Meal	Total Maize
			(grams)		
D1 (lowest)	3,132	257	83	315	3,787
D2	3,481	606	31	528	4,646
D3	3,903	533	209	707	5,351
D4	4,261	342	172	675	5,449
D5	3,578	556	503	726	5,362
D6	3,471	310	648	703	5,132
D7	2,985	682	669	1,014	5,349
D8	3,347	469	1,119	998	5,934
D9	3,085	346	1,547	827	5,804
D10 (highest)	1,979	407	2,145	896	5,426
All Households	3,322	450	713	739	5,225

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).
Note: Total Maize = Maize Meal + Maize Grain + Breakfast Meal + Roller Meal

Table 62. Average monthly protein availability from maize items for rural households by rural household per capita total expenditure decile

Rural Household Decile	Maize Meal	Maize Grain	Breakfast Meal	Roller Meal	Total Maize
			(grams)		
D1 (lowest)	3,063	219	78	190	3,549
D2	3,696	639	30	404	4,769
D3	4,055	554	26	569	5,203
D4	4,099	518	183	797	5,597
D5	5,084	379	81	637	6,181
D6	4,257	694	66	768	5,785
D7	4,874	480	185	750	6,289
D8	4,826	781	182	1,084	6,873
D9	6,487	713	333	1,529	9,062
D10 (highest)	4,964	866	1,379	1,338	8,547
All Rural Households	4,540	585	255	807	6,186

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).
Note: Total Maize = Maize Meal + Maize Grain + Breakfast Meal + Roller Meal

Table 63. Average monthly protein availability from maize items for urban households by urban household per capita total expenditure decile

Urban Household Decile	Maize Meal	Maize Grain	Breakfast Meal	Roller Meal	Total Maize
			(grams)		
D1 (lowest)	334	173	457	668	1,632
D2	608	33	1,669	942	3,253
D3	132	29	1,887	483	2,530
D4	100	219	1,689	498	2,505
D5	73	42	2,167	437	2,719
D6	243	222	2,011	461	2,937
D7	282	96	2,623	579	3,580
D8	72	208	2,105	408	2,793
D9	478	97	1,669	602	2,846
D10 (highest)	108	2	2,412	586	3,108
All Urban Households	243	112	1,871	566	2,792

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).
Note: Total Maize = Maize Meal + Maize Grain + Breakfast Meal + Roller Meal

Table 64. Nutrient composition of maize items

Food Item	Kilocalories per 100 edible grams of item	Protein (g) per 100 edible grams of item
Maize Meal	362	9.5
Maize Grain	359	9.3
Breakfast Meal	354	8.0
Roller Meal[1]	357	8.7

SOURCE: FAO 1968.

[1]Interpolated between nutrient values of maize meal at a 96 percent extraction rate and breakfast meal at a 60 percent extraction rate, assuming a 78 percent extraction.

Table 65. Population participation rates of food item availability for all Zambia, rural, and urban areas

Food Items	All Zambia	Rural	Urban
		(percent)	
Maize Meal	47.89	65.34	6.26
Breakfast Meal	16.90	5.01	45.25
Roller Meal	16.46	17.98	12.82
Maize Grain	16.23	20.88	5.10
Bread	23.12	8.04	59.09
Rice	12.85	10.04	19.56
Cassava Flour	20.18	27.75	2.18
Beef	48.41	36.20	77.51
Chicken	41.30	33.49	59.94
Dried Kapenta	44.06	25.17	89.11
Frozen Fish	31.93	22.06	55.47
Dried Fish	51.80	43.26	72.16
Fresh Milk	16.80	5.53	43.68
Chicken Eggs	15.97	8.95	32.71
Cooking Oil	39.45	21.87	81.39
Sweet Potatoes	67.48	67.65	67.06
Cassava	15.64	20.67	3.64
Cabbages	36.98	20.69	75.83
Onions	25.46	6.67	70.26
Rape	71.29	61.91	93.68
Tomatoes	53.02	36.49	92.42
Beans	57.73	45.55	86.77
Pumpkin	26.31	34.77	6.16
Okra	35.87	32.36	44.23
Groundnut	66.26	71.95	52.69
Refined Sugar	41.51	29.31	70.60
Salt	58.56	57.07	62.10

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).

Table 66. Average monthly expenditure on 27 food items, total food expenditure, and the 27 items' percentage share of total food expenditure for all households by household per capita total expenditure decile

Household Decile	27 Food Items Expenditure	Total Food Expenditure	Share
	(kwacha)		(percent)
D1 (lowest)	893.43	1,118.48	79.88
D2	1,285.68	1,628.58	78.94
D3	1,554.57	1,972.10	78.83
D4	1,981.71	2,413.75	82.10
D5	2,132.62	2,651.89	80.42
D6	2,590.19	3,134.31	82.64
D7	2,757.27	3,386.20	81.43
D8	3,504.08	4,291.82	81.65
D9	3,876.61	4,718.82	82.15
D10 (highest)	4,840.44	6,849.65	70.67
All Households	2,543.12	3,218.62	79.01

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).

Table 67. Average monthly expenditure on 27 food items, total food expenditure, and the 27 items' percentage share of total food expenditure for rural households by household per capita total expenditure decile

Household Decile	27 Food Items Expenditure	Total Food Expenditure	Share
	(kwacha)		(percent)
D1 (lowest)	816.46	1,020.94	79.97
D2	1,106.46	1,430.38	77.35
D3	1,469.57	1,841.21	79.82
D4	1,508.72	1,952.92	77.25
D5	1,979.12	2,443.57	80.99
D6	1,862.21	2,359.67	78.92
D7	2,219.90	2,846.56	77.99
D8	2,368.69	3,066.64	77.24
D9	3,614.30	4,511.43	80.11
D10 (highest)	3,472.73	5,080.20	68.36
All Rural Households	2,042.72	2,656.93	76.88

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).

