



CASE STUDY: UGANDA

LINKING FOOD SECURITY AND NUTRITION

April 1998

Paper compiled for USAID and the Greater Horn of Africa Initiative

by

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List of Acronyms

DHS	Demographic Health Surveys
BMI	body mass index
VAD	vitamin A deficiency
WHO	World Health Organization
IDA	iron deficiency anemia
IDD	iodine deficiency disorders
NFNC	National Food and Nutrition Council
MOA	Ministry of Agriculture
ICN	International Conference on Nutrition
UNPAN	Uganda National Plan of Action for Nutrition
BFHI	Baby Friendly Hospital Initiative
MOH	Ministry of Health
IEC	information, education, and communication
USAID	United States Agency for International Development
NGO	non governmental organization
HIV/AIDS	Human Immunodeficiency Virus/Acquired Immune
Deficiency	Syndrome
IDPs	internally displaced persons
DRC	Democratic Republic of the Congo
MAAIF	Ministry of Agriculture, Animal Industry, and Fisheries
PVO	private voluntary organization
UNICEF	United Nations Children's Fund

I. INTRODUCTION

Uganda, located in East Africa, is a land-locked country bordering Kenya, Tanzania, Rwanda, Zaire, and

Sudan. The population of Uganda is estimated to be over 16 million people. Because of its relatively

high altitude, Uganda has a generally favorable climate with some variation across the regions. The

central and western regions of the country have two rainy seasons, while the north, with semi-desert

vegetation, has only one rainy season. Corresponding to these climate conditions are higher population

densities and greater agricultural production capacities in the western and central regions than in the

north.

The nutrition and food security situation in Uganda has received considerable attention in recent years.

While nutritional status has improved slightly in the past decade, the prevalence of stunting, underweight, and wasting for children under five remains high. The poor nutritional status of pregnant

and lactating women is also of ongoing concern. Many factors common to other countries in the region

are contributing to this, including: low levels of food intake; higher rates of disease, especially HIV/AIDS; inadequate maternal and child care practices; poor water, sanitation, and health services; and

low levels of income and food production. These determinants demonstrate the closely related issues of

nutrition and food security, and reaffirm the importance of taking a multisectoral approach towards

alleviating the nutritional problems of Uganda.

II. PRIORITY I: Improved maternal, infant, and child nutrition, with a focus on program quality, design, and implementation.

A. Situation/Problem Overview

Nutritional Status Infants and Children. The Uganda Demographic and Health Survey found that

over one-third of children (38 percent) under four years were stunted (low height for age), while five

percent of children under four were wasted (low weight for height). The proportion of children in the

same age group considered underweight (low weight for age) was 26 percent (DHS, 1995).

Stunting

prevalence among children ages 3-5 months has decreased significantly by 18 percent in Uganda since

the last DHS of 1989. However, the proportion of children wasted and underweight for children 3-5

months has increased. Children between the ages of 3-11 months are the most vulnerable to underweight malnutrition coinciding with the weaning age period. The primary determinants of nutritional status of children in Uganda are inadequate food intake and poor health conditions.

Nutritional Status Women. One in ten mothers in Uganda have a Body Mass Index (BMI) below 18.5

and can be considered undernourished. Fewer than two percent of women in general are shorter than 145

centimeters, an indicator of past socioeconomic and nutrition status. There are other indications, however, that pregnant and lactating women in Uganda may be at risk of malnutrition. One study

conducted in 1992 in Rukungiri district demonstrated very poor maternal nutritional status. Over 35

percent of women had arm circumference measurements below 23.5 cm (WINS, 1992). Another indication of poor maternal nutrition often used is low birthweight. Over 16 percent of newborns in

Uganda are born weighing less than 2.5 kg (UNICEF, 1994). Reasons cited for poor maternal nutrition

are inadequate food intake, excessive work load, closely spaced pregnancies, illness, low educational

status, and poverty.

