

SECTION I. BACKGROUND AND INTRODUCTION

USAID's Office of Food for Peace defines *food security* as "when all people, at all times, have both physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for a productive and healthy life."

Three distinct variables are essential to the attainment of food security:

1. **Food Availability:** Sufficient quantities of appropriate, necessary types of food from domestic production, commercial imports or donors other than USAID, are consistently available to the individuals or are with reasonable proximity to them or are within their reach.
2. **Food Access:** Individuals have adequate incomes or other resources to purchase or barter to obtain levels of appropriate food needed to maintain consumption of an adequate diet/nutrition level.
3. **Food Utilization:** Food is properly used; proper food processing and storage techniques are employed; adequate knowledge of nutrition and child care techniques exist and is applied; and adequate health and sanitation services exist.

– *USAID Policy Determination, Definition of Food Security, April 13, 1992*

This Policy Determination provides the parameters within which USAID development programs should be operating to assist their host countries in achieving sustainable food security for its populations. Given that food security is a basic, fundamental right of all populations, USAIDs must give priority to this issue in their development programming in countries where food insecurity continues to exist.

In Zambia, food insecurity is chronic for much of the population and has a major impact on the country's ability to develop economically. Malnutrition is endemic, affecting *almost fifty percent of all children under the age of five!* (DHS). Child stunting rates are some of the highest in Africa. The 2002 Human Poverty Index (UNDP) ranked Zambia 153rd out of a total 173 countries. In the rural areas, the source of the country's food production base, fully 83 percent of the population is considered impoverished. (*Republic of Zambia, Living Conditions in Zambia*). Clearly, food insecurity in Zambia is a complex and chronic development issue that will require the long-term commitment of the Government and the support of USAID and other major donors to be effectively resolved.

The following analysis of food security, health and nutrition in Zambia was conducted by a combined Bureau team to assist the USAID Mission in its efforts to design its next Country Strategic Plan. The purpose was threefold: 1) to research the extent of the existing food security problem in the country and the types of vulnerable populations; 2) to evaluate the approach of the Mission's new 2004-2010 Country Strategic Plan concept paper for addressing key food security, health and nutrition issues; and 3) to advise the Mission on additional improvements they might include in the new strategic plan to enhance food security, health and nutrition interventions.

1.1 Current Food Security Situation

Despite Zambia's good agricultural potential, there are significant, long-standing food insecurity problems in the country. This is particularly true in drought-prone areas in the Western Province and parts of the Southern and Eastern Provinces. Like many developing countries, food is the most important element in the life of every Zambian. More than 70 percent of rural household incomes are spent on food. However, agricultural output for many years has not kept pace with population growth, creating a major problem of *chronic food insecurity* for 70 percent of the population. (*Republic of Zambia, Living Conditions in Zambia*). According to FAOSTAT data, Zambia produced only enough grain to meet food requirements for only two years between the 1990 and 2000 period.

Several factors have contributed to continuous food shortages in Zambia. The long list includes recurrent droughts, pervasive poverty, poor infrastructure and limited investments in agriculture, insufficient attention paid to smallholder agriculture, policies that favor urban businesses over farmers and consumers over producers, policies that distort prices and interfere with markets, etc. But what separates this country from many others is its heavy dependence for the last three decades on maize as the predominant food crop. The production sector is dominated by maize, which accounts for about 65 percent of land cropped annually and for about 90 percent of all cereals. Thus, fully 60 percent of an average person's caloric intake comes from maize (one of the highest levels of dependence on maize in Africa according to FAO data). This has clearly had a profound impact on the poor nutritional status of the population, especially the most vulnerable groups (as will be shown in the next section).

While weather and other exogenous factors have limited the food sector's ability to grow, erratic agricultural policies influenced by politics have also imposed added limitations. Some of these include the ban on bio-tech foods; delayed delivery to farmers at planting time of seeds, fertilizers and other inputs; over-emphasis on maize production; interventions in the maize market which have discouraged the commercial sector from participating effectively in production and trade; and a failure to advocate to small-scale and subsistence farmers the use of improved farming techniques and diversified cropping strategies. The government's ban on genetically modified organisms (GMO) is a new, particularly important factor affecting the current food security situation. Following the August 2002 Government consultative meeting on GMOs, public officials announced that further importation of GMO foods would not be allowed, because the Government did not have the technical expertise to evaluate the safety of such products. They then called for donor assistance to procure non-GMO cereals and requested the WFP to withdraw all stockpiled GMO maize (basically US food donations). These decisions had a significant disruptive effect on the emergency food pipeline during a time of severe food deficits in the country.