Table 68. Average monthly expenditure on 27 food items, total food expenditure, and the 27 items' percentage shares of total food expenditure for urban households by household per capita total expenditure decile

Household Decile	27 Food Items Expenditure	Total Food Expenditure	Share
	(kwacha)		(percent)
D1 (lowest)	1,789.51	2,036.84	87.86
D2	2,677.70	2,997.74	89.32
D3	3,342.89	3,770.24	88.67
D4	3,650.60	4,176.81	87.40
D5	3,754.05	4,473.90	83.91
D6	3,965.53	4,631.54	85.62
D7	4,193.98	4,904.53	85.51
D8	4,801.89	5,647.20	85.03
D9	4,973.27	6,221.76	79.93
D10 (highest)	4,899.73	7,477.10	65.53
All Urban Households	3,807.07	4,637.35	82.10

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).

Table 69. Ten most important food items as determined by ranking of household per capita item expenditure within the households

Rank	Ten Most Important Food Items	Participation Rate
		(percent)
1	Sweet Potatoes	67.48
2	Beef	48.41
3	Rape	71.29
4	Groundnuts	66.26
5	Maize Meal	47.89
6	Chicken	41.30
7	Dried Fish	51.80
8	Cooking Oil	39.45
9	Beans	57.73
10	Refined Sugar	41.51

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).

Table 70. Ten most important food items for rural and urban households as determined by ranking of household per capita item expenditure within the household

	Rural		Urban	
Rank	Ten Most Important Food Items	Participation Rate	Ten Most Important Food Items	Participation Rate
		(percent)		(percent)
1	Maize Meal	65.34	Beef	77.51
2	Groundnuts	71.95	Cooking Oil	81.39
3	Sweet Potatoes	67.65	Rape	93.68
4	Rape	61.91	Tomatoes	92.42
5	Dried Fish	43.26	Dried Kapenta	89.11
6	Beans	45.55	Chicken	59.94
7	Beef	36.20	Dried Fish	72.16
8	Chicken	33.49	Refined Sugar	70.60
9	Pumpkin Leaves	56.66	Bread	59.09
10	Refined Sugar	29.31	Beans	86.79

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).

Table 71. Five food items with the largest average monthly per capita expenditure for all households

Five Most Popular Food Items	Per Capita Expenditure	Participation Rate
	(kwacha)	(percent)
Maize Meal	46.53	47.89
Beef	44.93	48.41
Groundnuts	29.41	66.26
Chicken	28.05	41.31
Sweet Potatoes	27.65	67.48

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).
Note: The participation rate is a percentage of the household population.

Table 72. Five food items with the largest average monthly per capita expenditure for rural and urban households

Rural			Urban		
Five Most Popular Food Items	Per Capita Expenditure	Participation Rate	Five Most Popular Food Items	Per Capita Expenditure	Participation Rate
	(kwacha)	(percent)		(kwacha)	(percent)
Maize Meal	64.75	65.34	Beef	95.88	77.51
Groundnuts	36.54	71.95	Chicken	56.70	59.94
Cassava Flour	31.95	27.75	Cooking Oil	53.40	81.39
Sweet Potatoes	30.21	67.65	Bread	52.97	59.09
Beef	23.57	36.20	Rape	38.91	93.68

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).
Note: The participation rate is a percentage of the household population.

Table 73. Expenditure elasticities for five food item groups, selected cereal items, and nonfood using the household per capita total expenditure decile of the unweighted household sample

	Expenditure Elasticity			Coefficient B_1	
Food Groups	Linear	Semilog	Double-log	Linear	Semilog
Rural					
Meat	1.29	1.36	1.27	0.192	152.97
All Other Food	1.10	1.21	1.24	0.195	163.85
Cereals	0.51	0.60	0.58	0.107	94.73
Maize Meal	0.41	0.48	0.46	0.043	38.29
Breakfast Meal	1.95	1.87	1.53	0.013	9.54
Roller Meal	0.80	0.95	1.08	0.013	11.68
Maize Grain	0.59	0.58	0.45	0.007	5.14
Bread	1.90	1.90	2.66	0.005	3.88
Rice	0.87	1.08	1.35	0.008	7.67
Cassava Flour	0.09	0.20	0.26	0.003	5.34
Fresh Vegetables	0.64	0.73	0.69	0.084	72.91
Fresh Fruits	0.44	0.57	0.62	0.031	30.39
Nonfood	1.55	1.58	1.50	0.408	316.10
Average Total Per Capita Expenditure:			K758.31		
Urban					
Meat	0.69	0.88	0.86	0.150	316.86
All Other Food	0.89	1.04	0.92	0.146	283.38
Cereals	0.63	0.85	0.91	0.063	139.46
Maize Meal	-0.10	-0.22	-0.18	-0.00019	-0.70
Breakfast Meal	0.49	0.65	0.72	0.012	27.21
Roller Meal	0.27	0.30	0.27	0.001	2.25
Maize Grain	-0.21	-0.09	-0.59	-0.00021	-0.14
Bread	0.76	1.04	1.30	0.032	73.33
Rice	0.99	1.29	1.93	0.008	16.77
Cassava Flour	-0.06	0.08	-3.71	-0.00004	0.07
Fresh Vegetables	0.44	0.59	0.57	0.045	100.37
Fresh Fruits	0.32	0.32	0.27	0.003	5.38
Nonfood	1.09	1.27	1.20	0.441	855.28
Average Total Per Capita Expenditure:			K1,658.08		

SOURCE: June 1991 Zambian Households Expenditure and Income Survey (HEIS).

