

# **Nutritional Status of Children Less Than Five Years of Age in Six Drought-Affected Regions of Georgia: 2000 - 2001**

**Conducted by**

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## **Final Report**

The inclusion of any information, statements, or findings in this report do not necessarily express the opinion of, or imply an endorsement from, the United States Agency for International Development (USAID).



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## Glossary

**Acute malnutrition (wasting)** - Serious and usually current periods of inadequate food intake.

**Anthropometry** - The study and technique of taking body measurements, especially for use on a comparison or classification basis.

**Chronic malnutrition (stunting)** - Extended periods of inadequate food intake.

**Cluster sample** - The selection of groups who are geographically close to one another for a sample; usually used in instances when lists of households or individuals are not readily available (UNICEF, 1995).

**Confidence interval** - An interval that has a specified probability of covering the true population value of a variable or condition.

**Cut-off point** - Predetermined risk levels used to differentiate between malnourished and adequately nourished segments of a population.

**Distribution** - A display that shows the number of observations (or measurements) and how often they occur.

**Epi Info software** - A series of microcomputer programs produced by the CDC and WHO, for handling epidemiologic data in questionnaire format and for organizing study designs and results into text that may form part of written reports.

**Food security** - Access by all people at all times to enough food for an active healthy life.

**Household** - One person who lives alone or a group of persons, related or unrelated, who share food or make common provisions for food and possibly other essentials for living (FAO, 1990); the smallest and most common unit of production, consumption and organization in societies (McLean, W.P., 1987).

**Indicator** - A measure used at the population level to describe the proportion of a group below a cut-off point; example: 30% of the region's children are below -2 SD for weight-for-age.

**Intra-household distribution** - The distribution of food within a household; the act of determining what proportion of the total household food supply each member of the household receives.

**Height-for-age** - An index of past or chronic nutritional status; an index which assesses the prevalence of stunting.

**Longitudinal survey** - A survey that follows people over time, to capture data on an evolving situation or problem. Different types of longitudinal surveys include: cohort studies, trend studies and panel studies.

**Malnutrition** - A nutritional disorder or condition resulting from faulty or inadequate nutrition.

**Mean** - The average value for a set of data; a measure of central location obtained by adding all the data items and dividing by the number of items.

**Measurement error** - The error that can result in a survey from incorrect (anthropometric) measurements being taken.

**Median** - A measure of central location for a set of data; the value that falls in the middle of a set of data when all the values are ordered from lowest to highest.

**MICS** – Multiple Indicator Cluster Survey. A survey conducted by the National Center for Disease Control and UNICEF in 1999.

**NCHS reference standards** - Growth percentiles developed by the National Center for Health Statistics in Atlanta that provide standards for weight-for-age, length-for-age and weight-for-length.

**Normal distribution** - A normal distribution takes a bell-shape and has the following characteristics: the highest point occurs at the mean; it is symmetric; the standard deviation determines the width of the distribution; and it can be described with only two numbers: the mean and the standard deviation.

**Panel studies** - A type of longitudinal survey that studies the same people over time.

**Population** - The entire group of units that is the focus of the study (everyone in the country, or those in a particular location, or a special ethnic, economic or age group).

**Prevalence** - The proportion of the population that has a condition of interest (i.e. wasting) at a specific point in time.

**Protein-energy malnutrition** – Under-nutrition that results in an individual not receiving adequate protein or calories for normal growth, body maintenance, and the energy necessary for ordinary human activities.

**References** or **reference standards** - Measurement data collected on representative, healthy populations through standardized methods; Data set that allows comparisons to be made between its values and individuals or populations being measured.

**Risk** - The possibility of suffering harm; danger; "a continuous variable relating to the likelihood that a defined undesirable outcome will occur."

**Sample** - A part or subset of the population used to supply information about the whole population.

**Sample size** - The number of households or persons selected to be included in a sample or survey.

**Sampling** - The technique of selecting a representative part of the population for the purpose of determining characteristics of the whole population.

**Sampling error** - The difference between the results obtained from a survey sample and those that would have been obtained had the entire population been surveyed. The size of sampling error varies both with the size of the sample and with the percentages giving a particular response.

**Standard deviation** - A statistical measure of dispersion away from the mean; the positive square root of the variance.

**Stunting** - A slowing of skeletal growth that results in reduced stature or length; a condition that usually results from extended periods of inadequate food intake, especially during the years of greatest growth for children.

**Survey** - A method of gathering information about a large number of people by talking to a few of them; a way to collect information on people's needs, behavior, attitudes, environment and opinions, as well as on such personal characteristics as age, income and occupation.

**Sustainable income** – in this survey this term is used for long-term sources of income, e.g. salary/wages, transfers (stipend, pension), alimony, rent, selling agrarian products, etc.

**Underweight** - A condition measured by weight-for-age; a condition that can also act as a composite measure of stunting and wasting.

**Unsustainable income** - in this survey this term is used for short-term sources of income, e.g. remittances, selling property, support from relatives, loans/debts.

**Variable** - A quantity that may vary from object to object; a characteristic of a unit.

**Wasting** - A condition measured by weight-for-height; a condition that results from the loss of both tissue and fat, in a body; a condition that usually reflects severely inadequate food intake happening at present.

**Weight-for-age** - An index of acute malnutrition; a valuable index for use with very young children or when length measurements are difficult to do accurately.

**Weight-for-length** - An index of current nutritional status.

**Weighting** - A data analysis process that involves adjusting key variables used for sample selection to their actual proportions in the population.

**Z-score** - A statistical measure of the distance, in standard deviations, of a value from the mean; the standardized value for an item based on the mean and standard deviation of a data set; a standardized value computed by subtracting the mean from the data value  $x$  and then dividing the results by the standard deviation.

## Executive Summary

In August 2000, Save the Children's (SC) Georgia Field Office initiated a discussion with USAID to fund a national study to examine the effect of the 2000 drought on children in Georgia. USAID, through SC's Georgia Assistance Initiative (GAI), financed a three-wave panel study of households having children 0-59 months of age to study acute and chronic malnutrition as well as household food security in the six regions of Georgia. The baseline survey occurred in December 2000, with subsequent surveys conducted in April and August 2001 in the regions of Imereti, Kvemo Kartli, Samtskhe-Javakheti, Mtskheta-Mtianeti, Shida Kartli and Kakheti. A well-trained and experienced team from the National Center for Disease Control (NCDC) conducted the fieldwork. Technical assistance was provided by Irwin Shorr (a private consultant) and Arnold Timmer from the Centers for Disease Control and Prevention, Atlanta, Georgia, USA.

**Map of Georgia and Surveyed Regions**



The initial wave of the three-wave panel study contacted 3039 households having 4001 children 0 to 59 months of age. The goal of a panel study is to contact the same households and same children at all three points in time. However, due to issues such as replacement<sup>1</sup>, refusal, movement, resettlement, and illness, it was not possible to achieve this goal completely. Therefore, Table 1 presents the number of households and children contacted during each of the three surveys and the number of identical households and children contacted for all three surveys.

**Table 1: Number of Households and Children Surveyed and Measured in Each Wave.**

	December 2000	April 2001	August 2001	Panel data (same households and children for all three surveys)
No. of Households	3039	3258	3251	2399
No. of Children	4001	4259	4183	3152

The nutritional status of children was assessed using anthropometric indicators which involved measuring the weight and height of children with electronic scales and measuring boards. Household food security was measured using a standardized set of questions developed by the United States Department of Agriculture (USDA) in 1995 and continually updated. The USDA household food security module is a set of questions that can be combined into a single overall measure called "the food security scale."

The essential results of the study are:

<sup>1</sup> Additional children were assessed to replace those children who were under one month of age (0) in December 2000 and, thus, would be four months at April 2001. Likewise, in the August 2001 survey additional children were assessed to replace those children 0 months of age in the April 2001 survey. Furthermore, children who were 59 months of age in December 2000, were also assessed in the April and August 2001 surveys.

## **Acute Malnutrition (wasting)**

1. Using the NCHS Growth Reference, overall findings show low levels of acute malnutrition among children in these regions. The overall prevalence of acute malnutrition (indicated by children with less than  $-2$  Z-score) was 1.0% in December 2000, 0.9% in April 2001, and 1.1% in August 2001. Based on the World Health Organization's (WHO) criteria, any national prevalence rate of wasting less than 5% is considered low. When compared with other countries in the Caucasus region, the prevalence of wasting in Georgia during this period of time was lower than what was found in Azerbaijan in April 1996 (3.6%) and Armenia in 1998 (4.3%).
2. Compared with a local study, conducted in 1999, the national MICS study found a slightly higher rate of 2.3% of wasting among children. In contrast, the percentage of overweight children in this study ranged from 8.5% to 8.9%, which is lower than the percentage of overweight children found in the MICS survey (12.7%). However, it must be said that the MICS covered the entire nation, which this study did not.
3. Comparative analysis of the six regions shows that in December 2000 the highest prevalence of wasting was in Kvemo Kartli (1.5%), followed by Shida Kartli (1.1%), Kakheti (1.1%) and Samtskhe-Javakheti (0.9%). In April 2001, the highest frequencies of wasting were in the regions of Imereti (1.1%) and Kvemo Kartli (0.9%). In August 2001, the highest frequencies of wasting were in the regions of Mtskheta-Mtianeti (1.7%), Kakheti (1.5%) and Samtskhe-Javakheti (1.2%). For all three points in time, the regional differences are not statistically significant.
4. A higher prevalence of wasting was found among children 6 months to 2 years of age than among children in the other age groups. However, these differences were not statistically significant.
5. The occurrence of wasting among children with low birth weight was 2.9%, 1.6% and 2.0% compared to 0.7%, 0.7% and 0.9% for normal birth weight children for each survey respectively, although this difference is not statistically significant.
6. Rural children have a higher prevalence of wasting than urban children, although this difference is not statistically significant.
7. There is no statistically significant difference in the prevalence of wasting in children of different ethnic groups.
8. There is no statistically significant difference in the prevalence of wasting in children from different size households.
9. Over the three surveys, children whose caretaker had a only a primary education had a statistically significantly higher prevalence of wasting (12.2%, 10.3%, and 7.1% respectively) than children whose caretaker had completed more than a secondary level of education (1.7%, 0.7% and 1% respectively).
10. When statistically controlling for other factors, the most significant factors contributing to low weight-for-height Z-scores were 1) caretakers having a low level of education, 2) low birth weight, 3) a poor diet, 4) low household income.

## **Chronic Malnutrition (stunting)**

1. Using the NCHS Growth Reference, the prevalence of stunting was 8.1% in December 2000, 10.4% in April and 10.0% in August 2001. Based on the WHO criteria, any national prevalence rate of stunting less than 20% is considered low. Comparatively, within the Caucasus region, this prevalence of wasting was lower than the rate found in Azerbaijan in April 1996 (21.5%), but close to the occurrence of stunting found in Armenia in May 1998 (12.8%). In addition, compared with the national 1999 MICS study in Georgia which found an 11.7% prevalence of stunting, this rate is

slightly lower.<sup>2</sup>

2. Comparative analysis of the six regions shows that the highest prevalence of wasting among children occurs in the southern regions of Kvemo Kartli and Samtskhe-Javakheti and in the central region of Shida Kartli.
3. There is no statistically significant difference in the prevalence of stunting between boys and girls.
4. There is no statistically significant difference between age groups on the prevalence of stunting, although an expected lower prevalence of stunting is found among children less than 1 year of age, especially during the 3<sup>rd</sup> round (August 2001) of the survey.
5. A statistically significant difference was found in the prevalence of stunting between low and normal birth weight children. In December 2000, the rate of stunting was higher in children with a low birth weight (20.0%) than in children with normal birth weight (7.1%). In the final survey, the rate of stunting for each birth weight group was 29.1% and 8.6%, respectively.
6. There is no statistically significant difference in the prevalence of stunting between children living in urban and rural areas. However, during all three surveys, children living in rural households had a slightly higher prevalence of stunting than children in urban areas (8.9%, 11.35%, 10.9% vs. 6.7%, 9.0% and 8.3% respectively).
7. There is no statistically significant difference in the prevalence of stunting between children living in different size households or rural/urban areas.
8. The highest prevalence of stunting is among Azeri children, followed by Armenian children. Comparatively, Georgian children have a lower prevalence of stunting than children of all other ethnicities. However, due to small sample sizes of other ethnicities, these differences are not statistically significant.
9. When statistically controlling for other factors, the most significant factors contributing to low height-for-age Z-scores were 1) caretakers having a low level of education, 2) low birth weight, 3) regional differences, 4) a poor diet, and 5) low household income.

## Food Consumption

1. The study examined the frequency (daily, weekly, monthly or never) that children ate 19 different food items. The average number of food items eaten by children was 5.3 in December 2000, slightly increasing to an average of 5.8 food items in April 2001, and 6.0 items in August 2001. Of the six regions, the three regions in which children eat the fewest number of food items (least variable diet) are Kvemo Kartli (5.2), Shida Kartli (5.2) and Samtskhe-Javakheti (5.8). The most varied diet was in the Mtskheta-Mtianeti region (6.3 food items).
2. Over the three surveys, approximately 15% of the children did not drink milk or eat milk products (cheese, cottage cheese or yogurt – *matsoni*) on a daily basis. Cottage cheese is not consumed by approximately 70% of surveyed children. Overall, the lowest percentages of children consuming milk products on a daily basis live in the regions of Mtskheta-Mtianeti, Kvemo Kartli and Samtskhe-Javakheti.
3. The percentage of children who ate meat on a daily basis is also quite low. In December 2000, 9.5% ate meat on a daily basis, decreasing in April 2001 to 4.6% and to 2.7% in August 2001. Comparing the regions, the lowest average percentages of children eating meat daily, over all three surveys, were in Samtskhe-Javakheti regions (2.5%), Shida Kartli (3.9%) and Kvemo Kartli (4.4%).

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<sup>2</sup> No confidence intervals were available for the MICS, therefore no statement can be made whether the difference is significant.

4. Of the 19 food items, bread, sugar, and potatoes were the most frequently consumed food on a daily basis by the greatest proportion of children (approximately 97%, 82% and 69% respectively for each survey).
5. The percentage of children eating fish on a daily basis is low (0.7%, 0.2% and 0.1% for each survey).
6. According to the results of the third round, the highest rate of wasting was in Mtskheta-Mtianeti, Kakheti and Samtskhe-Javakheti, and the highest rate of stunting was in Kvemo Kartli, Samtskhe-Javakheti and Shida Kartli regions. It is in these regions that the fewest of the 19 different food products studied were consumed.

## Household Food Security

1. The percentage of households that were food insecure, that is, experiencing either moderate or severe hunger, increased over the three surveys. In December 2000, 59.5% of households were food insecure, increasing to 63.5% and 66.1% in April and August 2001, respectively.
2. Over the three surveys, the largest percentages of food insecure households were in Samtskhe-Javakheti (64.8%, 67.6% and 71.2% respectively).
3. A greater percentage of rural households were food insecure over the three surveys (63.3%, 67.6% and 69.9% respectively) than urban households (52.8%, 57.6% and 58.9%).
4. The anthropometric data presented above indicate low levels of acute and chronic malnutrition among children. However, the household food security data indicate a serious problem in almost two-thirds of all households having children 0 to 59 years of age over all three periods of time. These two findings appear, at first-hand, to be contradictory. Nonetheless, during focus group discussions one reason for this discrepancy was revealed; household members mentioned that even though there may be little available food, it is the children who are fed first. As explained by one mother, *“Children and elderly are in the same category. They should have everything necessary. We can survive [due to the] lack of some products but you cannot explain this to a child. Anyway you want everything good for your child.”* (Pregnant woman, Mtskheta).
5. Through the use of multivariate statistical analysis, the most important predictors of household food insecurity were 1) having little to no household income or wealth, 2) living in the Imereti region, 3) being ethnically Azeri, 4) owning little to no land, and 5) living in a rural area.
6. No statistically significant difference was found in wasting or stunting Z-scores, or food security, between households that received and did not receive supplementary food assistance in April and August 2001.

## Summary

Overall, what this study indicates is that the drought did not severely impact the acute nutritional status of children; that is, the prevalence of wasting was low. Rather, the drought added to the already dire situation that impacts the nutritional status of mothers, the household economic situation, and overall household food security. The long-term impact of the drought, coupled with chronic economic poverty, will lead to the decline of the health status of children in Georgia. And, as their health status declines so will their ability to learn and be healthy participants in Georgia's future development.

### Summary Table of Indicators

Indicators (%)		Regions												Total	
		Imereti		Kvemo Kartli		Samtskhe-Javakheti		Mtskheta-Mtianeti		Shida Kartli		Kakheti			
		%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI	%	95% CI		
Weight for Height (Wasting) <-2 Z score in children 0-59 months of age.	<i>Dec 2000</i>	0.5	0.0 - 1.0	1.5	0.1 - 2.9	0.9	0.3-1.6	0.6	0.0-1.3	1.1	0.4-1.8	1.1	0.2-1.9	1.0	0.5-1.4
	<i>April 2001</i>	1.1	0.2 - 1.9	0.9	0.0 - 1.8	0.8	0.1-1.4	0.8	0.0-1.6	0.8	0.1-1.4	0.6	0.0-1.2	0.9	0.5-1.2
	<i>August 2001</i>	1.0	0.1 - 1.8	0.4	0.0 - 1.0	1.2	0.3-3.1	1.7	0.0-1.6	0.6	0.0-1.2	1.5	0.7-2.3	1.0	0.6-1.3
Height for Age (Stunting) <-2 Z score in children 0-59 months of age.	<i>Dec 2000</i>	6.4	3.8 - 9.0	11.7	8.1 - 15.4	10.6	8.6-12.6	6.4	4.0-8.8	8.6	5.6-11.5	5.4	3.7-7.0	8.1	6.9-9.4
	<i>April 2001</i>	8.5	5.5 - 11.6	14.0	10.0-17.9	15.1	12.1-18.0	7.2	4.7-9.7	11.2	7.4-15.0	6.9	4.1-9.8	10.4	8.9-12.0
	<i>August 2001</i>	6.1	3.7 - 8.7	14.8	10.2-19.5	13.7	10.8-16.7	7.4	4.7-10.1	11.9	7.9-15.8	7.5	3.8-11.3	10.0	8.4-11.6
Household Food Insecurity (moderate + severe hunger)	<i>Dec 2000</i>	56.1		58.5		64.8		56.5		61.3		63.6		59.5	
	<i>April 2001</i>	63.2		56.5		67.6		56.2		68.3		68.8		63.5	
	<i>August 2001</i>	63.2		64.9		71.2		60.4		69.6		68.2		65.5	

## 1. INTRODUCTION

### 1.1. Background and Planning of the Survey

Georgia is one of the post-Soviet countries that gained independence in 1991. Georgia is bordered on the north and northeast by Russia, on the southeast by Azerbaijan, on the south by Armenia and Turkey, and on the west by the Black Sea. In spite of its small territory (about 70,000 sq.km), the country has a varied physical and geographical environment and climatic conditions. Historically, and up to the present time, household livelihood strategies differ substantially by region.

In 1999, the State Department of Statistics estimated the population of Georgia to be 4.6 million inhabitants (not including Abkhazia and South Ossetia).<sup>3</sup> Slightly more than a half of the population resides in urban areas.

The majority of the population is ethnic Georgian (70%), with smaller percentages of other ethnic groups such as Armenians, Russians, Azerbaijanis, Ossetians, Greeks, Abkhazians, Kurds, and Ukrainians.<sup>4</sup> Ethnicity in this survey was determined by the self-report of the child's primary caregiver, which was overwhelmingly the mother.

#### Regions

The six regions of Georgia surveyed differ from each other by geography, climate, cultural-ethnic traditions, nutritional habits, and the level of socio-economic development.

Imereti - is divided into two geographical areas, Zemo (upper) and Kvemo (lower), based on the altitude of the territory above sea level. The climate ranges from subtropical to dry. The soil is barren in Zemo-Imereti, harvests are generally poor, and the main crop is hay. In Kvemo-Imereti viticulture and maize farming are well developed. The main ethnic group is Georgian.

Shida Kartli - has a dry continental climate, with well-developed horticulture and grain farming. The main ethnic group is Georgian.

Kakheti - has an inclement, dry continental climate. The main agricultural branch – viticulture; the other branches of agriculture are also developed, such as grain farming, horticulture, and melons. The main ethnic group is Georgian.

Samtskhe-Javakheti - is a relatively high mountainous region with rigorous winters, short and cold summers, and barren soils. Many households are involved in livestock farming, as well as potato planting, especially those areas 1000 m. above sea level. The main ethnic group is Armenian.

Mtskheta-Mtianeti - is a relatively small region, both geographically and by the number of inhabitants. It is a high mountainous area with small villages. Many households are involved in livestock farming. In this area it is the tradition to pasture livestock in the mountains during the summer months and in the lowlands during the winter months. The main ethnic group is Georgian.

Kvemo Kartli - has a humid climate, with mild winters and long warm summers. Livestock farming, melon and vegetable growing are developed. The main ethnic group is Azeri.

#### Agricultural Practices and Ethnic Eating Habits

Historically, ethnic Georgians have been involved in agriculture and livestock farming. Their nutritional peculiarities are very much dependent upon local agriculture practices of a particular region.

The majority of ethnic Armenians live in the region of Samtskhe-Javakheti. They live in the high mountainous areas and are primarily involved in livestock farming. Barren soil and a rigorous climate limit the development of grain farming and horticulture. Their diet mostly consists of livestock products and potatoes.

Most ethnic Azeris live in the region of Kvemo Kartli, a region of a highly diversified agriculture. Their nutritional peculiarities are highly influenced by their Muslim religious practices.

<sup>3</sup> Unpublished data, State Department of Statistics, April 2000.

<sup>4</sup> The Population of Georgia, All-Georgian World Congress, Tbilisi, 1993.

Other ethnic groups in these six regions are few in number, tend not to live in dense clusters, and are relatively assimilated into the general population.

### Locations

The survey was carried out in three types of locations: city, *daba*, and village. Cities are larger than *dabas* and villages. Cities include settlements such as Kutaisi and Rustavi. Most residents of large cities, due to the collapse of the economy and high unemployment, are involved in small-scale agriculture on plots of land near their houses.

A *daba* is smaller than a city but larger than the village. In the Soviet period, one or two heavy industries were the primary employer for residents. However, most of these industries have closed. Since the collapse of the economy and local industries, residents have recently taken up small-scale agriculture and thus lack basic agricultural knowledge, experience and inputs for its further development.

Villages are smaller settlements located in rural areas. In the Soviet period, most rural residents were employed in agricultural enterprises such as *kolkhozi* (collective farms) or *sovkhozi* (state farms). These agricultural enterprises have closed, thus most residents are involved in a variety of different types of household agriculture.

In summary, many residents in Georgia rely on small-scale, household agriculture for food security. With few inputs, such as irrigation and fertilizers household agriculture relies almost completely upon the weather. Thus, the drought of year 2000 summer was critical to household food security.

### Health Care

The national health care system is directed by the Ministry of Health, Labor and Social Affairs (MoHLSA), with health care being administered by the local authorities that are overseen by MoHLSA regional public health centers. The regional centers monitor all local health services, report communicable diseases, supervise immunization and other preventive activities, and regulate environmental hazards. Health services are provided through three types of health care facilities: a) primary health care network, represented by various ambulatories (e.g. Feldsher Ambulatory Posts and Doctor Ambulatory Centers) in rural areas and public polyclinics and women's consultation clinics in urban areas; b) a secondary health care network, which consist of rural, central district, and municipal hospitals; and c) tertiary health care, delivered by specialized municipal and state level hospitals, polyclinics, and research institutes. Within the context of the transition to a market economy, the medical institutions are gradually changing from solely state financed to self-financing (Resolution 269, July 1995). The recent health care reforms have resulted in a lack of state funds for the health care sector, with most health care expenditures being out-of-the-pocket expenses.<sup>5</sup>

## 1.2. Objectives of the Survey

The objective of this survey was to evaluate the nutritional status of children less than five years of age in six regions of Georgia to determine if there were significant differences over time as a result of the 2000 drought.

Additional goals of the survey were:

- Assess impact of the drought on nutritional status, household food security and coping mechanisms;
- Provide information for targeting food aid: identify who is affected (individuals, households, regions) and;
- Establish a baseline for monitoring emergency program interventions.

Data on physical development (height and weight), breastfeeding, eating of different foods (19 items), the character and number of feedings, occurrence of diarrhea and fever, and type of available health care was collected. In addition, socio-economic indices, such as the amount and sources of income of household were obtained, as well as ownership of assets.

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<sup>5</sup> A Study of Georgian Health Care Financing: Impacts of Alternative Options, Actuarial Research Group, 1998.

## 2. METHODS

### 2.1. Survey design

The survey was conducted in all six regions identified by the Ministry of Agriculture as having severely suffered from the summer drought of 2000. The goal was to obtain a representative number of children 0 to 59 months of age in each of the six regions.

A multistage sampling design was used based on an updated sampling frame maintained by the State Department of Statistics for labor force and other ad hoc surveys. Each region represented separate strata, and each region was stratified by the rural/urban population.

The first stage of the two-stage sample design was a selection of census sectors with probability proportional to the number of households (PPS). This was accomplished by using a systematic sample with a random start in each stratum. In the second stage of sampling, clusters of households were randomly selected in each census sector chosen in the first stage. Cluster size was determined on the number of households required to obtain an average of 20 completed interviews and measurements per cluster. The total number of households in each cluster took into account estimates of unoccupied households, average number of children aged 0 to 59 months of age per household. In households with more than one child in this age range, up to three children were measured. Moreover, an estimated response rate of 90% in urban areas and 92% in rural areas was taken into account.

### 2.2. Sampling

The first stage of the two-stage sample design was a selection of 198 census units using PPS, and each of these units served as the Primary Sampling Units (PSUs). In the second stage households were selected within a PSU in order to find 20 children less than five years of age. The selection was based on a systematic sampling method, and interviews took place in those households that had children less than five years of age.

In the baseline survey of December 2000, a total of 4001 children living in 3039 households were measured. In April 2001, a total of 4259 children living in 3258 households, and in August 2001 a total of 4183 children living in 3251 households, were measured.

The sample size was calculated based on following data:

Design effect	1.35
Expected prevalence of acute malnutrition	2.30%
Margin of errors	1.50%
Attrition	16.00%
Non-response	11.00%
Proportion of children aged 0-64 months in a general population	5.50%

Average size of households by region (taken from the SDS recent quarterly household survey):

Imereti	3.3
Kakheti	3.4
Mtskheta – Mtianeti	3.5
Kvemo Kartli	3.4
Shida Kartli	3.5
Samtskhe-Javakheti	3.8

### 2.3. Training

NCDC was responsible for the coordination and implementation of survey fieldwork. Irwin Shorr, a specialist invited from United States, managed the training of 28 female interviewers, all of whom work for NCDC. Interviewer training took place at the NCDC headquarters in Tbilisi just prior to data collection and consisted of three days of classroom training in fieldwork procedures, measurement

techniques and proper administration of the questionnaire, and three days of practical training in the field with close monitoring by the trainers. A set of practicums were held in a kindergarten and nursing house in Tbilisi, followed by house visits in the village of Sartichala, in the Sagarejo district of Kakheti.

#### **2.4. Data collection**

The interviewers were divided in seven teams, with each team composed of two subgroups. These seven teams traveled throughout the six regions in small jeeps. A fieldwork coordinator managed the fieldwork. Each team was assigned to visit an equal number of primary sampling units in all six regions. Interviews were conducted at the homes of respondents with a structured questionnaire administered by an interviewer which lasted, on average, about 35 minutes (see Interview Guide, page 58). Most interviews were conducted in the Georgian language, with a few being conducted in Russian. All interviewers were bi-lingual in Georgian and Russian. The children's' primary caretakers were interviewed. The majority of primary caretakers were mothers.