Presently, Zambia is faced with a food crisis attributable to unfavorable weather patterns that have reduced food production in the last two consecutive agricultural seasons (2000/2001 and 2001/2002). A recent joint assessment put the present shortfall in cereals production (largely maize) at 635,000 metric tons, which is 51 percent of Zambia's annual cereal needs. (*World Bank, Emergency Drought Recovery Project*). There is some dispute as to whether this figure is too high, but most organizations have been using this figure to plan their responses to the crisis. If this figure is true, the value of this deficit (measured at replacement cost) would be approximately \$160 million. Of the 10 million population in Zambia, from 1-2 million persons will have received emergency food assistance in the 2002-03 agricultural year. According to the December 2002 Food Security Assessment (*SADC FANR*), of Zambia's 72 districts, 24 were categorized as seriously affected by the current food security crisis, meaning

that up to 50 percent of the Zambian population in rural and urban areas (based on population density of the affected districts) is facing some form of food insecurity. Some of the most affected groups include smallholder farmers, who rely on the food from their farms for subsistence, and the urban poor who will face higher food prices. The death and sale of livestock and sale of seed stocks to purchase food will also constrain the ability of vulnerable households to recover from the drought. The full impact of this second year of drought is yet to be felt, but given the fragile nature of the Zambian economy, poverty is likely to deepen as vulnerable populations further deplete their remaining assets and coping mechanisms.

To make matters worse, the HIV/AIDS pandemic is having deleterious effects on productive assets and labor at the national and household level, as well as greatly impacting Zambia's health care systems. In the midst of this crisis, the current food insecurity is deteriorating community capacities at the local level to effectively cope with their growing poverty and to adequately feed and care for the more vulnerable household members. HIV/AIDS has emerged as a formidable and long-term constraint that will have a growing negative impact on Zambia's food security picture in the future.

Unfortunately, the Government does not have a definite policy on household food security, and did not address the issue in the 1998 National Poverty Reduction Action Plan. The 2002-2004 Poverty Reduction Strategy Paper (PRSP) was the latest opportunity for government to establish a food security policy. Some elements of such a policy (such as a reliance on agriculture as the economic engine of national growth) can be found in the PRSP but there is no coherent, workable strategy to eliminate food insecurity. The food security situation today is the manifestation of many factors over the years, and is currently worsened by drought, cereal production deficits and livestock losses. Unless food insecurity is addressed directly as a cross-cutting theme in Government policies and operations, it will not be successfully reversed.

1.2 Current Health/Nutrition Situation

Malnutrition in Zambia is a serious development problem *affecting almost fifty percent of the all children under five years of age. (DHS)*. It contributes to the country's high rates of child mortality and serious morbidity, affects mental development, and impedes school performance and labor productivity later in life. In adults, nutritional status affects the progression of HIV and the survival of those with AIDS. Malnutrition includes both protein energy malnutrition as well as micronutrient deficiencies. In the past ten years, increasing rural and urban poverty, a high burden of disease, and improper feeding and agricultural practices have led to a serious decline in nutritional status in Zambia. The current food emergency - characterized by very low household food stocks in rural areas and unprecedented high prices for maize in both rural and urban markets - will exacerbate the poor nutritional situation of vulnerable groups, such as young children, pregnant and lactating mothers, people living with HIV/AIDS and orphans.

1.21 Anthropometry: Children and Mothers

The DHS provides the most recent national and regional level data on maternal and child malnutrition. Most alarming are the stunting rates for children under-five (Table 1). **Stunting** is an indicator of chronic malnutrition caused by continuing inadequate food intake and/or frequent episodes of illness over a period of time. 46.8 percent of children under-five are moderately stunted (below 2 SDs height-for-age) and 22.2 percent are severely stunted (below 3 SDs height for age).

