



# FEED THE FUTURE

The U.S. Government's Global Hunger & Food Security Initiative



# UGANDA

Feed the Future Zone of Influence Baseline Report  
December 2013



**USAID**  
FROM THE AMERICAN PEOPLE

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## List of Acronyms

5DE	Five Domains of Empowerment
BMI	Body Mass Index
CAPI	Computer-Assisted Personal Interviewing
DHS	Demographic and Health Survey
FTFMS	Feed the Future Monitoring System
GDP	Gross Domestic Product
GPI	Gender Parity Index
HH	Household
HHS	Household Hunger Scale
IRB	Institutional Review Board
LSMS	Living Standards Measurement Survey
MAD	Minimum Acceptable Diet
MICS	Multiple Indicator Cluster Survey
ODK	Open Data Kit
PBS	Population-Based Survey
PPP	Purchasing Power Parity
PPS	Probability Proportional to Size
SEA	Standard Enumeration Area
UBOS	Uganda Bureau of Statistics
UNHS	Uganda National Household Survey
USAID	United States Agency for International Development
WEAI	Women's Empowerment in Agriculture Index
WHO	World Health Organization
ZOI	Zone of Influence

## Executive Summary

This document reports the findings of the Uganda Feed the Future population-based survey (PBS) that serve as the Uganda baseline for the U.S. Government's Feed the Future initiative, led by the United States Agency for International Development (USAID). Feed the Future seeks to reduce poverty and undernutrition in 19 developing countries by focusing on accelerating growth of the agriculture sector, addressing root causes of undernutrition, and reducing gender inequality. The survey captures data in the geographic areas targeted by Feed the Future interventions, known as the Feed the Future Zone of Influence (ZOI).

The PBS is a product of the Feed the Future (FTF) FEEDBACK contract, which is responsible for performance monitoring and impact evaluation of the Feed the Future initiative. FTF FEEDBACK is implemented by Westat in partnership with TANGO International, the International Food Policy Research Institute, and the University of North Carolina's Carolina Population Center. In Uganda, the FTF FEEDBACK PBS fieldwork was conducted by the Uganda Bureau of Statistics (UBOS) with input from Westat and TANGO International. The fieldwork took place from October 25 to December 30, 2012.

The ZOI in Uganda comprises 38 districts across eight regions. A total of 2,566 households in the ZOI were interviewed for the Feed the Future survey. These households were spread across 140 standard enumeration areas (SEAs) in the targeted districts, which are the same SEAs within the ZOI from the Demographic and Health Survey (DHS) 2011.

The Feed the Future ZOI baseline values for Uganda draw on data from both primary and secondary sources. Of the 13 Feed the Future indicators reported, seven were calculated using data gathered in the PBS: (1) *Women's Empowerment in Agriculture Index (WEAI)*; (2) *prevalence of households with moderate or severe hunger (Household Hunger Scale, HHS)*; (3) *Women's Dietary Diversity Score*;<sup>1</sup> (4) *prevalence of underweight women*; (5) *prevalence of underweight children under 5*; (6) *prevalence of wasted children under 5*; and (7) *prevalence of stunted children under 5*. The remaining six indicators utilized secondary data from the Uganda National Household Survey (UNHS) 2009/2010 and the Uganda DHS 2011, specifically: (1) *per capita expenditures*; (2) *prevalence of poverty*; (3) *prevalence of children 6–23 months receiving a minimum acceptable diet (MAD)*; (4) *prevalence of exclusive breastfeeding*; (5) *prevalence of anemia among children 6–59 months*; and (6) *prevalence of anemia among women of reproductive age*. All Uganda Feed the Future ZOI baseline values collected from both primary (PBS) and secondary (DHS, UNHS) data have been entered into the Feed the Future Monitoring System (FTFMS) database for the global Feed the Future initiative.

Overall, the prevalence of poverty based on the \$1.25/person/day (2005 PPP) threshold in the ZOI is 32.9 percent. The poverty gap in the ZOI is about 9.4 percent, and per capita expenditure is \$1.53/day (2010 USD).

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<sup>1</sup> Women's Dietary Diversity Score and prevalence of underweight women are measured on women of reproductive age (15 to 49 years of age).

The household demographic findings show that households with both a male and a female adult in the ZOI have significantly more household members, more females, and more children of every age bracket than other household types (i.e., male adult only, female adult only, or child no adult).<sup>2</sup>

Regarding dwelling characteristics, about one in 10 households (9.8 percent) in the ZOI have electricity. Male and female adult households are more likely to have electricity than female adult only households (10.1 and 7.7 percent, respectively). Similarly, male and female adult households also have more rooms (2.9) compared to other household types. There are no differences in household water source or sanitary facilities for different household types.

The nutrition data collected show that one-third (33.0 percent) of children under 5 in the ZOI are stunted. The prevalence of stunting in under 5 boys is higher than in girls (36.2 and 29.8 percent, respectively), and the difference is statistically significant. The prevalence of exclusive breastfeeding for children under 6 months in the ZOI is 60.0 percent; the prevalence of exclusive breastfeeding is significantly higher for boys compared to girls (67.8 and 52.5 percent, respectively). More than one-quarter of all interviewed households (26.7 percent) reported moderate or severe hunger based on the HHS. Women's Dietary Diversity is low, with women of reproductive age reporting an average consumption of approximately three out of nine total food groups (3.3 food groups). Women in urban areas consumed significantly more food groups than women in rural areas (3.7 versus 3.3, respectively). In addition, pregnant women in the ZOI have a higher prevalence of anemia than nonpregnant women (30.0 and 19.0 percent, respectively), and the difference is statistically significant.

The Women's Empowerment in Agriculture Index (WEAI) measures the empowerment, agency, and inclusion of women in the agriculture sector using two subindices. The Five Domains of Empowerment (5DE) subindex measures women's empowerment in five key domains (production, resources, income, leadership, and time), and the Gender Parity Index (GPI) measures the average level of equality in the empowerment of men and women in the household. The Uganda PBS data show that the 5DE subindex is 0.85. More than half (57.8 percent) of women in the survey have achieved empowerment (a score of 0.80 or greater). The GPI subindex is 0.92. Within households with both a male and a female adult, 61.0 percent of women have achieved adequate gender parity (i.e., a 5DE score equal to or higher than the man in their household). The WEAI, which is the weighted sum of the 5DE and GPI subindices, is 0.86 (out of a maximum possible value of 1.0).

Additional analysis requested by USAID/Uganda was conducted to determine the extent to which WEAI indicators are associated with levels of household hunger. Women in households with moderate to severe hunger are significantly less likely than women in households reporting no

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<sup>2</sup> As explained in USAID. 2012b. "Feed the Future household (HH) level indicators are disaggregated by 'gendered household types' – that is: (1) HH with male and female adults (18+ years), (2) HH with at least one male adult and no female adult, (3) HH with at least one female adult and no male adults, and (4) HH with children and no adults. This categorization is somewhat different than the standard 'male-headed vs. female-headed' households, and the distinction and change is very meaningful. The concept of 'head of household' is highly loaded, presumes certain characteristics that may or may not be present in household gender dynamics, and often reflects the bias of the researcher or respondent. In addition, the head of household concept may perpetuate existing social inequalities and prioritization of household responsibilities that may be detrimental to women."

hunger to achieve adequacy in autonomy in production, ownership or control of assets, control over the use of income, and satisfaction with leisure time. However, women in households with moderate to severe hunger are significantly more likely to achieve adequacy with respect to access to and decisions on credit.

Further analysis provided population demographics in relation to select Feed the Future indicators. The outcomes for children and women are more severe in rural areas of the ZOI for all indicators. The prevalence of household hunger is also higher in rural compared to urban areas (27.4 and 19.8 percent, respectively), and hunger is more prevalent in households in which no one has schooling above the primary level. Women's Dietary Diversity is higher for women in households with at least one member with education above the primary level compared to households in which no one has schooling above the primary level (3.6 versus 3.1 food groups), as well as higher in households with more than seven members, which is a surprising finding.

The data in this report will be used to measure changes in Feed the Future indicators over time in the Uganda ZOI. It should be noted that the survey was not designed to allow for conclusions about attribution or causality.

# I. Background

## I.1 Feed the Future and FTF FEEDBACK Overview

Feed the Future is the President’s global hunger and food security initiative, which seeks to sustainably reduce poverty, the root cause of hunger, raise the incomes of the rural poor, and reduce the number of children suffering from undernutrition. The USAID is responsible for leading the Government-wide effort to implement the Feed the Future initiative. The core investment areas of the initiative are women’s empowerment, diet quality and diversification, post-harvest infrastructure, high-quality inputs, and financial services. The high-level target of the initiative is “to reduce poverty by 20 percent and prevent stunting among children under age 5 by 20 percent in target regions of Feed the Future focus countries.”<sup>3</sup>

FTF FEEDBACK is a USAID-funded project that is implementing the performance monitoring and impact evaluation agenda for Feed the Future. FTF FEEDBACK is implemented by Westat in partnership with TANGO International, the International Food Policy Research Institute, and the University of North Carolina’s Carolina Population Center.

The main objectives of the FTF FEEDBACK project are to (1) enable USAID Missions to meet Feed the Future performance-monitoring requirements and maximize the use and benefits of the data collected; (2) provide high-quality empirical evidence to inform program design and investment decisions that will promote sustainable food security; (3) ensure timely availability of high-quality data for use in monitoring performance and evaluating impacts of the Feed the Future initiative; and (4) facilitate accountability and learning about what Feed the Future interventions work best, under what conditions, and at what cost.

To measure progress in addressing global food security, USAID is collecting data through large household surveys in geographic areas targeted by Feed the Future interventions, known as ZOIs. The FTF FEEDBACK PBSs, combined with secondary data for ZOIs, capture information related to food security, consumption, nutrition, women in agriculture, and well-being of households in the ZOI. The baseline values will be used to measure changes in the Feed the Future indicators over time in the Uganda ZOI. All baseline indicators – using both primary data collected in the PBS as well as secondary data sources (UNHS, DHS) – have been entered into the FTFMS database for the global Feed the Future initiative. The midterm and final surveys will be conducted in 2015 and 2017, respectively.

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<sup>3</sup> USAID. (2012b).

**Figure I. Feed the Future Uganda ZOI and intervention areas**



Source: USAID Uganda Mission, received May 23, 2013.

## **I.2 Feed the Future ZOI Profile**

### **I.2.1 Feed the Future Intervention Areas Within the ZOI**

The ZOI comprises geographic areas that were prioritized according to three criteria: number of smallholder farms, number of people living in poverty, and number of underweight children. In addition, the potential for commercialization of high-priority staple food crops and cash crops was considered. Figure 1 shows the ZOI areas in Uganda. More maps of the geographic zones of intervention for the Feed the Future agricultural and nutrition strategic objectives can be found in Annex A.