Virtually all households agreed to be interviewed and actively participated. The only exceptions occurred in several villages located in the Samtskhe-Javakheti region where local primary health care workers assisted NCDC staff to establish contact with respondents.

To weigh the children, a specially designed UNICEF weighing-scale was used. This scale is not only highly accurate in weighing, but it is very compact, easy to transport, and can provide the difference between mother's and child's weights, when the mother holds the child, thus minimizing errors. The infants were weighed either without clothes, if the room was warm enough. In December 2000, if the room was not heated or warm enough, the child was weighed with few clothes, and then these clothes were weighed together with the mother. Older children were weighed without footwear and with as few clothes as tolerable. All children were weighted within one-hundredth of precision.

The height of all children was measured by special device constructed by the Appropriate Health Resources and Technologies Action Group Ltd. (AHRTAG) Company, which allows one to measure the recumbent height of children less than 2 years of age. The children were measured without footwear within a precision of 0.1 cm. Children under 24 months of age were measured lying down and children 24 to 59 months of age were measured standing.

All completed questionnaires were reviewed in the field by the team supervisors. Afterwards, the fieldwork coordinator took the questionnaires to NCDC headquarters in Tbilisi for data processing.

In addition, two focus group sessions were held in each of the six regions in April 2001 to obtain insights into the effects of the drought. Quotes from the transcripts of these focus groups are highlighted in caption boxes throughout this report.

#### **2.5. Fieldwork**

To complete the fieldwork in the six regions, seven teams were used and each team had a supervisor, three interviewers and a driver; in all, there were 7 supervisors, 21 interviewers, and 1 fieldwork coordinator using 8 vehicles. The December 2000 baseline survey required a total of 28 days to complete, and since this was a panel survey where the same households and children are contacted, the surveys conducted in April and August 2001 took less time, only 14 days to complete.

#### **2.6. Data entry**

Completed questionnaires were first reviewed in the field by team supervisors and then by the fieldwork coordinator. Afterwards, questionnaires were taken to NCDC's headquarters for data entry by the data entry coordinator. Four computer operators were involved in data entry by means of specially developed program.

## 2.7. Data analysis

### 2.7.1 Data cleaning

The database was checked for both random and systematic errors. Furthermore, extreme differences between calculated (using birth date) and reported age (by the caretaker) were checked, as well as outliers for weight, height, weight-for-height, height-for-age and weight-for-age measures.

In a few cases in December 2000 when some households had no heating, children were measured almost fully dressed. Thus, to correct for this extra weight, clothes from several heavily clothed children (2 and 5 years of age) were weighed and this amount was subtracted from the total measured weight of the children. Thus, the clothing weight correction applied for younger children (<3 years of age) was 0.35 kg while this was 0.55 for older children (3 to 5 years of age).

### 2.7.2 Data analysis

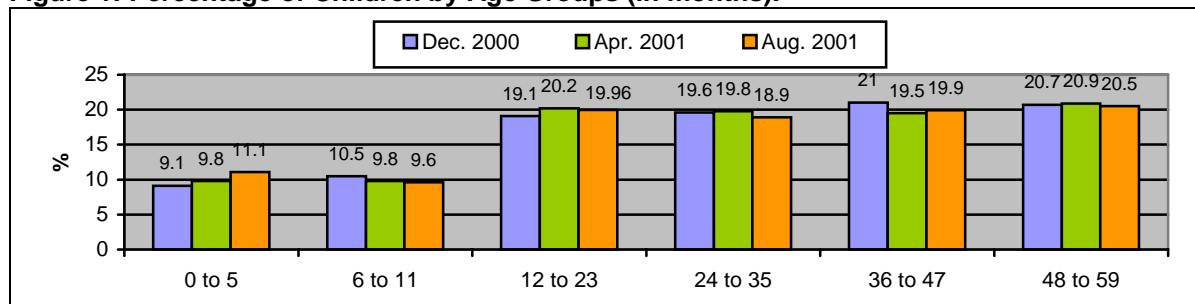
Data analysis was statistically weighted using population estimates for each region, unless otherwise indicated. To perform data analyses, both EpiInfo 6.04 and SPSS for Windows (version 8) software were used. The software, Csample, was used for all weighted analysis. Data analysis was conducted at the Tbilisi office of NCDC, Save the Children Field Office, and in Atlanta, Georgia-USA at the Centers for Disease Control.

## 3. FINDINGS

### 3.1. General description of surveyed children

Figure 1 shows the percentage of children measured by age groups for each survey. Approximately 80% of the children measured were from 12 to 59 months of age.

**Figure 1: Percentage of Children by Age Groups (in months).**



In all regions, there is no significant difference in the percentage of boys and girls between regions, although the percentage of boys is slightly more than girls (as shown in Figure 2).

**Figure 2: Percentage of Male and Female Children by Region (December 2000).**

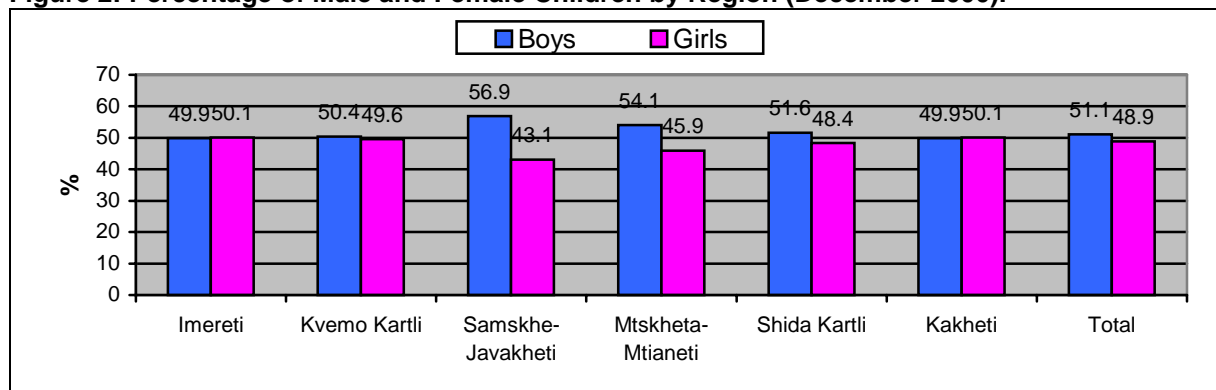
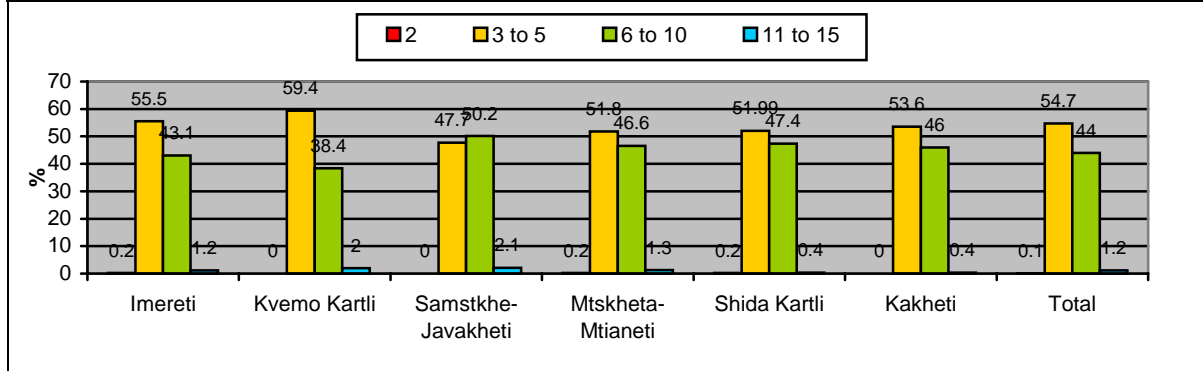


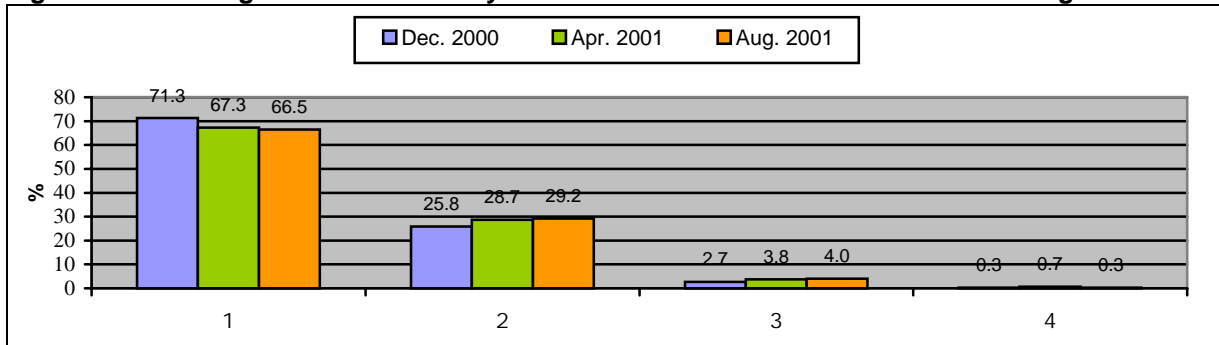
Figure 3 presents the percentage of households by size groups. In all regions, the majority of households contained 3 to 5 members, except in Samtskhe-Javakheti where slightly more than one-half (50.2%) of the households surveyed contained 6 to 10 members. The average size of households was 5.5 members.

**Figure 3: Percentage of Households by Number of Household Members in December 2000.**



The average number of children less than 5 years of age per household was 1.3 (see Figure 4). The average number of children aged 5 to 15 years of age per household was less than one (0.7). There was no statistically significant difference between regions on the number of children less than 5 years of age (see Table A - 1 in Appendix).

**Figure 4: Percentage of Households by Number of Children Less Than 5 Years of Age.**



In all regions, the primary caretakers were mothers (95.4% to 99.5%). Due to the importance of a primary caretaker to the nutritional status of a child, the primary caretaker was asked the highest level of education she had achieved: primary, incomplete secondary, secondary, special technical, or high education. Over the three surveys, most caretakers (ranging from 39% to 42%) had completed a secondary education, with 25% to 27% completing a special technical education, and 25% to 28% completing a high education. Only 1% of the caretakers had completed only a primary education. The caretakers with only a primary education are in the regions of Kvemo Kartli (16 caretakers) and Samtskhe-Javakheti (10 caretakers); however, there was not a statistical difference between the regions on the level of education of primary caretakers.

Grandmother in Mtskheta:  
 "We try not to deprive the children. First, we buy products they need, then for the adults. Children need special food. Children eat first, then the elderly, and the others last."

Approximately, three-fifths (59.3% to 61.8%) of the children in this survey were above 2 years of age. Of these children, the percentage who attended kindergarten ranged from 17% to 27% over the three surveys. In December 2000, the region with the lowest percentage of children over 2 years of age attending kindergarten was Samtskhe-Javakheti (16.2%) with the highest kindergarten attendance found in the Mtskheta-Mtianeti (35.9%) region.

For all three surveys, 34% of the children live in urban settlements, 2% in *dabas*, and 64% in rural villages.

### 3.2. Nutritional status

Measuring the weight and height of children, and comparing those measurements with a standard growth reference of healthy children, is one method of assessing the general nutritional status of children in a population.<sup>6</sup> This type of assessment is called anthropometry, which means the study and technique of taking human body measurements.

#### 3.2.1. Acute malnutrition (wasting)

One measurement of the nutritional status of children, weight-for-height, helps to identify children who are wasted, or acutely malnourished. Wasting or thinness in children indicates in most cases a recent and severe process of weight loss, which is often associated with acute starvation and/or severe disease. However, wasting may also be the result of a chronically adverse condition. Wasting means that children do not weigh as much as they should for their height, gender and age. And, when a child's weight-for-height is substantially different than a reference group of healthy children, there is cause for concern.

Z-scores are widely recognized as the best system for analysis and presentation of anthropometric data because of its advantages compared to the other methods. The Z-score system expresses the anthropometric value as a number of standard deviations or Z-scores below or above the reference median value. For instance, -2 Z-score or less from the norm are often used as a cut-off point for wasting. See Figure 25, page 28, for a distribution of weight-for-height Z scores.<sup>7</sup>

In this study, the overall prevalence of wasting is 1.0%. Based on the WHO criteria, any national prevalence rate of wasting less than 5% is considered low. When compared with other countries in the Caucasus region, the prevalence of wasting in Georgia during this period of time was lower than what was found in Azerbaijan in April 1996 (3.6%) and Armenia in 1998 (4.3%).<sup>8</sup>

Pregnant women in Mtskheta:  
*"Because of the drought, everything is more expensive, and we have little to no income. We must buy only essentials."*

Compared with a local study conducted in 1999, the national MICS study, which found a 2.3% prevalence of wasting among children, this finding is low. In contrast, the percentage of overweight children in these surveys ranged from 8.5% to 8.9%, which is lower than the percentage of overweight children found in the MICS survey (12.7%). However, it must be said that the MICS covered the entire nation, which this study did not.

Figure 5 shows the prevalence of wasting in each of the six regions for all three surveys. In December 2000, the highest prevalence of wasting was in Kvemo Kartli (1.5%). In April 2001, the highest occurrence of wasting was in Imereti (1.1%), followed in August 2001 by Mtskheta-Mtianeti (1.7%) and Kakheti (1.5%). However, these regional differences were not statistically significant (see).<sup>9</sup>

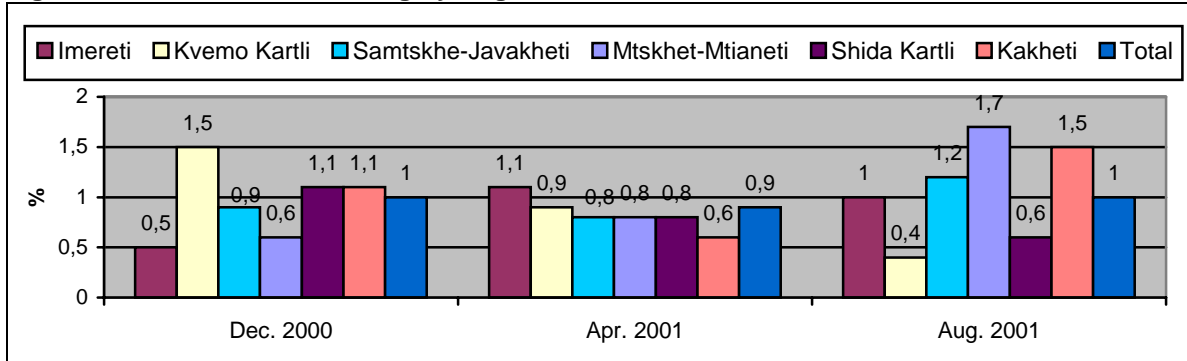
<sup>6</sup> Growth percentiles were developed by the National Center for Health Statistics in Atlanta and provide standards for weight-for-age, length-for-age and weight-for-length.

<sup>7</sup> The standard deviation of the Z-scores should range between 0.85 and 1.1 for weight-to-height measures. Any standard deviation of the Z-scores above 1.3 suggests inaccurate data due to measurement error or incorrect age reporting. The standard deviation of weight-to-height Z-scores for all three surveys was 1.1.

<sup>8</sup> "Azerbaijan Health & Nutrition Survey," World Health Organization (WHO), April 1996; "The Health and Nutritional Status of Children and Women in Armenia," National Institute of Nutrition-Italy, September 1998.

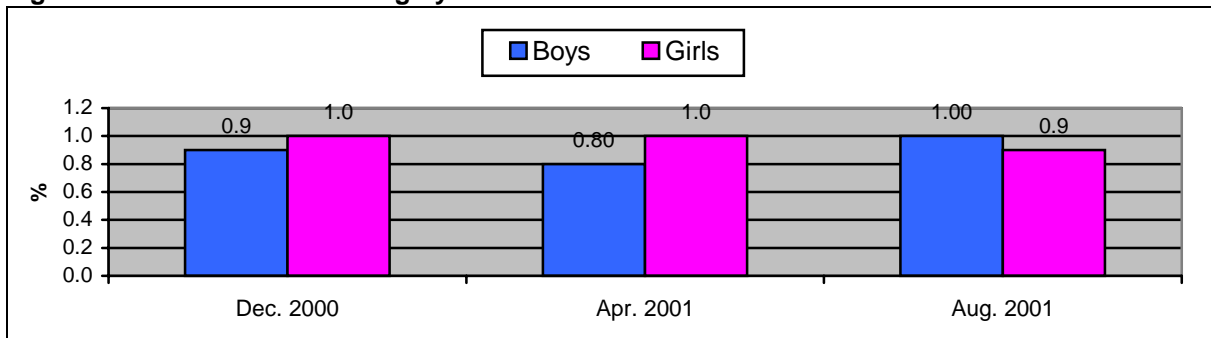
<sup>9</sup> In the interpretation of results confidence intervals are compared of the two groups. When the point prevalence falls within the confidence interval of the other group, the difference is not significant. When the 2 confidence intervals do not overlap the difference is significant. When there is overlap but the point prevalence does not fall within the other confidence interval the difference is likely to be significant.

**Figure 5: Prevalence of Wasting by Region.**



As shown in Figure 6, there was a slightly higher occurrence of wasting among girls than boys in the first two surveys; however, in the last survey the prevalence of wasting was slightly higher than girls. Nevertheless, no statistically significant difference was found on the rate of wasting for boys and girls.

**Figure 6: Prevalence of Wasting by Gender.**

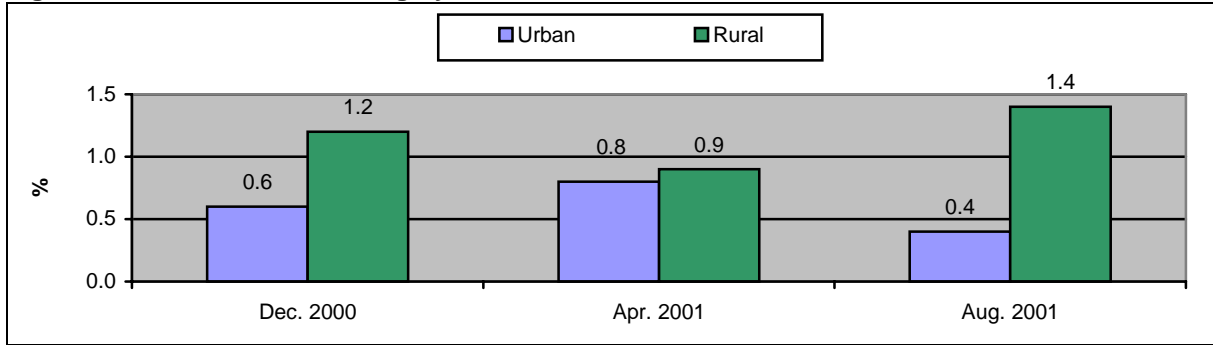


Other findings related to the prevalence of wasting include:

- No statistically significant difference was found between children in different age groups, although among children 0-6 months and 1-2 years of age the prevalence of wasting is higher than other age groups.
- Children who had diarrhea two weeks prior to the survey show a slightly higher prevalence of wasting. However, there is no difference between children who had, and those who did not have a cough and/or fever during or two weeks prior to the survey.
- Although not statistically significant, low birth-weight children (<2.5kg) have a higher prevalence of wasting than children with normal birth weights (>=2.5kg). The occurrence of wasting among children with low birth weight was 2.9%, 1.6% and 2.0% compared to 0.7%, 0.7% and 0.9% for normal birth weight children for each survey respectively.
- Although not statistically significant, urban children have a lower prevalence of wasting than rural children (see Figure 7) during all three rounds of the survey.

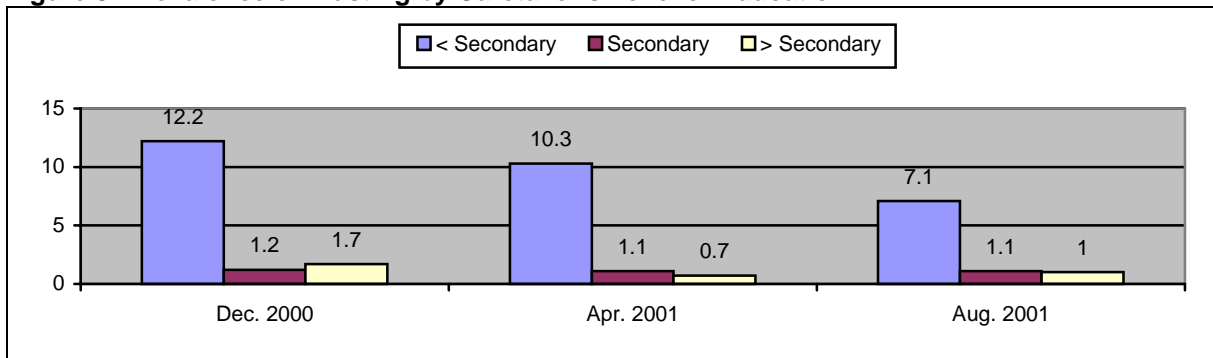
Pregnant women in Mtskheta:  
*"Because of the drought, everything is more expensive, and we have little to no income. We must buy only essentials."*

**Figure 7: Prevalence of Wasting by Urban/Rural Location.**



- No statistically significant difference was found in the occurrence of wasting between the different ethnic groups.
- No statistically significant difference was found in the prevalence of wasting between the different sizes of households.
- Figure 8 shows that children whose caretaker has a only a primary education have a statistically significantly higher prevalence of wasting than children whose caretaker has completed more than a secondary level of education.

**Figure 8: Prevalence of Wasting by Caretaker's Level of Education.**



### 3.2.2. Chronic malnutrition (stunting)

Another issue examined in this study is chronic malnutrition or stunting. A child who is not as tall as expected for their age may be stunted. Stunting is determined by low height-for-age measurements. Stunted growth reflects a process whereby a child fails to reach his or her linear growth potential as a result of poor health and/or nutritional conditions. Generally, high levels of stunting are associated with poor socioeconomic conditions and increased risk of frequent and early exposure to adverse conditions such as illness and/or inappropriate feeding practices. In many such settings, prevalence starts to rise at the age of about three months; the process of stunting slows down at around three years of age, after which average heights run parallel to the reference. Therefore, the age of the child modifies the interpretation of the findings: for children in the age group below 2-3 years of age, low height-for-age probably reflects a continuing process of "failing to grow" or "stunting"; for older children, it reflects a

Male in Samtskhe-Javakheti:  
*"Land cultivation is expensive, and then you are not certain what you will get since there is no irrigation or fertilizer, and the drought to make it worse. It is better to use the money to buy food and not worry if you will have a harvest."*

state of "having failed to grow" or "being stunted". (See Figure 26, page 29, for a distribution of weight-for-height Z scores.)<sup>10</sup>

In this study, the prevalence of stunting (height-for-age measures less than -2 Z-scores) varied from 8.1% to 10.4%, which is considered low. Based on the WHO criteria, any national prevalence rate of stunting less than 20% is considered low.

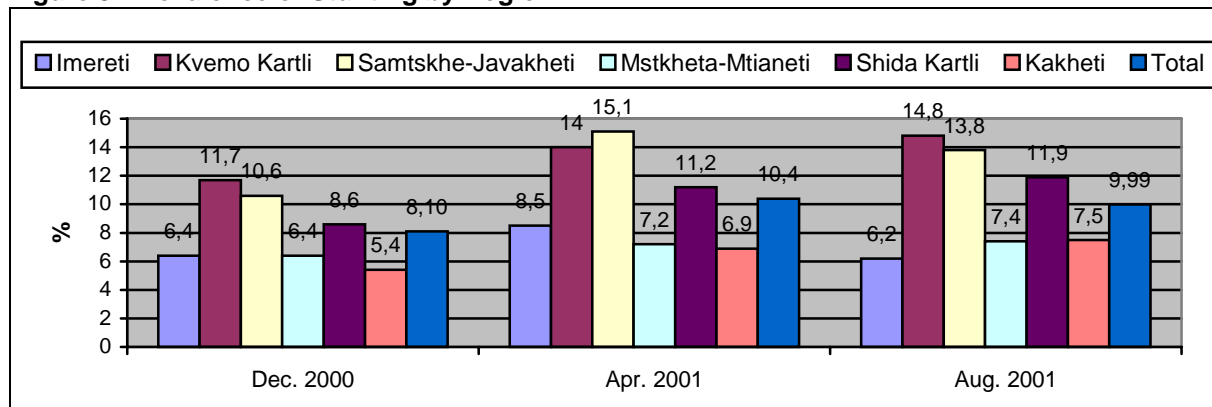
When compared with other countries in the Caucasus region, the prevalence of stunting in Georgia during this period of time was lower than what was found in Azerbaijan in April 1996 (21.5%) and Armenia in 1998 (12.5%).<sup>11</sup> In addition, compared with the national 1999 MIC study in Georgia, which found an 11.7% prevalence of stunting, this rate is low.<sup>12</sup>

Other main findings related to chronic malnutrition or stunting were:

Among all the six regions, a significantly higher occurrence of stunting was found in the regions Samtskhe-Javakheti, Kvemo Kartli and Shida Kartli (see Figure 9).

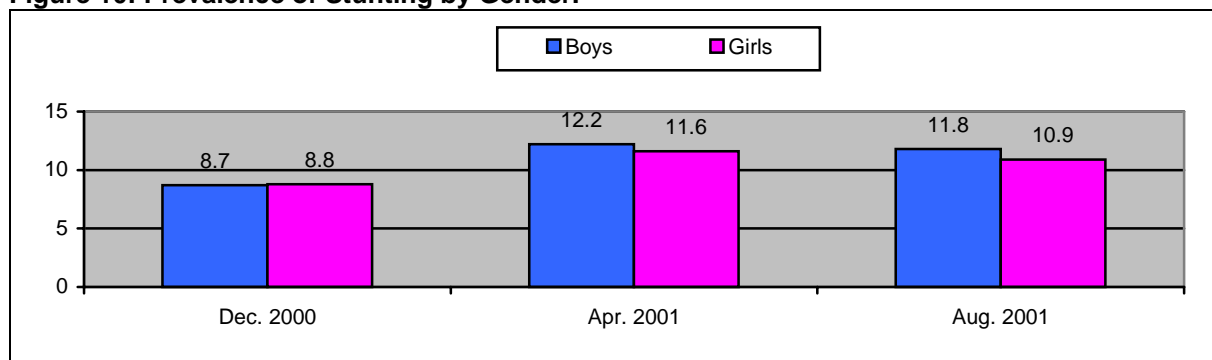
Mother in Kvemo Kartli:  
 "Because of no electricity, our milk and yogurt spoil quickly. So, we sell it to get money to buy other things."

**Figure 9: Prevalence of Stunting by Region.**



There was no statistically significant difference between boys and girls on the prevalence of stunting during all three rounds of the survey (see Figure 10).