With these levels, Zambia has one of the highest rates of stunting in all of Africa (Table 2). Stunting begins early in life with 36.8 percent of children 6-9 months already stunted, and increasing to 55.6 percent of children stunted between 12-23 months of age. Nutrition experts in Zambia believe that these very high rates are due to extremely inadequate diets for young children and frequent bouts of illness—particularly

Table 1: Childhood Malnutrition

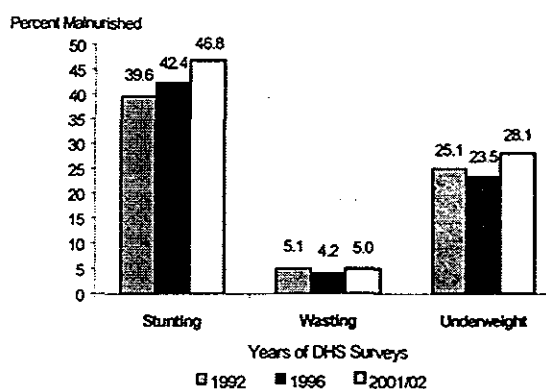
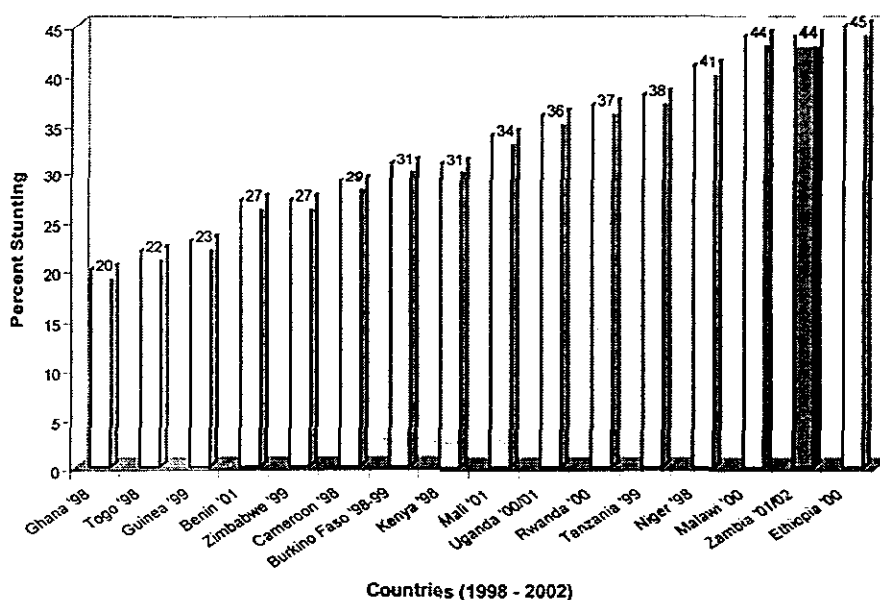


Table 2: Stunting Among Children Under 3 Years in Sub-Saharan Africa



malaria. Stunting early in life has irreversible consequences. Stunted children grow up to be stunted adults. Studies have found that adult stunting is associated with reduced physical capacity and economic productivity.

Acute malnutrition or *wasting* represents failure to gain weight in relationship to height usually due to a recent bout of illness or a current food shortage situation. Children who are wasted have a significant increased risk of death. Five percent of children under-five are moderately wasted and 1.1 percent are severely wasted. Wasting begins to increase at age 6-9 months and is particularly high in the 10-11 months age group at 10.9 percent. This trend is found in many developing countries and typically reflects the inadequacy of the weaning diet -- the lack of nutrient dense foods to accompany breastmilk that a child needs beginning at the age of 6 months. It also reflects the increased risks of diarrhea associated with the introduction of new foods at this very important growth period.

The results of both chronic and acute malnutrition are seen in the weight-for-age measurements, described as under-weight. 28.1 percent of children under-five are moderately underweight (below 2 SD weight-for-age) and 7.1 percent are severely underweight (below 3 SD weight for age). Both stunting and under-weight rates have continued to rise in each successive DHS survey since 1992. 40 percent of the under-five population was stunted in 1992 compared to 46.8 percent in 2001/2. 25 percent of the under-five population was underweight in 1992 compared to 28.1 percent in 2001/02.