### **I.2.2 Rationale for ZOI Designation**

Uganda has one of the most rapidly developing economies in Africa, maintaining an average of 7.8 percent growth since 2000. Additionally, with 2.9 percent growth in agriculture, Uganda is expected to meet the first Millennium Development Goal of halving poverty and hunger by 2015. Yet, apart from these gains, Uganda continues to suffer from chronic poverty and pervasive undernutrition, with a national average of 38 percent of children chronically undernourished or stunted.<sup>4</sup>

The Uganda Feed the Future strategy builds on a foundation of prevention and nutrition treatment interventions, growth-oriented value chain activities, and integration of nutrition and agriculture interventions to improve the nutritional status and incomes of vulnerable populations. Through these interventions an estimated 709,000 vulnerable Ugandan women, children, and family members will receive targeted assistance to escape poverty and hunger. More than 45,000 children will be reached with services to improve their nutrition and prevent stunting and child mortality. The core investments in nutrition will focus on community- and facility-based prevention and treatment, targeted nutrition service delivery, and an enabling environment for improved nutrition and capacity building.<sup>5</sup>

In the agriculture sector, Feed the Future investment will focus on value chains with the greatest market potential, the largest number of farmers, and the greatest income potential for farmers. Impact on nutrition and role of gender were also critical considerations in selecting value chains. Maize, beans, and coffee were selected as key drivers for economic growth in terms of number of farmers, market demand, and income potential. The Feed the Future strategy is aligned with the Government of Uganda's Agricultural Sector Development Strategy and Investment Plan, in which 10 priority value chains were identified, including the three selected for Feed the Future.

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<sup>4</sup> <http://www.feedthefuture.gov/country/uganda>. Retrieved May 21, 2013.

<sup>5</sup> <http://www.feedthefuture.gov/country/uganda>. Retrieved May 21, 2013.

### I.2.3 Strategic Objectives for Feed the Future in the ZOI

The overall objective of Uganda’s Feed the Future investment is to reduce poverty and undernutrition by increasing inclusive agriculture economic growth and improving nutritional status, especially of women and children. This objective will be achieved by working in targeted areas of the agriculture sector, improving nutrition and livelihoods for the vulnerable, and focusing on natural resource management to accelerate prosperity in Uganda.

Uganda’s Feed the Future strategy is built on three components: (1) agriculture, (2) nutrition, which addresses the dual objectives of the global Feed the Future initiative, and (3) connecting nutrition to agriculture by eliminating the gap between improved agriculture and improved nutrition. The integration of agriculture and health/nutrition is at the core of the Feed the Future strategy.

The overall purpose of the agricultural component is to increase smallholder farmers’ incomes derived from selected crop value chains in 38 districts. Maize, coffee, and bean value chains were prioritized in line with the Uganda government priorities, division of labor, and potential for highest impact. The key outputs for the agriculture component are:

- **Increased productivity** through the development, dissemination, promotion, and adoption of improved technologies including crop varieties, agricultural inputs, crop and soil management techniques (including on-farm techniques to increase resilience to climate change), and post-harvest handling practices.
- **Increased access to competitive markets** through the expansion of trade opportunities (domestic, regional, and international), improving quality of agricultural commodities, improving market information systems (access and utilization), and strengthening market linkages.
- **Strengthened support services** through the sustainable development of markets for value-chain support services such as input supplies, finance, advisory services (business development and extension), and production. Additional support services, such as plowing, chemical spraying, and improved storage, processing, and transport, will also be strengthened to increase efficiencies along the value chains.
- **Improved government agriculture-related policy environment** that improves the private sector investment climate, strengthens advocacy through commodity platforms, improves compliance with standards and regulations, strengthens product certification procedures, and generally improves legislation, licensing, and policy implementation.
- **Improved public sector capacity** through (1) strengthening the availability and quality of agricultural statistics; (2) accelerating the implementation of the national agriculture strategic investment plan, thereby improving the institutional capacity of the commodity platforms; (3) improving agriculture-related technical skills; and (4) strengthening the capacity of the Ministry of Agriculture, Animal Industry, and Fisheries to plan and monitor policies.

The Connecting Nutrition to Agriculture component will reach vulnerable households in 25 districts in the Southwest and North Regions of Uganda. These two regions were selected because they represent a combination of the highest poverty and worst stunting and wasting rates in the country. Specific districts were chosen to complement the U.S. President’s Emergency Plan for AIDS Relief program for orphans and vulnerable children. Under this component, USAID is implementing a flagship activity called Community Connector. The Community Connector activity aims to reduce vulnerability to crisis and improve household and community capacity to absorb income, environmental, or other shocks. It will work to integrate vulnerable households into the market economy and transition them from subsistence to production. Community Connector is strategically implemented in geographic areas that allow for an overlay with other activities promoting improved production, health, and nutrition to reinforce practice and behavior change.<sup>6</sup> Community Connector provides the opportunity to examine the interaction of nutrition, agriculture, and gender programming approaches, with particular focus on the role of women in the household decision-making process, including the use and distribution of resources.

## 1.2.4 Demographics

Table 1 reports the available population figures for the ZOI. The total population of Uganda is more than 34 million, and the population within the ZOI is almost 14 million people. The ZOI population comprises 2,465,540 households (HHs). Estimates for the populations in the various age categories shown in Table 1 have been calculated using information from the baseline PBS.

**Table 1. Total population of the ZOI, 2012**

	ZOI population
Total population <sup>1</sup>	13,769,300
Rural	12,643,942
Urban	1,125,358
Population in male and female adult HHs	11,607,084
Population in female adult only HHs	1,664,794
Population in male adult only HHs	479,038
Population in child no adult HHs	18,384
Total households <sup>2</sup>	2,465,540
Male and female adult HHs	1,793,018
Female adult only HHs	409,066
Male adult only HHs	255,831
Child no adults HHs	7,626
Women of reproductive age (WRA, 15-49 years)	2,702,591
WRA rural	2,415,420
WRA urban	287,171
WRA nonpregnant	2,439,687
WRA pregnant	262,232

<sup>6</sup> USAID. (2011b).

**Table 1. Total population of the ZOI, 2012 (continued)**

	ZOI population
Children 0–59 months	2,362,766
Males 0–59 months	1,182,748
Females 0–59 months	1,180,019
Children 6–59 months	2,128,509
Males 6–59 months	1,060,892
Females 6–59 months	1,067,617
Children 0–5 months	234,257
Males 0–5 months	121,856
Females 0–5 months	112,401
Children 6–23 months	674,084
Males 6–23 months	337,506
Females 6–23 months	336,578

<sup>1</sup> Source: UBOS projection for ZOI total population; age group estimates calculated with information from the PBS.

<sup>2</sup> This number is the number of households in the ZOI, and not the number of people in the household.

## 1.2.5 Agriculture

Uganda is a landlocked country endowed with large freshwater resources and a high agricultural potential. The population, young and predominantly rural, is mostly engaged in subsistence rain-fed farming.

Agriculture is essential to Uganda's economic growth. The sector contributes more than 20 percent of Uganda's gross domestic product (GDP) and accounts for 48 percent of exports.<sup>7</sup> The performance of the agriculture sector has been mixed. Between 1998 and 2002, the sector grew at an average rate of 5.4 percent annually, but growth deteriorated to 1.1 percent from 2004 to 2008. Growth in the sector is primarily driven by increases in area planted rather than by increases in productivity.<sup>8</sup> Table 2 provides data on crop yields and marketed volumes over time, including the three Feed the Future priority value chains of maize, coffee, and beans. The production of the three value chain crops has increased since 2000, with the exception of beans, which decreased slightly from 2005 to 2011. Maize and coffee crop yields have increased from 2000 to 2011, while bean crop yields experienced a steady decrease during that time.

<sup>7</sup> UBOS & MAAIF. (2010).

<sup>8</sup> USAID. (2011b).

**Table 2. Agricultural yields and marketed volumes, national level**

Crop	Production (MT)			Yield (kg/ha)		
	2000	2005	2011	2000	2005	2011
Plantains	9,428,000	9,045,000	10,547,400	5,900	5,400	5,978
Cassava	4,966,000	5,576,000	4,753,430	12,384	14,408	11,154
Sweet potatoes	2,398,000	2,604,000	2,554,000	4,321	4,414	4,803
Sugar cane	1,476,220	2,350,000	2,400,000	73,811	69,118	60,000
Cereals, total	2,112,000	2,459,000	4,228,000	1,539	1,532	2,100
Maize	1,096,000	1,170,000	2,551,000	1,743	1,500	2,400
Coffee, green	143,475	158,100	191,371	477	601	598
Beans, dry	420,000	478,000	464,105	601	577	406

Source: FAO Stat Database. Retrieved online April 11, 2013.

Approximately 75 percent of all households are engaged in agriculture, and nearly 70 percent derive their livelihoods from subsistence agriculture. Although there are some large-scale commercial farmers, smallholder producers dominate Uganda's agriculture sector, with an average landholding of less than two hectares. These smallholder farmers mostly engage in nonmarket-oriented production and predominantly use low-input and low-output systems.<sup>9</sup> The major commodities are plantains, cassava, cow's milk, meat, and maize, and are mainly consumed locally. The main exported cash crops are coffee, tea, and tobacco, and the main imports are palm oil, wheat, sugar, and rice.<sup>10</sup>

Although half the arable land in East Africa is concentrated in Uganda, and although the country benefits from abundant rainfall and two growing seasons, the country is plagued with disease and pests, declining soil fertility, poor infrastructure, lack of access to finance, poor-quality inputs, and inadequate post-harvest storage and processing. Agricultural yields per hectare are significantly below potential because the majority of Ugandan farmers do not use improved agricultural practices. Post-harvest losses are high, with estimates of maize losses as high as 25 percent. Crop yields are therefore low and have not kept pace with rapid population growth. In addition, natural soil erosion is compounded by man-made factors, such as human and livestock population pressure on land and inappropriate farming techniques.<sup>11</sup> The hungry season stretches from June to August and is worsened by lack of food storage capacity at the household and community levels.

Women are responsible for approximately 70 percent of overall agriculture GDP, and about 70 percent of smallholder farmers are women. It is estimated that women produce 90 percent of Uganda's total food output and 50 percent of the total cash crop output.<sup>12</sup>

Background information related to national nutrition status and household food security can be found in Section 3.3, Household Hunger, and Section 3.4, Nutrition.

<sup>9</sup> UBOS & MAAIF. (2010).

<sup>10</sup> <http://www.fao.org/countryprofiles/index/en/?iso3=UGA>. Retrieved May 6, 2013.

<sup>11</sup> <http://www.fao.org/countryprofiles/index/en/?iso3=UGA>. Retrieved May 6, 2013.

<sup>12</sup> USAID. (2011b).

## 1.3 Purpose of This Report

This report presents baseline values established from primary and secondary data collected for 13 Feed the Future indicators in the ZOI in Uganda. This baseline will be used as a reference point for measuring changes in the indicators over time in the ZOI. Changes over time for the indicators will be determined by comparing baseline performance-monitoring data collected in 2012 to data to be collected in 2015 (midpoint) and 2017 (endpoint). The data do not allow for conclusions about attribution or causality.

The presentation of data findings in this report begins with general descriptive findings (Section 3), followed by country-specific analysis of findings (Section 4).

## 2. Methodologies for Obtaining Baseline Values for the PBS Indicators

### 2.1 Data Sources

The USAID Mission in Uganda (USAID/Uganda) is reporting on all 13 required indicators<sup>13</sup> in the Feed the Future ZOI. Where possible, indicators were estimated based on existing sources of data. These data sources had to meet two criteria to provide valid baseline estimates of indicators: (1) data were collected in a recent time window, but prior to the start of Feed the Future activities, and (2) the sample size was large enough to estimate indicator values with sufficient precision and power to measure change over time. The UNHS 2009/2010 and the Uganda DHS 2011 met these criteria for six of the 13 indicators for the Feed the Future ZOI. As the indicators are for the entire ZOI, these surveys had sufficiently large samples.