Micronutrient Deficiencies. Although the magnitude of vitamin A deficiency, VAD in Uganda has not been documented nationwide, several research studies suggest that VAD, xerophthalmia, and nutritional blindness are likely to be significant public health problems, particularly in the north and northeast regions. According to 1995 estimates, more than 200,000 preschool age children in Uganda suffer from xerophthalmia each year, and of these children, approximately 20,000 develop corneal damage. Another 11,000 children with corneal related complications become blind every year, and almost 8,000 of these children die.

Smaller-scale studies indicate that the VAD prevalence exceeds the WHO minimum criteria for public health significance by three to four times. An assessment of blindness and VAD was completed in Kamuli district in 1991. Approximately half of all children under six years of age were reported to have insufficient dietary intake of vitamin A. An overall xerophthalmia prevalence rate of 5.4 percent was found among children under six years, and 2.5 percent of these school children had a history of night blindness, one percent had Bitots spots, 0.3 percent had corneal xerosis, and 1.7 percent had corneal scars. While the Ugandan diet offers a wide variety of foods, VAD found in the Kamuli District was in part due to insufficient dietary intake of vitamin A.

Iron deficiency anemia (IDA) increases the risk of poor pregnancy outcome including prematurity, low birth weight, and maternal mortality. More than 20 percent of low birth-weight babies born in Uganda can be attributed to IDA. Malaria and some parasitic infections also contribute to the high prevalence of anemia in the country. Iron requirements are closely related to caloric intakes. Nutritional anemia is a

significant nutritional problem for women in Uganda, especially those who are pregnant and lactating.

Women with anemia are at increased risk of premature deliveries, fetal growth retardation, distress, and mortality. The problems of anemia in Uganda are worsening the malaria conditions. Anemia is the leading cause of maternal morbidity and mortality, and in 1993, it ranked as one of the top five leading causes of morbidity and mortality for all age groups including children under five years of age (UNPAN, 1996).

Iodine deficiency disorders (IDD) impair physical and mental development, including intellectual capacity. The presence of goiter enlargement of the thyroid gland reflects significant iodine deficiency in a population. While the prevalence of IDD varies by region (with the highest incidence of IDD in the mountainous and flood-prone areas of the country), the preliminary results of the 1993 Ministry of Health Micronutrient Survey indicate that IDD is a significant health problem in most regions of Uganda. According to 1995 data, 16 percent of children ages 6-11 in Uganda have goiter. Two Ugandan Ministry of Health studies conducted in 1991 in five high-risk areas of the country found a total goiter rate of 75 percent, and a visible goiter rate of 40 percent. The 1995 DHS survey reported a 69 percent iodized salt coverage rate.

Food Security Situation. Per capita food production in Uganda has been declining for 30 years. Food

production has not kept pace with population growth mostly because of declining soil fertility, increasing

soil erosion, lack of access to inputs (especially seeds), and seasonal labor shortages (due to HIV/AIDS).

There is a heavy reliance on hoe cultivation and women's labor. Over 85 percent of the food production

is comprised of matoke, cassava, and sweet potatoes (Riley, 1994). Smallholders produce 94 percent of

all agricultural production and 100 percent of food production in the country (UNFNC 1996:3).

Over 81 percent of land in Uganda is suitable for agriculture. Rainfall, though erratic and prone to

microclimatic variation, is ample (900-2000 mm annually) (DHS 1995). Most production is carried out

on smallholder settled farms comprising 2.2 ha of land on average (1.8 ha for female headed households). Tenure is most often "customary" with usufruct rights being granted by family, lineage, or

clan. In 1995, three types of tenure were officially constituted by the government allowing for freehold,

leasehold, or customary tenure.

Uganda produces a large diversity of food crops and comprises an extremely diverse agroecological

environment. There is no one staple crop and no crop accounts for more than 15 percent of food consumption (Riley 1994). The principal crops consumed are cooking bananas (matoke), cassava, sweet

potatoes, finger millet, maize, beans, sorghum, peanuts, and sesame. They are augmented with meat,

milk, and eggs to various degrees during the year. Nontraditional export crops are currently being

encouraged, which has led to an increase in rural incomes women comprise over 80 percent of the

farmers growing these nontraditional crops (USAID 1997).