**Figure 10: Prevalence of Stunting by Gender.**



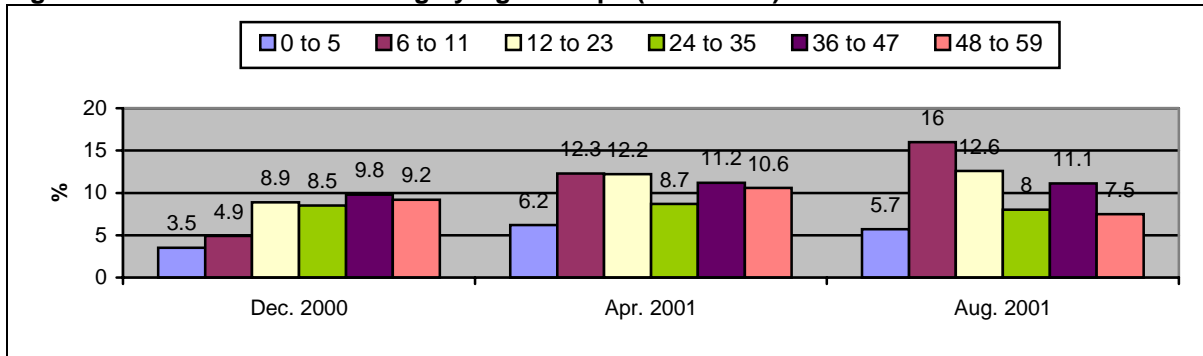
<sup>10</sup> According to the WHO, the expected ranges of standard deviations of the Z-score distributions for height-for-age Z-scores should range from 1.10 to 1.30. In this study, the standard deviations for stunting Z-scores were 1.3, 1.2 and 1.3 respectively.

<sup>11</sup> "Azerbaijan Health & Nutrition Survey," World Health Organization (WHO), April 1996; "The Health and Nutritional Status of Children and Women in Armenia," National Institute of Nutrition-Italy, September 1998.

<sup>12</sup> No confidence intervals were available for the MICS, therefore no statement can be made whether the difference is significant.

There is no statistically significant difference between age groups on stunting, although a lower prevalence of stunting is found during the second and the third rounds among children 6 months to 1 year of age (see Figure 11). As mentioned earlier, the prevalence of stunting starts to rise at about the age of three months, then slows down at around three years of age, after which mean heights run parallel to the reference. Therefore, the higher prevalence in 6 to 11 months and the 12 to 23 month age groups show a process of "failing to grow," whereas in the older age groups it reflects a state of "having failed to grow."

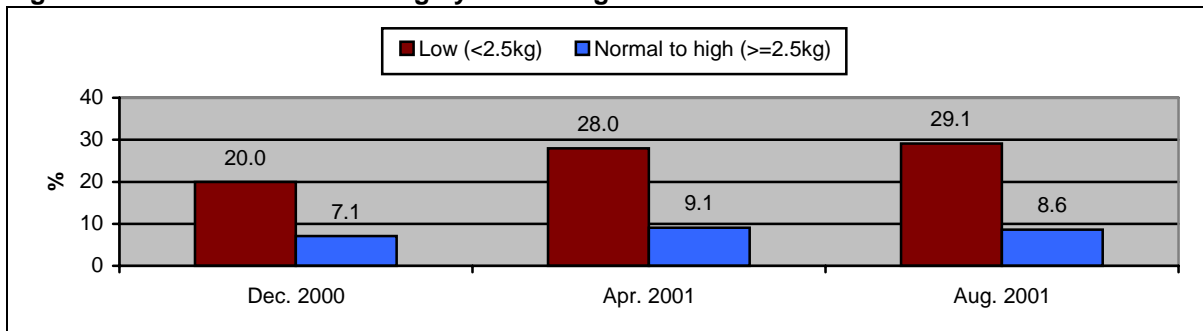
**Figure 11: Prevalence of Stunting by Age Groups (in months).**



There is a significant difference between children born with a low birth weight and children born with normal to high birth weight during all three surveys (see Figure 12). Children with a low birth weight were almost three times more likely to be stunted than children born at or above a normal birth weight.

Male in Kvemo Kartli:  
*"There is no electricity or gas and we are in a dire situation. We cut the fruit trees and use them for firewood. We are not going to plant new ones because it is senseless."*

**Figure 12: Prevalence of Stunting by Birth Weight.**



No statistically significant difference was found between children who were never breastfed and those who were breastfed and the prevalence of stunting during all three rounds of the survey.

However, children living in rural households have a higher prevalence of stunting than children living in urban areas (see Figure 13).

**Figure 13: Prevalence of Stunting by Rural/Urban Location.**

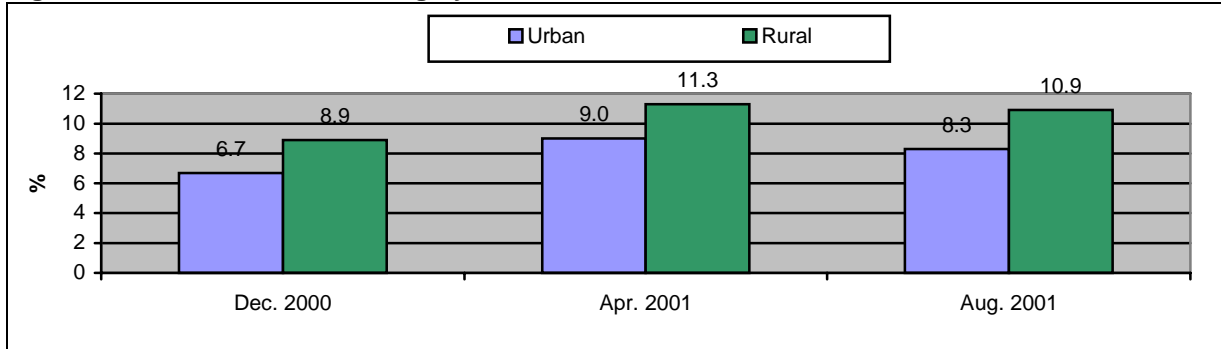
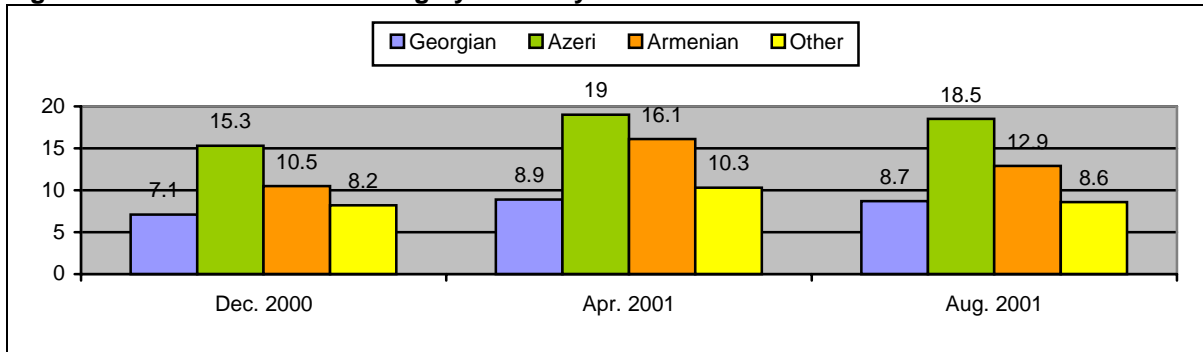


Figure 14 shows the prevalence of stunting by ethnicity. The highest prevalence of stunting is among Azeri children, followed by Armenian children. Comparatively, Georgian children have a lower prevalence of stunting than children of all other ethnicities.

**Figure 14: Prevalence of Stunting by Ethnicity.\***



\*Other includes Russians, Ossets, Kurds, Greeks or a mixture.

No statistically significant difference was found in the prevalence of stunting between children living in different household sizes.

### 3.3. Food consumption

This nutritional survey included questions to obtain information about the eating habits of children to supplement the anthropometry measures. This involved a recall by the primary caretaker of a list of 19 foods eaten by the children and, generally, how frequently children consume them (daily, weekly, monthly, or not at all).

#### 3.3.1 Frequency of eating 19 food items

The listed products were divided into several groups:

- milk and milk products;
- meat, fish, eggs;
- fat (animal and vegetable);
- bread, groats and leguminous; and
- fruit, vegetables, sweets and sugar.

Father in Kvemo Kartli:  
*"City people believe that because we live in a village we do not have food problems. But due to the drought, other than milk and yogurt, we buy most of our food at the market like city people."*

Overall, slightly less than one-half of all children drink milk or eat any one of these milk products on a daily basis (see Figure 15). For all milk products, 15% of children do not consume any milk product on a daily basis.

**Figure 15: Percentage of Children Who Drink Milk and Eat Milk Products Daily.**

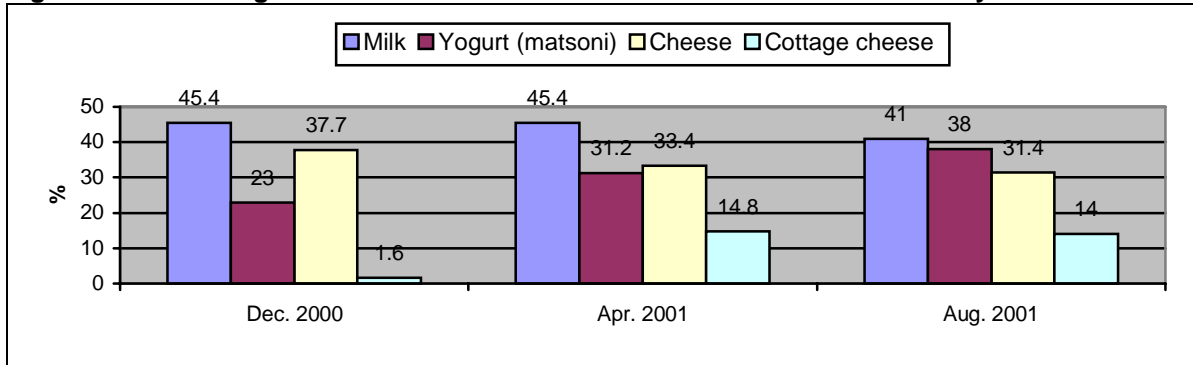
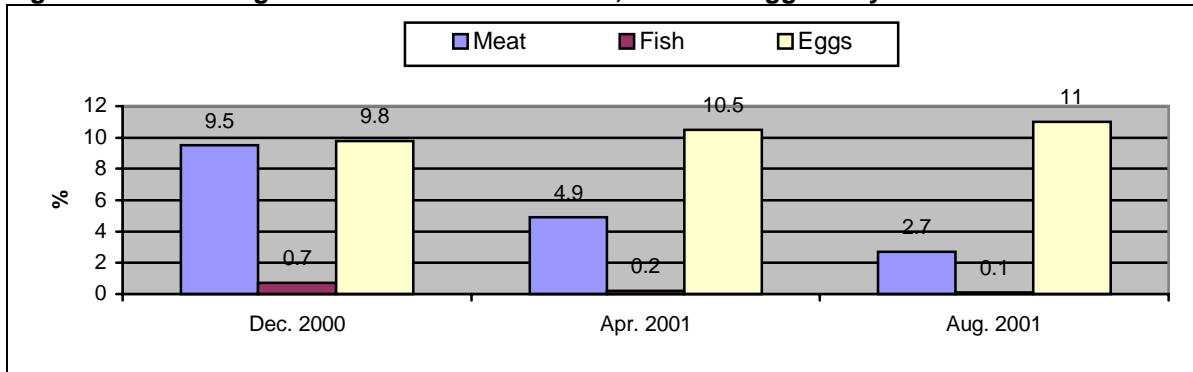


Figure 16 shows a precipitous decline from December 2000 to August 2001 in the percentage of children eating meat (9.5%, 4.9% and 2.7% respectively). The daily consumption of fish remained low throughout the study. The percentage of children eating eggs on a daily basis slightly increased over this period of time but still remain low.

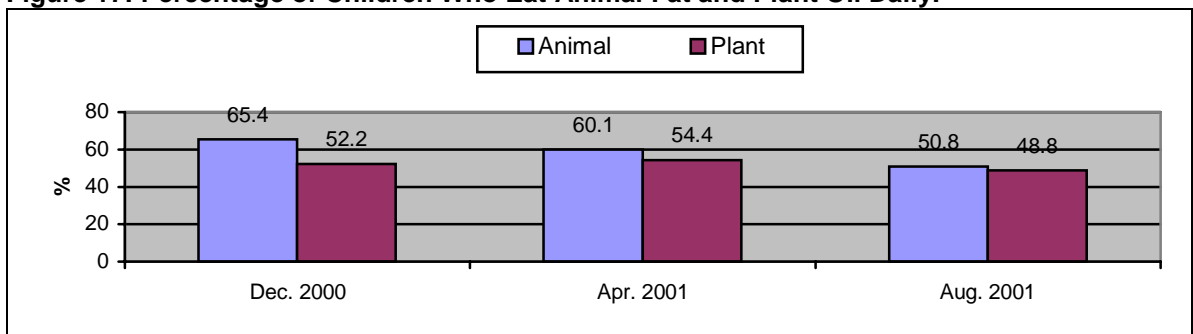
**Figure 16: Percentage of Children Who Eat Meat, Fish and Eggs Daily.**



All of these food products (milk, milk products, meat, fish and egg) are sources of animal proteins that contribute to the development of a child's body. According to general nutritional recommendations, children 1 to 5 years of age should consume 3 to 4 grams of protein per kilogram of weight, of which 70%-75% of these proteins should be of animal origin. Based on these recommendations, 55% to 58% of the children in this survey do not receive on a daily basis these very important proteins.

Comparing how frequently animal fats and vegetable oils are consumed by the children indicate that animal fats (butter, fat) were eaten more often than plant oils (oil, margarine). For all three rounds of the survey, the percentage of children eating plant oils on a daily basis remained the same; however, the percentage of children eating animal fats on a daily basis declined significantly (see Figure 17).

**Figure 17: Percentage of Children Who Eat Animal Fat and Plant Oil Daily.**



The most frequently eaten food items by the children are bread and sugar (see Figure 18). Bread is eaten on a daily basis by almost every child (96%), and sugar is consumed on a daily basis by 75% to 85% of all children.

**Figure 18: Percentage of Children Who Eat Bread and Sugar Daily.**

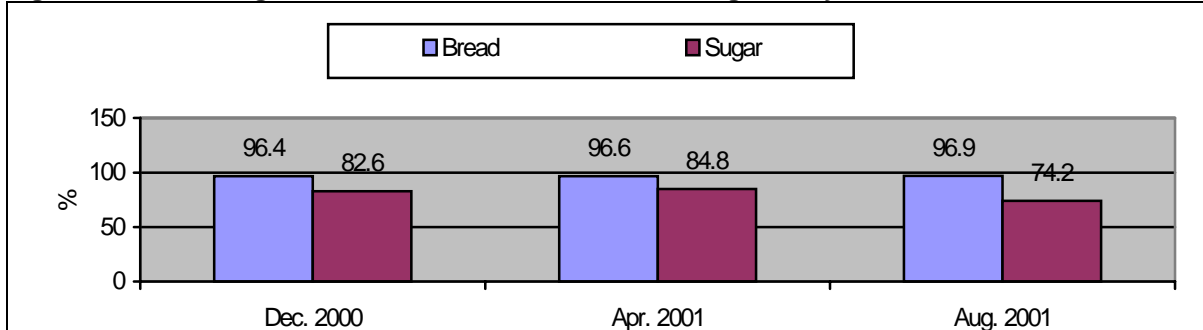
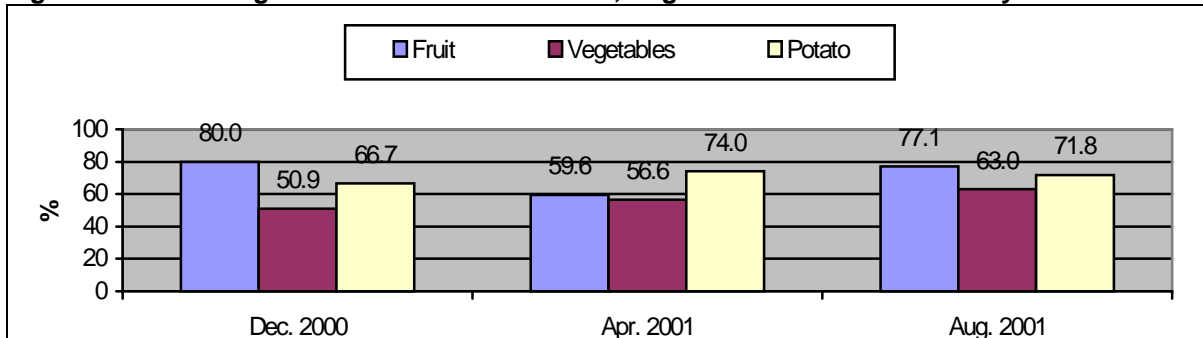


Figure 19 shows the percentage of children who eat fruit, vegetables and potatoes on a daily basis. The changes in the percentage of children consuming fruit, vegetables and potatoes for the three surveys illustrate the seasonal character of nutrition. During the first survey, the harvest was in; and there were generally sufficient food stocks and in August the market was filled. In spring, the percentage of children eating fruit declined because it was not yet ripe.

When compared to the consumption of animal proteins, many more children consumed fruit and vegetables during this study. Fruit and fruit juices are in the everyday ration of approximately 80.0% of children. Vegetables are consumed daily or weekly basis by 96% of children. These results are indicative of the fact the majority of children in this study live in rural areas where household gardens are large enough for growing and harvesting fruit and vegetables.

**Figure 19: Percentage of Children Who Eat Fruit, Vegetables and Potatoes Daily.**



### 3.3.2 Summary of food consumption

These results point to the conclusion that the regular consumption of protein needed for a growing body is poor among these children. An overwhelming percentage of children consume carbohydrates (bread, sugar, cake, etc.) which provide only the energetic value of the diet.

The lowest consumption of milk and milk products is in the regions of Kvemo Kartli, Shida Kartli and Kakheti. Consumption of fish is low in all regions. The lowest percentages of children consuming meat on a daily basis are in the regions of Shida Kartli, Kvemo Kartli and Samtskhe-Javakheti. These regional differences in food consumption were reflected in anthropometric

Mother in Shida Kartli:  
*"My son is living in Moscow and he sends money. It is the only source of money for my household. It is not possible to earn a living here."*

measurements. For example, rates of wasting are the highest in Kakheti, and the rates of stunting are highest in Kvemo Kartli, Samtskhe-Javakheti, followed by Shida Kartli (Figure 9).

Based on generally accepted principles of nutrition, a daily diet should consist of 12% proteins, 27% to 30% fats, and 57% to 65% carbohydrates. The results of this study indicate that diets of more than one-half of the children is deficient of protein, especially food items such as milk, yogurt, cheese, cottage cheese, meat, fish, egg. In addition, it was reported that 18% to 25% of all the children never ate meat, fish or eggs. And, even though the quantity of consumption was not studied during the survey, the frequency in which children ate these food items signify that their nutritional status is deficient and should be improved.

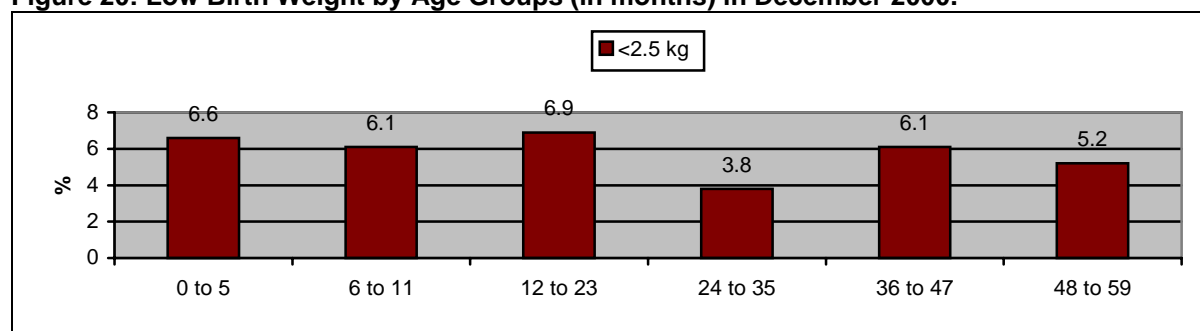
### 3.4. Maternal and child health

#### 3.4.1. Birth weight

The mean birth weight found in this study is 3.3 kg (0.57 standard deviation). Using the criterion of 2.5kg indicating low birth weight, the percentage of children in this surveyed born with low birth weight ranged from 5.0% to 5.7%. (No information was collected on when the birth weight measurement was taken or whether the child was full-term.) Comparatively, this prevalence of low birth weight rate is one-half the rate established by the WHO as low (<10%) and slightly lower than the 7.8% reported in Armenia in 1998.

Compared with other national studies, the prevalence of low birth weight in this study is relatively similar to the rate found in the Reproductive Health Survey-Georgia<sup>13</sup> (5.4%) and in the MICS (4.2%) studies conducted in 1999.

**Figure 20: Low Birth Weight by Age Groups (in months) in December 2000.**



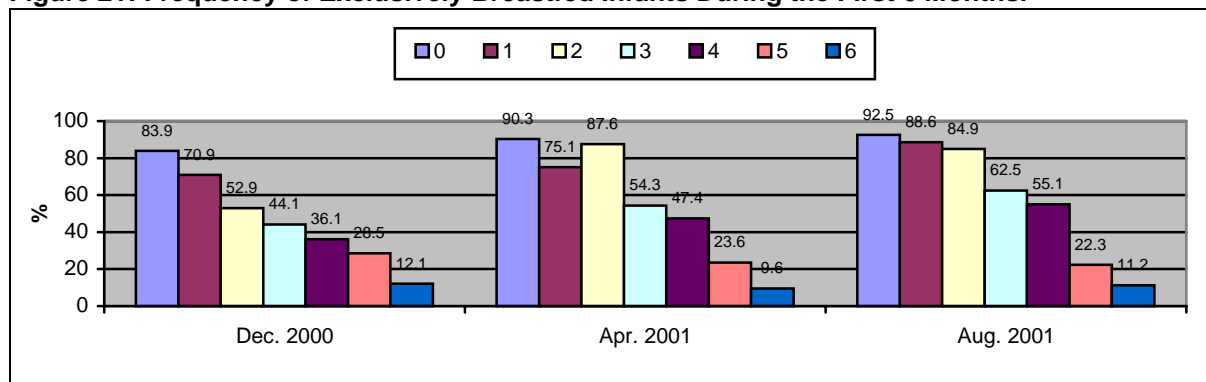
During all three rounds of the survey, no significant difference on birth weight was found between the regions, gender, or between rural and urban areas.

#### 3.4.2. Breastfeeding

The percentage of children 6 months of age and younger who were exclusively breast-fed is presented in Figure 21. The percentage of children under 1 month of age who were exclusively breast-fed ranged from 83.9% to 92.5% over the three surveys. For children 6 months of age, the rate of exclusive breastfeeding ranged from 9.6% to 12.1%.

No significant differences were found for the length of breastfeeding between boys and girls or between urban and rural areas. The sample size of children 6 months of age and younger was too small to allow comparison between regions or between the education levels of the mother.

<sup>13</sup> Reproductive Health Survey Georgia, 1999. National Center for Disease Control. October 2001.

**Figure 21: Frequency of Exclusively Breastfed Infants During the First 6 Months.**

### 3.5. Prevalence and treatment of diarrhea and respiratory illness

#### 3.5.1 Diarrhea

For all the children, the occurrence of diarrhea during or two weeks prior to the survey ranged from 3.2% to 3.6%. Comparatively, this is about one-half the rate of diarrhea found in the 1999 MICS study was 6%.

The appropriate treatment of diarrhea includes oral rehydration, increasing the intake of fluids and continued eating. In this survey no information was collected on the use of oral rehydration solution. However, according to the mothers, about one-half of all children (ranging from 35% to 52% over the three surveys) who had diarrhea increased oral fluids and continued eating (ranging from 43% to 56%) These percentages of appropriate treatment are higher than the found in 1999 MICS study (33%).

Mother in Kakheti:  
*"Foreigners gave us some aid: 10kg of flour and 600gms of oil. This is three days food for a family. This is a drop in the sea."*

The mothers were asked if they sought treatment for their children who had diarrhea. The percentage of children who had diarrhea and were taken for treatment was 37.9% in December 2000, 38.4% in April 2001, increasing to 47.4% in August 2001. Overwhelmingly, these children were taken to ambulatories or polyclinics; fewer were taken to hospitals, and even fewer to private doctors.

#### 3.5.2 Cough with fever

For all the children, the occurrence of a cough together with a fever during or two weeks prior to the survey ranged from a low of 3.3% in April 2001 to a high of 8% in December 2000. From these children, the percentage that received treatment over the three surveys was 55.2%, 52.8% and 44.5%, respectively. Treatment was primarily sought at ambulatories and polyclinics; fewer were treated at hospitals, and several sought treatment from relatives, pharmacists, and traditional healers.

### 3.6. Multivariate analysis of wasting and stunting

An ordinary least-squares (OLS) regression of weight-to-height (wasting) and height-to-age (stunting) Z-scores on selected characteristics of children and their households is presented in Table 2 and Table 3.<sup>14</sup> These regressions equations analyze data from the 3152 children who were measured in all three surveys. In addition, to analyze the pure affect of each

Woman in Kakheti:  
*"Today, the only people eating well are doctors, police and thieves; they are the ones with money."*

<sup>14</sup> A logistic regression would be the best statistical method. However, the low prevalence of wasting (1%), does not allow for a logistic regression due to the need to have at a minimum of 25% - 75% split on the dichotomous dependent variable.

characteristic on the weight-to-height and height-to-age Z-scores, a pooled data set was created.<sup>15</sup>

An OLS regression equation is used to analyze the affect of each characteristic on weight-to-height (wasting) Z-scores, while statistically controlling for the other characteristics. The standardized regression coefficients (or Betas) are presented since they allow one to compare the relative contribution of each independent variable in the prediction of the dependent variables.

Women in Mtskheta:  
"I am ill and I need medicines. To feed my children I can not buy these medicines."

**Table 2: OLS Regression of Weight-to-Height (wasting) Z-Scores on Selected Characteristics.**

Predictors of Wasting: Characteristics	Standardized Beta Coefficients
<b>Maternal/Child health</b>	
Mother's level of education	<b>0.064***</b>
Age	<b>- 0.063***</b>
Child's birth weight	<b>0.057***</b>
Gender (boy =1)	0.000
<b>Food</b>	
Milk products	<b>0.085***</b>
Potato	- 0.038
Meat (includes fish)	- 0.031
Vegetables	0.022
Grain	- 0.019
Tea	- 0.017
Fruit	0.008
Oil	- 0.004
<b>Economic</b>	
# HH members with income activities	<b>0.044***</b>
Self- evaluation of economic status	<b>0.040***</b>
# of assets owned	0.014
<b>Region</b> (reference=Imereti)	
Kvemo Kartli	<b>0.037*</b>
Mtskheta- Mtianeti	<b>- 0.036*</b>
Kakheti	<b>- 0.029*</b>
Shida Kartli	0.003
Samtskhe-Javaheti	- 0.002
<b>Illnesses</b> (reference=healthy)	
Diarrhea	<b>- 0.030**</b>
Cough/fever	<b>- 0.022*</b>
<b>Ethnicity</b> (reference=Georgian)	
Azeri	<b>- 0.038**</b>
Other	0.011
Armenian	0.009
<b>Time</b>	<b>0.050***</b>
<b>Livestock</b>	
# of goats owned	- 0.013
# of cows owned	- 0.011
# of poultry owned	0.002
<b>Location</b> (reference=Urban)	
Daba	0.007
Rural	- 0.007
<b>Received food aid assistance</b>	- 0.018
N	9135
F test	8.97***
Correlation Coefficient R	0.18

There are 321 missing cases.

Levels of significance: \*=<0.05; \*\*=<0.01;\*\*\*<0.001

accounts for about 3% of the change in weight-to-height Z-scores. That is, children who ate milk products (milk, cheese, yogurt) daily had significantly higher weight-to-height Z-scores than children who did not. Interestingly, children who ate meat products daily had lower weight-to-height Z-scores (as indicated by the negative sign) than children who ate meat infrequently.

The standardized coefficients that are in bold are those that are statistically significant at a 95% confidence interval. Also, to evaluate the contribution of each set of characteristics, the change in the Correlation Coefficient (R) is used. The R-value indicates how well a set of predictor variables fit the data (e.g., an R-value close to 1.0 indicates that almost all of the variability with the variables specified in the model is accounted for).