The six indicators calculated from secondary data are: (1) prevalence of poverty; (2) per capita expenditures; (3) percentage of children 6–23 months receiving a MAD; (4) prevalence of children 0–5 months exclusively breastfed; (5) prevalence of anemia in children 6–59 months; and (6) prevalence of anemia among women of reproductive age. Table 3 lists the indicators and data source for each.

Where secondary data for an indicator were unavailable, primary data collection was conducted. The Uganda ZOI baseline survey collected primary data for seven indicators: (1) WEAI; (2) prevalence of households with moderate or severe hunger; (3) Women’s Dietary Diversity Score; (4) prevalence of underweight women (as indicated by body mass index, BMI); (5) prevalence of underweight children under 5; (6) prevalence of stunted children under 5; and (7) prevalence of wasted children under 5.

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<sup>13</sup> Refer to Annex C: Indicator Descriptions and Calculations.

**Table 3. Feed the Future indicators and data sources**

Indicator	Source	Month/year collected
WEAI	PBS	Dec. 2012
Prevalence of households with moderate or severe hunger	PBS	Dec. 2012
Women's Dietary Diversity Score	PBS	Dec. 2012
Prevalence of underweight women	PBS	Dec. 2012
Prevalence of underweight children under 5	PBS	Dec. 2012
Prevalence of stunted children under 5	PBS	Dec. 2012
Prevalence of wasted children under 5	PBS	Dec. 2012
Prevalence of poverty	UNHS	May 2009 – April 2010
Per capita expenditure (as a proxy for income)	UNHS	May 2009 – April 2010
Prevalence of children 6–23 months receiving a MAD	DHS	June-Dec. 2011
Prevalence of exclusive breastfeeding	DHS	June-Dec. 2011
Prevalence of anemia among children 6–59 months	DHS	June-Dec. 2011
Prevalence of anemia among women of reproductive age	DHS	June-Dec. 2011

All Uganda Feed the Future ZOI baseline values from both primary and secondary sources have been entered into the FTFMS database for the Feed the Future initiative.

## 2.2 Procedures for Estimating Values at ZOI Level From Secondary Data

Where possible, indicators were calculated from existing data sources. As shown in Table 3, four nutrition-related indicators were based on the DHS 2011 data files. These indicators were calculated by Westat. The indicators related to prevalence of poverty and per capita expenditure were based on the UNHS 2009/10 data files. These indicators were calculated by UBOS.

An estimate of the sample size for the ZOI was calculated based on information from UBOS. There are 141 SEAs in the ZOI. Assuming 22 households per SEA gives an estimated sample size of 3,102 households. Based on 404 SEAs in the DHS 2011, 34.9 percent of the DHS 2011 SEAs are in the ZOI. If this percentage is applied to the 8,674 women surveyed for the DHS, there are an estimated 3,027 women in the ZOI. When applied to the 6,775 households in UNHS 2009/2010, this percentage gives an estimate of 2,364 households in the ZOI.

Based on these estimates of sample size in the ZOI, we determined that the existing samples used for the DHS and UNHS were sufficient for measuring indicators. The UNHS clearly had a sufficient sample for measuring change from baseline to endpoint values of poverty and expenditure indicators for the ZOI. The DHS also had a sufficient sample for measuring change from baseline to endpoint values for the indicator of exclusive breastfeeding for the ZOI. For the anthropometric and anemia indicators, there was a sufficient sample from baseline to endpoint measurement of some indicators if the full sample of women and children was measured rather than a subsample. The indicators for stunting and wasting in children under 5 and for anemia in women and children had sufficient samples for measurement of baseline to endpoint change. Collecting data for stunting and wasting indicators for children under 5 thus was not required, but was done because it did not increase costs and provided validation of secondary data with the data collected through the FTF

FEEDBACK PBS. The underweight indicator is not expected to have a sample size that is sufficient for measuring change.

The general approach to calculating indicators from secondary data was first to match the results at the national level found in the DHS or UNHS reports. Statistical analysis programs (SPSS or Stata) were used to calculate the indicators at the national level. When the results of these analyses closely matched those of the DHS or UNHS reports, the analyses were modified to only include the ZOI.

## 2.3 Organization of Survey Work

For the baseline PBS, the primary data source for FTF FEEDBACK indicators, UBOS conducted the fieldwork with input from Westat and TANGO International. Training began October 25, 2012, and data collection took place December 1–30, 2012. The survey questionnaire was translated, field-tested, and modified during the first week of training.

### *Training*

UBOS provided qualified field interviewers to carry out the survey. Just prior to the fieldwork, there was a one-week training of interviewers to prepare them to conduct the interviews. Survey team leaders were given additional training on how to supervise the interviewer teams, conduct the household listing, select households from the ones listed, make and track interview assignments, check the quality of the interview process, and check the quality of the data entered for each interview. A copy of the interviewer training manual can be obtained from the Development Experience Clearinghouse or by contacting the FTF FEEDBACK project.

### *Fieldwork*

During the fieldwork, the survey team leaders supervised the daily activities of the field teams. For the purpose of the survey, the country was divided into four regions, which do not correspond to administrative regions. Each survey region had one supervisor. These supervisors visited field teams on a regular basis to ensure the quality of interviews and recording. The supervisors also reported to the survey coordinator, who managed the overall survey process. Field teams consisted of three female interviewers, three male interviewers, an editor, and a survey team leader. There were eight teams, two for each of the four survey regions. The overall survey team was composed of 48 interviewers, eight team leaders, eight editors, four supervisors, and one survey coordinator. Each field team divided into four subteams, each with one male and one female interviewer because the WEAI requires that male and female interviewers interview the primary male and female members of the household, respectively. These subteams interviewed respondents in the same household.

Interview data were entered by interviewers on Google Nexus 7 tablets running Open Data Kit (ODK) data collection software. Data were backed up in the field and transmitted to secure Westat servers, where data were aggregated and managed.

## ***Data Quality Control***

During the fieldwork, data quality was maintained in several ways. The data entry software on the tablet computers contained programmed checks for variable ranges, skip patterns, and consistency. In the field, the supervisors and field editors checked each questionnaire closely for completeness, consistency, range checks, and skip patterns. The team leader also checked a subset of questionnaires in the same manner. The fieldwork was planned so that all field teams worked in close proximity during the initial days of fieldwork. The teams all stayed at the same location in the evening, which allowed problems that were identified during the first days of fieldwork to be shared and resolved with the entire field team.

Westat data management staff ran data quality programs that incorporated the data quality checks on the tablet computers, the checks done by field staff, and other general checks. These data quality programs included range checks, checks of skip patterns, consistency checks, and completeness checks done by the tablet computer software, and the checks by field editors and supervisors. The programs helped data managers determine whether all expected questionnaires per SEA had been received, results of the interview (complete, incomplete, etc.), percentage of modules that were completed (by module), and percentage of missing data for select variables, such as age and gender of respondents. All of these data were analyzed by Westat data management staff to identify data quality problems requiring resolution with the field. In addition to producing detailed reports by the interviewer, the programs produced summary reports that were used for general data quality control.

## ***Handling of Missing Values***

The approach used for this analysis was to take all “don’t know” responses and missing data and recode them to null value—to take the value of “no” (if a yes/no question) or “0” (if a numeric response is required)—and to include the recoded data in the numerator and denominator of indicators. This approach generally was used in calculating the baseline values, unless a specific indicator was defined otherwise (e.g., children who were not weighed and measured and children whose values for weight and height were not recorded were excluded from both the numerator and the denominator for anthropometry indicators). Means were based on respondents with numerical answers to the questions on which the means were calculated. Missing, don’t know, and other non-numerical responses were excluded from calculation.

## ***Data Imputation***

Missing or “don’t know” values were generally treated as described above and allowed to remain in the data. An exception was dates for critical events that are needed to correctly compute (1) date of birth of women aged 15 to 49; and (2) date of each birthing for living children under 5 years of age

of women aged 15 to 49. The procedure implemented to impute these dates followed international DHS standards, as described in *DHS Data Editing and Imputation*.<sup>14</sup>

### **Methods for Data Analysis**

Most of the quantitative results in this report are presented as percentages and means. In general, these are presented with two decimal points in tables and one decimal point in the narrative. Representativeness was maintained by weighting any statistics that apply to the survey population (such as percentages and means) by the inverse of the probability of selection of any given survey respondent:

- **Percentages.** For values provided in nominal scales (e.g., yes/no responses), percentages were computed using the weighted number of cases that provided a given response as the numerator, and the total weighted number of cases for that column as the denominator. Single response variables add up to a maximum of 100 percent, while multiple response variables may add up to more than 100 percent.
- **Means.** For variables collected in a continuous scale format (e.g., number of household members), means were computed using the weighted sum of values as the numerator and the total weighted number of cases for that column as the denominator.

The unweighted sample sizes for the results are presented in each table with a column labeled “n.” To avoid showing unreliable statistics, results are only shown when the unweighted sample size for a column is greater than or equal to 30 cases.

### **Computed Variables and Indicators<sup>15</sup>**

International standards were used whenever available to compute analytic variables and indicators, as follows:

1. Housing characteristics and health indicators were computed using DHS standards and definitions, as described in:
  - 2012 DHS Guide to Statistics; and
  - 2012 Tabulation Plan for DHS Final Report.

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<sup>14</sup> Croft. (2013).

<sup>15</sup> Detailed descriptions provided in handling missing values, data imputation, methods for data analysis, and computed variables and indicators are based, in part on Rosell, P.D., O’Colmain, B, & Howell, H. Haiti Baseline Survey. Draft Report. ICF Macro Inc. May 2013. Report submitted to USAID/Haiti, pp. 12–14.

2. Nutrition and food security indicators were computed using international standards as described in:
  - 2012 Feed the Future Indicator Handbook;
  - 2011 Household Hunger Scale: Indicator Definition and Measurement Guide; and
  - 2010 World Health Organization (WHO) Indicators for Assessing Infant and Young Child Feeding Practices (Part 2 Measurement).
3. Anthropometry indicators were calculated using the child growth standards and data processing programs published by WHO in 2006.<sup>16</sup>
4. Data were obtained from the UNHS 2009/2010<sup>17</sup> and the Uganda DHS 2011,<sup>18</sup> and per capita expenditures and poverty rates were calculated on the subset of cases extracted from the national dataset that fall within the Feed the Future ZOI. General guidance on computing expenditures from Living Standards Measurement Survey (LSMS) data includes Deaton & Zaidi (2002)<sup>19</sup> and Grosh & Muñoz (1996).<sup>20</sup>
5. WEAI was calculated with guidance and materials provided via the USAID Feed the Future webinar conducted on November 9, 2012, and the *Instructional Guide on the WEAI*.<sup>21</sup>

The details for calculations of the ZOI indicators are provided in Annex C.

## 2.4 Survey Sample Design

The FTF FEEDBACK PBS was designed and implemented through coordinated efforts between UBOS,<sup>22</sup> Westat, and TANGO International.