Crops were planted late this past season as a result of delayed planting rains. Rainfall levels since this

time have been significantly below normal and harvests are expected to be below average. The eastern

and northeastern areas of Uganda are dealing with limited food supplies. Reflecting concern over

delayed rains, food prices did not decline after harvests in September and were above their levels of last

year. Rebel activities in the western districts have resulted in substantial population displacement and

agricultural disruption (FAO/GIEWS 1997).

Food Consumption. The daily caloric energy supply available in Uganda is 2,268 kcals per capita

(FAO, 1997). Studies have shown that despite the lack of protein and heavy reliance on starchy foods,

there is much diversity in the diet of Ugandans. No food accounts for more than 15 percent of the

national caloric/protein consumption (Riley, 1994). The 1994 food balance sheet reported that the

primary vegetable items consumed in Uganda were matoke, cassava, sweet potatoes, maize, finger

millet, sorghum, beans, simsim, and groundnuts. The non- vegetable items were meat, milk, and eggs

(ibid). The variety in the Ugandan diet does not preclude the prevalence of micronutrient deficiencies.

Studies showed that the VAD found in the Kamuli District was attributed to an insufficient dietary intake

of vitamin A.

B. Food Security and Nutrition Connections

Women and Agriculture Food Availability. Women comprise 80 percent of the agricultural labor

force and primarily use hand hoe cultivation (UNPAN, 1996). Women are responsible for the harvesting, preparing, cooking, and serving of food. In addition, women are responsible for cleaning,

gathering fuel and water, and often other income generating activities such as market activities, making

and selling handicrafts, etc. (UNICEF, 1994). Hence, interventions to improve food security in Uganda

should be women-centered.

Pregnant and lactating women are generally assumed to be among the nutritionally vulnerable in a

population. In Uganda, women who are pregnant or breastfeeding continue with their agricultural and

domestic labor, thus requiring extra energy intake during these periods. In most areas of the country, it

is believed that pregnant and lactating women do indeed increase food intake if time and income permit.

Special attention is necessary to ensure that these population groups are receiving sufficient food as well

as care and health services during these more vulnerable periods.

Urban Farming Food Availability. Studies have been conducted in Uganda examining the relationship of urban farming with child nutritional status. The findings provide further evidence of the

importance of integrated strategies for addressing food security and malnutrition. The primary reason

identified for the increase in urban farming in Kampala, where the studies were conducted, was the

decline in household income. Households that previously relied on selling labor were forced to resort to

other income-generating activities. The study noted that urban agriculture is largely a woman's strategy

for ensuring food security for her family. In addition to the benefits of increased income derived from

urban agriculture, it was also shown to have a positive impact on the nutritional status of children,

especially for the lowest income groups.

The study found that there was a nearly one-half standard deviation difference in the level of chronic

malnutrition between farming and non-farming groups in two studies (SCF, 1987; and Household

Survey, 1993). Little or no difference was found in the weight-for-height data between the two groups.

When height-for-age data was desegregated on the basis of income groups, a significant difference in

nutritional status of the farming and non-farming households for the low and very-low income groups

was found.

Income Access to Food. Income emerges as a key component of the food security and nutrition connection. Riley (1994) notes that both rural and urban households must purchase food in the market

at various points in the year in order to meet their household food requirements. It is estimated that over

70 percent of household expenditures in Uganda go towards food purchases. Studies in other African

countries demonstrate that when women have greater control over resources in households, the nutritional status of children is likely to improve. In Uganda, the majority of women who receive cash

for work (65 percent) do decide for themselves how to spend the money earned. Increased capacity to

purchase foods by urban dwellers is also dependent on food production levels. As production increased,

urban market prices paid for food dropped significantly (EIU 1998:16), increasing the food purchasing

power and nutritional status of urbanites.