There are important geographical differences in malnutrition (Table 3). Rural areas have higher levels of stunting at 51.3 percent compared to 36.8 percent in urban areas as well as under-weight rates at 30.3 percent in rural areas compared to 23.4 percent in urban areas. *Wasting* is similar. Eastern, Luapula and Northern provinces are above the national averages for stunting and underweight (Table 4). The Northern and Copperbelt provinces have higher rates of wasting.

Table 3: Childhood Stunting by Area of Residence

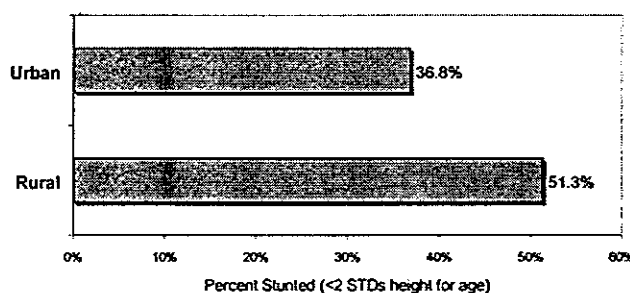
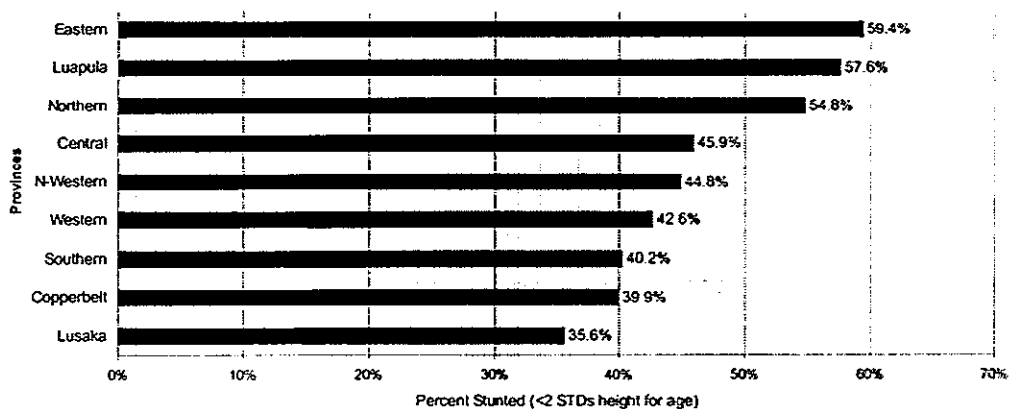


Table 4: Regional Childhood Stunting 2001-02



The DHS survey also provides anthropometric measurements for women. 15 percent of women are chronically malnourished with a Body Mass Index (BMI) less than 18.5. (The average is 12.9 percent among DHS surveys in Sub-Saharan Africa.) The average height for women is 158 cm, which is above the cut-off point of 145 cm. for being short. (This is very close to the average among DHS surveys in Sub-Saharan Africa) This is a marked difference from the high rates of stunting found in children. There were also geographical differences with 17.5 percent of women in rural areas considered thin compared to 11.4 percent in urban areas.

For the first time in Zambia, the 2001/02 DHS included anthropometric data for school age children 7 through 11 years. Because of limitations on the growth reference curves, analysis could only be carried out on children between the ages of 7 and 9 years. 31 percent of this school age population were found to be stunted (Below 2SDs). Nine percent were severely stunted (Below 3SDs). Rates of stunting for this age group are nearly double in rural areas at 38 percent compared to 20 percent in rural areas. Northern and Luapula provinces have very high rates at 50.4 percent and 50.9 percent respectively compared to Lusaka with 17.7 percent and Southern Province with 19.3 percent. Wasting was seen at about 2 percent, which "seems to be in normal population range of variability in weights for height" (DHS). 17 percent of school aged children were underweight with the highest levels in Northern Province at 31 percent and in Luapula at 24 percent. There was a significant difference between the stunting rates and under-weight rates for boys compared to girls with 35 percent of boys stunting and 20 percent underweight compared to 26 percent of girls who are stunting and 13 percent of girls under-weight.