Table 4 shows the sample design for the ZOI including the DHS 2011 sample estimates. The sample for the PBS included the same SEAs that were in the Uganda DHS 2011. As the DHS SEAs were a subset of the UNHS SEAs, having the same SEAs for the PBS made the survey comparable to both the Uganda DHS 2011 and the UNHS 2009/2010. If 22 households were selected in each of the 140 EAs in the ZOI, the total sample size would have been 3,080 households. A total of 2,566 households were interviewed.

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<sup>16</sup> WHO and UNICEF. (2006).

<sup>17</sup> UBOS. (2010).

<sup>18</sup> UBOS. (2012).

<sup>19</sup> Deaton and Zaidi. (2002).

<sup>20</sup> Grosh and Muñoz. (1996).

<sup>21</sup> Alkire, Malapit et al. (2013).

<sup>22</sup> UBOS is the principal data collecting, processing, analyzing, and disseminating agency responsible for coordinating and supervising the National Statistical System, particularly for data related to social, economic, and political developments in the country ([www.ubos.org](http://www.ubos.org)).

**Table 4. Survey sample design for the ZOI and for the DHS 2011**

Region	Number of Feed the Future districts in region	Number of districts in region	Percent of districts in region that are Feed the Future	DHS sample in region (unweighted)	Estimated Feed the Future sample in region (unweighted)
Central 1	2	12	16.7	767	128
Central 2	4	11	36.4	830	302
East Central	5	11	45.5	1,039	472
Eastern	5	21	23.8	826	197
Kampala	0	1	0.0	992	0
Karamoja	0	7	0.0	823	0
North	10	14	71.4	659	471
Southwest	7	14	50.0	910	455
West Nile	1	8	12.5	919	115
Western	4	13	30.8	909	280
<b>Total</b>	<b>38</b>	<b>112</b>	<b>-</b>	<b>8,674</b>	<b>2,420</b>

Below we describe the sample size calculation, sample weights, sample design, and questionnaire design.

### **Sample Size Calculation**

The sample size for each indicator varied based on the baseline values and the amount of change expected. Table 5 lists the required sample sizes to show statistically significant change from baseline to endpoint for the Feed the Future indicators in the PBS. For all indicators, the sample sizes are for the populations associated with the indicator. For example, the sample for prevalence of stunted, wasted, or underweight children is all children under 60 months of age. The sample for underweight women and for the Women’s Dietary Diversity Score is all women aged 15 to 49 years. The sample for WEAI includes the principal male and female decision-makers aged 18 or older in male and female adult households, and the principal female decision-maker aged 18 or older in female adult only households.

The sample sizes were calculated to determine how large a sample to use in the surveys. The last two columns in Table 5 show the number of households required to achieve the sample sizes for each indicator. These two columns incorporate nonresponse. At least that number of households would have had to be interviewed to have enough respondents to show change over time.

**Table 5. Required sample size for baseline survey, baseline to endpoint**

Indicator	Baseline value (National level)	Endpoint target value	Sample size		Number of households	
			Baseline	Endpoint	Baseline	Endpoint
Prevalence of underweight children under 5	14.0	10.5	1,538	1,538	2,200	2,200
Prevalence of stunted children under 5	33.0	26.4	998	998	1,428	1,428
Prevalence of wasted children under 5	5.0	2.5	1,001	1,001	1,432	1,432
Prevalence of underweight women	12.0	9.0	2,211	2,211	3,209	3,209
WEAI	0.789	0.947	1,762	1,762	2,049	2,049
Prevalence of households with moderate or severe hunger	49.7	34.8	296	296	330	330
Women's Dietary Diversity Score	NA	NA	NA	NA	NA	NA

Sample size calculations used targets for the amount of change to be measured based on the Uganda Feed the Future strategy or what would be considered a reasonable amount of change. Baseline to midpoint targets were set to half of those for baseline to endpoint. The targets for child underweight and stunting were based on the Feed the Future strategy. The target for maternal underweight was set to the child underweight target of 25 percent reduction. The WEAI target was set to a 6 percent increase, which corresponds to an approximate 5 percentage point increase. The change for this indicator was modest because there was no past trend data with which to estimate the expected amount of change. The target for child wasting was set to a 50 percent reduction. With a starting value of 5.0, a 50 percent reduction in child wasting reduces the value by only 2.5 percentage points.

These sample sizes were calculated utilizing Stata sample size calculation functions for proportions and means as appropriate. The level of significance was set to 5 percent and the power was set to 80 percent. One-tailed tests were performed in all cases because the expected change is in only one direction for all indicators.

The sample size calculations were adjusted for the design effect. The values for design effect were taken from the DHS 2006 and UNHS 2009/2010 where possible. Design effect values were taken from the DHS 2006 instead of the DHS 2011 because the report and data for DHS 2011 were not yet available at the time of the calculation.<sup>23</sup> If there was no source for the design effect, it was assumed to be 2.0, except for exclusive breastfeeding. This indicator had a very small number of cases (2.5) in each EA; such a low number of cases corresponds to a low design effect.

<sup>23</sup> It should be noted that the DHS 2011 data files were not available at the time of sample size calculation but were available at the time of data collection.

The proposed sample size would be enough to measure change from baseline to endpoint for underweight women and children under 5, stunted and wasted children under 5, the WEAI, and the prevalence of households with moderate or severe hunger. The sample size would not be enough to measure change from baseline to midpoint. Thus, the sample size provides the ability to report a percentage change from baseline to endpoint.

### **Sample Weights**

Data required for statistical weighting of survey data were collected throughout the sampling process. These data included, but were not limited to: (1) SEA population sizes used for selection of SEAs, (2) population of strata (i.e., region, urban/rural) from which EAs are drawn, (3) population of selected SEAs at the time of listing, and (4) response rates at the household and individual (women, men, and children) levels.

Computations based on the survey sample were weighted so that the results accurately reflected the proportions of the sampled elements within the overall sample frame of the population in the ZOI. Details of how weights were computed are provided in Annex B.

### **Sample Design**

As mentioned above, the sample for the ZOI baseline survey included the same SEAs that were in the Uganda DHS 2011. In this design, households were selected using a two-stage sampling design, with the first stage consisting of SEA selection using probability-proportional-to-size. In the second stage, households within each selected SEA were selected randomly from a list of households in the SEA. During fieldwork, the sample of households in the ZOI was first listed in sampled SEAs; then, a list of eligible households was constructed, and households for the survey were randomly selected from that list.

### **Questionnaire Design**

The survey questionnaire was designed to conform to existing questionnaires such as the DHS, UNHS, and WEAI. The questionnaire included the informed consent statement, the household roster, the dwelling characteristics module, and modules for all indicators that could not be calculated with existing data sources. The FTF FEEDBACK PBS included the following modules (Table 6).

**Table 6. Feed the Future Uganda ZOI baseline survey indicators**

Survey module	Description of indicator
F	Prevalence of households with moderate or severe hunger
G	WEAI
H	Women's Dietary Diversity Score: Mean number of food groups consumed by women of reproductive age
H	Women's BMI
I	Prevalence of underweight children under 5
I	Prevalence of stunted children under 5
I	Prevalence of wasted children under 5

Prior to interviewer training, the survey questionnaire (paper version) was translated and back-translated into six local languages. During interviewer training, a pretest of the questionnaire was conducted in a field setting, which allowed any problems in the translations to be identified and corrected.

## 2.5 Limitations

Delays in the arrival of the tablet computer shipment disrupted the flow of the interviewer training. In addition, no training of trainers occurred. This resulted in the FTF FEEDBACK technical specialist training 100 interviewers, with a trainer-to-trainee ratio of 1:100. This resulted in further modifications of the training agenda, with more time focused on training on tablet use.

Translations of the survey questionnaire into each of the six local languages should have been available on the tablets to avoid potential differences of interpretation/translation by interviewers in the field. This was not done due to personnel and time constraints.

Utilization of secondary data sources has the significant advantage of reducing the amount of primary data collected, thus, reducing the overall cost of conducting the baseline survey. The disadvantage, however, is that multivariate analyses between indicators from different data sources are precluded because of incompatibilities of the databases.

As noted in the *Uganda Comprehensive Food Security and Vulnerability Assessment*, most of Uganda has a subtropical climate with two rainy seasons, March to June and mid-August to December. Harvest usually takes place in June to August and November to January. The FTF FEEDBACK project started in May 2012, and it was not possible to obtain the necessary approvals and organize the survey logistics before the end of the hungry season in October. Thus, data collection coincided with the November to December harvest, which may have the impact of portraying greater household food security due to increased food availability.

## 3. Descriptive Findings

The baseline values for the Feed the Future indicators in Uganda are presented in Table 7. This is followed by a detailed description of each indicator.

**Table 7. Feed the Future ZOI population-based indicators (13 indicators)**

Feed the Future indicators	Baseline values						Source
	n (unweighted)	Value (weighted)	SD	95 percent CI	DEFF	Non- response rate	
<b>Prevalence of poverty: Percentage of people living on less than \$1.25/day</b>	<b>2,372</b>	<b>32.86</b>		<b>29.40-6.33</b>	<b>3.32</b>	<b>10.3</b>	<b>UNHS</b>
Male and female adult HHs	1,773	32.93		29.12-36.75	3.43	10.3	UNHS
Female adult only HHs	410	35.39		28.69-42.08	1.47	10.3	UNHS
Male adult only HHs	189	18.82		9.37-28.27	0.94	10.3	UNHS
Child no adult HHs <sup>^</sup>	0	-		-	-	-	UNHS
<b>Per capita expenditures of USG targeted beneficiaries (\$/day 2010 USD PPP)</b>	<b>2,372</b>	<b>1.53</b>	<b>1.30</b>	<b>1.44-1.62</b>	<b>2.80</b>	<b>10.3</b>	<b>UNHS</b>
Male and female adult HHs	1,773	1.51	1.13	1.42-1.60	3.01	10.3	UNHS
Female adult only HHs	410	1.42	1.51	1.29-1.55	0.78	10.3	UNHS
Male adult only HHs	189	2.78	4.95	2.36-3.20	0.35	10.3	UNHS
Child no adult HHs <sup>^</sup>	0	-	-	-	-	-	UNHS
<b>Prevalence of underweight children under 5 years of age</b>	<b>2,074</b>	<b>13.45</b>		<b>11.77-15.12</b>	<b>1.28</b>	<b>10.95</b>	<b>FTF FEEDBACK PBS</b>
Male	1,028	14.50		11.99-17.02	1.34	11.23	FTF FEEDBACK PBS
Female	1,046	12.40		9.88-14.92	1.55	10.52	FTF FEEDBACK PBS
<b>Prevalence of stunted children under 5 years of age</b>	<b>2,074</b>	<b>32.99</b>		<b>30.10-35.89</b>	<b>2.01</b>	<b>10.95</b>	<b>FTF FEEDBACK PBS</b>
Male	1,028	36.23 <sup>a</sup>		32.80-39.65	1.34	11.23	FTF FEEDBACK PBS
Female	1,046	29.78 <sup>a</sup>		26.16-33.41	1.67	10.52	FTF FEEDBACK PBS
<b>Prevalence of wasted children under 5 years of age</b>	<b>2,074</b>	<b>5.99</b>		<b>4.75-7.23</b>	<b>1.45</b>	<b>10.95</b>	<b>FTF FEEDBACK PBS</b>
Male	1,028	5.79		4.22-7.37	1.20	11.23	FTF FEEDBACK PBS
Female	1,046	6.19		4.60-7.77	1.15	10.52	FTF FEEDBACK PBS