First, the child and household characteristics in the survey account for about 18% of variance in the weight-to height Z-scores (R = 0.18). In other words, the majority (or 82%) of the variance in low and high weight-to height Z-scores is unaccounted for. Thus, the set of characteristics obtained in this survey as a whole are not good predictors of wasting.

Nevertheless, several of the characteristics do account for some of change in the amount of variance in the weight-to height Z-scores (i.e., the change in the R-value). In rank order, the most important predictors of weight-to-height Z-scores (low weight-to-height Z-scores indicate wasting) in this survey are:

**Maternal/Child Health** – the characteristics of the child's birth weight, child's age, and the mother's level of education account for slightly more than one-half (10%) of the total variance in the weight-to height Z-scores in this survey. That is, children with high birth weights, younger children, and mothers with high levels of education had high weight-to-height Z-scores.

Low birth weight occurs because of poor maternal and foetus health and nutrition and a number of risk factors such as smoking, infection, or malnutrition during pregnancy. In addition, long hours of physical work also cause low birth-weight babies to be born.

**Food consumption** – the next important set of characteristics is food consumption, which accounts for about 3% of the change in weight-to-height Z-scores. That is, children who ate milk products (milk, cheese, yogurt) daily had significantly higher weight-to-height Z-scores than children who did not. Interestingly, children who ate meat products daily had lower weight-to-height Z-scores (as indicated by the negative sign) than children who ate meat infrequently.

<sup>15</sup> A pooled data set is created from assembling all three data sets of the children measured in all three surveys into one data set. Since the total number of children measured over all three surveys is 3152, the total number of cases in the pooled data set is 9456.

Economic – the characteristics, which account for about 2% of the variance in the weight-to-height Z-scores, are economic indicators; which are the number of household members involved in some form of income earning activity, and the mother’s self-evaluation of the overall economic status of the household.

Other – other characteristics that account for a small portion of the variance in the weight-to-height Z-scores are: *regional differences* (children living in Mtskheta-Mtianeti and Kakheti have significantly lower weight-to-height Z-scores than children in Imereti)<sup>16</sup>; *ethnicity* (Azeri children have significantly lower weight-to-height Z-scores than Georgian children)<sup>17</sup>; *illnesses* (children who had diarrhea or a cough/fever during the survey or two weeks prior had lower weight-to-height Z-scores than children who did not); and *time* (weight-to-height Z-scores increased from December 2000 to August 2001).

Female in Kvemo Kartli:  
 “When children do not have basic food, I do not know how children can grow up normally under such circumstances.”

Table 2 also shows that, when controlling for other factors, food aid assistance was not a significant predictor of weight-to-height Z-scores.<sup>18</sup>

Table 3 (see the next page) presents an OLS regression of height-to-age (stunting) Z-scores on selected characteristics of children and their households.

The child and household characteristics in the survey account for about 30% of variance in the height-to-age Z-scores for stunting, as seen in R-value of 0.32; this is almost double the amount of variance accounted for in the weight-to-height Z-scores for wasting. Nonetheless, this means that approximately 70% of the variance is unaccounted for in the height-to-age Z-scores.

Again, using the change in the amount of variance in the height-to-age Z-scores accounted for by each block of characteristics as a guide, in general rank order, the most important predictors of low height-to-age Z-scores are:

Maternal/Child health – the maternal factors of high birth weight and the mother having a high level of education account for 23% of the change in the height-to-age Z-scores in this survey. As with wasting, childhood stunting is very much related to the health and nutrition of the mother. The most significant factors related to higher height-to-age Z-scores are mothers with high levels of education, high birth weights, and a child being young.

Region – regional differences account for about 4% of the variance in height-to-age Z-scores. The regional differences are between Imereti, which on average has statistically significantly higher height-to-age Z-scores than Samtskhe-Javakheti, Kvemo Kartli and Shida Kartli.

Food – food consumption accounted for about 2% of the variance in the height-to-age Z-scores. Specifically, children who ate meat frequently (daily) had significantly higher height-to-age Z-scores than children who ate meat infrequently (monthly). Also, tea is negatively associated with high height-to-age Z-scores, indicating that children who consumed high amounts of tea had lower height-to-age Z-scores.

Economic – households owning a higher number of assets (cars, TVs, mobile phones), and with higher self-evaluation of their economic status, had on average children with significantly higher height-to-age Z-scores than households that owned fewer assets and lower self-evaluated economic status. Interestingly, the number of members in the household with economic activities did not significantly predict height-to-age Z-scores, as was the case with wasting.

<sup>16</sup> In a regression equation, to compare categorical data such as regions, it is necessary to select one category as the reference group. In this equation, Imereti was selected as the reference group. Thus, the coefficients indicate the difference in the slope of each identified region with Imereti.

<sup>17</sup> The reference group is Georgians.

<sup>18</sup> A total of 650 households reported receiving supplementary food aid assistance from international organizations during the survey period.

**Table 3: OLS Regression of Height-to-Age (stunting) Z-Scores on Selected Characteristics.**

Predictors of Stunting: Characteristics	Standardized Beta Coefficients
<b>Maternal/Child health</b>	
Mother's level of education	<b>0.168***</b>
Child's birth weight	<b>0.142***</b>
Age	<b>- 0.080**</b>
Gender (boys=1)	- 0.012
<b>Region (reference=Imereti)</b>	
Sametskhe- Javakheti	<b>- 0.157***</b>
Kvemo Kartli	<b>- 0.096***</b>
Shida Kartli	<b>- 0.081***</b>
Mtskheta- Mtianeti	- 0.019
Kakheti	0.005
<b>Food</b>	
Meat (includes fish)	<b>0.085***</b>
Tea	<b>- 0.042**</b>
Vegetables	- 0.035
Potato	- 0.035
Milk products	0.011
Oil	0.010
Grain	0.014
Fruit	- 0.006
<b>Economic</b>	
# of assets owned	<b>0.082***</b>
Self- evaluation of economic status	<b>0.043***</b>
# HH members with income activities	0.010
<b>Livestock</b>	
# of poultry owned	<b>- 0.042**</b>
# of cows owned	<b>0.041***</b>
# of goats owned	- 0.024
<b>Time</b>	
<b>Ethnicity (reference=Georgian)</b>	
Other	<b>0.036**</b>
Armenian	0.016
Azeri	- 0.013
<b>Illnesses (reference=healthy)</b>	
Diarrhea	- 0.006
Cough/fever	0.002
<b>Location (reference=Urban)</b>	
Daba	0.016
Rural	0.004
<b>Received food assistance</b>	
	0.013
N	9145
F test	31.83***
Correlation Coefficient R	0.32

There are 312 missing cases.

Levels of significance: \*=<0.05; \*\*=<0.01; \*\*\*<0.001

Other – other characteristics which account for a small portion of the variance in the height-to-age Z-scores are: *livestock ownership* (children living in households owning with cows have significantly higher height-to-age Z-scores than children living in households that own no cows); interestingly, it is the reverse for poultry; *time* (alarmingly, height-to-age Z-scores decreased significantly from December 2000 to August 2001); and *ethnicity* (Other ethnic groups<sup>19</sup> have significantly higher height-to-age Z-scores than Georgian children).

Table 3 also shows that when controlling for other factors, food aid assistance was not a significant predictor of height-to-weight Z-scores.

In summary, the low amounts of explained variance in each of the regression tables indicate that other important characteristics need to be included so as to better account for the change in weight-to-height and height-to-age Z-scores of children than the current ones. Nevertheless, the maternal factors of the child's birth weight and the mother's level of education clearly impact a child's nutritional well-being.

### 3.7. Household food security

#### 3.7.1. Food security

The drought in Georgia has merely compounded the problems household have faced since the collapse of the economy ten years ago. However, there are few survey tools that are valid and reliable to measure the food security of a household in Georgia. To this end, SC decided to include in this nutritional survey a standardized set of questions developed by the US Department of Agriculture (USDA).<sup>20</sup> Household food security was measured by using the USDA's set of questions that can be combined into a single overall measure called, "the food security scale" (see question # 50 in the

<sup>19</sup> Other ethnic group includes a mixture of Russian, Ukrainian, Ossets, Greeks, Abkhaz and Kurds.

<sup>20</sup> "Measuring food security in the United States," US Department of Agriculture- Food and Nutrition Unit, Revised January 2000.

Interview Guide, page 62). This is a continuous, linear scale that measures the degree of severity of food insecurity/hunger experienced by a household in terms of a single numerical value. These values vary across a continuum that expresses the full range of severity of food insecurity/hunger as observed in households. The unit of measure is a range of severity scale is expressed by numerical values ranging from 0 to 10, depending upon the responses of a household to the ten questions. Next, these values were recoded into the four categories of food security.

The 4 categories of household food security are:

- Food secure;
- Food insecure without hunger;
- Food insecure with moderate hunger; and
- Food insecure with severe hunger.

In December 2000, of all the 3039 households that had children 0 to 59 months of age, approximately 60% are food insecure with either moderate or server hunger. Specifically, 35.8% were “food insecure with moderate hunger” and 23.7% were “food insecure with severe hunger” (see Figure 22). In April 2001, 62.5% of the 3258 surveyed households were food insecure with hunger, slightly increasing to 65.3% of the 3251 households surveyed in August 2001. Thus, over the three surveys, the percentage of households that were food insecure increased.

**Figure 22: Percentage of Households by Food Security Categories.**

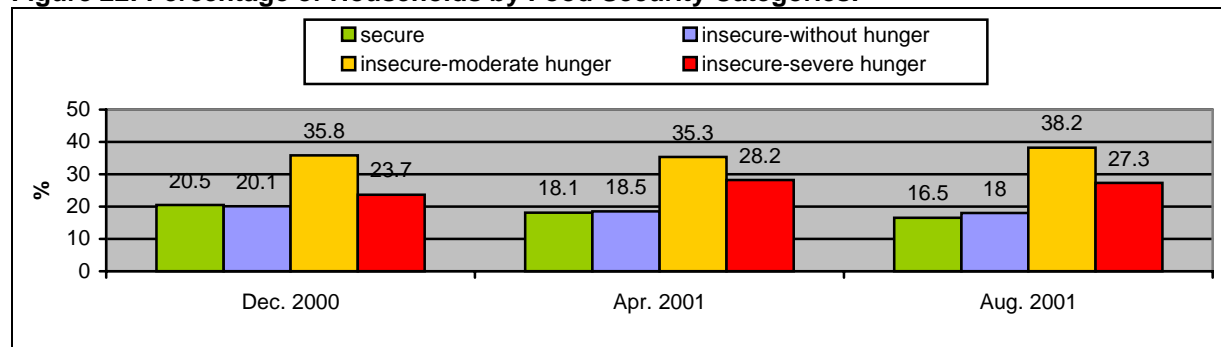
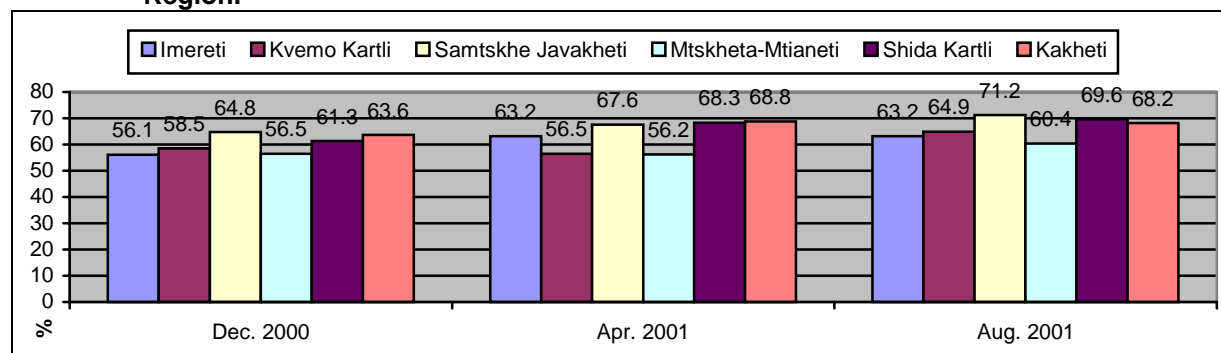


Figure 23 shows the percentage of households that were food insecure (moderate and severe combined) over the three surveys. The region of Samtskhe-Javakheti consistently had one of the highest percentages of households that were food insecure, followed by Kakheti and Shida Kartli.

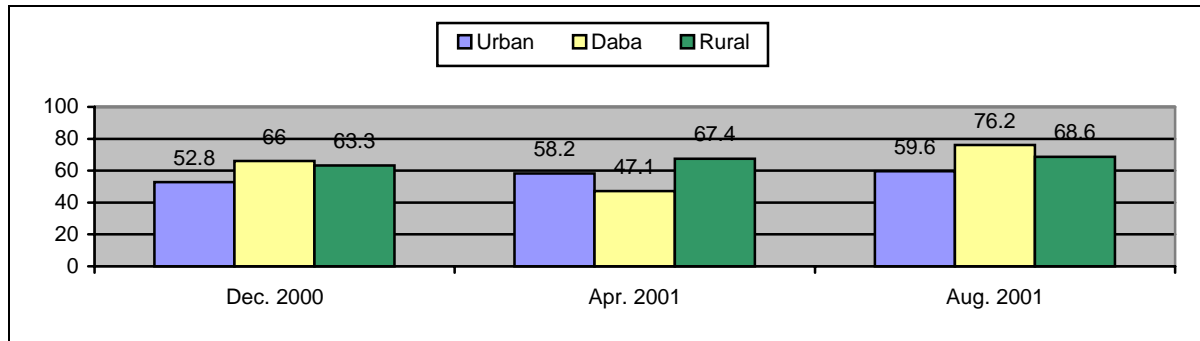
**Figure 23: Percentage of Households Food Insecure with Hunger (moderate + severe) by Region.**



There is a significant difference in household food security between rural and urban areas. In December 2000, a greater percentage of households in *dabas* (66%) and rural areas (63.2%) were food insecure than urban households (52.8%), as shown in Figure 24. In April and August 2001, a greater percentage of rural households were food insecure than urban households. However, for

households residing in *daba* areas, the percentage that was food insecure decreased from December 2000 (66%) to April 2001 (47.1%), then significantly increasing in August 2001 (76.2%).

**Figure 24: Percentage of Households Food Insecure with Hunger (moderate + severe) by Urban/Rural Location.**



The anthropometry measures indicate a low prevalence of wasting and stunting among children in these six regions. However, the household food security measure indicates a relatively high percentage of food insecure households. Even though the food security module has been validated in the USA where it has been used for several years, experience is scarce in other countries including Georgia. To obtain an idea about the reliability and validity of this tool, several statistical tests were conducted. First, an alpha reliability was done to test the internal validity of the food security questions. An alpha reliability test indicates to what degree a respondent who answers negative to food security on one question will respond negative on a different food security question. The alpha reliability (Cronbach) was 0.96 for the December 2000 baseline survey. This indicates that about 96% of the time respondents who answered negatively on one of the ten food security questions also responded negatively on the others.

To test the face validity of the food security questions a set of correlations were calculated between the interval scale of the food security index (0 to 10) and socio-economic indicators, household assets and household income), as well as the child anthropometric measures of weight-for-height and height-for-age Z-scores.

Mother in Kutaisi:  
*“Unless we are in a critical financial situation we do not kill our cows or chickens because of the milk, cheese and eggs. However, because we do not have money, more and more we are forced to sell meat. Eventually, we will not even have milk, cheese or eggs.”*

Table 4 presents a Pearson correlation between the household food security index and various socio-economic indicators over the three surveys. It shows that household food security is significantly correlated with other acknowledged measures of socio-economic status. The first correlation shows households that subjectively evaluated their household as rich to very rich also responded favorably to the household food security questions. The correlation is reasonably good, ranging from 0.42 to 0.46.

Similarly, there is a strong association between household food security and ownership of assets, although slightly weaker than a household’s self-reported economic status. These correlations ranged from 0.33 in December 2000 to a high of 0.36 in April and August 2001. The correlations between household food security and the amount of reported monthly household income (0.38 in April and 0.43 in August 2001) are almost as strong as self-reported economic status. The anomaly to this association was the baseline survey in December 2000 in which the correlation is 0. This is due to many households reporting no income as a result of their encountering the interviewers for the first time. However, with the return of the same interviewers during the second and third surveys, many mothers were more open about reporting their monthly household income.

Table 4 also shows that household food security is poorly associated with the anthropometry measures, especially wasting, indicated by the low correlation of 0.05 between the measures. Several reasons may account for this. First, acute malnutrition is due to a recent and severe process of weight loss, which is often associated with acute starvation and/or severe disease children. The household food security index questions ask about food needs, in general, over a period of time. Second, in the

focus group sessions held in the regions, participants consistently reported that, when there is a shortage of food in the household, children are fed first. Thus, due to the cultural priority of children, weight loss (or wasting) among children appears not be a good indicator for household food insecurity.

There is a slightly stronger association with the measures of stunting; these correlations held at a correlation of 0.10. Since stunted growth reflects a chronic failure to reach linear growth potential over a period of time, it appears to be more closely associated with household food security.

**Table 4: Pearson Correlation of Household Food Security with Various Socio-Economic Status Indicators Over The Three Surveys.\***

Socio-Economic Status Indicators		Household Food Security		
		December 2000	April 2001	August 2001
Self-reported Economic Status (very poor; poor; middle; rich; very rich)	Pearson Correlation	<b>0.44</b>	<b>0.42</b>	<b>0.46</b>
	Sig. (2-tailed)	0.000	0.000	0.000
	N	2378	2344	2234
Number of Assets Owned (sum of cars, mobile phones & TVs)	Pearson Correlation	<b>0.33</b>	<b>0.36</b>	<b>0.36</b>
	Sig. (2-tailed)	.000	.000	.000
	N	2373	2348	2237
Per Capita Monthly Household Income	Pearson Correlation	<b>0.00</b>	<b>0.38</b>	<b>0.43</b>
	Sig. (2-tailed)	.796	.000	.000
	N	1918	2348	2238
Wasting (Z scores)	Pearson Correlation	<b>0.05</b>	<b>0.07</b>	0,00
	Sig. (2-tailed)	.022	0.001	0.970
	N	2362	2336	2238
Stunting (Z scores)	Pearson Correlation	<b>0.10</b>	<b>0.10</b>	<b>0.09</b>
	Sig. (2-tailed)	0.000	0.000	0.000
	N	2372	2336	2238

\*these correlations use the interval scale of the Food Security Index.

### 3.7.2 Household income and food security

The primary caretaker in each household was asked to report the amount of GEL received by all household members in the previous month by 14 different sources.<sup>21</sup> Of the approximately 3000 households surveyed at each time period, 80% (or 2400 households) reported household income. Table 5 shows that the average monthly household income was 119 GEL in December 2000, 115 GEL in April 2001, and 120 in August 2001. The per capita monthly household income was 23 to 24 GEL over all three surveys.

**Table 5: Average, Per Capita and Sustainability of Monthly Household Income (in GEL).**

	December 2000	April 2001	August 2001
<b>Monthly household income</b>			
Average	119	115	120
Median	80	84	100
<b>Per capita monthly income</b>			
Average	23	23	24
Median	16	16	18
<b>Sustainability of income</b>			
Sustainable	74%	74%	77%
Unsustainable	26%	26%	24%

<sup>21</sup> The fourteen sources included: 1) salary/wages, 2) savings, 3) student benefits, 4) disability/veteran/pensions, 5) child benefits, 6) alimony, 7) dividends/shares/interest, 8) rent of property, 9) sells of agriculture products, 10) selling property, 11) support from relatives, 12) remittances, 13) loans, and 14) other.

In addition, Table 5 shows the monthly household income analyzed by sustainable and non-sustainable sources.<sup>22</sup> Of the total monthly household income over all three surveys, approximately 75% is from sustainable sources, with the remaining 25% from unsustainable sources.

In general, there was little disparity between the median monthly household incomes and the percentages of monthly household income that is derived from sustainable sources for urban and rural areas. However, *daba* areas tended to have a higher percentage of their monthly household income from unsustainable sources (33% in December 2000, 42% in April and 25% in August 2001), compared to households in urban and rural areas.

Regionally, there was little disparity in median monthly household income. However, households in Kakheti had the highest percentage of their monthly household income from unsustainable sources over all three surveys (36%, 39% and 35% respectively). Interestingly, for all regions the percentage of unsustainable income declined over the three surveys, except for Imereti where the percentage of unsustainable income increase from a low of 17% in December 2000 to a high of 25% in August 2001.

**Table 6: OLS Regression of Food Security on Selected Characteristics.**

Predictors of Food Security: Characteristics	Standardized Beta Coefficients
<b>Economic</b>	
Salary or earnings from income activities	<b>0.063***</b>
# of assets owned	<b>0.051***</b>
Remittances	<b>0.043***</b>
Savings	<b>0.029*</b>
# of hh members with income activities	<b>0.024*</b>
Relative	<b>- 0.024*</b>
Sale of household items	<b>- 0.024*</b>
Alimony	- 0.019
Stipend	0.013
Dividends	0.011
Other	0.011
Student benefits	- 0.009
Loans	- 0.007
Benefits	- 0.004
Rent	0.003
Agriculture	0.002
<b>Region</b> (reference=Imereti)	
Mtskheta-Mtianeti	<b>0.142***</b>
Kakheti	<b>0.054**</b>
Kvemo Kartli	<b>0.046**</b>
Shida Kartli	- 0.020
Samtskhe-Javakheti	- 0.018
<b>Ethnicity</b> (reference=Georgian)	
Armenian	<b>0.085***</b>
Azeri	<b>- 0.042*</b>
Other	0.003
<b>Household</b>	
Size of land	<b>0.039*</b>
Number of household members	0.004
<b>Location</b> (reference=Urban)	
Rural	<b>- 0.030*</b>
<b>Time</b>	- 0.004
<b>Received supplemental food aid</b>	- 0.001
N	7145
F test	11.97***
Correlation Coefficient R	0.21

There are 52 missing cases.  
Levels of significance: \*=<0.05; \*\*=<0.01;\*\*\*<0.001

When examining monthly household income characteristics and food security, there is a low, but statistically significant, correlation. The total monthly household and per capita incomes are correlated at 0.11 and 0.10, respectively. The percentage of sustainable monthly household income is slightly less, 0.08, indicating that the slightly advantage of the absolute amount of household is more important than its source for household food security.

Table 6 (on the following page) presents an OLS regression of the food security index scale on selected characteristics of households. Specifically, six sets of household characteristics and their statistical relationship with food security are examined.

These household characteristics account for about 20% of variance in the food security index, as seen in R-value of 0.21. In other words, approximately 80% of the reasons why a household is more or less food secure is unaccounted for.

The household characteristics that best predict household food security is economic ones, of which the most important characteristic is the amount of salary from a job or earnings from some sort of income activity. The next important is the number of assets owned by a household, a proxy for household wealth. Other economic characteristics associated with household food security are: the amount of remittances received by the household, having savings, and the number of household members involved in some type of income-earning activity. Thus, not too surprisingly,

income and wealth are highly related to household food security.

<sup>22</sup> Non-sustainable income included use of savings, selling property, remittances and loans.

Economic characteristics negatively associated with household food security are receiving money from relatives and the sale of property. Again, not too surprisingly, increasing one's debt through borrowing money from relatives, and depleting one's assets by selling household items, decreases household food security.

The next set of characteristics that are associated with household food security is geographical. That is, households in Mtskheta-Mtianeti, Kakheti and Kvemo Kartli evaluated their food security significantly higher than households in Imereti.

Other characteristics that were related to household food security are ethnicity, amount of land owned and rural/urban location. More specifically, compared to ethnic Georgian households, Armenian households were more food secure, whereas Azeri households were less food secure. Also, households owning more land were more food secure than households owning little to no land for cultivation. And last, rural households were less food secure than urban households.

The non-significance of time and receiving supplemental food assistance shows that household food security did not change substantially from December 2000 to August 2001. Additionally, households that received supplemental food assistance were not significantly more food secure than households that did not.

#### 4. CONCLUSIONS

A prevalence of 1.0% of wasting and approximately 10% of stunting was found among children in six drought-affected regions of Georgia from December 2000 to August 2001. Comparatively, this prevalence of wasting and stunting in Georgia is considered low based on WHO standards. Regionally, these rates of wasting and stunting are lower than what has been found in the neighboring countries of Azerbaijan and Armenia.

The low occurrence of wasting, though surprising, appears reasonably accurate. To ensure accuracy, the staff of the NCDC, who are well experienced in conducting numerous anthropometry studies prior to this study, nevertheless received additional training and practicums that emphasized accuracy. All NCDC staff who conducted the interviews were either Ph.D.s or M.D.s. Second, all scales and measures were checked and rechecked for accuracy. Third, the interviewers were instructed to insist that children wear no to minimum clothing. If minimum clothing was allowed the clothing was weighted separately and the child's weight adjusted accordingly. The interviewers recorded what the child was wearing at the time of weighing: no clothes, light, heavy or multiple layers. The frequencies were:

	Dec. 2000	Apr. 2001	Aug. 2001
No clothing	29.5%	74.1%	95.2%
Light clothing	69.0%	25.9%	4.8%
Heavy/multiple layers	1.5%	0.0%	0.0%

The prevalence of wasting in the Dec. 2000 survey was similar to the rate in August 2001 despite the overwhelming majority of the children being weighted with no clothes in August 2001. Thus, the low rate of wasting found in these studies can not be attributed to incorrect weight measurements.

One of the first expected effects of the drought would be acute malnutrition or wasting of children. However, this does not seem to be confirmed by this survey. On the other hand, the results on household food security indicate a serious problem in 60% of the households. The question arises, Is it possible to reconcile these two apparently contradictory findings? Possible explanations could be:

- Although at risk, children less than 5 years of age are probably not the worst, or the first, members of the household affected by the drought. Children receive the highest priority among family members regarding food needs, which results in a low prevalence of acute malnutrition. However, due to the poor household food security situation, it is the adult family members that

are suffering the effects of the drought, especially the elderly and women.

- Another explanation for the high rate of household food insecurity is the conjunction of the drought with chronic economic problems households have faced over the last 10 years. Due to the drought, households had a lower harvest and thus fewer reserves for the winter months. In addition, due to chronic economic conditions, households have little income from salary/wages and have sold many of their assets; many are turning to unsustainable sources of income such as obtaining loans or receiving remittances from relatives. One consequence of this situation is a change in the daily diet of adults, and some children: less diversity (lower quality starch food and fewer protein foods), infrequent meals, and smaller portions of food at mealtime.

The primary factors correlated with low weight-to-height Z-scores (wasting) and height-to-age Z-scores (stunting) are maternal and child health. Particularly, this study that mothers with high levels of education had children with normal to high weight-to-height Z-scores. This relationship, which is common in many studies, is generally linked to educated mothers who are better able to gain health and nutrition information, but they are also far more likely to make use of preventive health-care service, thereby reducing the risk of infectious disease. Other possible explanations are that better educated women marry later and are more able to control their fertility so as to space births over longer periods, all of which benefit child health. These linkages most likely contribute to the second most important factor contributing to low Z-scores: low birth weight.

The next most important factors related to low weight-to-height Z-scores were food consumption and household economics. Children who consumed milk and milk products infrequently had significantly lower weight-to-height Z-scores compared to children that consumed these products daily. In fact, the number of cows owned by a household was significantly related to higher height-to-age Z-scores, indicating that the consumption of milk and milk products is an important source of nutrition. However, the enduring economic destitution of most households will push households into either selling or killing their cows, one major source of nutrition for the household, in order to reduce expenses or earn some cash.