Income is further linked to greater food security and nutrition in that as production increases (and therefore income), other inputs are more likely to be purchased such as improved seeds, fertilizer, and

pesticides (Riley 1994). Incomes must increase to a certain point beyond subsistence level, especially

during the hungry season, in order for additional purchases to be made. If this does not occur, production

levels will remain low.

Further evidence of the linkages between income and nutrition were found in a study examining the

income-generating activity of beer brewing and child nutritional status. The study found that beer

brewing (male dominated) tended to drain the household food supply (i.e. millet in the east and northern

regions of Uganda; bananas in the southern regions). Children in beer brewing households were twice as

likely to be stunted than those in non-brewing households (UNICEF, 1994).

Poverty as a root cause of malnutrition is also clearly evident in Uganda with significant evidence that

poor farming households are forced to sell subsistence food in order to obtain cash for health care costs

(1994:27). Poverty also reduces levels of education, especially among women and has an added negative

impact on the nutritional status and child survival.

Health Utilization. Although malnutrition has most often been addressed as a hunger problem through the agriculture sector, it is more recently being associated with health. The UNICEF framework

on the causes of malnutrition places health alongside food intake as the two leading causes of malnutrition and mortality. The health situation in Uganda lends support to this conceptualization as

several of the leading causes of mortality are also related to malnutrition.

Table 1 : Leading Causes of Mortality in Uganda by Age Group

BELOW 5 YEARS

5 YEARS AND ABOVE

ALL AGE GROUPS

Malaria

Malaria

Malaria

Intestinal Infections

AIDS

Ill-defined intestinal infections

Pneumonia

Bacterial Meningitis

AIDS

Iron deficiency anemia

Disorder of intestines and
peritoneum

Pneumonia

Measles

Musculo-skeletal diseases

Iron deficiency anemia

Bacterial meningitis

Pneumonia

Bacterial meningitis

Septicaemia

Ill-defined intestinal infections

Measles

Newborn diseases

Iron deficiency anemia

Disorders of intestines

Nutritional marasmus

Ill-defined symptoms and signs

Tetanus

AIDS

Ischaemic heart disease

Septicaemia

Source: Ministry of Health, 1993

As illustrated in the Table 1, the top ten causes of mortality in Uganda are health related. The synergistic relationship nutrition has with several of these conditions further implicates malnutrition in the mortality and morbidity problems of Uganda. Malnutrition is most commonly associated with the deaths caused by acute respiratory infections, diarrhea, measles, and malaria. The World Bank reports that the infant mortality rate in Uganda has not changed significantly in the past two decades from 119 deaths in 1965 to 117 deaths in 1990 (World Bank, 1993).

Access to affordable health care is a relevant problem to nutrition as well. One national study in 1993 showed that the sale of subsistent crops was the most frequent strategy for obtaining funds to meet health care expenditures (UNICEF, 1994). The DHS for 1995 showed that antenatal care is relatively high. However, further analysis reveals that women often receive care late in pregnancy and usually only once during pregnancy.

Another extremely important health concern related to nutrition is HIV/AIDS. HIV depresses the body's immune system so that infections can set in, while good nutrition can slow the immune system's decline.

One study in Uganda demonstrated the direct connections between hunger, crop cycles, and progress of HIV/AIDS. There was a seasonally recurring pattern in the growth rate of the AIDS epidemic at the district level. People with HIV were found to most likely develop AIDS during the hunger season before harvest (Dunn, 1994).

Utilization Young Child Feeding Practices. Breastfeeding rates in Uganda are relatively high in comparison to other countries in the Greater Horn and around the world. The DHS (1995) for Uganda cites a 70.5 percent prevalence of exclusive breastfeeding for children under four months of age in Uganda, and a median duration of breastfeeding at 20 months. Mothers reportedly avoid giving their children bottles or infant formula. Studies show that the knowledge, attitudes, and behaviors surrounding breastfeeding generally are very good. For example, women believe that suckling improves lactation. Babies are fed on demand and a wet nurse steps in to feed infants if there is a problem. Efforts are needed to reinforce these beliefs and practices. It is also important to prevent any deterioration of breastfeeding practices due market influences or women moving into workplaces not conducive to breastfeeding.