**Table 7. Feed the Future ZOI population-based indicators (13 indicators) (continued)**

Feed the Future indicators	Baseline values						Source
	n (unweighted)	Value (weighted)	SD	95 percent CI	DEFF	Non- response rate	
<b>Prevalence of underweight women</b>	<b>2,083</b>	<b>7.98</b>		<b>6.44-9.53</b>	<b>1.74</b>	<b>25.72</b>	<b>FTF FEEDBACK PBS</b>
WEAI	1,801	0.86					
5DE subindex	1,801	0.85	0.19	0.84-0.86	1.14	20.63	FTF FEEDBACK PBS
GPI subindex	1,278	0.92	0.13	0.91-0.93	1.11	30.01	FTF FEEDBACK PBS
<b>Prevalence of households with moderate or severe hunger</b>	<b>2,519</b>	<b>26.69</b>		<b>23.73-29.65</b>	<b>2.88</b>	<b>1.83</b>	<b>FTF FEEDBACK PBS</b>
Male and female adult HHs	1,785	26.41		23.08-29.75	2.67		FTF FEEDBACK PBS
Female adult only HHs	447	29.24		23.90-34.58	1.51		FTF FEEDBACK PBS
Male adult only HHs	279	24.61		18.53-30.69	1.30		FTF FEEDBACK PBS
Child no adult HHs <sup>^</sup>	8	-		-	-		FTF FEEDBACK PBS
<b>Prevalence of children 6-23 months receiving a MAD</b>	<b>754</b>	<b>16.69</b>		<b>13.48-19.91</b>	<b>1.59</b>		<b>DHS</b>
Male	384	12.66 <sup>b</sup>		8.38-16.94	1.79		DHS
Female	370	20.80 <sup>b</sup>		16.01-25.60	1.48		DHS
Women's Dietary Diversity: Mean number of food groups consumed by women of reproductive age	2,311	3.34	1.39	2.22-3.46	4.65	17.23	FTF FEEDBACK PBS
Urban	563	3.70 <sup>c</sup>	2.46	3.42-3.98	1.88	16.34	FTF FEEDBACK PBS
Rural	1,748	3.30 <sup>c</sup>	1.24	3.17-3.45	5.08	17.51	FTF FEEDBACK PBS

**Table 7. Feed the Future ZOI population-based indicators (13 indicators) (continued)**

Feed the Future indicators	Baseline values						Source
	n (unweighted)	Value (weighted)	SD	95 percent CI	DEFF	Non- response rate	
<b>Prevalence of exclusive breastfeeding of children under 6 months of age</b>	<b>300</b>	<b>60.01</b>		53.85-66.17	<b>1.37</b>	-	<b>DHS</b>
Male	150	67.77 <sup>d</sup>		60.24-75.30	1.11	-	DHS
Female	150	52.50 <sup>d</sup>		42.73-62.26	1.68	-	DHS
<b>Prevalence of anemia among children 6-59 months</b>	<b>774</b>	<b>43.61</b>		<b>37.89-49.33</b>	<b>2.90</b>	-	<b>DHS</b>
Male	395	44.75		37.89-51.61	2.10	-	DHS
Female	379	42.43		35.11-49.76	2.36	-	DHS
<b>Prevalence of anemia among women of reproductive age</b>	<b>943</b>	<b>20.20</b>		<b>16.78-23.63</b>	<b>1.97</b>	-	<b>DHS</b>
Pregnant	97	29.97 <sup>e</sup>		19.12-40.83	1.72	-	DHS
Nonpregnant	846	18.96 <sup>e</sup>		15.72-22.19	1.63	-	DHS

<sup>a-e</sup> Subgroups with the same superscript are significantly different at the 0.05 level. Comparisons are between rows within each indicator.

<sup>^</sup> = Results not statistically representative; n<30.

Sources: PBS = FTF FEEDBACK PBS 2012; DHS = Uganda Demographic and Health Survey (DHS) 2011; UNHS = Uganda National Household Survey 2009/2010.

## 3.1 Household Characteristics

### 3.1.1 Demographics

Module C of the FTF FEEDBACK PBS questionnaire captured information about household size, the number of females and children within a household, and the level of education achieved by household members. Table 8 shows that the average number of household members is 5.6 and that male and female adult households have more members compared to female adult only or male adult only households (6.5, 4.0, and 1.9, respectively).<sup>24</sup> Similarly, male and female adult households have more females than female adult only or male adult only households (3.2, 2.7, and 0.3, respectively). On average, there is one child under 5 years of age per household and 2.3 children 5 to 17 years of age. Households with male and female adults have more children regardless of age bracket, compared to female adult only or male adult only households. All of these reported differences are statistically significant.

The ZOI mean household size is comparable to the national average household size (5.0 members) reported in the UNHS 2009/2010, which has remained steady in previous surveys.<sup>25</sup>

Table 8 also shows that an average of two school-aged children in each household are currently attending school, with an average of 2.3 school-aged (5 to 17 years) children per household. Male and female adult households have more school-aged children attending school (2.2 children) than other household types, but it should be noted that male and female adult households also have more children overall.

At the national level, nearly one in three (31.0 percent) school-aged household members (defined by the Government of Uganda as 6 to 24 years) is not currently attending school. These household members may have attended school earlier and then left or they may have never been to school; 9.8 percent of people in this age range have never attended school. In addition, 83.6 percent of all Ugandan children aged 6 to 12 years are currently attending school, as are 77.3 percent of children 13 to 18 years old.<sup>26</sup>

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<sup>24</sup> As explained in USAID. 2012b. “Feed the Future household (HH) level indicators are disaggregated by ‘gendered household types’ – that is: (1) HH with male and female adults (18+ years), (2) HH with at least one male adult and no female adult, (3) HH with at least one female adult and no male adults, and (4) HH with children and no adults. This categorization is somewhat different than the standard ‘male-headed vs. female-headed’ households, and the distinction and change is very meaningful. The concept of ‘head of household’ is highly loaded, presumes certain characteristics that may or may not be present in household gender dynamics, and often reflects the bias of the researcher or respondent. In addition, the head of household concept may perpetuate existing social inequalities and prioritization of household responsibilities that may be detrimental to women.”

<sup>25</sup> UBOS. (2010). Section 2.2 Household Characteristics.

<sup>26</sup> UBOS. (2010). Section 3.0 Education.

**Table 8. Household demographics**

	Household type				
	All households	Male and female adults	Female adult only	Male adult only	Child no adult <sup>^</sup>
	Mean (SD)				
Number of household members	5.56 (3.03)	6.46 <sup>a</sup> (2.72)	3.97 <sup>a</sup> (2.40)	1.85 <sup>a</sup> (1.58)	-
Number of females in household	2.82 (1.85)	3.22 <sup>b</sup> (1.71)	2.69 <sup>b</sup> (1.56)	0.30 <sup>b</sup> (0.80)	-
Number of children (0–5 years)	0.95 (0.97)	1.17 <sup>c</sup> (0.95)	0.55 <sup>c</sup> (0.85)	0.04 <sup>c</sup> (0.21)	-
Number of children (6–23 months)	0.25 (0.46)	0.31 <sup>d</sup> (0.50)	0.14 <sup>d</sup> (0.36)	0.01 <sup>d</sup> (0.12)	-
Number of children (5–17 years)	2.34 (2.01)	2.63 <sup>e</sup> (1.99)	2.10 <sup>e</sup> (1.88)	0.63 <sup>e</sup> (1.30)	-
Number of children attending school (5–17 years)	1.95 (1.82)	2.21 <sup>f</sup> (1.81)	1.73 <sup>f</sup> (1.68)	0.50 <sup>f</sup> (1.18)	-
<b>n (unweighted)</b>	<b>2,566</b>	<b>1,826</b>	<b>443</b>	<b>289</b>	<b>8</b>

<sup>a-f</sup> Subgroups with the same superscript are significantly different at the 0.05 level. Comparisons are across columns.

<sup>^</sup> = Results not statistically representative; n<30.

Source: FTF FEEDBACK PBS 2012.

The highest education level within the household is presented in Table 9. Female adult only households have the greatest percentage of households that have only achieved primary education. About three-quarters (73.6 percent) of female adult only households have only primary education, compared to 64.0 percent of male adult only households, and 54.2 percent of male and female adult households. Regarding lower secondary education, fewer female adult only households have a member that has reached lower secondary school than both male adult only households and male and female adult households, and the differences are statistically significant. A similar pattern emerges from data on post-secondary education, where female adult only households lag behind male and female adult households in achievement of post-secondary education.

**Table 9. Highest education level within the household**

Education level	Household type				
	All households	Male and female adults	Female adult only	Male adult only	Child only <sup>^</sup>
	Percent				
Primary or none	58.41	54.15 <sup>a</sup>	73.58 <sup>a</sup>	63.95 <sup>a</sup>	-
Lower secondary (O level)	25.94	28.37 <sup>b</sup>	16.91 <sup>bc</sup>	23.00 <sup>c</sup>	-
Upper secondary (A level)	5.44	6.22 <sup>d</sup>	3.10 <sup>d</sup>	3.95	-
Above secondary	10.20	11.27 <sup>e</sup>	6.41 <sup>e</sup>	9.10	-
<b>n (unweighted)</b>	<b>2,566</b>	<b>1,826</b>	<b>443</b>	<b>289</b>	<b>8</b>

<sup>a-e</sup> Subgroups with the same superscript are significantly different at the 0.05 level. Comparisons are made across columns.

<sup>^</sup> = Results not statistically representative; n<30.

Source: FTF FEEDBACK PBS 2012.

### 3.1.2 Dwelling Characteristics

Information about dwelling characteristics is collected as part of Module D in the FTF FEEDBACK PBS using a combination of direct observations (e.g., housing construction materials) and self-reported methods (e.g., questions regarding whether households have electricity, type of fuel used for cooking, etc.). Results are presented in the following tables.

According to the data in Table 10, few households in the ZOI have electricity; about one in ten households (9.8 percent) report electricity. Male and female adult households have greater access to electricity compared to female adult only households (10.1 and 7.7 percent, respectively). Households have an average of three rooms in the dwelling (2.8 rooms), and this result also differs significantly by household type. Male and female adult households have more rooms than female adult only or male adult only households (2.9, 2.4, and 2.2 rooms, respectively).

These ZOI findings are comparable to the national level, in which just 12.1 percent of the population has household electricity (for lighting). Also, the national average of 2.9 people per room compares with the PBS estimated value of 2.0 people per room in the ZOI (average household size of 5.6 members and 2.8 rooms per house).<sup>27</sup>

**Table 10. Dwelling characteristics**

	Household type				
	All households	Male and female adults	Female adult only	Male adult only	Child no adult <sup>a</sup>
Mean number of rooms (std dev)	2.75 (1.56)	2.89 <sup>a</sup> (1.57)	2.43 <sup>a</sup> (1.34)	2.24 <sup>a</sup> (1.57)	-
% Households with electricity	9.76	10.06 <sup>b</sup>	7.66 <sup>b</sup>	10.72	-
<b>n (unweighted)</b>	<b>2,551</b>	<b>1,817</b>	<b>438</b>	<b>288</b>	<b>8</b>

<sup>a-b</sup> Subgroups with the same superscript are significantly different at the 0.05 level. Comparisons are made across columns.