Table 74. Expenditure elasticities for five item food groups, selected cereal items, and nonfood using the household per capita total expenditure decile of the weighted household sample

	Expenditure Elasticity			Coefficient B_1	
Food Groups	Linear	Semilog	Double-log	Linear	Semilog
Rural					
Meat	1.32	1.42	1.27	0.189	135.01
All Other Food	1.13	1.29	1.27	0.199	150.05
Cereals	0.50	0.61	0.59	0.111	89.88
Maize Meal	0.39	0.49	0.46	0.044	36.43
Breakfast Meal	2.09	2.00	1.47	0.012	7.79
Roller Meal	0.82	1.02	1.14	0.014	11.31
Maize Grain	0.52	0.52	0.40	0.007	4.27
Bread	2.07	2.08	2.77	0.005	3.29
Rice	0.93	1.20	1.44	0.009	7.55
Cassava Flour	0.12	0.25	0.32	0.005	6.65
Fresh Vegetables	0.62	0.74	0.70	0.086	67.86
Fresh Fruits	0.45	0.61	0.65	0.034	30.62
Nonfood	1.62	1.68	1.51	0.397	272.72
Average Total Per Capita Expenditure:			K661.90		
Urban					
Meat	0.71	0.99	0.89	0.159	291.71
All Other Food	0.88	1.12	0.91	0.145	243.37
Cereals	0.67	0.99	0.98	0.069	134.14
Maize Meal	-0.11	-0.32	-0.29	-0.00026	-1.02
Breakfast Meal	0.48	0.73	0.79	0.013	26.38
Roller Meal	0.23	0.25	0.20	0.00119	1.70
Maize Grain	-0.08	0.07	-0.25	-0.0001	0.11
Bread	0.86	1.29	1.43	0.036	71.23
Rice	1.16	1.64	2.15	0.008	15.50
Cassava Flour	0.02	0.13	-2.63	0.00001	0.11
Fresh Vegetables	0.43	0.64	0.58	0.050	96.37
Fresh Fruits	0.24	0.24	0.19	0.003	3.70
Nonfood	1.15	1.45	1.22	0.440	731.62
Average Total Per Capita Expenditure:			K1,317.97		

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).

Table 75. Expenditure elasticities for five food item groups, selected cereal items, and nonfood using the unweighted participating households

Food Groups	Expenditure Elasticity			Coefficient B_1		Households Participating	Mean Group Expenditure	Mean Total Expenditure
	Linear	Semilog	Double-log	Linear	Semilog			
Rural								
Meat	0.97	1.36	1.08	0.155	168.53	1,325	K124.30	K778.83
All Other Food	1.19	1.50	1.22	0.212	197.09	1,560	131.78	737.43
Cereals	0.43	0.73	0.63	0.103	126.49	1,660	172.82	715.14
Maize Meal	0.41	0.65	0.53	0.074	81.76	1,145	125.37	693.76
Breakfast Meal	0.59	0.72	0.53	0.043	88.68	58	122.85	1,690.92
Roller Meal	0.71	0.74	0.63	0.083	75.68	210	101.98	867.76
Maize Grain	0.51	0.65	0.36	0.047	41.79	265	64.69	702.66
Bread	0.71	1.05	0.91	0.014	30.97	82	29.44	1,485.76
Rice	0.30	0.63	0.72	0.023	48.80	149	77.40	1,029.52
Cassava Flour	0.59	0.68	0.55	0.129	91.12	435	134.22	614.09
Fresh Vegetables	0.50	0.81	0.65	0.077	89.51	1,654	110.11	714.97
Fresh Fruits	0.35	0.66	0.60	0.035	48.56	1,306	73.56	740.91
Nonfood	1.80	1.88	1.35	0.431	335.75	1,508	178.42	745.40
Urban								
Meat	0.76	1.11	0.94	0.169	421.30	756	K381.2112	K1,699.63
All Other Food	1.12	1.38	0.97	0.197	416.02	752	301.5466	1,704.31
Cereals	0.58	0.99	0.90	0.062	187.38	677	189.7998	1,773.85
Maize Meal	0.20	0.58	0.44	0.008	32.49	49	56.20336	1,471.06
Breakfast Meal	0.70	0.81	0.56	0.042	82.26	346	101.4421	1,684.33
Roller Meal	0.15	0.58	0.47	0.007	43.22	97	74.28342	1,624.94
Maize Grain	0.37	0.47	0.22	0.010	17.38	33	37.00515	1,323.71
Bread	0.56	1.01	0.97	0.031	114.07	427	112.9294	2,016.90
Rice	1.27	1.41	0.86	0.037	102.25	162	72.31255	2,486.45
Cassava Flour	0.53	0.37	0.14	0.024	22.88	19	62.16134	1,386.26
Fresh Vegetables	0.41	0.71	0.58	0.045	131.07	757	184.2471	1,698.50
Fresh Fruits	0.39	0.50	0.42	0.007	15.11	431	29.96331	1,639.26
Nonfood	1.37	1.59	1.19	0.522	1,030.58	756	648.0478	1,700.52

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).

APPENDIX A.

ADDITIONAL DATA TABLES FOR THE ZAMBIAN HEIS

Table A.1. Number of male- and female-headed within rural, urban, and all households by age group of household head

Age Group of Household Head	Rural		Urban		All	
	Male Head	Female Head	Male Head	Female Head	Male Head	Female Head
18 - 55	661,436	183,804	322,214	62,627	983,650	246,431
55 and Over	135,834	44,009	17,572	3,427	153,406	47,436
All Zambia	797,270	227,813	339,786	66,054	1,137,056	293,867

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).

Table A.2. Percentage of male- and female-headed within rural, urban, and all households by age group of household head

Age Group of Household Head	Rural		Urban		All	
	Male Head	Female Head	Male Head	Female Head	Male Head	Female Head
			(percent)			
18 - 55	78.25	21.75	83.73	16.27	79.97	20.03
55 and Over	75.53	24.47	83.68	16.32	76.38	23.62
All Zambia	77.78	22.22	83.72	16.28	79.46	20.54

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).

Table A.3. Percentage of households within male- and female-headed rural, urban, and all households by age group of household head

Age Group of Household Head	Rural		Urban		All	
	Male Head	Female Head	Male Head	Female Head	Male Head	Female Head
			(percent)			
18 - 55	82.96	80.68	94.83	94.81	86.51	83.86
55 and Over	17.04	19.32	5.17	5.19	13.49	16.14
All Zambia	100.00	100.00	100.00	100.00	100.00	100.00

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).

Table A.4. Percentage of male- and female-headed households within rural, urban, and all areas by size of household

Size of Household	Rural		Urban		All	
	Male Head	Female Head	Male Head	Female Head	Male Head	Female Head
	(percent)					
1 - 4	73.32	26.68	78.66	21.34	74.70	25.30
5 - 6	74.49	25.51	82.13	17.87	76.60	23.40
7 - 8	84.02	15.98	89.63	10.37	85.60	14.40
9 - 10	87.83	12.17	89.07	10.93	88.38	11.62
11 and More	96.17	3.83	92.67	7.33	95.18	4.82
All Zambia	77.78	22.22	83.72	16.28	79.46	20.54

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).