A more pressing problem related to young child feeding practices in Uganda may be the complementary feeding practices, and specifically the quality of weaning foods. Compared to other sub-Saharan African countries, the late introduction of weaning foods is less of a problem than the quality of weaning foods. However, there is still 34 percent of infants between the ages of six nine months who are still not receiving food in addition to breastmilk. Tubers (potatoes or cassava) are the most weaning foods followed by cereals such as flour and plantains. By the age seven nine months, 30 percent of children are given these cereals. Protein foods enter the infant's diet even later on only 5 percent of infants

receive protein foods (meat, poultry, fish, or eggs) by age 4 5 months and only 30 percent of children by

10 11 months. The poor complementary feeding practices become apparent through the high stunting

rates in Uganda (44.9 percent for children aged 24-35 mos.).

The factors contributing to poor breastfeeding and weaning practices in Uganda include:

- cultural beliefs and attitudes;

- poor integration of breastfeeding and weaning practices into the existing nutrition programs;

- inadequate support and information for exclusive breastfeeding;

- inadequate information at the community level regarding child care, proper feeding practices, and maternal nutrition;

- lack of facilities for working mothers to breastfeed at work places;

- inadequate maternity leave of 45 days (applies only to women in wage labor force);

- excessive workload of women and poor household technology.

Education. As in many other countries around the world, a direct correlation exists with prevalence of

nutrition and education level of the mother. For mothers without any education, there was a 32 percent

prevalence of underweight (weight-for-age) for children under three years. For mothers with just

primary education, the prevalence decreased to 27 percent, and finally for mothers with secondary

education and above, the prevalence fell to 19 percent (DHS, 1995).

III. PRIORITY II: Improved use of information and advocacy to influence policies, strategies,

and programs.

A. Situation/Problem Overview

Nutrition Policies. The National Food and Nutrition Policy (1993) provides an overall framework for addressing food and nutrition problems in Uganda. The policy emphasizes agricultural approaches to guaranteeing food security and nutrition in the country: increasing food production and ensuring adequate nutrition through sufficient food processing, storage, marketing and distribution, external trade, and supplementary food aid. The policy does include the elimination of micronutrient deficiencies, promotion of breastfeeding, nutrition education, food quality and safety, and efficient nutrition monitoring systems. The Ministry of Agriculture (MOA) has exercised greater control over the policy as it focuses on food, security, consumption, production and income. Early warning systems and improving dietary diversity are also being stressed by the MOA.

The Uganda National Programme of Action for Children (1992) also incorporates nutrition objectives to

be achieved by the year 2000, especially related to the survival of women and children, including:

- 4.9 reduction of severe and moderate malnutrition among children under five years from 4.9 percent and 18.4 percent to 2.5 percent and 9.2 percent respectively;
- reduction of iron deficiency to one-third of current levels;
- reduction of total goitre rate from 80 percent to 30 percent and elimination of deficiency in nonprone areas;
- elimination of vitamin A deficiency.

As follow-up to the International Conference on Nutrition (ICN) (1992), the Government of Uganda

began the process of preparing the Uganda National Plan of Action for Nutrition (UNPAN). The National Food and Nutrition Council (NFNC) established a multi sectoral task force that included

representatives from various ministries (i.e. Agriculture, Animal Industries, and Fisheries; Health;

Finance and Economic Planning; Education and Sports; etc.) The plan was finalized and adopted in 1996. The NFNC will serve as the coordinator in the implementation of the UNPAN. The nine themes of the ICN are covered in the plan with background information, objectives, strategies, activities, and monitoring and evaluation indicators for each theme. A framework for the implementation of the UNPAN is also laid out in detail.