Repeatedly, economic factors, such as having some form of income, contributed to a better nutritional status of children. However, approximately 25% of the monthly household income was derived from unsustainable sources. How much longer households will be able to rely on these unsustainable sources of income is not known.

And last, clearly regional differences affect the nutritional status of children, even while controlling for ethnicity. Some research suggests that child stunting should replace economic measures, such as income or expenditures, as an indicator of poverty since the multiple determinants (food, health, environment) of stunting are all integral to the quality of life.<sup>23</sup> Thus, from the multivariate analysis of low height-to-age Z-scores, as an indicator for "level of economic development," the most impoverished regions are Samtskhe-Javakheti, Kvemo Kartli and Shida Kartli.

Overall, what this study indicates is that the drought did not severely impact the nutritional status of children. Rather, the drought added to the already dire situation that impacts the nutritional status of mothers, the household economic situation, and overall household food security. The long-term impact of the drought, coupled with chronic economic poverty, will lead to the decline of the health status of children in Georgia. And, as their health status declines so will their ability to learn and be healthy participants in Georgia's future development.

### **Representativeness of the survey**

These survey findings cannot be generalized to all households in the six drought affected regions. The following should be kept in mind:

- The survey only included households with children less than 5 years of age. These households comprise approximately 11.5% of all households in Georgia. Households without children less

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<sup>23</sup> Gross, R., Schultink, W., and Sastroamidjojo, S., 1997. 'Stunting as an indicator for health and wealth: an Indonesian application', *Nutrition Research*, 16(11): 1829-1837.

than 5 years of age may be in a worse situation due to the drought.

- Due to the accepted practice of abortion during the Soviet period for birth control, and its availability, the households included in these surveys may be more well-off financially since they have chose to have children (excluding some ethnic differences).

## 5. RECOMMENDATIONS

This study focused on the nutritional status of children less than 5 years of age. There seems to be no visible deterioration in these children as a direct result of the drought. Nevertheless, the rate of stunting slowly increased from December 2000 (8.1%) to August 2001 (10.0%).

- Recommendation – stunting (or chronic malnutrition) is generally a sign of chronic poverty. Interventions must first of all provide households with the means by which to retain valuable assets that contribute to good nutrition, that is, various products from livestock (milk, cheese, yogurt, and meat) and self-provisioning mechanisms (vegetables and fruit). Next, there must be interventions aimed at income generation and employment. Without some cash, all too often, primary caretakers must make the difficult decision to, for example, have the children eat more bread so that the cheese can be sold to buy needed clothes or medicine.

There appears to be a clear indication that food insecurity is quite high among these households. In addition, there was a strong positive correlation between the assistance provided by relatives and the food security of these households. However, only households containing children less than five years of age were sampled.

- Recommendation – a survey, utilizing either the USDA or another standardized measurement of household food security, should be conducted to evaluate and estimate the percentage of food insecure households overall. If the rate of household food security is also high in other types of households, this will signify the coping strategy of inter-household support may decline.

There appeared to be a seemingly contradictory finding of a low prevalence of wasting and stunting, yet a relatively high occurrence of household food insecurity. However, through focus group sessions, caretakers told us that in a food shortage situation children eat first.

- Recommendation – conduct a targeted, in-depth study of food utilization in households to obtain information on the potential malnutrition of other household members such as pregnant women and the elderly. This could include blood tests of mothers for the presence of anemia, or body-mass measures of adults.

## **APPENDIXES**

Figure 25: Distribution of Weight-for-Height (wasting) Z-scores.

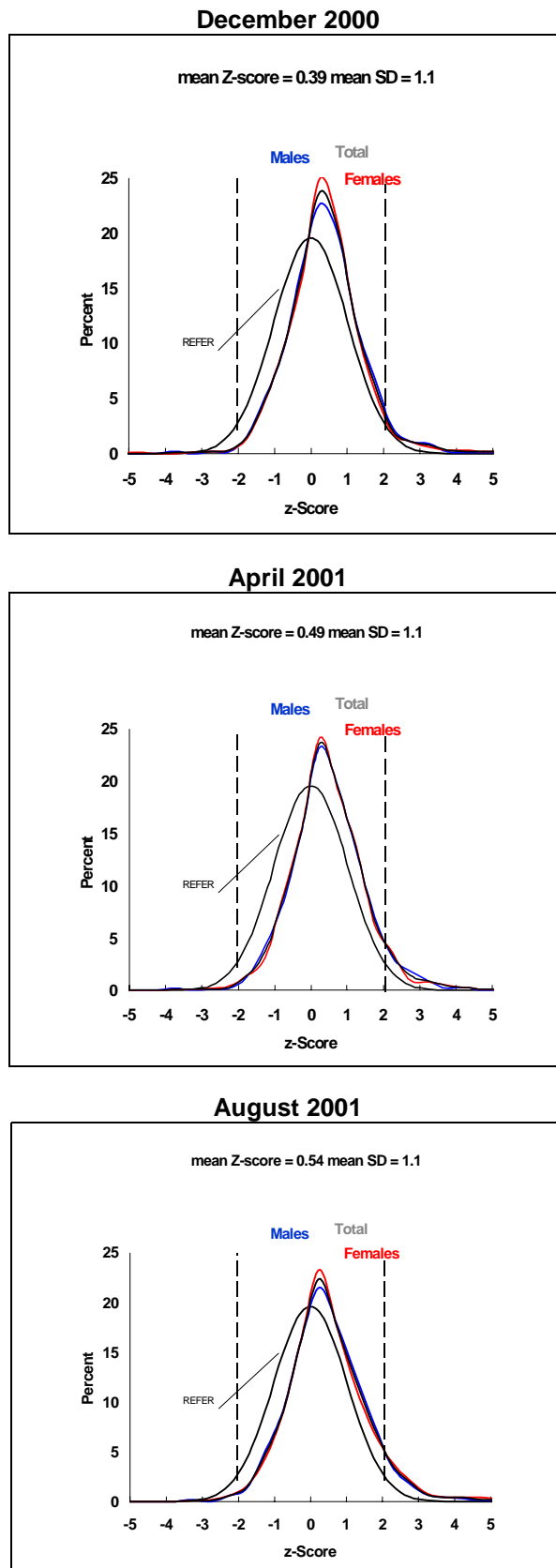
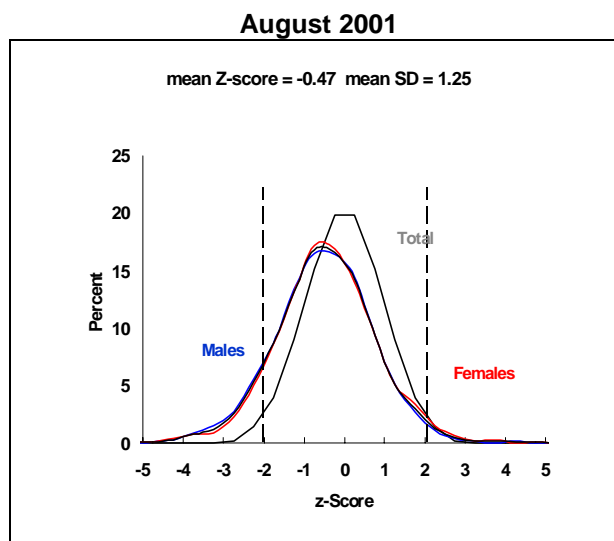
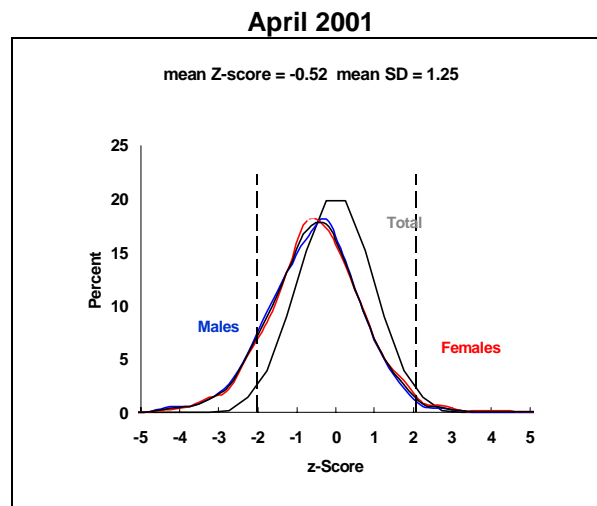
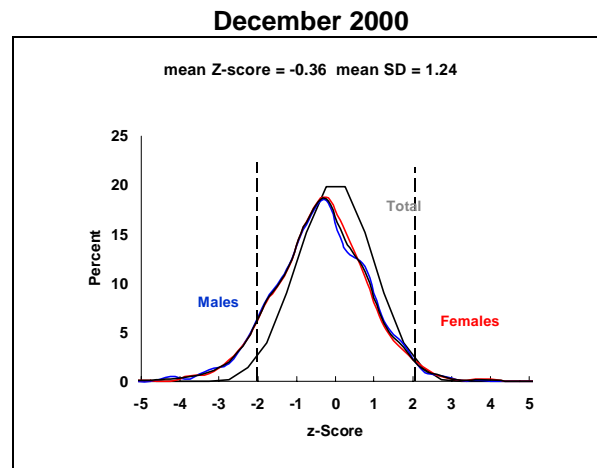


Figure 26: Distribution of Height-for-Age (stunting) Z-scores.



## December 2000 Data

Table A - 1: The surveyed population by region grouped in categories of age groups, gender, child's primary caretaker, household size, number of children under 5 years of age, number of children 5 to 15 years of age, and kindergarten attendance.

Group	Imereti	Kvemo Kartli	Samtskhe-Javakheti	Mtskheta-Mtianeti	Shida Kartli	Kakheti	Total
<b>Age groups:</b>							
Number	670	668	656	662	665	675	3996
0 – 5 months	9.1	8.0	12.2	8.6	7.8	10.4	9.1
6 - 11 months	9.7	10.6	8.5	7.7	14.0	11.0	10.5
12 – 23 months	19.4	18.3	19.1	15.7	18.7	21.2	19.1
24 – 35 months	20.1	18.7	19.4	22.5	19.55	19.1	19.9
36 – 47 months	21.0	20.7	21.8	24.0	21.1	19.7	21.0
48 – 60 months	20.6	23.8	19.1	21.3	18.95	18.7	20.7
<b>Sex:</b>							
Number	670	668	656	662	668	679	4003
Male	49.9	50.4	56.9	54.1	51.6	49.9	51.1
Female	50.1	49.6	43.1	45.9	48.4	50.1	48.9
<b>Caretaker:</b>							
Number (missing)	663 (7)	668 (0)	653 (3)	661 (1)	664 (4)	672 (7)	3981 (22)
Mother	96.2	98.1	95.4	98.3	98.2	98.1	97.3
Father	0.0	0.0	0.2	0.0	0.2	0.0	0.04
Granny	2.9	1.5	3.5	1.4	1.5	1.5	2.1
Aunt	0.3	0.3	0.5	0.3	0.2	0.3	0.3
Relative	0.6	0.15	0.5	0.0	0.0	0.1	0.3
Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Household size:</b>							
Number (missing)	500 (3)	496 (1)	496 (0)	503 (0)	501 (2)	542 (0)	3038 (6)
Mean	5.5	5.4	5.7	5.5	5.5	5.4	5.5
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	0.4	0.0	0.2	0.4	0.2	0.0	0.2
3 – 5	54.4	62.9	48.8	54.7	52.3	54.1	55.5
6 – 10	44.0	35.1	49.6	43.9	47.1	45.8	43.2
11 – 15	1.2	1.8	1.4	1.0	0.4	0.3	1.1
> 15	0.0	0.2	0.0	0.0	0.0	0.0	0.05
<b>Children less than 5 years of age:</b>							
Number	503	497	496	503	503	542	3044(0)
Mean	1.3	1.3	1.3	1.3	1.3	1.3	1.3
1	71.4	68.2	70.6	71.4	69.2	76.6	71.2
2	24.5	28.8	27.0	25.4	28.2	21.2	25.7
3	3.8	3.0	2.0	3.2	1.8	2.2	2.9
4	0.4	0.0	0.4	0.0	0.8	0.0	0.3
<b>Children between 5 and 15 years of age:</b>							
Number	500 (3)	495 (2)	487 (9)	503 (0)	502 (1)	537 (5)	3024 (20)
Mean	0.6	0.7	0.8	0.7	0.7	0.7	0.7
0	56.0	53.5	49.3	53.9	51.4	53.4	53.6
1	33.0	27.9	28.8	30.9	33.1	30.9	31.0
2-4	11.0	18.4	21.4	14.9	15.1	15.1	15.1
>=5	0.0	0.2	0.6	0.4	0.4	0.6	0.3
<b>Child attending kindergarten:</b>							
Number	415	424	394	448	396	387	2464
Yes	31.6	26.2	16.2	35.9	17.2	33.6	27.5
No	68.4	73.8	83.3	64.1	82.8	66.4	72.5

**Table A - 2: The surveyed population by ethnicity grouped in categories of age, child's primary caretaker, household size, number of children under 5 years of age, and number of children 5 to 15 years of age.**

Group	Georgian	Azeri	Armenian	Other	Total
<b>Age groups:</b>					
Number	3241	302	371	77	3991(12)
0 - 5 months	9.0	8.8	11.7	9.0	9.1
6 - 11 months	10.4	11.1	10.7	11.1	10.5
12 - 23 months	19.0	19.4	18.6	24.8	19.1
24 - 35 months	19.5	20.3	20.75	17.1	19.6
36 - 47 months	21.2	20.2	18.7	22.9	21.0
48 - 60 months	20.9	20.2	19.5	15.2	20.7
<b>Caretaker:</b>					
Mother	97.1	98.7	97.6	97.6	97.3
Father	0.04	0.0	0.0	0.0	0.04
Granny	2.3	0.7	2.1	2.4	2.1
Aunt	0.3	0.6	0.4	0.0	0.3
Relative	0.4	0.0	0.0	0.0	0.3
Other	0.0	0.0	0.0	0.0	0.0
<b>Household size:</b>					
Number	2492	207	278	58	3035
Missing	(6)	(0)	(0)	(0)	(6)
Mean	5.4	5.7	5.9	5.7	5.5
1	0.0	0.0	0.0	0.0	0.
2	0.2	0.0	0.0	0.0	0.2
3 - 5	56.3	57.2	44.8	42.7	55.5
6 - 10	42.9	38.3	53.0	54.0	43.2
11 - 15	0.6	4.0	2.2	3.3	1.1
> 15	0.0	0.5	0.0	0.0	0.5
<b>Children less than 5 years of age:</b>					
Number	2498	207	278	58	3041
Missing	(0)	(0)	(0)	(0)	(0)
Mean	1.3	1.5	1.3	1.3	1.3
1	72.6	59.6	79.3	68.5	71.2
2	24.3	36.1	28.8	26.6	25.7
3	2.8	4.3	1.6	4.8	2.9
4	0.3	0.0	0.3	0.0	0.3
<b>Children between 5 and 15 years of age:</b>					
Number	2483	204	276	58	3021
Missing	(15)	(3)	(2)	(0)	(20)
Mean	0.7	0.7	0.7	0.9	0.7
0	53.6	54.1	53.4	50.1	53.6
1	32.2	24.3	25.9	25.2	31.0
2-4	14.0	21.1	20.1	23.1	15.1
>=5	0.2	0.5	0.6	1.5	0.3

**Table A - 3: The surveyed population by location grouped in categories of age, gender, child's primary caretaker, household size, number of children under 5 years of age, and number of children 5 to 15 years of age.**

Group	Urban	<i>Daba</i> <sup>†</sup>	Rural	Total
<b>Age groups:</b>				
<i>Number</i>	1249	119	2628	3996
(%)	(36.1)	(2.1)	(61.8)	(7)
0 – 5 months	8.7	6.4	9.5	9.1
6 - 11 months	9.3	9.55	11.3	10.5
12 - 23 months	18.6	23.3	19.3	19.1
24 – 35 months	20.2	18.4	19.3	19.6
36 – 47 months	21.8	18.1	20.6	21.0
48 – 60 months	21.5	24.4	20.1	20.7
<b>Caretaker:</b>				
Number	1247	119	2615	3981
Mother	95.6	93.8	98.2	97.3
Father	0.06	0.0	0.0	0.04
Granny	3.0	6.0	1.4	2.1
Aunt	0.4	0.0	0.2	0.3
Relative	0.7	0.0	0.1	0.3
Other	0.0	0.0	0.0	0.0
<b>Household size*:</b>				
<i>Number</i>	1009	96	1933	3038
Missing	(4)	(0)	(2)	(6)
Mean	5.0	5.2	5.7	5.5
1	0.0	0.0	0.0	0.0
2	0.3	0.5	0.1	0.2
3 – 5	68.0	61.5	47.2	55.5
6 – 10	31.3	37.5	51.2	43.2
11 – 15	0.4	0.5	1.5	1.1
> 15	0.0	0.0	0.1	0.05
<b>Children less than 5 years of age:</b>				
Number	1013	96	1935	3044
(%)	(38.5)	(2.2)	(59.3)	(0)
Mean	1.2	1.3	1.4	1.3
1	78.3	74.3	66.5	71.2
2	20.0	20.6	29.5	25.7
3	1.4	2.6	3.8	2.6
4	0.2	2.5	0.2	0.3
<b>Children between 5 and 15 years of age:</b>				
Number	1000	96	1928	3024
Missing	(13)	(0)	(7)	(20)
0	0.6	0.7	0.7	0.7
1	56.3	49.7	52.0	53.6
2-4	32.3	39.9	29.8	31.0
>=5	11.3	10.4	17.8	15.1
Mean	0.4	0.0	0.4	0.3

<sup>†</sup>Areas that cannot be clearly categorized as either rural or urban.

**Table A - 4: Caretaker's level of education.**

Group	Mother	Father	Granny	Aunt	Relative	Other	Total
Children*							
Education:							
Number	3870	2	79	10	8	0	3969
Primary	25.6	0.0	22.5	8.7	17.1	0.0	25.5
Incomplete secondary	5.2	0.0	9.1	36.2	51.2	0.0	2.3
Secondary	41.2	0.0	51.6	43.8	19.2	0.0	14.3
Tech. Vocational	1.0	100	1.7	0.0	12.6	0.0	1.0
High education	27	0.0	15.2	11.3	3.0	0.0	26.8

\*34 cases of total 4003 children are missing by caretaker's education.

**Table A - 5: Weight-for-height Z-scores of children 0-59 months of age by total, region, gender, age groups, weight at birth, breastfeeding, infectious illnesses, location, ethnicity, household size, caretaker's education and self-rated economic status.**

Weight for Height												
Group	N	Severe <-3 Z-score		Moderate -3 to -2 Z-score		Severe + moderate <-2 Z-score		Overweight >3 Z-score		Mean WHZ	Mean SD	Oedema <sup>3</sup>
		%	95% CI	%	95% CI	%	95% CI	%	95% CI			
<b>Region:</b>												
All regions	3910 (99)	0.4	0.2-0.6	0.6	0.3-0.9	1.0	0.5-1.4	0.2	1.1-2.0	0.39	1.03	0.2
Imereti	645	0.16	0.0-0.46	0.31	0.0-0.73	0.47	0.0-1.0	0.16	0.6-2.5	0.46	1.05	0.15
Kakheti	667	0.3	0.0-0.7	0.75	0.0-1.5	1.05	0.2-1.9	2.3	0.8-3.6	0.33	1.08	0.0
Kvemo Kartli	658	0.61	0.04-1.2	0.9	0.0-1.9	1.5	0.1-2.9	1.1	0.4-1.8	0.35	1.09	0.3
Mtskheta-Mtianeti	655	0.6	0.0-1.3	0.0	0.0	0.6	0.0-1.3	1.8	0.5-3.2	0.43	0.92	0.5
Samtskhe-Javakheti	633	0.5	0.0-1.0	0.5	0.0-1.0	0.9	0.3-1.6	1.4	0.5-2.3	0.37	1.0	0.3
Shida Kartli	652	0.5	0.0-1.0	0.6	0.05-1.2	1.1	0.4-1.8	1.2	0.4-2.1	0.41	1.02	0.15
<b>Sex:</b>												
	3910 (93)											
Male	2026	0.35	0.1-0.6	0.5	0.1-0.9	0.9	0.3-1.4	1.3	0.8-1.9	0.39	1.04	0.1
Female	1884	0.4	0.1-0.7	0.6	0.2-1.0	1.0	0.5-1.5	1.8	1.0-2.5	0.39	1.02	0.3
<b>Age group:</b>												
	39140 (93)											
< 6 months	355	0.0	0.0	0.6	0.0-1.6	0.6	0.0-1.6	0.9	0.0-2.1	0.43	1.05	0.0
6-12 months	404	0.0	0.0	0.3	0.0-0.6	0.3	0.0-0.6	3.2	1.2-5.1	0.49	1.15	0.0
1-2 years	735	0.9	0.2-1.6	0.8	0.1-1.5	1.7	0.6-2.8	2.8	1.7-4.0	0.47	1.26	0.3
2-3 years	778	0.3	0.0-0.6	1.0	0.2-1.9	1.3	0.4-2.2	0.9	0.1-1.7	0.28	0.94	0.0
3-4 years	835	0.4	0.01-0.8	0.1	0.0-0.4	0.55	0.1-1.0	0.7	0.01-1.4	0.37	0.91	0.35
4-5 years	803	0.3	0.0-0.8	0.5	0.0-1.0	0.8	0.1-1.5	1.1	0.3-2.0	0.40	0.9	0.3
<b>Birth weight:</b>												
	3842 (161)											
< 2.5 kg	226	1.1	0.0-2.5	1.7	0.0-3.8	2.9	0.4-5.3	1.0	0.0-2.2	0.19	1.09	0.3
>=2.5 kg	3616	0.3	0.1-0.4	0.5	0.2-0.8	0.7	0.3-1.1	1.6	1.1-2.0	0.41	1.02	0.15
<b>Ever breastfed</b>												
	3906 (97)											
Yes	3202	0.4	0.4-0.7	0.6	0.2-0.9	1.0	0.5-1.5	1.4	0.9-1.8	0.39	1.03	0.2
No	604	0.1	0.0-0.4	0.5	0.0-1.1	0.6	0.0-1.2	2.3	0.8-3.8	0.4	1.06	0.0
<b>Infectious illnesses:</b>												
	3899 (104)											
Diarrhea in last 2 weeks												
Yes	139	0.0	0.0	3.2	0.0-6.6	3.2	0.0-6.6	1.2	0.0-2.9	0.22	1.0	0.0
No	3760	0.4	0.2-0.6	0.5	0.2-0.8	0.9	0.5-1.3	1.5	1.1-2.0	0.4	1.03	0.2
Cough/fever in last 2 weeks												
	3900 (103)											
Yes	314	0.0	0.0	0.5	0.0-1.2	0.5	0.0-1.2	0.8	0.0-1.7	0.31	0.96	0.0
No	3586	0.4	0.2-0.6	0.6	0.2-0.9	1.0	0.6-1.4	1.6	1.1-2.1	0.4	1.03	0.2
<b>Location:</b>												
	3910 (93)											
Rural	1222	0.2	0.0-0.5	0.3	0.0-0.7	0.6	0.1-1.0	2.1	1.3-2.9	0.45	1.08	0.1
Daba	118	0.7	0.0-1.9	1.0	0.0-2.7	1.65	0.0-3.6	1.6	0.0-4.0	0.59	1.13	0.6
Urban	2770	0.5	0.2-0.8	0.7	0.2-1.1	1.2	0.5-1.8	1.2	0.7-1.7	0.36	1.01	0.2

Weight for Height												
Group	N	Severe <-3 Z-score		Moderate -3 to -2 Z-score		Severe + moderate <-2 Z-score		Overweight >3 Z-score		Mean WHZ	Mean SD	Oedema <sup>3</sup>
		%	95% CI	%	95% CI	%	95% CI	%	95% CI			
<b>Ethnicity:</b>	3905 (98)											
Armenian	361	0.0	0.0	0.2	0.0-0.7	0.2	0.0-0.7	1.8	0.1-3.5	0.47	0.96	0.0
Azeri	297	1.7	0.4-2.9	1.8	0.0-3.9	3.5	0.6-6.4	0.7	0.0-1.6	0.17	1.11	0.7
Georgian	3173	0.2	0.1-0.4	0.4	0.2-2.7	0.7	0.4-1.0	1.6	1.1-2.1	0.4	1.03	0.1
Mix	13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.47	0.9	0.0
Osetian	39	2.6	0.0-6.8	0.0	0.0	2.6	0.0-6.8	0.0	0.0	0.68	0.8	2.5
Russian	8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.6	0.0
Other	14	0.0	0.0	6.3	0.0-19.0	2.7	0.0-19.0	0.0	0.0	0.3	1.2	0.0
<b>Household size:</b>	3903 (100)											
2	6	0.0	0.0	0.0	0.0	0.0	0.0	32.4	0.0-81.9	0.87	1.57	0.0
3 to 5	1953	0.3	0.1-0.6	0.6	0.2-1.0	0.9	0.4-1.4	1.6	1.0-2.3	0.36	1.03	0.1
6 to 10	1878	0.5	0.1-0.8	0.6	0.2-1.0	1.0	0.5-1.5	1.3	0.6-1.9	0.42	1.03	0.3
11 to 15	64	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0-2.3	0.41	1.02	0.0
> 15	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.13	0.29	0.0
<b>Caretaker's education:</b>	3899 (104)											
Primary	37	9.6	4.3-14.9	0.0	0.0	9.6	4.3-14.9	0.0	0.0	0.01	1.35	3.5
Incomplete sec.	225	0.0	0.0	1.4	0.0-3.1	1.4	0.0-3.1	1.1	0.0-2.5	0.31	0.99	0.0
Secondary	1642	0.3	0.04-0.5	0.7	0.2-1.2	0.5	0.4-1.6	1.2	0.6-1.2	0.35	0.99	0.1
Technical/vocational	1035	0.2	0.0-0.5	0.3	0.0-0.8	0.5	0.0-1.0	1.3	0.4-2.1	0.36	1.01	0.2
High education	960	0.5	0.0-0.9	0.4	0.0-0.9	0.9	0.2-1.5	2.4	1.4-3.3	0.53	1.09	0.2
<b>Self-rated economic status:</b>	3899 (104)											
Very poor	184	0.6	0.0-1.5	1.5	0.0-3.6	2.1	0.0-4.4	0.0	0.0	0.25	0.94	0.4
Poor	923	0.6	0.0-1.2	0.6	0.1-1.2	1.2	0.4-2.0	0.7	0.2-1.2	0.33	1.02	0.4
So-so	2716	0.28	0.1-0.5	0.5	0.1-0.9	0.8	0.3-1.3	1.8	1.3-2.4	0.41	1.03	0.1
Rich	74	0.8	0.0-2.3	0.0	0.0	0.8	0.0-2.3	3.3	0.0-7.8	0.69	1.09	0.0
Very rich	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.67	0.2	0.0

<sup>1</sup> results based on very small sample size.

<sup>2</sup> non-weighted.

<sup>3</sup> oedema is also included in category "severe <-3Z."