Table A.5. Percentage of households within male- and female-headed rural, urban, and all households by the size of household

Size of Household	Rural		Urban		All	
	Male Head	Female Head	Male Head	Female Head	Male Head	Female Head
1 - 4	39.81	50.70	34.99	48.85	38.37	50.28
5 - 6	25.04	30.01	24.60	27.53	24.91	29.45
7 - 8	22.84	15.21	22.41	13.34	22.72	14.79
9 - 10	6.86	3.33	13.18	8.32	8.75	4.45
11 and More	5.44	0.76	4.81	1.96	5.25	1.03
All Zambia	100.00	100.00	100.00	100.00	100.00	100.00

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).

Table A.6. Percentage of male- and female-headed households within rural, urban, and all households by educational level of household head

Educational Level of Household Head	Rural		Urban		All	
	Male Head	Female Head	Male Head	Female Head	Male Head	Female Head
	(percent)					
No School	55.42	44.58	54.69	45.31	55.36	44.64
Primary	84.73	15.27	84.43	15.57	84.67	15.33
Secondary	86.98	13.02	87.34	12.66	87.18	12.82
Higher	97.54	2.46	84.43	15.57	89.01	10.99
Not Reported	51.31	48.69	59.08	40.92	52.42	47.58
All Zambia	77.78	22.22	83.72	16.28	79.46	20.54

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).

Table A.7. Percentage of rural, urban, and all households within male- and female-headed households by educational level of household head

Educational Level of Household Head	Rural		Urban		All	
	Male Head	Female Head	Male Head	Female Head	Male Head	Female Head
	(percent)					
No School	17.59	49.51	3.99	17.02	13.53	42.21
Primary	61.84	39.00	36.59	34.71	54.29	38.04
Secondary	15.96	8.36	44.80	33.40	24.58	13.99
Higher	3.77	0.33	14.24	13.51	6.90	3.29
Not Reported	0.84	2.80	0.38	1.36	0.70	2.47
All Zambia	100.00	100.00	100.00	100.00	100.00	100.00

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).

Table A.8. Percentage of male- and female-headed households within rural, urban, and all households by employment status of household head

Employment Status of Household Head	Rural		Urban		All	
	Male Head	Female Head	Male Head	Female Head	Male Head	Female Head
	(percent)					
Not Applicable	59.47	40.53	100.00	0.00	69.38	30.62
Self-employed	75.62	24.38	71.91	28.09	75.24	24.76
Employed	94.04	4.96	88.04	11.96	90.32	9.68
Unemployed	71.21	28.79	69.10	30.90	70.51	29.49
All Zambia	77.78	22.22	83.72	16.28	79.46	20.54

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).

Table A.9. Percentage of rural, urban, and all households within male- and female-headed households by employment status of household head

Employment Status of Household Head	Rural		Urban		All	
	Male Head	Female Head	Male Head	Female Head	Male Head	Female Head
	(percent)					
Not Applicable	1.57	3.74	2.00	0.00	1.70	2.90
Self-employed	78.85	88.96	19.82	39.83	61.21	77.91
Employed	16.56	3.02	74.73	52.22	33.94	14.08
Unemployed	3.03	4.29	3.46	7.95	3.16	5.11
All Zambia	100.00	100.00	100.00	100.00	100.00	100.00

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).

Table A.10. Percentage of male- and female-headed households within rural, urban, and all households by marital status of household head

Marital Status of Household Head	Rural		Urban		All	
	Male Head	Female Head	Male Head	Female Head	Male Head	Female Head
	(percent)					
Single	65.05	34.95	61.70	38.30	63.51	36.49
Married	93.14	6.86	95.91	4.09	93.92	6.08
Widowed	9.76	90.24	20.43	79.57	11.89	88.11
Divorced	23.78	76.22	30.58	69.42	25.10	74.90
All Zambia	77.78	22.22	83.72	16.28	79.46	20.54

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).

Table A.11. Percentage of rural, urban, and all households within male- and female-headed households by marital status of household head

Marital Status of Household Head	Rural		Urban		All	
	Male Head	Female Head	Male Head	Female Head	Male Head	Female Head
	(percent)					
Single	4.98	9.37	9.37	29.92	6.29	13.99
Married	90.91	23.44	87.14	19.14	89.78	22.47
Widowed	1.00	32.33	1.22	24.46	1.07	30.56
Divorced	3.11	34.87	2.77	26.48	2.86	32.98
All Zambia	100.00	100.00	100.00	100.00	100.00	100.00

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).

Table A.12. Percentage of male- and female-headed households within rural, urban, and all households by household expenditure class

Household Expenditure Class	Rural		Urban		All	
	Male Head	Female Head	Male Head	Female Head	Male Head	Female Head
	(percent)					
Below K15,000	65.74	34.26	79.84	20.16	65.97	34.03
K15,000-30,000	73.49	26.51	88.37	11.63	74.80	25.20
K30,000-45,000	83.58	16.42	83.57	16.43	83.58	16.42
K45,000-60,000	88.01	11.99	84.22	15.78	86.57	13.43
K60,000-75,000	85.07	14.93	77.00	23.00	81.79	18.21
K75,000-90,000	83.88	16.12	84.96	15.04	84.53	15.47
K90,000-105,000	92.42	7.58	88.73	11.27	90.31	9.69
K105,000-120,000	77.70	22.30	88.12	11.88	84.86	15.14
K120,000-135,000	82.57	17.43	71.43	28.57	75.00	25.00
K135,000 and Above	84.19	15.81	85.32	14.68	84.96	15.04
All Zambia	77.78	22.22	83.72	16.28	79.46	20.54

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).