<sup>a</sup> = Results not statistically representative; n<30.

Source: FTF FEEDBACK PBS 2012.

Table 11 presents information about housing construction materials for all households, and by gendered household type. Roughly three-quarters of all surveyed households have iron sheets as roofing material (73.1 percent). The remaining one-quarter (25.4 percent) use thatching for their roofs. Similarly, about three-quarters of households have some type of earthen floor (earth/dung is 41.4 percent, and earth/sand is 30.8 percent), while about one-quarter has cement flooring (26.2 percent). Forty-one percent of households have walls made out of mud and poles. Nearly one-third of households have walls made of burnt brick with cement (28.9 percent). About 20 percent of household walls are made either with unburnt bricks with plaster (10.9 percent) or just unburnt bricks (9.0 percent). Less than one percent of houses in the ZOI have cement walls.

<sup>27</sup> UBOS. (2010). Section 9.0 Housing and Household Conditions.

**Table II. Housing construction materials**

	Household type				
	All households	Male and female adults	Female adult only	Male adult only	Child no adult <sup>^</sup>
<b>Roof</b>	<b>Percent</b>				
Iron sheets	73.09	72.20	74.99	75.54	-
Thatched/vegetable matter/sticks	25.44	26.49	22.52	23.54	-
Plastic sheeting	0.54	0.46	1.12	0.19	-
Tile	0.32	0.18 <sup>a</sup>	0.96 <sup>a</sup>	0.29	-
Mud	0.42	0.49	0.42	0.00	-
Asbestos	0.11	0.00	0.00	0.44	-
Cement	0.00	0.00	0.00	0.00	-
Tin	0.00	0.00	0.00	0.00	-
Wood	0.00	0.00	0.00	0.00	-
<b>Floor</b>					
Earth/dung	41.40	42.33	40.38	37.33	-
Earth/sand	30.84	30.17	32.27	32.87	-
Cement	26.17	25.81	25.97	28.61	-
Tiles	0.20	0.21	0.30	0.00	-
Wood	0.00	0.00	0.00	0.18	-
Stone	0.70	0.65	0.72	1.01	-
Bricks	0.17	0.24	0.00	0.00	-
<b>Wall</b>					
Mud and poles	41.02	40.55	39.67	47.72	-
Burnt brick with cement	28.89	28.90	30.28	26.25	-
Unburnt bricks with plaster	10.92	11.43	10.50	8.26	-
Unburnt bricks	8.96	9.47	8.71	5.61	-
Burnt bricks with mud	8.04	7.55	8.38	9.83	-
Cement blocks	0.67	0.52 <sup>b</sup>	1.02 <sup>b</sup>	1.18	-
Thatched/straw	0.32	0.30	0.29	0.56	-
Stone	0.43	0.43	0.70	0.00	-
<b>n (unweighted)</b>	<b>2,560</b>	<b>1,824</b>	<b>440</b>	<b>288</b>	<b>8</b>

<sup>a-b</sup> Subgroups with the same superscript are significantly different at the 0.05 level. Comparisons are made across columns.

<sup>^</sup> = Results not statistically representative; n<30.

Source: FTF FEEDBACK PBS 2012.

These results are comparable to the national level; 61.8 percent of all households in Uganda have roofs made of iron sheets, followed by thatched roofs (36.9 percent). Floors made of earthen material are the most common (71.4), and most households have walls made of brick (57.1 percent) or mud with poles (39.4 percent).<sup>28</sup>

<sup>28</sup> UBOS. (2010). Section 9.0 Housing and Household Conditions.

As shown in Table 12, when queried about their main source of cooking fuel, the majority of households indicated relying on firewood (85.9 percent). Just over one in ten households use charcoal (12.3 percent), and charcoal use is more prevalent in male adult only households (18.2 percent) compared to other household types. Similarly, male adult only households report the highest prevalence of no food being cooked in the household (9.6 percent), compared to other household types.

**Table 12. Main source of cooking fuel**

Fuel type	Household type				
	All households	Male and female adults	Female adult only	Male adult only	Child no adult <sup>^</sup>
	Percent				
Firewood	85.85	88.56 <sup>a</sup>	84.02 <sup>a</sup>	70.35 <sup>a</sup>	-
Charcoal	12.27	10.71 <sup>bc</sup>	15.24 <sup>b</sup>	18.21 <sup>c</sup>	-
Animal dung	0.00	0.00	0.00	0.00	-
Electricity	0.00	0.00 <sup>d</sup>	0.00	0.54 <sup>d</sup>	-
Liquified petroleum or natural gas	0.14	0.12	0.00	0.48	-
Kerosene	0.00	0.00 <sup>e</sup>	0.00 <sup>f</sup>	0.44 <sup>ef</sup>	-
Straws/shrubs/grass	0.39	0.52 <sup>g</sup>	0.00 <sup>g</sup>	0.00	-
No food cooked in household	1.13	0.00 <sup>h</sup>	0.53 <sup>h</sup>	9.62 <sup>h</sup>	-
<b>n (unweighted)</b>	<b>2,560</b>	<b>1,824</b>	<b>440</b>	<b>288</b>	<b>8</b>

<sup>a-h</sup> Subgroups with the same superscript are significantly different at the 0.05 level. Comparisons are made across columns.

<sup>^</sup> = Results not statistically representative; n<30.

Source: FTF FEEDBACK PBS 2012.

In comparing these ZOI findings to the national level, firewood is also the primary source of cooking fuel followed by charcoal. However, at the national level a smaller proportion of the population relies on firewood (73.0 percent) than the ZOI households, but the value at the national level for rural residents (86.3 percent) is comparable to the ZOI. Similarly, more of the Ugandan population on average uses charcoal for cooking (21.5 percent) compared to the ZOI, yet the values are comparable at the national rural level (10.4 percent in rural households).<sup>29</sup>

### 3.1.3 Water and Sanitation

According to WHO<sup>30</sup> standards, sources of improved drinking water include piped water to the house or yard, public taps or standpipes, boreholes, protected dug wells, protected springs, and rainwater collection. Improved sanitation facilities include flush or pour-flush toilets connected to a piped sewer system, septic tanks or pit latrines, and composting toilets.

As shown in Table 13, roughly three-quarters of all households surveyed use an improved water source (72.8 percent); fewer have access to and use an improved sanitation facility (62.0 percent). There are no statistically significant differences across household types.

<sup>29</sup> UBOS. (2010). Section 9.0 Housing and Household Conditions.

<sup>30</sup> WHO. (2013).

**Table 13. Households using improved water and sanitation facilities**

	Household type				
	All households	Male and female adults	Female adult only	Male adult only	Child no adult <sup>^</sup>
	Percent				
Households using improved water source	72.78	71.76	74.02	77.59	-
Households using improved sanitation facilities*	61.96	63.71	58.09	56.64	-
<b>n (unweighted)</b>	<b>2,560</b>	<b>1,824</b>	<b>440</b>	<b>288</b>	<b>8</b>

No differences across subgroups for any of the indicators are statistically significant at the 0.05 level.

<sup>^</sup> = Results not statistically representative; n<30.

\* Uganda's sanitation data are disaggregated between improved and nonimproved sanitation facilities. Improved sanitation facilities include covered pit latrines with slab but exclude uncovered pit latrines.

Source: FTF FEEDBACK PBS 2012.

At the national level, 73.8 percent of the population has an improved drinking water source, which is very similar to the ZOI level. The national level values are higher than the ZOI for access to improved sanitation, with 91.4 percent of the population using an improved sanitation facility.<sup>31</sup>

## 3.2 Household Expenditure

### 3.2.1 Prevalence and Depth of Poverty in the ZOI

Secondary data from the UNHS 2009/2010 were used to calculate the prevalence of poverty and per capita expenditure indicators for the ZOI. These calculations were done by UBOS. Refer to Annex C for further description of these indicators.

The *prevalence of poverty* is defined as the percentage of people living on less than \$1.25 per day (2005 PPP). shows that one third (32.9 percent) of the population of the ZOI is poor, which is similar to the national poverty rate of 33.5 percent. The baseline value for male and female adult households in the ZOI living on less than \$1.25/person/day (2005 PPP) is 32.9 percent; female adult only households is 35.4 percent; and male adult only households is 18.8 percent.

The *poverty gap* is the mean shortfall from the poverty line (counting the non-poor as having zero shortfall), expressed as a percentage of the poverty line. This measure reflects the depth of poverty as well as its incidence.<sup>32</sup> The poverty gap within the ZOI is 9.4 percent, calculated based on the poverty level of \$1.25/day (2005 PPP), shown in . This indicates that the average shortfall of all Ugandans living in the ZOI is about 9 percent below the poverty line, with those at or above the poverty line counted as having zero shortfall.<sup>33</sup>

<sup>31</sup> UBOS. (2010). Section 9.0 Housing and Household Conditions.

<sup>32</sup> <http://data.worldbank.org/indicator/SLPOV.GAPS/countries>. Retrieved July 22, 2013.

<sup>33</sup> The depth of poverty could not be calculated using the national poverty line, as the secondary data have not been received.

**Table 14. Prevalence of poverty, poverty gap, and per capita expenditure in the ZOI**

Feed the Future indicators	n (unweighted)	Baseline value	Std dev	95% CI	DEFF
<b>Prevalence of poverty: Percent of people living on less than \$1.25/day (2005 PPP)</b>	<b>2,372</b>	<b>32.86</b>	-	<b>29.40-36.33</b>	<b>3.32</b>
Male and female adult HHs	1,773	32.93	-	29.12-36.75	3.43
Female adult only HHs	410	35.39	-	28.69-42.08	1.47
Male adult only HHs	189	18.82	-	9.37-28.27	0.94
Child no adult HHs <sup>^</sup>	0	-	-	-	-
<b>Poverty gap at \$1.25/day (2005 PPP)</b>	<b>2,372</b>	<b>9.40</b>	-	-	-
Male and female adult HHs	1,773	9.30	-	-	-
Female adult only HHs	410	11.12	-	-	-
Male adult only HHs	189	4.58	-	-	-
Child no adult HHs <sup>^</sup>	0	-	-	-	-
<b>Per capita expenditure of USG targeted beneficiaries (2010 USD)</b>	<b>2,372</b>	<b>1.53</b>	<b>1.30</b>	<b>1.44-1.62</b>	<b>2.80</b>
Male and female adult HHs	1,773	1.51	1.13	1.42-1.60	3.01
Female adult only HHs	410	1.42	1.51	1.29-1.55	0.78
Male adult only HHs	189	2.78	4.95	2.36-3.20	0.35
Child no adult HHs <sup>^</sup>	0	-	-	-	-

<sup>^</sup> = Results not statistically representative; n<30.

Source: Uganda National Household Survey (UNHS) 2009/2010.