**Table A - 6: Height-for-age Z-scores of children 0-59 months of age by total, region, gender, age groups, weight at birth, ever been breastfed, location, ethnicity, household size and self-rated economic status.**

Group	N	Height for Age						Mean HAZ	Mean SD
		Severe (<-3 Z-score)		Moderate (-3 to -2 Z-score)		Severe + moderate (<-2 Z-score)			
		%	95% CI	%	95% CI	%	95% CI		
<b>Region:</b>									
All regions (missing)	3958 (45)	2.2	1.5-3.0	5.9	5.0-6.8	8.1	6.9-9.4	-0.36	1.25
Imereti	658	2.1	0.4-3.8	4.3	2.6-5.9	6.4	3.8-9.0	-0.16	1.29
Kakheti	671	0.6	0.0-1.3	4.8	3.1-6.4	5.4	3.7-7.0	-0.19	1.16
Kvemo Kartli	665	4.4	2.4-6.3	7.4	4.9-9.8	11.7	8.1-15.4	-0.57	1.38
Mtskheta-Mtianeti	659	0.5	0.0-0.95	5.9	3.6-8.3	6.4	4.0-8.8	-0.23	1.15
Samtskhe-Javakheti	650	1.5	0.6-2.5	9.1	7.1-11.1	10.6	8.6-12.6	-0.64	1.22
Shida Kartli	655	2.0	0.9-3.0	6.6	4.3-3.8	8.6	5.6-11.5	-0.39	1.9
<b>Sex:</b>	3958 (45)								
Male	2059	2.6	1.4-3.8	5.5	4.4-6.7	8.1	6.3-9.9	-0.35	1.25
Female	1899	1.8	1.0-2.6	6.3	5.1-7.6	8.2	6.7-9.6	-0.37	1.25
<b>Age group:</b>	3958 (45)								
< 6 months	370	0.8	0.0-1.9	2.7	1.1-4.3	3.5	1.5-5.4	0.28	1.31
6-12 months	408	1.5	0.1-2.9	3.4	1.3-5.6	4.9	2.4-7.4	-0.07	1.15
1-2 years	742	2.3	1.0-3.7	6.5	4.6-8.5	8.9	6.5-11.3	-0.47	1.32
2-3 years	787	1.7	0.8-2.7	6.8	4.9-8.7	8.5	6.3-10.8	-0.25	1.31
3-4 years	843	3.0	1.5-4.5	6.8	4.8-8.7	9.8	7.2-12.4	-0.54	1.15
4-5 years	808	2.8	1.2-4.4	6.4	4.6-8.2	9.2	6.7-11.6	-0.62	1.1
<b>Birth weight:</b>	3889 (114)								
< 2.5 kg	227	4.3	1.1-7.5	15.7	10.3-21.1	20.0	13.8-26.2	-1.13	1.31
>=2.5 kg	3662	2.1	1.3-2.8	5.1	4.2-5.9	7.1	5.9-8.4	-0.30	1.22
<b>Ever breastfed:</b>	3954 (49)								
Yes	3347	2.3	1.5-3.1	5.8	4.9-6.8	8.2	6.9-9.5	-0.35	1.24
No	607	2.1	0.8-3.3	6.4	4.0-8.8	8.5	5.9-11.1	-0.41	1.28
<b>Location:</b>	3958 (45)								
Rural	2605	2.4	1.4-3.4	6.6	5.4-7.7	8.9	7.2-10.7	-0.41	1.26
Urban	1234	1.9	0.9-2.9	4.8	3.4-6.3	6.7	4.7-8.7	-0.27	1.22
Daba	119	3.6	0.0-8.1	5.9	3.7-8.0	9.5	5.8-13.2	-0.32	1.25
<b>Ethnicity:</b>	3953 (50)								
Armenian	369	1.5	0.0-3.1	9.0	5.0-13.0	10.5	6.0-15.0	-0.63	1.19
Azeri	302	6.1	3.2-9.0	9.2	6.2-12.2	15.3	11.3-19.4	-0.77	1.4
Georgian	3206	1.8	1.0-2.6	5.3	4.3-6.2	7.1	5.7-8.5	-0.3	1.23
Mix	13	9.3	0.0-26.0	9.3	0.0-24.0	18.6	1.0-36.0	-0.51	1.48
Osetian	39	0.0	0.0	3.1	0.0-9.4	3.1	0.0-9.4	0.12	1.15
Russian	8	0.0	0.0	0.8	0.0-46.5	14.0	0.0-46.5	-1.02	1.03
Other	16	0.0	0.0	5.3	0.0-16.7	5.3	0.0-16.7	0.33	1.28
<b>Household size:</b>	3951 (51)								
2	6	32.4	0.0-82.0	9.5	0.0-28.7	41.9	0.0-91.2	-1.07	1.48
3 to 5	1983	2.5	1.4-3.6	5.8	4.6-7.0	8.3	6.6-10.0	-0.34	1.21
6 to 10	1895	1.8	1.1-2.5	1.2	5.0-7.4	8.0	6.5-9.5	-0.36	1.28
11 to 15	65	3.5	0.0-8.4	3.2	0.0-7.1	6.7	0.7-12.6	-0.57	1.32
> 15	2	0.0	0.0	0.0	0.0	0.0	0.0	-0.88	0.88
<b>Self-rated economic status:</b>	3947 (56)								
Very poor	185	2.8	0.1-5.5	11.2	5.5-16.9	14.0	8.1-19.8	-0.71	1.26
Poor	927	3.8	1.8-5.8	6.8	4.9-8.8	10.6	7.7-13.6	-0.54	1.31
Middle	2756	1.7	1.1-2.3	5.4	4.3-6.4	7.0	5.8-8.3	-0.28	1.22
Rich	77	1.8	0.0-5.4	1.8	0.0-5.5	3.7	0.0-8.6	-0.1	1.11
Very rich	2	0.0	0.0	0.0	0.0	0.0	0.0	-0.45	0.69

<sup>1</sup> results based on very small sample size.

<sup>2</sup> non-weighted.

**Table A - 7: Percentage of children 0-59 months of age with diarrhea, cough & fever, and their medical treatment.**

Group	N	Diarrhea during or 2 weeks prior to survey		Cough and fever during or 2 weeks prior to survey		
		Yes	No	N	Yes	No
Total*	3976	3.6	96.4	3977	8.0	92.0
Missing Treatment:	(27)			(26)		
Drink less or the same	[140] 75	56.5		[319] 161	53.0	
Drink more	64	43.3		152	45.5	
Does not Know	1			6		
Eat less	[139] 60	46.1		[319] 171	54.8	
Eat same	78	53.7		142	43.7	
Eat more	1			6		
Sought treatment:	(142)			319		
Yes	55	42.6		169	55.2	
No	95	57.4		141	42.8	
Missing	2			9		
Why not?	74			141		
Missing	(68)			(28)		
-impossible <sup>1</sup>		27	37.6	55	37.7	
-unnecessary <sup>2</sup>		47	62.4	86	62.3	

<sup>1</sup>that means, that Health Care Center is far away, or has no money for treatment.

<sup>2</sup>That means, that caretaker answered, that the treatment was not necessary, or household member treated.

**Table A - 8: Percentage of children 6 months of age and younger who are exclusively breastfed.**

Group	N	Exclusive Breastfeeding %	
		Yes	No
Age:			
At 0 month	43	83.9	16.0
At 1 month	54	70.9	29.1
At 2 months	39	52.9	47.1
At 3 months	39	44.1	55.8
At 4 months	56	36.1	63.9
At 5 months	28	28.5	71.5
At 6 months	34	12.1	87.9
Total:	293	48.1	51.9

<sup>1</sup>Not weighted.

**Table A - 9: Time that breastfeeding ceased for children under 5 years of age by month of cessation.**

Group	N	Ceasing breastfeeding:		
		% Total	Male	Female
Age:				
At 0 month	70	0.3	0.18	0.4
At 1 month	375	15.1	14.7	15.5
At 2 months	366	13.5	13.8	13.2
At 3 months	363	12.8	13.1	12.4
At 4 months	209	7.3	7.6	6.9
At 5 months	128	4.4	4.9	3.8
At 6 months	170	6.7	6.5	6.9
7-9 months	210	7.8	8.0	7.5
10-12 months	262	9.3	9.5	9.0
13-18 months	340	11.7	10.2	13.1
>18 months	311	11.4	11.5	11.3
All		100.0%	51.1	48.9
	2741		1426	1315

**Table A - 10: Percentage of children under 5 years of age by birth weight groups and broken down by age groups, gender, region and location.**

Group	N	Birth weight							
		<2.5 kg 95% C.I.		≥2.5 and <3.5 kg %		≥3.5 and <4.5 kg %		≥4.5 kg 95% C.I.	
Age groups:									
Total	3923 (80)	5.7	3.5-7.0	52.6	50.7-54.6	39.6	37.7-41.6	2.1	1.6-2.6
0 - 5 months	366	6.6	2.9-10.3	54.7	48.7-60.5	37.8	32.6-43.0	1.00	0.0-2.1
6 - 11 months	400	6.1	3.3-8.8	51.6	45.8-57.4	39.95	34.4-45.5	2.4	0.6-4.2
12 – 23 months	732	6.9	4.4-9.4	50.0	46.0-54.0	40.7	36.8-44.5	2.4	1.2-3.6
24 – 35 months	784	3.8	2.4-5.3	54.8	50.7-59.0	38.9	35.0-43.1	2.4	1.2-3.6
36 – 47 months	837	6.1	4.4-7.8	51.9	47.6-56.1	40.8	36.7-44.8	1.3	0.6-2.0
48 – 60 months	804	5.2	3.5-7.0	43.3	49.8-56.8	38.9	35.6-42.3	2.6	1.3-3.8
Sex:	3923 (80)								
Male	2045	5.0	3.8-6.3	47.1	44.6-49.6	45.0	42.5-47.6	2.8	1.9-3.7
Female	1378	6.3	4.9-7.7	58.4	55.8-60.9	34.0	31.4-36.7	1.3	0.7-1.8
Region:									
All regions	3923(80)	5.7	4.8-6.7	52.7	50.6-54.6	39.6	37.7-41.6	0.3	1.6-2.6
Imereti	666	5.6	3.7-7.5	50.1	46.5-54.7	41.7	37.8-45.7	2.1	0.98-3.2
Kakheti	654	7.8	3.3-12.3	50.3	45.1-55.5	39.6	34.8-44.4	2.3	1.2-3.4
Kvemo Kartli	627	4.5	2.9-6.0	55.5	54.4-59.6	37.8	33.5-42.1	2.2	0.98-3.5
Mtskheta-Mtianeti	660	7.1	5.1-9.1	53.6	50.0-57.2	37.0	33.3-40.6	2.3	1.0-30.6
Samtskhe-Javakheti	652	5.2	3.2-7.3	57.4	53.5-61.3	35.4	31.4-39.5	2.0	0.9-3.1
Shida Kartli	364	5.0	3.2-6.8	52.0	47.6-56.3	41.6	37.5-45.7	1.5	0.4-2.6
Location:	3923 (80)	5.7	4.6-6.8	52.6	50.7-54.6	39.6	37.7-41.6	2.1	1.6-2.6
Urban	1247	6.0	4.5-7.4	51.6	48.1-55.1	40.9	37.5-44.1	1.7	0.8-2.5
Rural	2559	5.7	4.1-7.2	53.1	50.8-55.5	38.9	36.5-41.3	2.3	1.7-3.0
<i>Daba</i>	117	1.1	0.0-2.9	55.5	46.6-64.5	41.0	31.9-50.0	2.4	0.0-4.8
	95	1.0	0.0-2.7	49.0	39.0-59.0	45.5	39.2-51.8	4.5	0.0-9.6

\* 80 cases missing

## April 2001 Data

**Table B - 1: The surveyed population by region grouped into categories of age groups, gender, child's primary caretaker, household size, number of children under five years of age, number of children 5 to 15 years of age and kindergarten attendance.**

Groups	Imereti	Kvemo Kartli	Samtskhe-Javakheti	Mtskheta-Mtianeti	Shida Kartli	Kakheti	Total
<b>Age:</b>							
Number	662	660	662	665	661	669	3979
0 – 5 months	9.2	9.7	11.0	9.2	8.3	12.1	9.85
6 - 11 months	11.0	8.0	10.9	8.3	8.6	10.6	9.8
12 – 23 months	20.5	18.2	18.4	15.6	23.0	22.1	20.2
24 – 35 months	18.5	21.4	19.8	21.7	18.9	20.6	19.8
36 – 47 months	19.8	20.0	18.9	22.6	20.4	16.9	19.5
48 – 60 months	21.0	22.7	21.0	22.7	20.7	17.7	20.9
<b>Sex:</b>							
Number	662	660	662	665	661	669	3979
Male	47.7	49.5	55.0	52.9	52.2	49.2	50.0
Female	52.3	50.5	45.0	47.1	47.8	50.8	50.0
<b>Caretaker:</b>							
Number	662	660	662	665	661	669	3979
Missing	(0)	(0)	(0)	(0)	(0)	(0)	(0)
Mother	95.9	97.9	97.0	98.0	99.2	98.4	97.5
Father	0.0	0.0	0.15	0.5	0.15	0.1	0.1
Granny	3.2	2.0	2.9	1.1	0.6	0.7	2.0
Aunt	0.8	0.15	0.0	0.15	0.0	0.7	0.4
Relative	0.2	0.0	0.0	0.3	0.0	0.0	0.1
Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Household size:</b>							
Number	510	497	517	522	518	547	3111
Missing	(3)	(0)	(0)	(0)	(0)	(0)	(3)
Mean	5.6	5.4	5.8	5.5	5.5	5.5	5.5
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	0.2	0.0	0.0	0.2	0.2	0.0	0.1
3 – 5	54.0	58.1	48.0	54.6	52.1	54.7	54.3
6 – 10	44.4	40.3	50.3	44.1	46.9	45.0	44.4
11 – 15	1.4	1.4	1.7	1.1	0.7	0.4	1.1
> 15	0.0	0.2	0.0	0.0	0.0	0.0	0.05
<b>Children less than 5 years of age:</b>							
Number	513	496	517	522	518	547	3113
Mean	1.4	1.4	1.4	1.3	1.3	1.3	1.36
1	66.9	61.9	67.9	69.5	68.1	73.3	67.3
2	27.7	31.4	28.4	26.4	29.3	24.1	28.7
3	5.1	4.0	3.3	4.0	2.1	2.6	3.8
4	0.4	0.0	0.4	0.0	0.4	0.0	0.2
<b>Children between 5 and 15 years of age:</b>							
Number	513	496	517	521	517	547	3111
Missing	(0)	(1)	(0)	(1)	(1)	(0)	(3)
Mean	0.54	0.67	0.76	0.65	0.68	0.63	0.65
0	60.0	57.3	51.6	55.7	51.6	55.6	56.4
1	29.4	25.2	27.9	30.5	33.1	30.0	29.0
2-4	10.5	17.3	19.9	13.6	14.9	14.1	14.3
>=5	0.0	0.2	0.6	0.2	0.4	0.4	0.2
<b>Child attending kindergarten:</b>							
Number	392	423	395	445	397	369	2421
Yes	24.5	23.9	12.9	33.9	12.1	27.6	21.6
No	75.5	76.1	87.1	66.1	87.9	74.4	77.4

**Table B - 2: The surveyed population by ethnicity and grouped in categories of age groups, child's primary caretaker, household size, number of children under 5 years of age, and number of children 5 to 15 years.**

Groups	Georgian	Azeri	Armenian	Other	Total
<b>Age:</b>					
Number	3208	309	385	72	3974
0 - 5 months	9.6	11.7	12.4	3.9	9.9
6 - 11 months	9.9	8.0	11.8	7.2	9.8
12 - 23 months	20.1	20.1	17.3	31.6	20.2
24 - 35 months	19.3	23.1	20.6	21.9	19.8
36 - 47 months	20.1	15.4	17.2	21.4	19.5
48 - 60 months	20.9	21.8	20.7	14.0	20.9
<b>Caretaker:</b>					
Number	3208	309	385	72	3974
Mother	97.3	98.7	98.2	97.3	97.5
Father	0.1	0.0	0.2	0.0	0.1
Granny	2.2	0.7	1.6	2.7	2.0
Aunt	0.4	0.6	0.0	0.0	0.4
Relative	0.1	0.0	0.0	0.0	0.1
Other	0.0	0.0	0.0	0.0	0.0
<b>Household size:</b>					
Number	2541	215	300	55	3111
Missing	(3)	(0)	(0)	(0)	(3)
Mean	5.5	5.7	5.9	5.4	5.5
1	0.0	0.0	0.0	0.0	0.17
2	0.1	0.0	0.0	0.0	0.1
3 - 5	55.1	52.5	45.8	54.9	54.3
6 - 10	44.0	44.0	51.9	43.2	44.5
11 - 15	0.8	3.0	2.3	1.9	1.1
> 15	0.0	0.5	0.0	0.0	0.05
<b>Children less than 5 years of age:</b>					
Number	2541	215	300	55	3111
Missing	(3)	(0)	(0)	(0)	(3)
Mean	1.35	1.5	1.4	1.35	1.36
1	68.6	56.5	66.5	68.3	67.3
2	27.5	38.3	30.6	28.2	28.7
3	3.7	5.1	2.6	3.5	3.7
4	0.2	0.0	0.3	0.0	0.2
<b>Children between 5 and 15 years of age:</b>					
Number	2539	215	300	55	3109
Missing	(5)	(0)	(0)	(0)	(5)
Mean	0.6	0.7	0.7	0.9	0.65
0	56.4	56.7	58.5	49.7	56.4
1	30.3	23.4	20.8	24.9	29.0
2-4	13.2	19.5	20.2	22.0	14.3
>=5	0.1	0.5	0.6	3.5	0.2

**Table B - 3: The surveyed population by location and grouped in categories of age groups, gender, child's primary caretaker, household size, number of children under 5 years of age, and number of children 5 to 15 years of age.**

Groups	Urban	Daba <sup>1</sup>	Rural	Total
<b>Children*</b>				
<b>Age group:</b>				
Number	1261	117	2601	3979
(%)	(36.6)	(2.1)	(61.3)	
0 – 5 months	9.8	5.25	10.0	9.9
6 – 11 months	9.4	5.9	10.1	9.8
12 – 23 months	19.9	23.2	20.2	20.2
24 – 35 months	18.7	26.0	20.3	19.8
36 – 47 months	21.6	20.9	18.2	19.5
48 – 60 months	20.6	18.7	21.2	20.9
> 60 months				
<b>Caretaker:</b>				
Number	1361	117	2601	3979
Mother	96.6	94.3	98.1	97.5
Father	0.0	0.0	0.1	0.1
Granny	2.8	5.7	1.4	2.0
Aunt	0.6	0.0	0.3	0.4
Relative	0.04	0.0	0.1	0.1
Other	0.0	0.0	0.0	0.0
<b>Household size*:</b>				
Number	1044	95	1974	3113
Missing	(0)	(0)	(1)	(1)
Mean	5.1	4.9	5.8	5.5
1	0.0	0.0	0.0	0.0
2	0.2	0.0	0.02	0.1
3 – 5	65.2	71.4	46.5	54.2
6 – 10	33.8	28.6	52.1	44.5
11 – 15	0.8	0.0	1.4	1.1
> 15	0.0	0.0	0.1	0.05
<b>Children less than 5 years of age:</b>				
Number	1044	95	1974	3113
(%)	(38.8)	(2.1)	(59.1)	
Mean	1.3	1.2	1.4	1.36
1	74.2	72.4	62.6	67.3
2	23.9	35.5	32.0	28.7
3	1.9	2.1	5.0	3.8
4	0.05	0.0	0.3	0.2
<b>Children between 5 and 15 years of age:</b>				
Number	1044	95	1972	3111
Missing	(0)	(0)	(3)	(3)
0	0.6	0.6	0.7	0.65
1	57.7	53.9	55.7	56.4
2-4	31.1	36.5	27.4	29.0
>=5	11.2	9.6	16.6	14.3
Mean	0.05	0.0	0.4	0.2

<sup>1</sup>Areas that cannot be clearly categorized as either rural or urban.

**Table B - 4: Caretaker's level of education.**

Group	Mother	Father	Granny	Aunt	Relative	Other	Total
Children*							
Education:							
Number	3884	6	69	12	3	0.0	3974*
Primary	1.3	25.3	0.0	0.0	25.3	0.0	1.2
Incomplete secondary	5.3	16.2	12.1	0.0	0.0	0.0	5.5
Secondary	41.1	0.0	45.4	75.9	0.0	0.0	41.3
Tech. Vocational	24.8	28.5	26.1	11.7	0.0	0.0	24.8
High education	27.5	30.0	16.3	12.4	74.7	0.0	27.2

\*5 cases of total 3979 children are missing by caretaker's education.

**Table B - 5: Weight-for-height of children 0-59 months of age by total, by region, gender, age groups, weight at birth, breastfeeding, infectious illnesses, location, ethnicity, household size, caretaker's education and self-rated economic status.**

Weight for Height												
Group	N	Severe <-3 Z		Moderate -3 to -2 Z		Severe + moderate <-2 Z		Overweight >3 Z		Mean WHZ	Mean SD	Oedema <sup>3</sup>
		%	95% CI	%	95% CI	%	95% CI	%	95% CI			
<b>Region:</b>												
All regions	3937 (42)	0.4	0.17-0.64	0.46	0.2-0.7	0.9	0.5-1.2	1.9	1.4-2.4	0.49	1.08	0.2
Imereti	652	0.61	0.04-1.19	0.46	0.0-0.97	1.07	0.2-1.9	2.0	0.9-3.1	0.55	1.11	0.5
Kakheti	663	0.15	0.0-0.45	0.45	0.0-0.95	0.6	0.04-1.2	1.97	0.9-3.05	0.37	1.07	0.0
Kvemo Kartli	659	0.5	0.0-1.0	0.46	0.0-0.96	0.9	0.0-1.8	1.7	0.8-2.6	0.48	1.04	0.2
Mtskheta-Mtianeti	652	0.6	0.0-1.45	0.15	0.0-0.45	0.8	0.0-1.6	1.2	0.0-2.5	0.4	0.91	0.6
Samtskhe-Javakheti	660	0.3	0.0-0.7	0.46	0.0-0.95	0.8	0.1-1.4	2.4	0.7-4.1	0.6	1.05	0.0
Shida Kartli	651	0.15	0.0-0.45	0.6	0.04-1.2	0.8	0.1-1.4	1.7	0.4-3.0	0.53	1.02	0.0
<b>Sex:</b>	3937 (42)											
Male	2013	0.4	0.07-0.7	0.4	0.06-0.7	0.8	0.3-1.2	1.7	1.0-2.3	0.49	1.05	0.1
Female	1924	0.4	0.07-0.7	0.54	0.2-0.9	0.95	0.5-1.4	2.1	1.3-2.8	0.48	1.03	0.3
<b>Age group:</b>	3937 (42)											
< 6 months	386	0.14	0.0-0.42	0.86	0.0-2.0	1.0	0.0-2.2	1.6	0.4-2.8	0.65	1.12	0.0
6-12 months	376	0.0	0.0	0.6	0.0-1.66	0.6	0.0-1.7	3.4	1.5-5.3	0.61	1.2	0.0
1-2 years	774	0.45	0.0-1.04	0.58	0.0-1.17	1.04	0.2-1.9	4.1	2.5-5.6	0.65	1.22	0.04
2-3 years	796	0.67	0.08-1.3	0.4	0.0-0.9	1.1	0.18-1.9	1.0	0.2-1.9	0.37	0.96	0.3
3-4 years	780	0.29	0.0-0.79	0.42	0.0-0.9	0.7	0.02-1.4	0.5	0.0-1.11	0.39	0.87	0.3
4-5 years	825	0.5	0.0-1.2	0.17	0.0-0.4	0.7	0.01-1.4	1.25	0.33-2.2	0.4	0.92	0.5
<b>Birth weight:</b>	3818 (161)											
< 2.5 kg	194	0.0	0.0	1.6	0.0-3.3	1.6	0.0-3.3	1.0	0.0-2.4	0.23	1.06	0.0
>=2.5 kg	3624	0.4	0.1-0.6	0.4	0.15-0.6	0.7	0.4-1.1	1.8	1.3-2.4	0.5	1.03	0.2
<b>Ever breastfed</b>	3933 (46)											
Yes	3347	0.4	0.15-0.66	0.43	0.18-0.68	0.9	0.5-1.2	1.6	1.1-2.1	0.48	1.03	0.2
No	586	0.4	0.0-1.0	0.6	0.0-1.4	1.04	0.1-2.0	3.1	1.4-4.8	0.52	1.09	0.4
<b>Infectious illnesses:</b>	3930 (49)											
Diarrhea in last 2 weeks	3930 (49)											
Yes	125	0.0	0.0	0.0	0.0	0.0	0.0	3.7	0.0-8.2	0.46	1.2	0.0
No	3805	0.42	0.2-0.7	0.5	0.2-0.7	0.9	0.5-1.3	1.8	1.3-2.3	0.49	1.03	0.2
Cough/fever in last 2 weeks	3923 (56)											
Yes	274	0.7	0.0-2.0	0.3	0.0-0.9	0.95	0.0-2.3	2.0	0.1-3.9	0.37	0.99	0.7
No	3649	0.4	0.15-0.6	0.5	0.2-0.7	0.9	0.5-1.2	1.9	1.3-2.4	0.5	1.04	0.2

Weight for Height												
Group	N	Severe <-3 Z		Moderate -3 to -2 Z		Severe + moderate <-2 Z		Overweight >3 Z		Mean WHZ	Mean SD	Oedema <sup>3</sup>
		%	95% CI	%	95% CI	%	95% CI	%	95% CI			
<b>Location:</b>	3937 (42)											
Rural	1245	0.36	0.0-0.7	0.43	0.06-0.8	0.8	0.3-1.3	2.6	1.6-3.6	0.59	1.09	0.3
Daba	116	0.0	0.0	0.0	0.0	0.0	0.0	4.8	0.0-9.9	0.51	1.06	0.0
Urban	2576	0.44	0.14-0.7	0.5	0.2-0.8	0.94	0.4-1.5	1.3	0.9-1.8	0.44	1.01	0.2
<b>Ethnicity:</b>	3932 (47)											
Armenian	383	0.2	0.0-0.7	0.5	0.0-1.1	0.7	0.0-1.4	2.5	0.1-4.9	0.57	1.05	0.0
Azeri	308	1.3	0.2-2.4	0.7	0.0-1.6	2.0	0.1-3.8	1.2	0.2-2.2	0.33	1.04	0.3
Georgian	3169	0.3	0.1-0.6	0.4	0.2-0.7	0.7	0.4-1.1	1.9	1.3-2.5	0.49	1.04	0.2
Mix	10	0.0	0.0	0.0	0.0	0.0	0.0	8.1	0.0-23.0	1.06	1.03	0.0
Osetian	43	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.79	0.9	0.0
Russian	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.07	1.2	0.0
Other	16	0.0	0.0	5.6	0.0-17.6	5.6	0.0-17.6	7.7	1.2-14.3	0.3	1.45	0.0
<b>Household size:</b>	3936 (43)											
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3 to 5	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.44	0.9	0.0
6 to 10	1965	0.7	0.3-1.1	0.7	0.3-1.1	1.3	0.7-2.0	1.9	1.2-2.7	0.45	1.03	0.4
11 to 15	1898	0.13	0.0-0.35	0.27	0.02-0.5	0.4	0.1-0.7	1.8	1.1-2.5	0.53	1.06	0.0
> 15	69	0.0	0.0	0.0	0.0	0.0	0.0	1.9	0.0-5.6	0.41	0.89	0.0
<b>Caretaker's education:</b>	3932 (47)											
Primary	48	7.6	2.9-12.3	0.0	0.0	7.6	2.9-12.3	2.0	0.0-5.2	0.29	1.3	2.8
Incomplete sec.	224	0.0	0.0	1.1	0.0-2.6	1.1	0.0-2.6	1.5	0.0-3.3	0.38	0.93	0.0
Secondary	1676	0.5	0.05-0.9	0.7	0.3-1.2	1.2	0.5-1.9	1.5	0.8-2.2	0.47	1.02	0.3
Technical/vocational	1013	0.07	0.0-0.2	0.3	0.0-0.8	0.4	0.0-0.9	1.5	0.6-2.4	0.39	1.02	0.1
High education	971	0.4	0.0-0.8	0.1	0.0-0.2	0.4	0.01-0.9	2.8	1.5-4.1	0.66	1.08	0.2
<b>Self-rated economic status:</b>	3929 (29)											
Very poor	209	0.0	0.0	2.6	0.2-4.9	2.6	0.2-4.9	0.84	0.0-1.9	0.24	1.0	0.0
Poor	920	1.0	0.2-1.8	0.6	0.0-1.1	1.6	0.6-2.5	1.3	0.5-2.1	0.4	1.0	0.6
So-so	2734	0.2	0.03-0.4	0.3	0.1-0.5	0.5	0.2-0.8	2.1	1.5-2.8	0.52	1.04	0.1
Rich	64	0.8	0.0-2.5	0.0	0.0	0.8	0.0-2.5	3.4	0.0-8.1	0.86	1.29	0.0
Very rich	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.29	0.23	0.0