Table A.13. Percentage of rural, urban, and all households within male- and female-headed households by household expenditure class

Household Expenditure Class	Rural		Urban		All	
	Male Head	Female Head	Male Head	Female Head	Male Head	Female Head
	(percent)					
Below K15,000	13.69	24.97	0.64	0.83	9.79	19.55
K15,000-30,000	33.64	42.45	9.12	6.18	26.31	34.30
K30,000-45,000	21.21	14.58	12.78	12.93	18.69	14.21
K45,000-60,000	10.43	4.97	14.42	13.90	11.62	6.98
K60,000-75,000	8.94	5.49	13.01	19.99	10.16	8.75
K75,000-90,000	3.62	2.43	13.01	11.84	6.42	4.55
K90,000-105,000	2.89	0.83	8.69	5.68	4.63	1.92
K105,000-120,000	1.47	1.48	8.60	5.96	3.60	2.49
K120,000-135,000	1.04	0.77	4.46	9.18	2.06	2.66
K135,000 and Above	3.07	2.01	15.27	13.52	6.71	4.60
All Zambia	100.00	100.00	100.00	100.00	100.00	100.00

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).

Table A.14. Average monthly household expenditure on item groups for male- and female-headed rural, urban, and all households

Item Group	Rural		Urban		All	
	Male Head	Female Head	Male Head	Female Head	Male Head	Female Head
	(kwacha)					
Total Food	2,805.84	2,135.79	4,706.35	4,282.41	3,373.77	2,618.30
Clothing and Footwear	326.68	261.47	605.36	519.91	409.96	319.56
Rent, Fuel, and Light	43.26	37.52	834.17	893.72	279.61	229.97
Furniture and Household Goods	306.54	209.89	715.19	596.24	428.66	296.73
Medical Services, Drugs	20.14	11.25	40.45	31.61	26.21	15.83
Transport-Communication	60.01	26.80	201.75	169.46	102.37	58.87
Recreation-Education	71.94	29.63	306.80	236.89	142.13	76.22
Other Goods and Services	122.86	89.71	299.31	219.79	175.59	118.95
Total Nonfood	951.44	666.27	3,003.04	2,667.62	1,564.52	1,116.12
Total Expenditure	3,757.28	2,802.06	7,709.39	6,950.04	4,938.29	3,734.42
Average Household Size	5.635	4.461	5.856	4.848	5.701	4.548

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).

Table A.15. Average monthly household expenditure on item groups for employment status of rural, urban, and all household heads

Item Group	Rural				Urban				All			
	Not Applicable	Self - Employed	Employed	Unemployed	Not Applicable	Self-Employed	Employed	Unemployed	Not Applicable	Self-Employed	Employed	Unemployed
	(kwacha)											
Total Food	1,777.80	2,620.65	3,182.67	1,937.37	4,042.42	4,574.28	4,657.52	4,880.30	2,331.36	2,818.45	4,178.11	2,919.92
Clothing and Footwear	418.05	261.54	653.81	88.94	23.33	739.04	528.76	1,069.10	321.57	309.89	569.41	416.19
Rent, Fuel, and Light	13.42	30.11	113.38	58.32	610.20	700.15	903.87	710.78	159.30	97.95	646.92	276.16
Furniture and Household Goods	133.33	231.02	682.09	77.56	673.05	548.64	752.44	555.46	265.26	263.17	729.57	237.12
Medical Services, Drugs	0.24	20.77	7.14	10.42	63.10	56.82	33.46	25.38	15.60	24.42	24.91	15.41
Transport - Communication	0.00	36.07	172.52	0.00	73.01	397.95	142.61	50.32	17.85	72.71	152.33	16.80
Recreation - Education	10.47	49.94	156.15	17.16	133.33	313.46	301.08	164.83	40.50	76.62	254.22	66.46
Other Goods and Services	117.51	114.04	138.61	55.34	78.74	176.70	333.62	171.84	108.03	120.38	270.23	94.24
Total Nonfood	693.02	743.50	1,924.46	307.74	1,654.76	2,932.76	2,995.84	2,747.71	928.11	965.15	2,647.58	1,122.37
Total Expenditure	2,470.82	3,364.14	5,107.13	2,245.10	5,697.18	7,507.04	7,653.36	7,628.02	3,259.47	3,783.60	6,825.69	4,042.30
Average Household Size	4.831	5.396	5.475	4.748	4.517	5.806	5.670	5.905	4.754	5.438	5.607	5.135

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).

Table A.16. Average monthly household expenditure on item groups for educational level of rural, urban, and all household heads

Item Group	Rural					Urban					All				
	No School	Primary	Secondary	Higher	Not Reported	No School	Primary	Secondary	Higher	Not Reported	No School	Primary	Secondary	Higher	Not Reported
	(kwacha)														
Total Food	2,141.49	2,590.47	3,314.45	5,551.10	1,417.75	3,453.95	3,718.22	4,836.40	6,924.63	4,151.23	2,258.72	2,818.21	4,141.87	6,444.59	1,810.09
Clothing and Footwear	154.07	217.04	939.03	564.18	0.00	294.22	517.80	548.26	1,063.38	0.00	166.59	277.78	726.59	888.91	0.00
Rent, Fuel, and Light	24.60	32.45	87.86	160.49	10.64	685.19	612.80	930.76	1,237.82	952.47	83.61	149.64	546.10	861.30	145.83
Furniture and Household Goods	108.54	246.17	633.38	892.31	104.26	390.05	414.96	707.60	1,527.36	350.04	133.69	280.26	673.73	1,305.41	139.54
Medical Services, Drugs	16.68	15.23	29.16	41.07	0.30	13.24	20.26	35.13	111.65	0.00	16.37	16.25	32.40	86.98	0.26
Transport - Communication	21.41	49.79	85.55	228.71	0.00	93.98	54.06	162.04	719.18	0.00	27.89	50.65	127.13	547.76	0.00
Recreation - Education	22.69	58.36	84.15	392.41	1.39	91.72	151.01	373.29	526.69	64.81	28.85	77.07	241.34	479.76	10.49
Other Goods and Services	64.01	132.73	135.73	157.20	20.22	114.64	186.98	298.58	586.63	86.04	68.53	143.68	224.27	436.54	29.67
Total Nonfood	412.00	751.77	1,994.85	2,436.36	136.81	1,683.05	1,957.86	3,055.66	5,772.70	1,453.35	525.53	995.33	2,571.57	4,606.67	325.78
Total Expenditure	2,553.49	3,342.24	5,309.31	7,987.46	1,554.56	5,137.00	5,676.05	7,892.05	12,697.33	5,604.58	2,784.25	3,813.54	6,713.43	11,051.26	2,135.86
Average Household Size	4.876	5.526	5.714	5.971	3.032	5.679	5.696	5.723	5.546	6.945	4.948	5.560	5.719	5.695	3.594

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).