At the national level, 24.5 percent of the Ugandan population is poor, based on the national poverty line of 16,443 USH/month (in 1993 prices). Rural households are much more likely to be poor compared to urban households (27.2 and 9.1 percent, respectively). The national poverty gap based on the national poverty line is 6.8 percent.<sup>34</sup>

### 3.2.2 Per Capita Expenditures

**Per capita expenditure** is an indicator that measures the expenditures of households as a proxy for income, based on the assumption that increased expenditure is strongly related to increased income. Per capita expenditure is used because of the difficulty in accurately measuring income. Expenditure data are less prone to error, easier to recall, and more stable over time than income data. Per capita expenditures in 2010 USD for the ZOI were calculated by UBOS using data from the UNHS 2009/2010.

As shown in Table 14, the per capita expenditure for U.S. Government-targeted beneficiaries, that is, the population within the ZOI, is \$1.53/day (2010 USD). Male adult only households have higher per capita expenditure than other household types, at \$2.78/day. Female adult only households' per capita expenditure is \$1.42/day, and male and female adult households' per capita expenditure is \$1.51/day.

<sup>34</sup> UBOS. (2010). Section 6.0.

### 3.3 Household Hunger

The HHS is used to calculate the *prevalence of households with moderate or severe hunger*. The HHS was developed by the USAID-funded Food and Nutrition Technical Assistance II Project (FANTA-2/FHI 360) in collaboration with the United Nations Food and Agriculture Organization and has been cross-culturally validated to allow comparison across different food-insecure contexts. The approach is based on the idea that the experience of food insecurity causes predictable reactions that can be captured through a survey and summarized in a scale. The HHS is used to assess, geographically target, monitor, and evaluate settings affected by substantial food insecurity. This indicator should always be measured at the same time each year, at the most vulnerable time of year<sup>35</sup> (right before the harvest, during the dry season, etc.).<sup>36</sup> The peak hunger season in Uganda lasts from March to August and aligns with the rainy season.<sup>37</sup> However, since the FTF FEEDBACK project started in May 2012, it was not possible to obtain the necessary approvals and organize the survey logistics before the end of the hungry season in August. The FTF FEEDBACK PBS was conducted during the month of December, which is considered a more food-secure time of the year. Refer to Annex C for further description of the HHS indicator.

The PBS data indicate that most households in the ZOI (73.3 percent) experience little to no hunger, while 23.8 percent face moderate hunger and 2.9 percent severe hunger (Table 15). There are no significant differences between gendered household types in the HHS categories.

**Table 15. Household hunger scale and household type**

	Little to no hunger	Moderate hunger	Severe hunger	n (unweighted)
	Percent			
<b>All households</b>	<b>73.31</b>	<b>23.81</b>	<b>2.89</b>	<b>2,519</b>
<b>Household type</b>				
Male and female adults	73.59	23.59	2.82	1,785
Female adult only	70.76	26.24	3.00	447
Male adult only	75.39	21.34	3.27	279
Child no adult <sup>^</sup>	-	-	-	-

No differences across subgroups for any of the indicators are statistically significant at the 0.05 level.

<sup>^</sup> = Results not statistically representative; n<30.

Source: FTF FEEDBACK PBS 2012.

### 3.4 Nutrition

The nutrition-related indicators for FTF FEEDBACK are calculated from both the DHS and PBS surveys. Module H from the PBS collected data on women’s anthropometry and dietary diversity, while Module I collected data on children’s anthropometry. These data include information on age, weight, and height for children under 5, and women of reproductive age, as well as food

<sup>35</sup> See discussion related to the timing of the data collection in the limitations section.

<sup>36</sup> Deitchler, Ballard, Swindale, & Coates. (2011).

<sup>37</sup> FEWS NET and USAID. (2008).

consumption for women of reproductive age. (Note that the children's food consumption questions were not included in the Uganda PBS due to the availability of this information in the DHS.) The PBS data were used to calculate Women's Dietary Diversity Score, the prevalence of underweight women, as well as stunting, wasting, and underweight indicators among children under 5 years of age.

Secondary data from the DHS was used to calculate the prevalence of exclusive breastfeeding, the prevalence of children 6 to 23 months receiving a MAD, and the prevalence of anemia among women of reproductive age and among children 6 to 59 months. Refer to Annex C for further description of these indicators.

### 3.4.1 Children's Nutrition

#### *Anthropometry*

This section reports three important anthropometric measurements of undernutrition among children under 5 years of age in the ZOI: stunting (height-for-age), wasting (weight-for-height), and underweight (weight-for-age). Each indicator is calculated by taking the number of children under 5 in the sample, meeting that criterion, divided by the total number of children under 5 in the sample for whom there are measurement data available. For example, stunting prevalence is calculated by the number of children who are stunted divided by the number of children whose height and age data were collected. Data presented in this section are disaggregated by gender of child and by gendered household type. In this sample, the numbers of male adult only and child no adult households were small ( $n < 30$ ). These results are not statistically representative, and data for these household types are not reported.

Stunting is an indicator of linear growth retardation, most often due to a prolonged inadequate diet and poor health. Reducing the prevalence of stunting among children, particularly age 0 to 23 months, is important because linear growth deficits accrued early in life are associated with cognitive impairments, poor educational performance, and decreased work productivity as adults. Stunting is a height-for-age measurement that reflects chronic undernutrition. This indicator measures the percentage of children 0 to 59 months who are stunted, as defined by a height-for-age Z-score more than two standard deviations below the median of the 2006 WHO Child Growth Standard ( $< -2SD$ ).<sup>38</sup> This indicator measures the combined prevalence of both moderate ( $< -2SD$  and  $> = -3SD$ ) as well as severe ( $< -3SD$ ) stunting. While stunting can be difficult to accurately measure among children 0 to 6 months, most stunting occurs in the 9 to 23 month age range. Data for this indicator will be reported for all children under 5 years of age to capture the impact of interventions over time and align with DHS data.

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<sup>38</sup> WHO and UNICEF. (2006).

The combined moderate and severe stunting prevalence in the ZOI among children under 5 is 33.0 percent, and 13.8 percent are severely stunted (Table 16). Boys have a significantly higher combined stunting as well as severe stunting prevalence than do girls. Analysis of gender differences within categories of household type shows that boys have significantly higher combined stunting prevalence than girls in both male and female adult households and female adult only households.

Stunting in the ZOI is similar to the reported national stunting prevalence from the DHS 2011, which was 33.4 percent. According to DHS data, stunting prevalence has decreased since 2006, from 38 percent to 34 percent (2011). Also according to DHS data, stunting prevalence within the Uganda ZOI is 36.6 percent, which is not statistically different from the PBS estimate at the 0.05 level. In addition, the average stunting prevalence reported in the PBS data aligns with the lower range of other East African<sup>39</sup> national averages reported in the DHS between 2007 and 2011. The stunting prevalence in the region ranged from 32 percent in Zimbabwe (DHS 2010–11) to 58 percent in Burundi (DHS 2010).<sup>40</sup>

Wasting is an indicator of acute malnutrition. Children who are wasted are too thin for their height and have a much greater risk of dying than children who are not wasted. This indicator measures the percentage of children 0 to 59 months who are acutely malnourished, as defined by a weight-for-height Z-score more than two standard deviations below the median of the 2006 WHO Child Growth Standard. This indicator measures the combined prevalence of moderate ( $< -2SD$  and  $\geq -3SD$ ) as well as severe ( $< -3SD$ ) wasting. Among children under 5 in the ZOI, approximately 6 percent are wasted (combined moderate and severe) and 2.3 percent are severely wasted (Table 16).

The combined moderate and severe wasting prevalence in the ZOI is higher than the national wasting prevalence reported in the DHS 2011, where combined wasting prevalence ( $< -2SD$ ) was 4.7 percent and severe wasting prevalence ( $< -3SD$ ) was 1.5 percent. According to the DHS 2011, the wasting prevalence within the ZOI is 4.9 percent, which is not statistically different from the PBS estimate at the 0.05 level. The PBS results fall within the East African<sup>41</sup> regional range reported in the DHS between 2007 and 2011. The East African combined wasting prevalence ranges from 3 percent (Rwanda DHS 2010) to 10 percent (Zimbabwe DHS 2010 and Ethiopia DHS 2011).<sup>42</sup>

Underweight is a weight-for-age measurement and is a reflection of acute and/or chronic undernutrition. This indicator measures the percentage of children 0 to 59 months who are underweight, as defined by a weight-for-age Z-score of more than two standard deviations below the median of the 2006 WHO Child Growth Standard. This indicator measures the combined prevalence of moderate ( $< -2SD$  and  $\geq -3SD$ ) as well as severe ( $< -3SD$ ) underweight. Among all children under 5, 13.5 percent are underweight (combined moderate and severe, Table 16).

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<sup>39</sup> USAID/MEASURE DHS East African countries include Kenya, Madagascar, Malawi, Mozambique, Rwanda, Sudan, Tanzania, Uganda, Zambia, and Zimbabwe.

<sup>40</sup> Data abstracted from USAID/MEASURE STATCompiler; limited to DHS, conducted from 2007 to 2012.

<sup>41</sup> USAID/MEASURE DHS East African countries: see previous note.

<sup>42</sup> Data abstracted from USAID/MEASURE STATCompiler; limited to DHS, conducted from 2007 to 2012.

**Table 16. Nutritional status of children under 5**

	Stunting			Wasting			Underweight			Number of children
	Height-for-age			Weight-for-height			Weight-for-age			
	Percentage below - 3 SD	Percentage below - 2 SD	Mean Z-score (SD)	Percentage below - 3 SD	Percentage below - 2 SD	Mean Z-score (SD)	Percentage below - 3 SD	Percentage below - 2 SD	Mean Z-score (SD)	
<b>All children under 5</b>	<b>13.81</b>	<b>32.99</b>	<b>-1.27 (1.72)</b>	<b>2.31</b>	<b>5.99</b>	<b>0.12 (1.34)</b>	<b>3.65</b>	<b>13.45</b>	<b>-0.63 (1.27)</b>	<b>2,074</b>
Male children	15.19 <sup>a</sup>	36.23 <sup>b</sup>	-1.40 <sup>e</sup> (1.71)	2.50	5.79	0.13 (1.38)	4.63 <sup>h</sup>	14.50	-0.70 <sup>k</sup> (1.28)	1,028
Female children	12.43 <sup>a</sup>	29.78 <sup>b</sup>	-1.15 <sup>e</sup> (1.71)	2.12	6.19	0.12 (1.30)	2.69 <sup>h</sup>	12.40	-0.56 <sup>k</sup> (1.25)	1,046
<b>Household type</b>										
<b>Male and female adults</b>										
All children	13.94	32.86	-1.28 (1.70)	2.40	6.35	0.12 (1.35)	3.96 <sup>i</sup>	13.48	-0.64 (1.26)	1,839
Male children	15.24	35.60 <sup>c</sup>	-1.38 <sup>f</sup> (1.71)	2.59	6.21	0.14 (1.40)	5.02 <sup>i</sup>	14.32	-0.68 (1.29)	910
Female children	12.67	30.17 <sup>c</sup>	-1.18 <sup>f</sup> (1.69)	2.21	6.49	0.10 (1.30)	2.91 <sup>i</sup>	12.66	-0.59 (1.23)	929
<b>Female adult only</b>										
All children	13.07	35.24	-1.27 (1.84)	1.67	3.11	0.21 (1.21)	1.14 <sup>i</sup>	13.61	-0.60 (1.33)	219
Male children	14.79	42.17 <sup>d</sup>	-1.57 <sup>g</sup> (1.68)	1.90	2.50	0.13 (1.23)	1.51	16.10	-0.83 <sup>l</sup> (1.18)	109
Female children	11.20	27.74 <sup>d</sup>	-0.95 <sup>g</sup> (1.95)	1.42	3.77	0.39 (1.18)	0.74	10.92	-0.35 <sup>l</sup> (1.44)	110
<b>Male adult only<sup>^</sup></b>										
All children	-	-	-	-	-	-	-	-	-	-
Male children	-	-	-	-	-	-	-	-	-	-
Female children	-	-	-	-	-	-	-	-	-	-
<b>Child no adult<sup>^</sup></b>										
All children	-	-	-	-	-	-	-	-	-	-
Male children	-	-	-	-	-	-	-	-	-	-
Female children	-	-	-	-	-	-	-	-	-	-

<sup>a-l</sup> Subgroups with the same superscript are significant at the 0.05 level. All comparisons are between rows.