Following a policy of decentralization, two district local councils (Kabale and Mubende) have developed District Plans of Action for Nutrition. Ten other districts are in the process of developing their plans. These plans first assess the food and nutrition situation in the district and then outline guidelines for its improvement.

Breastfeeding in Uganda is advocated exclusively for six months with continuation up to two years.

Policy work related to breastfeeding has concentrated on attempts to increase maternity leave from 45 days to 90 days. The Baby Friendly Hospital Initiative (BFHI) of UNICEF is also being promoted in several hospitals and health centers throughout the country.

Micronutrient Policies. The Government of Uganda's commitment to addressing micronutrient deficiencies is illustrated in several key policy documents such as the National Food and Nutrition Policy (1993), Ugandan National Programme of Action for Children (MFEP, 1993), the National Plan of Action for Nutrition (1995), MOH Three-Year Plan Frame (1993-1996), and the MOH White Paper on Health Policy Update and Review (1993). These documents propose strategies to eliminate micronutrient deficiencies in Uganda with a focus on VAD. Vitamin capsules are now on the country's

essential drug list, and guidelines for vitamin A supplementation are included in the National Standard

Treatment Guidelines.

In an effort to eliminate VAD in Uganda by the year 2000, Uganda's strategy includes awareness building, education, capacity building, public health measures, vitamin A supplementation, dietary

diversification, and food fortification. The plan was launched in 1994 in the Kamuli district to serve as a

pilot project. With lessons learned from this pilot project, the vitamin A prevention and control program

will be expanded nationwide. The highest priority activities of the program are vitamin A supplementation for the immediate prevention and control of VAD, and dietary approaches to provide a

long-term sustainable approach to eliminating VAD. Dietary approaches include information, education

and communication (IEC) activities to promote behavior change and increase the production and intake

of foods rich in vitamin A. Uganda's sugar producers have expressed an interest in the potential to

fortify household sugar with vitamin A.

After enactment of a government policy to support the universal iodization of salt, the Ugandan government initiated a marketing campaign to increase the consumption of iodized salt. Iodized salt can

be found in two-thirds of all households. These results indicate that to eliminate IDD nationwide, even

greater efforts are needed to reach the remaining one-third of the population that is not consuming

iodized salt.

USAID and UNICEF provided the technical and financial assistance to the Uganda Ministry of Health

(MOH) for the Kamuli District Vitamin A Deficiency Baseline Survey performed in 1991. This survey

documented vitamin A deficiency, and provided recommendations for preventing and controlling VAD

in Uganda. Uganda's VAD Prevention and Control Program was initiated in 1993 by the MOH, in close

collaboration with other ministries and the Makerere University. Technical and financial support for this

program has been provided by USAID, UNICEF, WHO, and various NGOs. UNICEF and WHO also

assisted the MOH in conducting the Kamuli District Vitamin A Baseline Survey in 1994, which allows

measurement of the impact of VAD interventions implemented in the district. The interventions found

most effective in preventing and controlling VAD will be implemented nationwide. USAID also funded

the 1995 DHS report, Nutrition and Health Status of Young Children and Their Mothers in Uganda.

This report provides analysis of the nutrition situation in Uganda, including evidence of micronutrient

malnutrition to allow policy makers to make informed decisions regarding the need for nutrition interventions.

Capacity Building. Due to the decentralization process, capacity building for food security and nutritional interventions must be completed at the district level. There are 45 districts comprising four

regions. It appears that those districts in greatest need of nutritional intervention programs are those that

do not recognize nutrition as a priority area (Cook [USAID] 1998). There is a significant number of

NGOs (World Vision, Save the Children, etc.) working in each district of Uganda and these should be

targeted for coordination of food security and nutrition interventions.

Capacity building potential in Uganda is seriously impacted by HIV/AIDS. A problem here, as in Kenya

and Tanzania, is that many individuals die soon after training and cannot easily be replaced.