Table A.17. Average monthly household expenditure on item groups for marital status of rural, urban, and all household heads

Item Group	Rural				Urban				All			
	Single	Married	Widowed	Divorced	Single	Married	Widowed	Divorced	Single	Married	Widowed	Divorced
	(kwacha)											
Total Food	2,212.05	2,868.41	1,602.55	2,164.14	3,383.51	4,781.94	4,230.89	4,829.25	2,956.97	3,411.93	2,126.16	2,683.07
Clothing and Footwear	353.71	327.93	92.88	342.06	643.06	617.53	104.37	558.70	486.23	410.19	95.17	384.24
Rent, Fuel, and Light	61.82	41.95	24.91	44.01	787.96	851.87	699.35	976.66	394.39	272.00	159.27	225.61
Furniture and Household Goods	315.55	312.50	86.96	217.42	523.51	746.51	473.92	606.61	410.80	435.78	164.05	293.20
Medical Services, Drugs	3.35	21.70	6.21	9.81	24.64	37.54	28.79	94.72	13.10	26.20	10.71	26.35
Transport - Communication	39.28	61.72	11.21	24.97	161.10	121.45	47.82	1,308.31	95.08	78.69	18.50	274.86
Recreation - Education	46.05	73.29	16.36	28.13	336.83	303.80	131.18	240.35	179.22	138.76	39.23	69.45
Other Goods and Services	112.23	127.71	62.02	68.05	147.17	318.58	176.66	265.15	128.23	181.93	84.86	106.43
Total Nonfood	931.99	966.80	300.56	734.45	2,624.27	2,997.28	1,662.08	4,050.49	1,707.05	1,543.55	571.79	1,380.13
Total Expenditure	3,144.05	3,835.21	1,903.11	2,898.59	6,462.78	7,779.22	5,892.97	8,879.74	4,664.02	4,955.48	2,697.95	4,063.21
Average Household Size	3.790	5.808	3.725	4.352	2.650	6.278	5.720	4.715	3.268	5.941	4.123	4.422

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).

Table A.18. Average monthly household per capita expenditure on item groups for sex of rural, urban, and all household heads

Item Group	Rural		Urban		All	
	Male Head	Female Head	Male Head	Female Head	Male Head	Female Head
	(kwacha)					
Total Food	497.97	478.74	803.67	883.34	591.81	575.68
Clothing and Footwear	57.98	58.61	103.37	107.24	71.91	70.26
Rent, Fuel, and Light	7.68	8.41	142.44	184.35	49.05	50.56
Furniture and Household Goods	54.40	47.05	122.13	122.99	75.19	65.24
Medical Services, Drugs	3.57	2.52	6.91	6.52	4.60	3.48
Transport - Communication	10.65	6.01	34.45	34.95	17.96	12.94
Recreation - Education	12.77	6.64	52.39	48.86	24.93	16.76
Other Goods and Services	21.81	20.11	51.11	45.34	30.80	26.15
Total Nonfood	168.86	149.35	512.81	550.25	274.44	245.40
Total Expenditure	666.83	628.09	1,316.48	1,433.59	866.25	821.08

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).

Table A.19. Average monthly per capita expenditure on item groups for employment status of rural, urban, and all household heads

Item Group	Rural				Urban				All			
	Not Applicable	Self - Employed	Employed	Unemployed	Not Applicable	Self-Employed	Employed	Unemployed	Not Applicable	Self-Employed	Employed	Unemployed
	(kwacha)											
Total Food	368.03	485.66	581.26	408.00	895.02	787.83	821.43	826.45	490.42	518.33	745.19	568.67
Clothing and Footwear	86.54	48.47	119.41	18.73	5.17	127.29	93.26	181.05	67.64	56.99	101.56	81.05
Rent, Fuel, and Light	2.78	5.58	20.71	12.28	135.10	120.59	159.41	120.37	33.51	18.01	115.38	53.78
Furniture and Household Goods	27.60	42.81	124.57	16.33	149.02	94.49	132.70	94.06	55.80	48.40	130.12	46.18
Medical Services, Drugs	0.05	3.85	1.30	2.19	13.97	9.79	5.90	4.30	3.28	4.49	4.44	3.00
Transport - Communication	0.00	6.68	31.51	0.00	16.16	68.54	25.15	8.52	3.75	13.37	27.17	3.27
Recreation - Education	2.17	9.25	28.66	3.61	29.52	53.99	53.10	27.91	8.52	14.09	45.34	12.94
Other Goods and Services	24.33	21.13	25.31	11.65	17.43	30.43	58.84	29.10	22.73	22.14	48.20	18.35
Total Nonfood	143.47	137.79	351.47	64.81	366.38	505.11	528.36	465.31	195.23	177.50	472.21	218.59
Total Expenditure	511.50	623.45	932.73	472.80	1,261.40	1,292.94	1,349.79	1,291.75	685.66	695.82	1,217.40	787.25

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).