<sup>1</sup> results based on very small sample size

<sup>2</sup> non-weighted

<sup>3</sup> oedema is also included in category "severe <-3Z"

**Table B - 6: Height-for-age of children 0-59 months of age by total, region, gender, age groups, weight at birth, ever been breastfed, location, ethnicity, household size and self-rated economic status.**

Group	N	Height for Age							
		Severe <-3 Z-score		Moderate -3 to -2 Z-score		Severe + moderate <-2 Z-score		Mean HAZ-score	Mean SD
		%	95% CI	%	95% CI	%	95% CI		
<b>Region:</b>									
All regions	3943 (36)	2.5	1.8-3.2	7.9	6.7-9.1	10.4	8.9-12.0	-0.52	1.24
Imereti	656	1.1	0.1-2.0	7.5	4.8-10.1	8.5	5.5-11.6	-0.29	1.22
Kakheti	663	0.8	0.0-1.5	6.2	3.8-8.5	6.9	4.1-9.8	-0.38	1.1
Kvemo Kartli	659	5.4	3.1-7.8	8.5	5.7-11.3	14.0	10.0-17.9	-0.67	1.35
Mtskheta-Mtianeti	654	0.9	0.1-1.7	6.3	4.0-8.5	7.2	4.7-9.7	-0.35	1.1
Samtskhe-Javakheti	658	3.5	2.1-4.9	11.6	9.0-14.1	15.1	12.1-18.0	-0.86	1.28
Shida Kartli	653	2.9	1.4-4.4	8.3	5.3-11.2	11.2	7.4-15.0	-0.55	1.26
<b>Sex:</b>	3943 (36)								
Male	2014	3.0	1.9-4.0	7.9	6.4-9.4	10.9	8.9-12.0	-0.55	1.22
Female	1929	2.0	1.4-2.7	7.9	6.3-9.5	10.0	8.2-11.8	-0.48	1.26
<b>Age group:</b>	3943 (36)								
< 6 months	394	2.7	0.9-4.4	3.5	1.4-5.6	6.2	3.5-8.8	-0.04	1.25
6-12 months	376	2.5	1.2-3.7	9.8	6.2-13.4	12.3	8.4-16.1	-0.61	1.46
1-2 years	774	2.0	0.8-3.1	10.3	7.8-12.7	12.2	9.5-15.0	-0.59	1.24
2-3 years	794	2.0	1.0-3.0	6.7	4.3-9.1	8.7	6.1-11.4	-0.36	1.26
3-4 years	780	3.3	1.5-5.1	8.0	5.9-10.1	11.2	8.5-14.0	-0.59	1.16
4-5 years	825	2.7	1.3-4.1	7.9	5.9-10.0	10.6	8.1-13.2	-0.7	1.1
<b>Birth weight:</b>	3824 (155)								
< 2.5 kg	195	9.8	5.0-14.6	18.2	11.7-24.7	28.0	20.3-35.7	-1.38	1.34
>=2.5 kg	3629	2.0	1.4-2.6	7.1	5.9-8.3	9.1	7.6-10.6	-0.45	1.2
<b>Ever breastfed:</b>	3939 (40)								
Yes	3354	2.5	1.9-3.2	8.1	6.7-9.4	10.6	8.9-12.2	-0.52	1.23
No	585	2.4	1.1-3.7	7.1	4.8-9.4	9.5	6.9-12.1	-0.49	1.26
<b>Location:</b>	3943 (36)								
Rural	2577	2.9	2.0-3.8	8.4	6.8-9.9	11.3	9.2-13.4	-0.59	1.25
Urban	1250	1.7	0.6-2.9	7.3	5.2-9.3	9.0	6.7-11.3	-0.38	1.2
Daba	116	4.4	0.0-8.9	6.1	2.1-10.1	10.5	2.4-18.6	-0.41	1.21
<b>Ethnicity:</b>	3938 (41)								
Armenian	384	4.2	1.7-6.8	11.9	7.9-16.0	16.1	11.7-20.7	-0.88	1.25
Azeri	308	6.6	3.9-9.4	12.4	8.2-16.5	19.0	13.6-24.4	-0.98	1.3
Georgian	3174	1.9	1.2-2.6	7.1	5.7-8.4	8.9	7.3-10.6	-0.43	1.2
Mix	10	11.1	0.0-30.5	0.0	0.0	11.1	0.0-30.5	-0.72	1.48
Osetian	43	0.0	0.0	12.4	0.8-24.0	12.4	0.8-23.9	-0.36	1.14
Russian	3	0.0	0.0	0.0	0.0	0.0	0.0	-0.48	0.99
Other	16	0.0	0.0	3.0	0.0-10.1	3.1	0.0-10.1	0.06	1.15
<b>Household size:</b>	3942 (37)								
1	1	0.0	0.0	0.0	0.0	0.0	0.0	-1.14	0.0
2	3	0.0	0.0	0.0	0.0	0.0	0.0	-0.63	0.43
3 to 5	1972	2.5	1.5-3.6	8.3	6.8-9.7	10.8	8.9-12.7	-0.52	1.21
6 to 10	1897	2.6	1.7-3.3	7.6	5.9-9.2	10.2	8.2-12.2	-0.51	1.27
11 to 15	69	1.5	0.0-3.6	6.1	0.2-12.0	7.7	1.5-13.8	-0.6	1.24
> 15	1	0.0	0.0	0.0	0.0	0.0	0.0	-0.09	0.0
<b>Self-rated economic status:</b>	3935 (44)								
Very poor	209	5.8	1.5-10.1	13.0	7.6-18.5	18.8	12.7-25.0	-0.88	1.38
Poor	917	3.7	2.5-5.0	9.8	7.2-12.4	13.5	10.4-16.7	-0.61	1.33
So-so	2743	1.9	1.2-2.5	7.0	5.7-8.2	8.8	7.3-10.3	-0.46	1.19
Rich	64	2.1	0.0-6.1	4.2	0.0-9.8	6.3	0.01-15.3	-0.29	1.12
Very rich	2	0.0	0.0	0.0	0.0	0.0	0.0	0.07	0.6

<sup>1</sup> results based on very small sample size

<sup>2</sup> non-weighted

**Table B - 7: Percentage of children 0-59 months of age with diarrhea, cough & fever, and their medical treatment.**

Group	N	Diarrhea in 2 weeks prior to survey		Cough and fever in 2 weeks prior to survey		
		Yes	No	N	Yes	No
Total*	3972	3.2	96.8	3965	6.9	93.1
Missing (5)				(12)		
Treatment:						
	[126]			[272]		
Drink less or the same	63	47.8		171	65.2	
Drink more	63	52.2		101	34.8	
Does not Know	0			1(0.4%)		
	[126]			[275]		
Eat less	73	56.8		158	53.7	
Eat same	53	43.2		116	45.9	
Eat more	0			0		
Seeking treatment:	(125)			270		
YES	48	43.9		137	52.8	
NO	77	56.1		133	47.2	
Missing	1			5		
Why not?	77			131		
Missing	(48)			(149)		
-impossible <sup>1</sup>		28	(37)		60	(43.7%)
-unnecessary <sup>2</sup>		49	(63.0)		71.0	(56.3%)

<sup>1</sup>the Health Care facility is too distant or the family had no money for treatment.

<sup>2</sup>the caretaker stated that treatment was not necessary or a household member treated the child.

**Table B - 8: Percentage of children 6 months of age and younger who are exclusively breastfed.**

Group	N	Exclusive Breastfeeding %	
		Yes	No
Age:			
At 0 month	55	90.3	9.7
At 1 month	70	75.1	24.9
At 2 months	52	87.6	12.4
At 3 months	49	54.3	45.7
At 4 months	43	47.4	52.6
At 5 months	35	23.6	76.3
At 6 months	37	9.6	90.4
Total:	341	61.5	38.5

<sup>1</sup>Not weighted

**Table B - 9: Time that breastfeeding ceased for children under 5 years of age by month of cessation.**

Group	N	Ceasing breastfeeding:		
		% Total	Male	Female
Age:				
At 0 month	17	0.7	0.8	0.7
At 1 month	350	14.2	13.5	14.8
At 2 months	353	13.1	13.6	12.6
At 3 months	345	12.9	12.9	11.2
At 4 months	197	7.1	7.1	6.8
At 5 months	131	5.4	5.4	3.8
At 6 months	151	6.5	6.5	5.4
7-9 months	214	8.2	8.2	7.9
10-12 months	262	8.8	8.8	10.2
13-18 months	362	11.0	11.0	14.4
>18 months	327	12.2	12.2	12.3
All			49.8	50.2
	2709		1384	1325

**Table B - 10: Percentage of children under 5 years of age by birth weight groups and broken down by age groups, gender, region and location.**

Group	N	Birth weight							
		%	<2.5 kg 95% C.I.	%	>=2.5 and <3.5 kg	%	>=3.5 and <4.5 kg	%	>=4.5 kg 95% C.I.
Age groups:									
Total	3860	5	4.1-5.8	54.6	51.6-55.5	39.6	37.6-41.6	1.8	1.3-2.3
Mean	(119)								
0 - 5 months	385	6.0	2.9-9.1	53.2	46.9-59.5	40.3	33.6-46.9	0.5	0.0-1.2
6 - 11 months	371	6.5	3.3-9.7	51.8	46.0-57.7	40.6	35.0-46.2	1.1	0.0-2.5
12 - 23 months	752	4.8	3.1-6.4	51.2	47.1-55.3	41.7	37.5-45.9	2.3	1.1-3.5
24 - 35 months	779	4.8	3.1-6.6	53.5	49.0-57.6	38.9	34.8-43.8	2.8	1.4-4.1
36 - 47 months	764	4.4	2.7-6.1	55.5	51.1-59.8	38.6	33.9-43.3	1.5	0.6-2.4
48 - 60 months	809	4.7	3.1-6.2	55.0	51.3-58.8	38.5	35.0-42.1	1.8	0.8-2.7
Sex:	3860(119)]								
Male	1965	4.7	3.6-5.8	49.7	47.2-52.2	43.3	40.8-45.8	2.4	1.6-3.1
Female	1895	5.3	4.2-6.5	59.3	56.5-62.0	34.2	31.6-37.0	1.2	0.6-1.8
Region:									
All regions	3860(119)	5.0	4.2-5.8	54.4	52.4-56.3	38.9	36.9-40.8	1.8	1.3-2.3
Imereti	660	5.3	3.4-7.2	50.0	46.0-54.0	42.8	38.4-47.1	2.0	0.8-3.1
Kakheti	635	4.4	2.7-6.1	54.0	49.4-58.6	28.8	35.3-44.4	1.7	0.8-2.7
Kvemo Kartli	603	4.9	3.1-6.5	57.7	53.2-62.2	35.8	31.4-40.3	1.7	0.6-2.7
Mtskheta-Mtianeti	643	6.4	4.5-8.3	55.5	52.0-59.0	36.5	32.7-40.4	1.6	0.4-2.7
Samtskhe-Javakheti	659	5.6	3.5-7.7	56.6	52.7-60.5	35.7	32.0-39.4	2.1	0.9-3.3
Shida Kartli	660	4.2	2.8-5.7	52.1	47.6-56.6	41.8	37.6-46.0	1.8	0.6-3.0
Location:	3860(119)								
Urban	1260	4.8	3.4-6.2	53.3	49.8-56.9	40.7	37.7-43.8	1.2	0.4-2.0
Rural	2505	5.3	4.3-6.2	55.0	52.6-57.4	37.8	35.4-40.3	1.9	1.3-2.5
Daba	95	1.0	0.0-2.7	49.0	39.0-59.0	45.5	39.2-51.8	4.5	0.0-9.6

\* 80 cases missing

## August 2001 Data

Table C - 1: The surveyed population by region grouped into categories of age groups, gender, child's primary caretaker, household size, number of children under 5 years of age, number of children 5 to 15 years of age and kindergarten attendance.

Group	Imereti	Kvemo Kartli	Samtskhe-Javakheti	Mtskheta-Mtianeti	Shida Kartli	Kakheti	Total
<b>Age:</b>							
Number	662	660	662	665	661	669	3979
0 – 5 months	9.2	9.7	11.0	9.2	8.3	12.1	9.85
6 - 11 months	11.0	8.0	10.9	8.3	8.6	10.6	9.8
12 – 23 months	20.5	18.2	18.4	15.6	23.0	22.1	20.2
24 – 35 months	18.5	21.4	19.8	21.7	18.9	20.6	19.8
36 – 47 months	19.8	20.0	18.9	22.6	20.4	16.9	19.5
48 – 60 months	21.0	22.7	21.0	22.7	20.7	17.7	20.9
<b>Sex:</b>							
Number	662	660	662	665	661	669	3979
Male	47.7	49.5	55.0	52.9	52.2	49.2	50.0
Female	52.3	50.5	45.0	47.1	47.8	50.8	50.0
<b>Caretaker:</b>							
Number	662	660	662	665	661	669	3979
Missing	(0)	(0)	(0)	(0)	(0)	(0)	(0)
Mother	95.9	97.9	97.0	98.0	99.2	98.4	97.5
Father	0.0	0.0	0.15	0.5	0.15	0.1	0.1
Granny	3.2	2.0	2.9	1.1	0.6	0.7	2.0
Aunt	0.8	0.15	0.0	0.15	0.0	0.7	0.4
Relative	0.2	0.0	0.0	0.3	0.0	0.0	0.1
Other	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Household size:</b>							
Number	510	497	517	522	518	547	3111
Missing	(3)	(0)	(0)	(0)	(0)	(0)	(3)
Mean	5.6	5.4	5.8	5.5	5.5	5.5	5.5
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	0.2	0.0	0.0	0.2	0.2	0.0	0.1
3 – 5	54.0	58.1	48.0	54.6	52.1	54.7	54.3
6 – 10	44.4	40.3	50.3	44.1	46.9	45.0	44.4
11 – 15	1.4	1.4	1.7	1.1	0.7	0.4	1.1
> 15	0.0	0.2	0.0	0.0	0.0	0.0	0.05
<b>Children less than 5 years of age:</b>							
Number	513	496	517	522	518	547	3113
Mean	1.4	1.4	1.4	1.3	1.3	1.3	1.36
1	66.9	61.9	67.9	69.5	68.1	73.3	67.3
2	27.7	31.4	28.4	26.4	29.3	24.1	28.7
3	5.1	4.0	3.3	4.0	2.1	2.6	3.8
4	0.4	0.0	0.4	0.0	0.4	0.0	0.2
<b>Children between 5 and 15 years of age:</b>							
Number	513	496	517	521	517	547	3111
Missing	(0)	(1)	(0)	(1)	(1)	(0)	(3)
Mean	0.54	0.67	0.76	0.65	0.68	0.63	0.65
0	60.0	57.3	51.6	55.7	51.6	55.6	56.4
1	29.4	25.2	27.9	30.5	33.1	30.0	29.0
2-4	10.5	17.3	19.9	13.6	14.9	14.1	14.3
>=5	0.0	0.2	0.6	0.2	0.4	0.4	0.2
<b>Child attending kindergarten:</b>							
Number	392	423	395	445	397	369	2421
Yes	24.5	23.9	12.9	33.9	12.1	27.6	21.6
No	75.5	76.1	87.1	66.1	87.9	74.4	77.4

**Table C - 2: The surveyed population by ethnicity and grouped in categories of age groups, child's primary caretaker, household size, number of children under 5 years of age, and number of children 5 to 15 years of age.**

Groups	Georgian	Azeri	Armenian	Other	Total
<b>Age:</b>					
Number	3208	309	385	72	3974
0 - 5 months	9.6	11.7	12.4	3.9	9.9
6 - 11 months	9.9	8.0	11.8	7.2	9.8
12 - 23 months	20.1	20.1	17.3	31.6	20.2
24 - 35 months	19.3	23.1	20.6	21.9	19.8
36 - 47 months	20.1	15.4	17.2	21.4	19.5
48 - 60 months	20.9	21.8	20.7	14.0	20.9
<b>Caretaker:</b>					
Number	3208	309	385	72	3974
Mother	97.3	98.7	98.2	97.3	97.5
Father	0.1	0.0	0.2	0.0	0.1
Granny	2.2	0.7	1.6	2.7	2.0
Aunt	0.4	0.6	0.0	0.0	0.4
Relative	0.1	0.0	0.0	0.0	0.1
Other	0.0	0.0	0.0	0.0	0.0
<b>Household size:</b>					
Number	2541	215	300	55	3111
Missing	(3)	(0)	(0)	(0)	(3)
Mean	5.5	5.7	5.9	5.4	5.5
1	0.0	0.0	0.0	0.0	0.17
2	0.1	0.0	0.0	0.0	0.1
3 - 5	55.1	52.5	45.8	54.9	54.3
6 - 10	44.0	44.0	51.9	43.2	44.5
11 - 15	0.8	3.0	2.3	1.9	1.1
> 15	0.0	0.5	0.0	0.0	0.05
<b>Children less than 5 years of age:</b>					
Number	2541	215	300	55	3111
Missing	(3)	(0)	(0)	(0)	(3)
Mean	1.35	1.5	1.4	1.35	1.36
1	68.6	56.5	66.5	68.3	67.3
2	27.5	38.3	30.6	28.2	28.7
3	3.7	5.1	2.6	3.5	3.7
4	0.2	0.0	0.3	0.0	0.2
<b>Children between 5 and 15 years of age:</b>					
Number	2539	215	300	55	3109
Missing	(5)	(0)	(0)	(0)	(5)
Mean	0.6	0.7	0.7	0.9	0.65
0	56.4	56.7	58.5	49.7	56.4
1	30.3	23.4	20.8	24.9	29.0
2-4	13.2	19.5	20.2	22.0	14.3
>=5	0.1	0.5	0.6	3.5	0.2

**Table C - 3: The surveyed population by location and grouped in categories of age groups, gender, child's primary caretaker, household size, number of children under 5 years of age, and number of children 5 to 15 years of age.**

Groups	Urban	Daba <sup>1</sup>	Rural	Total
<b>Children*</b>				
<b>Age:</b>				
Number	1261	117	2601	3979
(%)	(36.6)	(2.1)	(61.3)	
0 – 5 months	9.8	5.25	10.0	9.9
6 – 11 months	9.4	5.9	10.1	9.8
12 – 23 months	19.9	23.2	20.2	20.2
24 – 35 months	18.7	26.0	20.3	19.8
36 – 47 months	21.6	20.9	18.2	19.5
48 – 60 months	20.6	18.7	21.2	20.9
> 60 months				
<b>Caretaker:</b>				
Number	1361	117	2601	3979
Mother	96.6	94.3	98.1	97.5
Father	0.0	0.0	0.1	0.1
Granny	2.8	5.7	1.4	2.0
Aunt	0.6	0.0	0.3	0.4
Relative	0.04	0.0	0.1	0.1
Other	0.0	0.0	0.0	0.0
<b>Household size*:</b>				
Number	1044	95	1974	3113
Missing	(0)	(0)	(1)	(1)
Mean	5.1	4.9	5.8	5.5
1	0.0	0.0	0.0	0.0
2	0.2	0.0	0.02	0.1
3 – 5	65.2	71.4	46.5	54.2
6 – 10	33.8	28.6	52.1	44.5
11 – 15	0.8	0.0	1.4	1.1
> 15	0.0	0.0	0.1	0.05
<b>Children less than 5 years of age:</b>				
Number	1044	95	1974	3113
(%)	(38.8)	(2.1)	(59.1)	
Mean	1.3	1.2	1.4	1.36
1	74.2	72.4	62.6	67.3
2	23.9	35.5	32.0	28.7
3	1.9	2.1	5.0	3.8
4	0.05	0.0	0.3	0.2
<b>Children between 5 and 15 years of age:</b>				
Number	1044	95	1972	3111
Missing	(0)	(0)	(3)	(3)
0	0.6	0.6	0.7	0.65
1	57.7	53.9	55.7	56.4
2-4	31.1	36.5	27.4	29.0
>=5	11.2	9.6	16.6	14.3
Mean	0.05	0.0	0.4	0.2

<sup>1</sup>Areas that cannot be clearly categorized as either rural or urban.

**Table C - 4: Caretaker's level of education.**

\*11 cases of total 3896 children are missing by caretaker's education

Group	Aunt	Father	Granny	Mother	Relative	Other	Total
Children*							
Education:							
Number	10	1	47	3838	0	0	3896*
Primary	0.0	0.0	0.0	1.39	0	0	1.37
Incomplete secondary	17.2	0.0	13.2	5.6	0	0	5.7
Secondary	61.6	0.0	51.6	39.3	0	0	39.5
Tech. Vocational	14.02	100.0	15.2	99.1	0	0	25.89
High education	7.2	0.0	20.1	27.7	0	0	27.5

**Table C - 5: Weight-for-height of children 0-59 months of age by total, by region, gender, age groups, weight at birth, breastfeeding, infectious illnesses, location, ethnicity, household size, caretaker's education and self-rated economic status.**

Weight for Height												
Group	N	Severe <-3 Z-score		Moderate -3 to -2 Z-score		Severe + moderate <-2 Z-score		Overweight >3 Z-score		Mean WHZ-score	Mean SD	Oedema <sup>3</sup>
		%	95% CI	%	95% CI	%	95% CI	%	95% CI			
<b>Region:</b>												
All regions	3894 (13)	0.3	0.17-0.64	0.7	0.4-0.9	0.95	0.6-1.3	2.1	1.5-2.7	0.48	1.1	10(0.14)
Imereti	628	0.16	0.0-0.47	0.8	0.14-1.45	0.96	0.1-1.8	1.9	0.8-3.0	0.5	1.14	0
Kakheti	662	0.45	0.0-0.95	1.06	0.34-1.77	1.5	0.7-2.3	1.96	0.9-4.9	0.4	1.12	0.3
Kvemo Kartli	651	0.15	0.0-0.45	0.31	0.0-0.72	0.4	0.0-0.96	2.9	0.8-2.6	0.6	1.02	0.15
Mtskheta-Mtianeti	644	1.24	0.0-1.45	0.46	0.0-0.97	1.7	0.0-1.6	1.2	0.2-2.3	0.4	0.99	1.1
Samtskhe-Javakheti	668	0.15	0.0-0.44	1.05	0.34-1.75	1.2	0.3-3.1	1.9	0.7-3.1	0.5	1.05	0
Shida Kartli	641	0.15	0.0-0.46	0.46	0.0-0.99	0.6	0.04-1.2	2.02	0.9-3.2	0.5	1.08	0
<b>Sex:</b>												
	3937 (42)											
Male	20.37	0.3	0.04-0.56	0.6	0.26-1.09	0.98	0.43-1.5	1.8	1.1-2.5	0.49	1.11	0.11
Female	1857	0.2	0.02-0.4	0.69	0.3-1.08	0.92	0.5-1.4	0.4	1.6-3.4	0.47	1.1	0.18
<b>Age group:</b>												
	3894 (13)											
< 6 months	438	0.0	0.0	1.6	0.3-2.9	1.6	0.3-2.99	1.07	0.1-2.05	0.33	1.1	0
6-12 months	374	0.0	0.0	0.5	0-1.2	0.5	0-1.2	3.7	1.05-1.6	0.61	1.2	0
1-2 years	749	0.07	0-0.2	1.04	0.1-1.9	1.1	0.2-2	5.6	3.5-7.7	0.82	1.3	0
2-3 years	737	0.3	0-0.7	0.4	0-0.8	0.7	0.1-1.2	1.03	0.2-1.9	0.38	0.96	0.18
3-4 years	786	0.5	0.1-0.9	0.5	0.05-0.88	0.9	0.4-1.5	0.5	0-1.03	0.38	0.98	0.34
4-5 years	810	0.5	0-1.1	0.4	0-0.9	0.9	0.1-1.7	1.2	0.3-2.1	0.37	0.96	0.2
<b>Birth weight:</b>												
	3804 (103)											
< 2.5 kg	187	0.7	0-1.7	1.3	0-2.9	1.98	0.18-3.78	0.9	0-2.5	0.2	1.1	0.18
>=2.5 kg	3617	0.3	0.08-0.43	0.6	0.3-0.9	0.86	0.5-1.2	2.1	1.5-2.8	0.5	1.1	0.15
<b>Ever breastfed</b>												
	3894 (13)											
Yes	3334	0.3	0.1-0.5	0.6	0.3-0.87	0.88	0.53-1.24	1.8	1.2-2.3	0.47	1.1	0
No	560	0.2	0.0-0.5	1.1	0-2.3	1.3	0.15-2.5	4.2	2.3-6.1	0.53	1.2	0.2
<b>Infectious illnesses:</b>												
	3894 (13)											
Diarrhea in last 2 weeks												
No	3756	0.25	0.08-0.42	0.66	0.4-0.94	0.91	0.56-1.25	2.2	1.52-2.8	0.49	1.1	0.15
Yes	138	0.7	0-2.14	1.44	0-3.4	2.2	0-4.5	1.23	0-3.3	0.36	1.2	0
Cough/fever in last 2 weeks												
	3894 (13)											
No	3765					0.9	0.6-1.3			0.49	1.1	0.14
Yes	129					1.3	0-3.0			0.28	1.0	0.26

Weight for Height												
Group	N	Severe <-3 Z-score		Moderate -3 to -2 Z-score		Severe + moderate <-2 Z-score		Overweight >3 Z-score		Mean WHZ-score	Mean SD	Oedema <sup>3</sup>
		%	95% CI	%	95% CI	%	95% CI	%	95% CI			
<b>Location:</b>	3894 (13)											
Urban	1235	0.16	0-0.4	0.2	0.01-0.44	0.4	0.1-0.7	2.1	1.3-3.0	0.5	1.1	0.14
<i>Daba</i>	117	0.0	0.0	0.0	0.0	0.0	0.0	5.5	0.6-10.4	0.57	1.1	0
Rural	2542	0.34	0.1-0.6	0.99	0.6-1.4	1.3	0.8-1.8	2.02	1.1-2.9	0.47	1.1	0.15
<b>Ethnicity:</b>	3894 (13)											
Armenian	395	0.2	0-0.66	0.7	0-1.4	0.9	0.1-1.7	2.5	0.5-4.5	0.53	1.1	0
Azeri	315	0.2	0-0.7	0.9	0.1-9	1.2	0.2-2.2	2.09	0.4-3.8	0.36	1.2	0
Georgian	3114	0.3	0.08-0.47	0.6	0.3-0.9	0.88	0.5-1.3	2.1	1.4-2.9	0.49	1.1	0.18
Mix	8	0.0	0.0	11.4	0-28.6	11.4	0-28.6	8.8	0-28.6	0.29	1.5	0
Osetian	39	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.69	0.97	0
Russian	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	1.4	0
Other	15	0.0	0.0	6.3	0.0-19.05	6.3	0.0-19.05	0.0	0.0	0.1	1.5	0
<b>Household size:</b>	3894 (13)											
2	3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.48	0.9	0
3 to 5	1936	0.42	0.12-0.7	0.62	0.2-1.03	1.05	0.5-1.6	2.5	1.6-3.4	0.46	1.1	0.24
6 to 10	1886	0.09	0.0-0.24	0.79	0.38-1.19	0.8	0.1-1.3	1.8	1.1-2.5	0.5	1.1	0.05
11 to 15	68	0.0	0.0	0.0	0.0	0.0	0.0	0.77	0.0-2.3	0.3	0.9	0
> 15	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.93	0	0
<b>Caretaker's education:</b>	3888 (19)											
Primary	51	1.9	0.0-4.8	2.6	0.0-7.8	4.5	0.0-9.95	4.7	0.0-10.7	0.48	1.5	0
Incomplete sec.	236	0.14	0.0-0.43	0.68	0.0-1.7	0.8	0.0-1.9	1.7	0.0-3.4	0.38	1.05	0.14
Secondary	1606	0.3	0.0-0.6	0.97	0.4-1.5	1.3	0.7-1.9	1.8	1.1-2.6	0.45	1.1	0.11
Technical/vocational	1027	0.12	0.0-0.2	0.8	0.2-1.4	0.9	0.3-1.6	2.1	1.1-3.1	0.43	1.1	0.06
High education	968	0.3	0.0-0.6	0.6	0.0-0.1	0.4	0.04-0.7	2.5	1.2-3.9	0.62	1.1	0.28
<b>Self-rated economic status:</b>	3888 (19)											
Very poor	173	0.0	0.0	1.06	0.0-2.5	5.03	0.0-2.5	1.8	0.0-3.5	0.24	1.0	0
Poor	906	0.16	0.0-0.4	0.9	0.1-1.7	1.096	0.3-1.9	1.9	0.7-3.1	0.24	1.2	0
So-so	2748	0.3	0.09-0.5	0.6	0.3-0.89	0.9	0.5-1.31	2.1	1.5-2.8	0.5	1.1	0.2
Rich	60	0.6	0.0-1.67	0.0	0.0	0.56	0.0-1.67	7.8	0.0-17.6	0.9	1.5	0
Very rich	1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.07	0	0

<sup>1</sup> results based on very small sample size.