Overall the DHS presents a very serious national nutrition problem that has gotten progressively worse over the last ten years. If not addressed, malnutrition will continue to contribute to high rates of child mortality and morbidity, low birthweights, and reduced educational and economic performance for Zambians throughout life.

1.22 Micronutrient Deficiencies

Surveys in the 1990s revealed micronutrient deficiencies of Vitamin A, iron and iodine among young children and mothers. Programs to address these problems are being implemented with support from USAID, GRZ, NGOs and other donors. The recent DHS survey indicates significant progress with a number of programs and distances to go for others.

The 1993 National Baseline Study in Iodine Deficiency Disorders (*National Food and Nutrition Commission*) identified the national prevalence rate of iodine deficiency at 32 percent. Iodine deficiency can lead to permanent mental impairment. Zambia passed laws in 1974 and 1994 for mandatory iodization of salt. According to the 2001-02 DHS survey, only 10.8 percent of urban households and 20.1 percent of rural households had no salt. Of those households with salt, 74.5 percent of urban households consumed salt with adequate iodine content and 79.1 percent of households in rural areas consumed salt with adequate iodine content.

In the 1998 National Survey on Vitamin A Deficiency in Zambia (*National Food and Nutrition Commission*), 66 percent of children age 0-4 years and 22 percent of women age 15-49 were found to be Vitamin A deficient. Vitamin A capsule distribution and sugar fortification programs have been aggressively implemented in the past three years. The 2001-02 DHS survey found that 67.4 percent of children under five years of age had received Vitamin A supplements. Overall 58.6 percent of children under-five are consuming

vegetables and fruits rich in Vitamin A. Fruits are available in most all rural areas; however, only 58.9 percent of children living in rural areas are consuming these. There are significant regional differences where only 42.3 percent of children in Southern Province are consuming fruits and vegetables compared to 71.2 percent in Northern Province. Mothers are also the target of Vitamin A capsule distribution programs; however, only 28 percent of mothers received Vitamin A within the first two months after delivery.

The 1999 National Baseline Survey on Anemia (*National Food and Nutrition Commission*) found that 39 percent of women, 23 percent of men and 65 percent of children were anemic. The DHS found that only 20 percent of mothers receive iron supplementation for 90 days or more.

SECTION 2. DETERMINANTS OF FOOD INSECURITY AND MALNUTRITION

Important determinants of food insecurity, malnutrition and micronutrient deficiencies in Zambia are:

- Poverty
- Shocks
- Dietary habits and improper child feeding practices
- Disease
- Agricultural Policy and Production Factors

2.1 Poverty

Zambia is one of the poorest countries in the world, facing numerous macro-economic and social development problems. In the most recently released (2002) Human Poverty Index, the United Nations Development Programme (UNDP) ranked the country 153rd out of a total 173 countries.

The ability of households in both rural and urban areas to access adequate food has significantly decreased during the last decade. According to the Central Statistics Office's Assessment of Poverty, more people were living in poverty at the end of the 1990s than at the beginning of the decade. Throughout the 1990s, prices of foods have risen, unemployment has increased and wages in the informal sector have remained stagnant. This has meant that urban consumers cannot purchase the quantity or quality of food required for an adequate diet. Small farm households that make up 70 percent of rural households have not been able to grow enough food. Given the high costs of agricultural inputs, small land size, low land productivity, these same households are not able to consume all their nutritional requirements from their own farm produce nor can sell enough to access an adequate diet. There is a hungry season in Zambia, which particularly affects small farming households. They find themselves with limited stocks of farm produce in the months between November and March and few off-farm income generating options. These realities, coupled with three periods of drought over the last 12 years, have deepened and extended the hungry season and levels of poverty for many households.

2.11 Urban Poverty

According to the World Bank Country Assessment, nearly 40 percent of Zambia's total population live in urban areas and 80 percent of this urban population live in poverty. This represents more than 3 million poor urban inhabitants. Given the continuing rural to urban migration and the limited industrial development, this number of poor is expected to rise for