Table A.20. Average monthly per capita expenditure on item groups for educational level of rural, urban, and all household heads

Item Group	Rural					Urban					All				
	No School	Primary	Secondary	Higher	Not Reported	No School	Primary	Secondary	Higher	Not Reported	No School	Primary	Secondary	Higher	Not Reported
	(kwacha)														
Total Food	439.16	468.82	580.03	929.69	467.63	608.16	652.83	845.09	1,248.50	597.71	456.49	506.88	724.23	1,131.68	503.71
Clothing and Footwear	31.59	39.28	164.33	94.49	0.00	51.81	90.91	95.80	191.73	0.00	33.67	49.96	127.05	156.09	0.00
Rent, Fuel, and Light	5.05	5.87	15.37	26.88	3.51	120.65	107.59	162.64	223.18	137.14	16.90	26.92	95.49	151.25	40.58
Furniture and Household Goods	22.26	44.55	110.84	149.44	34.39	68.68	72.86	123.64	275.38	50.40	27.02	50.41	117.81	229.23	38.83
Medical Services, Drugs	3.42	2.76	5.10	6.88	0.10	2.33	3.56	6.14	20.13	0.00	3.31	2.92	5.67	15.27	0.07
Transport - Communication	4.39	9.01	14.97	38.30	0.00	16.55	9.49	28.31	129.67	0.00	5.64	9.11	22.23	96.19	0.00
Recreation - Education	4.65	10.56	14.73	65.72	0.46	16.15	26.51	65.23	94.96	9.33	5.83	13.86	42.20	84.25	2.92
Other Goods and Services	13.13	24.02	23.75	26.33	6.67	20.19	32.83	52.17	105.77	12.39	13.85	25.84	39.21	76.66	8.26
Total Nonfood	84.49	136.05	349.10	408.04	45.13	296.35	343.75	533.93	1,040.81	209.26	106.21	179.02	449.65	808.94	90.66
Total Expenditure	523.65	604.87	929.13	1,337.72	512.75	904.50	996.59	1,379.02	2,289.32	806.97	562.70	685.90	1,173.88	1,940.61	594.37

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).

Table A.21. Average monthly per capita expenditure on item groups for marital status of rural, urban, and all household heads

	Rural				Urban				All			
Item Group	Single	Married	Widowed	Divorced	Single	Married	Widowed	Divorced	Single	Married	Widowed	Divorced
Total Food	583.59	493.89	430.19	497.32	1,448.55	761.66	739.71	1,024.16	904.80	574.26	515.74	606.70
Clothing and Footwear	93.32	56.46	24.93	78.61	242.67	98.36	18.25	118.49	148.78	69.04	23.09	86.89
Rent, Fuel, and Light	16.31	7.22	6.69	10.11	297.35	135.68	122.27	207.12	120.68	45.78	38.63	51.01
Furniture and Household Goods	83.25	53.81	23.34	49.96	197.56	118.90	82.86	128.65	125.70	73.34	39.79	66.30
Medical Services, Drugs	0.88	3.74	1.67	2.26	9.30	5.98	5.03	20.09	4.01	4.41	2.60	5.96
Transport - Communication	10.36	10.63	3.01	5.74	60.80	19.34	8.36	277.46	29.09	13.24	4.49	62.15
Recreation - Education	12.15	12.62	4.39	6.46	127.11	48.39	22.93	50.97	54.84	23.35	9.52	15.71
Other Goods and Services	29.61	21.99	16.65	15.64	55.54	50.74	30.89	56.23	39.24	30.62	20.58	24.07
Total Nonfood	245.88	166.46	80.68	168.78	990.33	477.40	290.59	859.01	522.34	259.79	138.70	312.08
Total Expenditure	829.47	660.35	510.87	666.10	2,438.88	1,239.06	1,030.30	1,883.17	1,427.14	834.05	654.44	918.78

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).

APPENDIX B.

TECHNICAL DESCRIPTION OF COMPUTATIONS FOR THE ZAMBIAN HEIS

This appendix describes the computations used in this report. The methods involve primarily those for constructing the household food consumption measurements: expenditure, prices, quantity and nutrient availabilities. The keys to the computations of quantity and nutrient availabilities were the expenditures and prices. However, specific assumptions were made for all of the computational variables, and these assumptions are also discussed.

In determining the aggregate food expenditure of the specific households, it was necessary to compute and to sum the expenditure on each individual food item. For each household, the results of four visits for reported food item purchases or home production consumption needed to be available. From the household's reported expenditure information during each of the four, 7-day reference periods, a 28-day survey enumeration period for expenditure was computed by summing the 7-day information for each reference period. This summed value for each item was then extrapolated to an annual base by multiplying by the number of 28-day periods per year. The two-step procedure can be summarized as follows:

$$1)\ 28\text{-}day\ item_i\ expenditure = \sum_{j=1}^{4} item_{ij},$$

$$where\ j = the\ survey\ reference\ period\ (1\text{-}4),$$

$$item_i = household\ expenditure\ for\ item\ i\ for\ the\ reference\ period$$

$$2)\ annual\ item_i\ expenditure = (28\text{-}\ day\ item_i\ expenditure) * (\frac{365}{28})$$

This procedure was followed to calculate the annual food item expenditure of each household. The expenditure aggregates for food groups and total food were determined in a straightforward manner by simply summing the computed expenditures of the individual food items composing the group.

For the descriptive tabular analysis of this report, the *average* household shares of expenditure were estimated by using the average of expenditures for the numerator and denominator of the share relationship. Therefore, the average shares of household expenditure for either a population or subpopulation of households were defined as the proportion of average expenditure (numerator) that was a component of a broader classification of average expenditure (denominator) for those households. This method of calculating an expenditure share is sometimes referred to as a *ratio of means*.

The estimation of a specific food item's market price as well as the nonmarket prices for the food items were very important for the analysis of quantities and nutrient availability. Once the item's price had been estimated, the imputation of the quantity of the food item available for household consumption could be made by dividing the household expenditure by the representative price per standard unit. After obtaining the food quantities, it was possible to calculate the nutrient availability, directly, using the food composition tables.

The determination of prices, that the households paid, was based upon an iterative procedure developed to filter the "noise" in the data. For many of the households, the reported units of measure were not interpretable in terms of a standard unit because many of the food item data were reported as being in heaps, plates, or unknown units and the quantity values at times seemed unreasonable when associated with the units of measure and the expenditures. After evaluating the reported food item data for these measurement problems, it was determined that in order to translate the available food expenditure information into quantities, it would be necessary to impute the item price for each household.

The price imputation process started with a review of the household's reported units of measure and number of unit information for each food item. It was only after this review that the extent of the data reporting/enumeration problems was realized. In general, there were many reported food transactions for which the reported unit of measure and number of units appeared to be unreasonable and/or there was no way to determine a quantity in using a standard unit of measure. However, for the most part, the reported item expenditure values appeared to be reasonable for the sample periods.