IV. PRIORITY III: - Improved maternal and child nutritional status in emergency and refugee

situations.

A. Situation/Problem Overview

Insecurity caused by fighting between the government and rebel factions in Uganda has led to large-scale population movements in many areas of the country. The civil unrest once confined to the north and northwest regions of Uganda has now expanded to the southwestern region. In December 1997, there were approximately 382,000 internally displaced persons (IDPs) in the country, up from 20,000 in September 1996 (RNIS, 1997). The civil unrest in these regions is creating severe food insecurity problems related to crop production, trade, and distribution of food aid. The onset of the rainy season has also disrupted food aid deliveries to IDPs. Although there are no nutritional details currently available on the IDPs, all indications are that these factors have a negative impact on nutritional status.

In addition to the IDPs in Uganda, there are a large number of refugees in Uganda from surrounding countries: 176,000 from the Sudan; 14,000 from Rwanda; and 14,000 from the Democratic Republic of the Congo (DRC) (RNIS, 1997). While the number of IDPs has increased, the numbers of refugees in Uganda has decreased since January 1997. In addition, Sudanese refugees fleeing from the fighting around the Sudanese town of Torit have reportedly settled in camps in northern Uganda. Their farming activities on small plots of land have rendered them partially self-sufficient. A survey conducted in the Mongolia settlement showed a 4.1 percent prevalence of wasting, as compared with a 5.9 percent prevalence of wasting in surrounding villages. The results reveal a dramatic decrease in wasting prevalence during 1997 despite the inconsistent deliveries of rations to the camp. The low levels of malnutrition have been partially attributed to the recent harvest of groundnuts and maize. There is no new information concerning the nutritional status of the Congolese and Rwandan refugees in Uganda.

Other food security related problems are creating potential emergency situations that will require immediate attention. Drought, flooding, and the cassava mosaic virus have afflicted the east and northeast districts of the country (FAO, 1997). Coping mechanisms for these families are reported to include reduced meal consumption to one meal a day; increased school absences; and mothers failing to make scheduled visits to clinics out of need to work. Flooding in the western parts of the country have led to the displacement of up to 150,000 people (RNIS, 1997).

There is an Early Warning and Food Information System within the Ministry of Agriculture, Animal Industry, and Fisheries (MAAIF), which is responsible for monitoring food situations and making regular forecasts of the food situation in different parts of the country. This information is used by the government in the development and implementation of national food management policies and programs. Such information could be integrated with the information collected by NGOs/PVOs at the community level to further mitigate and respond to emergency situations.

V. CONCLUSION

Relative to other countries in the Greater Horn of Africa, certain aspects of Uganda's overall food security situation appear supportive for reducing rates of malnutrition. Much of Uganda's land is suitable for agriculture and farmers are able to produce a wide variety of crops. Studies show that the population also consumes a wide variety of foods at sufficient energy levels. In addition, the Government of Uganda has initiated and developed several nutrition-related policies and plans to address malnutrition in the country. Unfortunately, these positive forces have not contributed significantly to lowering rates of malnutrition.

Surveys found that there are still over one-third of children under four years of age in Uganda who are stunted. Serious micronutrient deficiencies are also widespread in the country. Several limiting factors, also related to food security, are preventing improved nutritional status poor young child feeding practices; heavy reliance on women in the agriculture labor force without proper inputs; low income levels, and limited access to markets; HIV/AIDS; other health concerns such as acute respiratory infections, diarrhea, measles, and malaria; low levels of knowledge; and to civil unrest in several regions

of the country. Efforts are still needed to mobilize resources, initiate and expand programs across the various sectors in order to alleviate the malnutrition problems of Uganda.

** Interventions to address the problems identified in this Case Study on Uganda have been proposed by the Cooperating Agencies of LINKAGES, OMNI, BASIS, and QAP. They may be found in the document *Priority Interventions: Linking Food Security and Nutrition*, April 1998.