<sup>2</sup> non-weighted.

<sup>3</sup> oedema is also included in category "severe <-3Z".

**Table C - 6: Height-for-age of children 0-59 months of age by total, region, gender, age groups, weight at birth, ever been breastfed, location, ethnicity, household size and self-rated economic status.**

Group	N	Height for Age						Mean HAZ	Mean SD
		Severe <-3 Z		Moderate -3 to -2		Severe + moderate <-2 Z			
		%	95% CI	%	95% CI	%	95% CI		
<b>Region:</b>									
All regions	3902 (5)	2.4	1.7-3.1	7.5	6.3-8.7	9.98	8.4-11.6	-0.47	1.25
Imereti	630	0.95	0.1-1.8	5.2	2.9-7.6	6.1	3.7-8.7	-0.14	1.2
Kakheti	663	1.66	0-3.5	5.8	3.6-8.1	7.5	3.8-11.3	-0.38	1.2
Kvemo Kartli	655	4.7	2.5-7	10.1	6.95-13.2	14.8	10.2-19.5	-0.68	1.3
Mtskheta-Mtianeti	646	1.5	0.6-2.5	5.8	3.3-8.4	7.4	4.7-10.1	-0.32	1.2
Samtskhe-Javakheti	668	3.6	2-5.2	10.2	7.7-12.6	13.7	10.8-16.7	-0.78	1.2
Shida Kartli	640	2.5	1.4-3.6	9.4	5.9-12.8	11.9	7.9-15.8	-0.52	1.3
<b>Sex:</b>	3902 (5)								
Male	2041	2.8	1.8-3.9	8.02	6.5-9.5	10.82	8.7-12.9	-0.44	1.28
Female	1861	2.01	1.3-2.7	7.03	5.4-8.6	9.04	7.2-10.8	-0.51	1.25
<b>Age group:</b>	3902 (5)								
< 6 months	443	1.8	0.15-3.6	3.9	1.9-5.8	5.7	3.1-8.5	0.08	1.3
6-12 months	374	4.2	2.2-6.2	11.8	8.02-15.6	16.0	11.6-20.5	-0.57	1.5
1-2 years	751	2.7	1.4-3.9	9.9	7.1-12.7	12.6	9.6-15.7	-0.66	1.3
2-3 years	737	1.7	0.6-2.7	6.3	4.2-8.5	8.0	5.7-10.3	-0.38	1.2
3-4 years	787	2.9	1.4-4.4	8.2	5.96-10.8	11.1	8.3-13.8	-0.51	1.2
4-5 years	810	1.9	0.6-3.3	5.6	3.96-7.3	7.5	5.4-9.8	-0.65	1.05
<b>Birth weight:</b>	3812 (95)								
< 2.5 kg	189	9.04	4.2-13.9	20.05	13.12-6.97	29.08	21.4-36.8	-1.3	1.3
>=2.5 kg	3623	1.97	1.4-2.6	6.6	5.4-7.8	8.6	7.1-10.03	-0.41	1.2
<b>Ever breastfed:</b>	3902 (5)								
Yes	3342	2.5	1.8-3.2	7.5	6.2-8.7	9.98	8.3-11.6	-0.48	1.25
No	560	2.1	0.8-3.3	7.9	5.1-10.6	9.95	7.01-12.9	-0.45	1.26
<b>Location:</b>	3902 (5)								
Urban	1243	2.3	1.15-3.5	5.96	4.12-7.8	8.3	5.96-10.62	-0.54	1.26
Rural	2542	2.4	1.5-3.3	8.5	6.8-10.14	10.9	8.6-13.15	-0.34	1.22
Daba	117	5.1	0.8-9.4	8.6	0-18.12	13.8	0.3-27.2	-0.44	1.35
<b>Ethnicity:</b>	3900 (7)								
Armenian	395	3.5	1.8-5.2	9.4	5.5-13.3	12.9	8.3-17.5	-0.78	1.24
Azeri	315	5.5	2.3-8.8	13.01	9-17.02	18.5	12.1-24.9	-0.9	1.3
Georgian	3122	1.97	1.3-2.7	6.8	5.4-8.1	8.7	7.0-10.4	-0.4	1.24
Mix	8	15.8	0-40.7	0.0	0.0	15.8	0-40.7	-0.44	2.0
Osetian	39	0.0	0.0	5.4	0-13.54	5.4	0-13.5	-0.16	1.13
Russian	6	0.0	0.0	0.0	0.0	0.0	0.0	-0.35	0.86
Other	15	0.0	0.0	6.3	0-19.05	6.3	0-19.1	0.44	0.99
<b>Household size:</b>	3902 (5)								
2	3	0.0	0.0	0.0	0.0	0.0	0.0	-0.45	0.23
3 to 5	1941	2.17	1.4-2.9	6.7	5.3-8.1	8.9	7.0-10.8	-0.45	1.23

Height for Age									
Group	N	Severe <-3 Z		Moderate -3 to -2		Severe + moderate <-2 Z		Mean HAZ	Mean SD
		%	95% CI	%	95% CI	%	95% CI		
6 to 10	1889	2.8	1.8-3.8	8.6	6.8-10.3	11.4	9.2-13.5	-0.49	1.29
11 to 15	68	0.77	0-2.3	4.0	0-8.4	4.8	0.1-9.5	-0.65	1.1
> 15	1	0.0	0.0	0.0	0.0	0.0	0.0	-0.76	0.0
<b>Self-rated economic status:</b>	3896 (11)								
Very poor	173	3.4	0.7-6.1	13.9	7.8-20.1	17.3	10.2-24.4	-0.78	1.3
Poor	906	3.5	2.1-4.9	9.3	7.05-11.6	12.9	10.05-15.7	-0.63	1.3
So-so	2756	1.98	1.2-2.7	6.5	5.2-7.8	8.5	6.8-10.12	-0.41	1.22
Rich	60	4.8	0-10.9	10.5	2.3-18.7	15.3	2.3-28.3	-0.22	1.4
Very rich	1	0.0	0.0	0.0	0.0	0.0	0.0	-0.34	0.0

<sup>1</sup> results based on very small sample size.

<sup>2</sup> non-weighted.

**Table C - 7: Percentage of children 0-59 months of age with diarrhea, cough & fever, and their medical treatment.**

Group	N	Diarrhea in 2 weeks prior to survey		Cough and fever in 2 weeks prior to survey		
		Yes	No	N	Yes	No
Total*	3907	3.6	96.4	3907	3.3	96.7
Missing	0	0	0	0	0	0
Treatment:						
	[138]			[129]		
Drink less or the same	89	65.0		90	69.8	
Drink more	48	35		39	30.2	
Does not Know	1			0		
	[137]			[129]		
Eat less	76	55.9		79	61.7	
Eat same	60	44.1		49	38.3	
Eat more	1			1		
Seeking treatment:	(137)			(128)		
YES	65	47.4		57	44.5	
NO	72	52.6		71	55.5	
Missing	1			1		
Why not?	66 (4)			56		
Missing	1			(15)		
-impossible <sup>1</sup>	23	34.8	(35.8%)		23	(41.1%)
-unnecessary <sup>2</sup>	43	64.2	(64.2%)		33	(58.9%)

<sup>1</sup>the Health Care facility is too distant or the family had no money for treatment.

<sup>2</sup>The caretaker stated that treatment was not necessary or a household member treated the child.

**Table C - 8: Percentage of children 6 months of age and younger who are exclusively breastfed.**

Group	N	Exclusive Breastfeeding, %	
		Yes	No
Age:			
At 0 month	61	92.5	7.5
At 1 month	92	88.6	11.4
At 2 months	84	84.9	15.1
At 3 months	52	62.5	37.5
At 4 months	58	55.1	44.9
At 5 months	34	22.3	77.7
At 6 months	40	11.2	88.8
Total:	421		

<sup>1</sup>Not weighted

**Table C - 9: Time that breastfeeding ceased for children under 5 years of age by month of cessation.**

Group	N	Ceasing breastfeeding:		
		% Total	Male	Female
Age:				
At 0 month	11	0.6	0.6	0.5
At 1 month	329	14.8	14.2	15.3
At 2 months	339	13.4	13.7	12.5
At 3 months	288	10.8	11.5	10.0
At 4 months	178	6.7	6.8	6.6
At 5 months	127	4.8	5.6	3.9
At 6 months	134	5.7	6.1	5.3
7-9 months	203	8.2	8.6	7.9
10-12 months	260	9.8	9.4	10.2
13-18 months	360	13.5	11.9	15.1
>18 months	316	12.1	11.6	12.6
All	2548		51%	49%

**Table C - 10: Percentage of children under 5 years of age by birth weight groups and broken down by age groups, gender, region and location.**

Group	N	Birth weight							
		<2.5 kg		≥2.5 and <3.5 kg		≥3.5 and <4.5 kg		≥4.5 kg	
		%	95% C.I.	%		%		%	95% C.I.
Age groups:									
Total	3814 (93)								
Mean									
0 - 5 months	434	4.3	0.02-6.6	54.4	48.4-60.5	39.9	33.6-46.3	1.3	0.06-2.5
6 - 11 months	365	5.3	2.1-8.5	56.4	50.4-62.5	37.2	31.4-43.04	1.03	0-2.2
12 - 23 months	731	5.2	3.3-7.04	50.7	46.6-54.7	41.5	37.5-45.6	2.6	1.3-3.9
24 - 35 months	723	4.6	2.8-6.4	52.0	47.7-56.3	40.7	36.6-44.8	2.6	1.3-3.9
36 - 47 months	770	4.5	2.7-6.3	54.5	50.4-58.5	38.9	34.5-43.3	2.1	0.99-3.3
48 - 60 months	791	5.1	3.6-6.6	56.03	51.99-60.1	37.13	33.3-40.98	1.7	0.8-2.7
Sex:	3814 (93)								
Male	1994	4.1	3.1-5.1	50.2	47.5-52.8	43.2	40.4-45.9	2.5	1.7-3.3
Female	1820	5.6	4.4-6.8	57.5	54.8-60.3	35.3	32.3-38.3	1.5	0.8-2.3
Region:									
All regions	3814 (93)								
Imereti	629	5.4	3.2-7.6	49.4	44.7-54.1	43.1	37.5-48.7	2.1	0.88-3.3
Kakheti	627	4.5	3.1-5.8	52.3	47.5-57.1	41.1	36.6-45.7	2.1	1.1-3.1
Kvemo Kartli	614	4.2	2.9-5.6	58.6	54.2-63.1	35.2	30.5-39.9	1.95	0.76-3.2
Mtskheta-Mtianeti	643	6.2	4.3-8.1	53.7	49.7-57.5	37.8	33.3-42.2	2.3	1.1-3.6
Samtskhe-Javakheti	661	5.4	3.4-7.5	59.3	54.7-63.8	33.3	29.3-37.2	1.97	0.85-3.1
Shida Kartli	640	4.1	2.5-5.6	53.9	50.3-57.5	40.0	35.96-44.0	2.03	0.78-3.3
Location:	3814 (93)								
Urban	2456	4.6	3.5-5.7	54.5	51.6-57.3	38.8	35.7-41.8	2.2	1.5-2.9
Rural	1244	5.5	4.13-6.9	52.8	49.3-56.3	40.1	36.2-44.1	1.6	0.75-2.4
Daba	114	0.4	0-1.2	51.5	43.3-59.7	42.3	35.6-49.2	5.8	3.0-8.6

\* 80 cases missing

## **Interview Guide**

## Nutritional Assessment Questionnaire

Questionnaire No: _____			
Interviewer No: _____ <small>(first visit)</small> Name: _____	Supervisor No: _____ <small>(first visit)</small> Name: _____	Date of first visit: ____ Day ____ Mo ____ Year	Outcome: Completed 1 Refusal 2 Not at home 3
Interviewer No: _____ <small>(first visit)</small> Name: _____	Supervisor No: _____ <small>(first visit)</small> Name: _____	Date of first visit: ____ Day ____ Mo ____ Year	Outcome: Completed 1 Refusal 2 Not at home 3
Interviewer No: _____ <small>(first visit)</small> Name: _____	Supervisor No: _____ <small>(first visit)</small> Name: _____	Date of first visit: ____ Day ____ Mo ____ Year	Outcome: Completed 1 Refusal 2 Not at home 3

### HH ID:

1. Region: __ __      2. District: __ __	3. Instruction Unit: __ __ __      4. Village/town: _____
5. Address: _____	6. HoH Name: _____

### HH Composition:

7. Has this household children under five years of age?	Yes 1 No 2 ⇒ End	8. How many? _____	9. Number of children of age 5-15 years: _____	10. Number of HH members: _____
---	---------------------	--------------------	--	---------------------------------

### Information on Children

11 What are children's names?	1. _____	2. _____	3. _____
12 Birth Date:	____ Day ____ Mo ____ Year	____ Day ____ Mo ____ Year	____ Day ____ Mo ____ Year
13 Age (months)?	____	____	____
14 Method used to assess age:	Birth certificate 1	Birth certificate 1	Birth certificate 1
	Health Card 2	Health Card 2	Health Card 2
	Home Record 3	Home Record 3	Home Record 3
	Mother/Caretaker verbal 4	Mother/Caretaker verbal 4	Mother/Caretaker verbal 4
15 Sex	Male 1	Male 1	Male 1
	Female 2	Female 2	Female 2
16 Who is the child's primary caretaker?	Mother 1	Mother 1	Mother 1
	Father 2	Father 2	Father 2
	Granny 3	Granny 3	Granny 3
	Aunt 4	Aunt 4	Aunt 4
	Relative 5	Relative 5	Relative 5
	Other 6	Other 6	Other 6
17 What is her/his education level?	Primary 1	Primary 1	Primary 1
	Incomplete second. 2	Incomplete second. 2	Incomplete second. 2
	Secondary 3	Secondary 3	Secondary 3
	Tech., vocational 4	Tech., vocational 4	Tech., vocational 4
	High education 5	High education 5	High education 5
18 <i>If &gt;2 years:</i> Is she/he attending kindergarten?	Yes 1	Yes 1	Yes 1
	No 2 ⇒ 20	No 2 ⇒ 20	No 2 ⇒ 20
19 What type:	Private 1	Private 1	Private 1
	State 2	State 2	State 2
20 Date of measurement:	____ Day ____ Mo ____ Year	____ Day ____ Mo ____ Year	____ Day ____ Mo ____ Year
	Yes 1	Yes 1	Yes 1
	No 2	No 2	No 2
21 Oedema	Yes 1	Yes 1	Yes 1
	No 2	No 2	No 2
22 Height (cm) (stature=1) Height (cm) (recumbent=2)	_____	_____	_____
	<input type="text"/> <input type="text"/> <input type="text"/>	_____	_____
23 Weight (kg)	<input type="text"/> <input type="text"/> <input type="text"/>	_____	_____
24 Clothing:	No clothes 1	No clothes 1	No clothes 1
	Light clothes 2	Light clothes 2	Light clothes 2
	Heavy clothes or multiple layers 3	Heavy clothes or multiple layers 3	Heavy clothes or multiple layers 3
	24a. The child was weighed	Alone 1 Together with mother 2	Alone 1 Together with mother 2
25 Completeness of measurements:	Completed 1	Completed 1	Completed 1
	Refusal 2	Refusal 2	Refusal 2
	Other (specify) _____ 3	Other (specify) _____ 3	Other (specify) _____ 3
26 The birth weight of the child	____	____	____

27	Was the child ever breastfed?	Yes	1	Yes	1	Yes	1	
		No	2⇒ 31	No	2⇒ 31	No	2⇒ 31	
28	Is he/she currently breastfeeding?	Yes	1	Yes	1	Yes	1	
		No	2⇒ 30	No	2⇒ 30	No	2⇒ 30	
29	Does the child take other foods or fluids (including water)?	Yes	1⇒ 31	Yes	1⇒ 31	Yes	1⇒ 31	
		No	2⇒ 34	No	2⇒ 34	No	2⇒ 34	
30	At what age did breast-feeding cease (mo)?	---		---		---		
31	How often did the child take the following?	Daily	Weekly	Monthly	Daily	Weekly	Monthly	
		Formula	1	1	1	1	1	1
		Milk	2	2	2	2	2	2
		Yougurt	3	3	3	3	3	3
		Cheese	4	4	4	4	4	4
		Cottage cheese	5	5	5	5	5	5
		Meat	6	6	6	6	6	6
		Fish	7	7	7	7	7	7
		Egg	8	8	8	8	8	8
		Bread	9	9	9	9	9	9
		Maize bread	10	10	10	10	10	10
		Porridge	11	11	11	11	11	11
		Cakes	12	12	12	12	12	12
		Oil/Margarine	13	13	13	13	13	13
		Butter /Fat	14	14	14	14	14	14
		Fruit/juices	15	15	15	15	15	15
		Sweet tea	16	16	16	16	16	16
		Leguminous	17	17	17	17	17	17
		Vegetable	18	18	18	18	18	18
Potato	19	19	19	19	19	19		
32	How many times did the child (name) take any food yesterday?	-----		-----		-----		
33	What foods or liquids did the child (name) take yesterday?	Formula	1	Formula	1	Formula	1	
		Milk	2	Milk	2	Milk	2	
		Yougurt	3	Yougurt	3	Yougurt	3	
		Cheese	4	Cheese	4	Cheese	4	
		Cottage cheese	5	Cottage cheese	5	Cottage cheese	5	
		Meat	6	Meat	6	Meat	6	
		Fish	7	Fish	7	Fish	7	
		Egg	8	Egg	8	Egg	8	
		Bread	9	Bread	9	Bread	9	
		Maize bread	10	Maize bread	10	Maize bread	10	
		Porridge	11	Porridge	11	Porridge	11	
		Cakes	12	Cakes	12	Cakes	12	
		Oil/Margarine	13	Oil/Margarine	13	Oil/Margarine	13	
		Butter /Fat	14	Butter /Fat	14	Butter /Fat	14	
		Fruit/juices	15	Fruit/juices	15	Fruit/juices	15	
		Sweet tea	16	Sweet tea	16	Sweet tea	16	
		Leguminous	17	Leguminous	17	Leguminous	17	
		Vegetable	18	Vegetable	18	Vegetable	18	
		Potato	19	Potato	19	Potato	19	
34	In the last 14 days has your child had diarrhoea (more than 3 liquid stools per day)?	Yes	1	Yes	1	Yes	1	
		No	2	No	2	No	2	
35	In the last 14 days has your child had cough and fever?	Yes	1	Yes	1	Yes	1	
		No	2	No	2	No	2	
36	During the child's illness, did he/she drink much less, about the same, or more than usual?	None or much less	1	None or much less	1	None or much less	1	
		About the same	2	About the same	2	About the same	2	
		More	3	More	3	More	3	
		Don't know	99	Don't know	99	Don't know	99	
37	During the child's illness, did he/she eat much less, about the same, or more than usual?	None or much less	1	None or much less	1	None or much less	1	
		About the same	2	About the same	2	About the same	2	
		More	3	More	3	More	3	
		Don't know	99	Don't know	99	Don't know	99	
38	Did you seek advice or treatment for the illness outside the home?	Yes	1	Yes	1	Yes	1	
		No	2⇒ 40	No	2⇒ 40	No	2⇒ 40	
		Don't know	99⇒40	Don't know	99⇒40	Don't know	99⇒40	
39	From where did you seek care?	Hospital	1	Hospital	1	Hospital	1	
		Ambulatory/polyclinic	2	Ambulatory/polyclinic	2	Ambulatory/polyclinic	2	
		Emergency	3	Emergency	3	Emergency	3	
		Private physician	4	Private physician	4	Private physician	4	
		Pharmacy or drug seller	5	Pharmacy or drug seller	5	Pharmacy or drug seller	5	
		Traditional healer	6	Traditional healer	6	Traditional healer	6	
		Relative or friend	7	Relative or friend	7	Relative or friend	7	
		Other (specify)	8	Other (specify)	8	Other (specify)	8	
40	Why (name the reason)?	I or family member is a physician	1	I or family member is a physician	1	I or family member is a physician	1	
		Did not consider it necessary	2	Did not consider it necessary	2	Did not consider it necessary	2	
		Physician is far away	3	Physician is far away	3	Physician is far away	3	
		I don't have money	4	I don't have money	4	I don't have money	4	
		Other (specify)	5	Other (specify)	5	Other (specify)	5	

HH Socio-Economic Characteristics:																																																
<p><b>41. Ethnic group:</b></p> <p>Georgian 1                      Azeri 2                      Armenian 3                      Russian 4                      Osetian 5                      Mix 6                      Other 7</p>	<p><b>42. Are any of HH members employed or earning income?</b></p> <p>Yes 1                      No 2 ⇒ 44</p> <p><b>43. How many?</b></p> <p>_____</p>	<p><b>44. ... your HH is:</b></p> <p>Very poor 1                      Poor 2                      So-so 3                      Rich 4                      Very rich 5</p>	<p><b>45. Does your HH have any of the following in a working condition (1-3)?</b></p> <table border="1"> <thead> <tr> <th></th> <th>Yes</th> <th>No</th> <th></th> </tr> </thead> <tbody> <tr> <td>1. TV set</td> <td>1</td> <td>2 ↓</td> <td>___ each</td> </tr> <tr> <td>2. Car</td> <td>1</td> <td>2 ↓</td> <td>___ each</td> </tr> <tr> <td>3. Mobile phone</td> <td>1</td> <td>2 ↓</td> <td>___ each</td> </tr> <tr> <td>4. Land</td> <td>1</td> <td>2 ↓</td> <td>___ ha</td> </tr> <tr> <td>5. Poultry</td> <td>1</td> <td>2 ↓</td> <td>___ each</td> </tr> <tr> <td>6. Goats</td> <td>1</td> <td>2 ↓</td> <td>___ each</td> </tr> <tr> <td>7. Cattle</td> <td>1</td> <td>2 ⇒ 46</td> <td>___ each</td> </tr> </tbody> </table>		Yes	No		1. TV set	1	2 ↓	___ each	2. Car	1	2 ↓	___ each	3. Mobile phone	1	2 ↓	___ each	4. Land	1	2 ↓	___ ha	5. Poultry	1	2 ↓	___ each	6. Goats	1	2 ↓	___ each	7. Cattle	1	2 ⇒ 46	___ each	<p><b>46. How many?</b></p>												
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<p><b>47. Could you please name the sources of income and its amount for the last month for all HH members (including children).</b></p> <p>How? (lari)</p> <p>1 Salary, income from business _____ Lari                      2 Using savings _____ Lari                      3 Student stipend _____ Lari                      4 Disability ben/retired/pension _____ Lari                      5 Child benefits _____ Lari                      6 Alimony _____ Lari                      7 Dividends, interest _____ Lari                      8 Rent _____ Lari                      9 Selling agr. products _____ Lari                      10 Selling property _____ Lari                      11 Support from relatives _____ Lari                      12 Remittances Yes 1                      No 2 ⇒ 50                      13 Loan _____ Lari                      14 Other (indicate) _____ Lari</p> <p>Day Month Year</p>		<p><b>48. Did your HH receive a food ration?</b></p>																																														
		<p><b>50. What is true for your HH or the individuals in your HH?</b></p> <table border="1"> <thead> <tr> <th></th> <th>Often true</th> <th>Sometimes true</th> <th>Never true</th> </tr> </thead> <tbody> <tr> <td>1 I worry whether my food will run out before I get money to buy more or get more products.</td> <td>1</td> <td>2</td> <td>3</td> </tr> <tr> <td>2 The food that I buy doesn't last, and I am not able to get more or money to get more.</td> <td>1</td> <td>2</td> <td>3</td> </tr> <tr> <td>3 I run out of the foods that I need to put together a meal and I am not able to get more or money to get more.</td> <td>1</td> <td>2</td> <td>3</td> </tr> <tr> <td>4 We eat the same thing for several days in a row because we only have a few different kinds of food on hand and I am not able to get more or money to get more.</td> <td>1</td> <td>2</td> <td>3</td> </tr> <tr> <td>5 I can't afford to eat properly.</td> <td>1</td> <td>2</td> <td>3</td> </tr> <tr> <td>6 I am often hungry, but I don't eat because I can't afford enough food.</td> <td>1</td> <td>2</td> <td>3</td> </tr> <tr> <td>7 I eat less than I think I should because I am not able to get more or money to get more.</td> <td>1</td> <td>2</td> <td>3</td> </tr> <tr> <td>8 I cannot give my child(ren) a balanced meal because I can't afford that.</td> <td>1</td> <td>2</td> <td>3</td> </tr> <tr> <td>9 My child(ren) is/are not eating enough because I just can't afford enough food.</td> <td>1</td> <td>2</td> <td>3</td> </tr> <tr> <td>10 I know my child(ren) is/are hungry sometimes, but I just can't afford more food.</td> <td>1</td> <td>2</td> <td>3</td> </tr> </tbody> </table>				Often true	Sometimes true	Never true	1 I worry whether my food will run out before I get money to buy more or get more products.	1	2	3	2 The food that I buy doesn't last, and I am not able to get more or money to get more.	1	2	3	3 I run out of the foods that I need to put together a meal and I am not able to get more or money to get more.	1	2	3	4 We eat the same thing for several days in a row because we only have a few different kinds of food on hand and I am not able to get more or money to get more.	1	2	3	5 I can't afford to eat properly.	1	2	3	6 I am often hungry, but I don't eat because I can't afford enough food.	1	2	3	7 I eat less than I think I should because I am not able to get more or money to get more.	1	2	3	8 I cannot give my child(ren) a balanced meal because I can't afford that.	1	2	3	9 My child(ren) is/are not eating enough because I just can't afford enough food.	1	2	3	10 I know my child(ren) is/are hungry sometimes, but I just can't afford more food.	1	2	3
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Interviewer's comments:	
Supervisor's comments:	
The form was reviewed by:	_____ Date: _____ supervisor's signature