The problems were resolved by using information that was believed to be accurately reported. This required making several assumptions. First, it was believed that the item codes had been

assigned correctly. Second, it was believed that the reported item expenditures were more accurately reported and enumerated than information on the units of measure and number of units. Therefore, it would be possible to use the item expenditure values and the representative prices for estimating the available quantities.

Since prices paid for food items were not directly reported by the households, it was necessary to impute prices for several available standard unit of measure items. For the purposes of this report, only prices for the four major maize commodities -maize meal, maize grain, breakfast meal and roller meal- were determined. But, it would be possible to estimate prices for other food items in the same way.

The most frequently reported standard unit of measure for each of the maize items was the 25-kg bag. An iterative, variance reduction procedure was used to filter the HEIS data for representative prices of the 25-kg bags. The maize items had been reported as either being home produced by the household or purchased in the market. The variance reduction procedure used the reported item expenditure values for a specific standard-unit of measure. It reduced the expenditure variance after each iteration by deleting observations based upon whether the reported expenditure value was within one standard deviation of the mean. It would normally require only three or fewer iterations to reduce the item expenditure variance and to stabilize it within the one standard deviation criteria. Examples 1 and 2 below illustrate the iterative variance reduction procedure for estimating representative prices of two of the maize commodities: breakfast meal, purchased by urban households; and maize meal, home produced by rural households. All of the estimated representative prices for the maize items, those reported in Table 54, were estimated using this procedure.

It was possible for four separate prices to have been imputed per 25-kg bag of each maize item (e.g. prices for home produced--rural areas, home produced--urban areas, purchased--rural areas, purchased--urban areas). In reality, only a subset of these possible prices was computed for specific items. For example, it was very unlikely to have much, if any, home produced breakfast meal, and because there were some households that reported this food item, decision rules were applied to associate an item price with an expenditure value in situations when an imputed price was not directly determinable from the data. The two rules used to fill the price gaps in Table 54 assigned a representative price for an item based upon the following criteria: (1) available item prices for a specific type of transaction within an area were assigned to represent any unavailable item price of another transaction type within the same area; and (2) if a computed representative price for a specific

transaction type within an area was unavailable, then representative prices were assigned across areas based upon transaction type.

After prices had been determined for the item, quantities were obtained by dividing the household expenditure values for each maize item by the appropriate 25-kg bag representative price. This quotient was the quantity of the maize item available to the household in terms of 25-kg bags. This quantity value could then be translated into any other standard unit-of-measure, such as kilograms or pounds.

The determination of household nutrient availabilities followed the determination of the available quantities of the maize items. Quantities for each maize item were ultimately expressed as the number of 100-gram edible portions, and these values were multiplied by the appropriate nutrient values from the food composition information, provided in Table 64. This product represented the nutrient availability provided by the specific maize item. Total maize nutrient availability for a household was calculated by simply summing the individual maize item nutrient availabilities within the household.

Example 1. Stages of the iterative filtering procedure that was used to determine the representative price of 25-kg. bags of purchased breakfast meal in urban locations.

Item: Breakfast Meal
Source: Purchased
Location: Urban
Measure: 25-kg

	Quantity	Number of Observations	Mean	Minimum	Maximum	Standard Deviation
Initial	1	221	259.28	160.00	2501.01	155.26
	2	23	493.78	430.00	700.00	64.69
	25	24	245.92	215.00	350.00	35.64
1st Iteration	1	219	247.95	160.00	350.00	29.66
	2	22	484.41	430.00	550.00	47.61
	25	21	235.81	215.00	280.00	22.79
2nd Iteration	1	123	255.85	220.00	275.00	11.85
	2	8	494.37	460.00	520.00	14.84
	25	16	225.75	215.00	250.00	14.84
3rd Iteration	1	74	251.76	250.00	260.00	3.83
	2	5	500.00	500.00	500.00	0.00
	25	13	220.15	215.00	240.00	9.71

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).

Example 2. Stages of the iterative filtering procedure that was used to determine the representative price of 25-kg. bags of home produced maize meal in rural locations.

Item: Maize Meal
Source: Home Produced
Location: Rural
Measure: 25-kg

	Quantity	Number of Observations	Mean	Minimum	Maximum	Standard Deviation
Initial	0.5	74	46.39	18.00	170.00	25.62
	1	601	157.65	10.00	720.00	90.83
	2	63	237.70	30.00	5000.00	633.34
	25	139	195.22	20.00	300.00	58.01
1st Iteration	0.5	66	39.17	37.00	70.00	5.14
	1	405	161.08	68.00	240.00	47.10
	2	62	160.89	30.00	700.00	172.94
	25	118	213.90	150.00	250.00	19.68
2nd Iteration	0.5	62	37.98	37.00	40.00	0.42
	1	250	169.12	115.00	200.00	24.92
	2	51	93.82	30.00	300.00	96.33
	25	96	214.64	200.00	230.00	8.56
3rd Iteration	0.5	51	38.00	38.00	38.00	0.00
	1	153	162.16	150.00	190.00	12.59
	2	40	44.75	30.00	60.00	5.99
	25	73	217.19	210.00	220.00	4.49

SOURCE: June 1991 Zambian Household Expenditure and Income Survey (HEIS).

END NOTES

1. The Prices and Incomes Commission was disbanded in the first quarter of 1992.

2. Five districts were not included in the sampling frame because a prelisting of households had not been completed for their census supervisory areas.

3. These were established by the CSO's census mapping project conducted prior to the 1990 Zambian Census of Population, Housing, and Agriculture.

4. The rural and urban designations of households were based upon a LOTUS 1-2-3 worksheet provided by the CSO that detailed information on the CSA location of the household population as defined for the 1990 Zambian Census of Population, Housing, and Agriculture.

5. This approximate proportion of rural/urban households has been reported in the CSO's report, "1990 Census of Population, Housing, and Agriculture, Preliminary Report." However, this proportion does not correspond with the proportion of rural/urban CSA-defined households.

6. These were the rural and urban household populations identified by the CPHA.

7. The HEIS cluster design attempted to minimize the homogeneity of cluster response through random selection of both the cluster and the observational units (households).

8. Life expectancies have been reported to be approximately 46.7 years for men and 50.5 years for women.

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