<sup>^</sup> = Results not statistically representative, n<30.

Source: FTF FEEDBACK PBS 2012.

Further analysis shows statistically significant differences by gender for severe (<-3SD) underweight prevalence. Across all households, and within male and female adult households only, boys have higher severe underweight prevalence than girls. Additionally, children in male and female adult households appear to experience more underweight than children in female adult only households.

The underweight prevalence reported in the PBS (13.5 percent) is similar to the reported 2011 national prevalence of 13.8 percent (DHS 2011). According to the DHS data, the underweight prevalence is 13.2 percent within the ZOI, which is not statistically different from the PBS estimate at the 0.05 level. Furthermore, this lies within the underweight prevalence range among countries in the East African<sup>43</sup> region: 10 percent in Zimbabwe (DHS 2010) to 29 percent in Burundi (DHS 2010).<sup>44</sup>

### Infant and Young Child Feeding

Exclusive breastfeeding provides children with significant health and nutrition benefits, including protection from gastrointestinal infections and reduced risk of mortality due to infectious disease. Exclusive breastfeeding means the infant received breast milk (including milk expressed or from a wet nurse) and may have received oral rehydration salts, vitamins, minerals, and/or medicines, but did not receive any other food or liquid. This indicator measures the percentage of children 0 to 5 months of age who were exclusively breastfed during the day preceding the survey.

In the ZOI, the *prevalence of exclusive breastfeeding of children under 6 months* is 60.0 percent (Table 17). As shown previously (Table 7), male infants have significantly higher exclusive breastfeeding prevalence than female infants (67.8 percent of boys versus 52.5 percent of girls). Further analysis shows that infants in male and female adult households have a significantly higher prevalence of exclusive breastfeeding than infants in female adult only households (Table 17).

**Table 17. Prevalence of exclusive breastfeeding of children under 6 months of age**

	Baseline value	SD	n (unweighted)
<b>All households</b>	<b>60.01</b>	<b>46.36</b>	<b>300*</b>
<b>Household type</b>			
Male and female adults	63.65 <sup>a</sup>	45.41	249
Female adult only	43.32 <sup>a</sup>	46.70	47
Male adult only <sup>^</sup>	-	-	4
Child no adult <sup>^</sup>	-	-	0

<sup>a</sup> Subgroups with the same superscript are significantly different at the 0.05 level. Comparisons are made between rows.

<sup>^</sup> = Results not statistically representative; n<30.

\* This indicator utilizes DHS data, which provide a relatively small sample size.

Source: DHS 2011.

<sup>43</sup> USAID/MEASURE DHS East African countries include: see previous note.

<sup>44</sup> Data abstracted from USAID/MEASURE STATCompiler; limited to DHS which were conducted from 2007 to 2012.

The *prevalence of children 6–23 months receiving a MAD* is an indicator that measures the proportion of children 6 to 23 months of age who receive a MAD apart from breastfeeding. This composite indicator measures both the minimum feeding frequency and minimum diet given to the child in the past 24 hours. Tabulation of the indicator requires data from the following components:

- Consumption of milk or milk products;
- Dietary diversity (consumption of four or more food groups); and
- Frequency of feeding semi-solid/solid feeds and number of milk feeds (minimum number of times or more).

Consumption of milk is important in development and promotion of strong bones. Children who are breastfed meet the milk consumption requirement. Nonbreastfed children’s diets should include at least two feedings of commercial infant, fresh, tinned, or powdered animal milk.

Dietary diversity for children 6 to 23 months is defined as four or more food groups out of the following seven: (1) dairy products (infant formula, milk other than breast milk, cheese, yogurt); (2) grains, roots, and tubers; (3) vitamin A-rich fruits and vegetables; (4) other fruits and vegetables; (5) eggs; (6) meat, fish, poultry, and organ meats; and (7) legumes and nuts.

The minimum necessary feeding frequency varies for breastfed and nonbreastfed children. The minimum times for feeding breastfed children (not including breastfeeds) are at least twice a day for infants 6 to 8 months, and three times a day for children aged 9 to 23 months. Nonbreastfed children aged 6 to 23 months should be fed four times a day or more.

Among breastfed children, the MAD is met if the child consumes four or more food groups and is fed the minimum number of times or more per day. Minimum dietary diversity for the nonbreastfed child is defined as four or more feedings of solid, semi-solid, or soft food or milk feeds for children 6 to 23 months. For nonbreastfed children to receive a MAD, at least two of these feedings must be milk feeds. Data are presented across the ZOI, disaggregated by gender, by gendered household type, and by breastfeeding status.

Results indicate that 16.7 percent of children 6 to 23 months received a MAD (Table 18). There are no significant difference in MAD by gendered household type. The overall prevalence in the ZOI is higher than the 2011 national MAD prevalence (5.8 percent) reported in the DHS.

The MAD indicator was disaggregated by component and breastfeeding status (Table 19). Among all children 6 to 23 months, less than half receive diverse diets (four or more food groups) or the minimum feeding frequency. Statistically significant differences were found between breastfed and nonbreastfed children 6 to 23 months by component. A greater percentage of nonbreastfed children 6 to 23 months receive the minimum dietary diversity (four or more food groups) compared to breastfed children. Conversely, a greater percentage of breastfed children 6 to 23 months receive the minimum feeding frequency compared to nonbreastfed children. Overall, significantly more breastfed children (18.5 percent) meet the MAD than nonbreastfed children (8.4 percent).

**Table 18. Prevalence of children 6-23 months receiving a MAD**

	Baseline value	SD	n (unweighted)
<b>All households</b>	<b>16.69</b>	<b>35.62</b>	<b>754</b>
<b>Household type</b>			
Male and female adults	17.31	36.06	644
Female adult only	13.47	32.96	106
Male adult only <sup>^</sup>	-	-	4
Child no adult <sup>^</sup>	-	-	0

No differences across subgroups for any of the indicators are statistically significant at the 0.05 level.

<sup>^</sup> = Results not statistically representative; n<30.

Source: DHS 2011.

A greater percentage of breastfed children in the ZOI (35.1 percent) receive minimum dietary diversity (four or more food groups) than the DHS 2011 result (10.5 percent), but there is a slightly lower prevalence than the DHS 2011 in minimum number of feedings (38.4 percent in the ZOI versus 43.8 percent in the DHS 2011).

Among nonbreastfed children 6 to 23 months, children in the ZOI report a similar prevalence to the national prevalence in receiving milk or milk products (36.2 percent in the ZOI and 35.0 percent nationally) (Table 19). Notably, nonbreastfed children in the ZOI have a higher dietary diversity prevalence (44.2 percent versus 21.5 percent nationally), and a lower feeding frequency (19.4 percent versus 48.8 percent nationally) than nonbreastfed children nationally. (However, these differences should be interpreted with caution as the sample size for nonbreastfed children 6-23 months in the ZOI is very small, at only 138 cases.)

**Table 19. Components of MAD among children 6–23 months of age**

	Baseline value (percent)	n (unweighted)
<b>Breastfed children 6–23 months</b>		
Four or more food groups	33.11 <sup>a</sup>	616
Minimum times or more	42.51 <sup>b</sup>	616
MAD	18.49 <sup>c</sup>	616
<b>Nonbreastfed children 6–23 months</b>		
Milk or milk products	36.20	138
Four or more food groups	44.23 <sup>a</sup>	138
Minimum times or more	19.35 <sup>b</sup>	138
MAD	8.42 <sup>c</sup>	138
<b>All children 6–23 months</b>		
Breast milk, milk, or milk products	88.60	754
Four or more food groups	35.10	754
Minimum times or more	38.37	754
MAD	16.69	754

<sup>a-c</sup> Subgroups with the same superscript are significantly different at the 0.05 level. Comparisons are made between rows.

Source: DHS 2011.

## Anemia

This indicator stresses the importance of micronutrient nutrition, and iron in particular, for children's health and development. Child anemia is associated with adverse consequences for child growth and development, including increased morbidity and impaired cognitive development. Anemia is measured by hemoglobin concentration in the blood. Data for this indicator are collected from children 6 to 59 months. Children with a hemoglobin concentration less than 11 g/dL are classified as anemic. This indicator measures the combined prevalence of mild, moderate, and severe anemia. The data are disaggregated by sex (shown in Table 7) and gendered household type.

The overall prevalence of anemia among children under 5 in the ZOI is 43.6 percent (Table 20). Both male and female adult households and female adult only households report similar anemia prevalence as the overall prevalence level. The anemia prevalence measured in the ZOI is slightly lower than the reported national prevalence of anemia in children at 49.3 percent (DHS 2011).

**Table 20. Prevalence of anemia among children 6–59 months**

	Baseline value (percent)	n (unweighted)
<b>All households</b>	<b>43.61</b>	<b>774</b>
<b>Household type</b>		
Male and female adults	43.66	624
Female adult only	43.38	148
Male adult only <sup>^</sup>	-	-
Child no adult <sup>^</sup>	-	-

No differences across subgroups for any of the indicators are statistically significant at the 0.05 level.

<sup>^</sup> = Results not statistically representative; n<30.

Source: DHS 2011.

Of children with hemoglobin levels less than 11.0 g/dL, the majority are mildly (21.6 percent) or moderately (20.9 percent) anemic (Table 21). Approximately 1.1 percent of children in the ZOI are classified as severely anemic. This finding is similar to the 2011 national child anemia prevalence rates where 22.3 percent were mildly anemic, 25.5 percent moderately anemic, and 1.5 percent severely anemic (DHS 2011).

**Table 21. Prevalence of mild, moderate, and severe anemia among children 6–59 months**

	Baseline value (percent)	n (unweighted)
<b>Any anemia (&lt;11.0 g/dL)</b>	<b>43.61</b>	<b>774</b>
Mild anemia (10.0–10.9 g/dL)	21.55	774
Moderate anemia (7.0–9.9 g/dL)	20.93	774
Severe anemia (<7.0 g/dL)	1.14	774

Source: DHS 2011.

## 3.4.2 Women’s Nutrition

### *Measures of Nutritional Status*

The prevalence of underweight (and overweight) women is an indicator that provides information about the extent to which women’s diets meet their caloric requirements. Undernutrition among women of reproductive age is associated with increased morbidity and poor food security, and can result in adverse birth outcomes. This indicator measures the percentage of nonpregnant women of reproductive age (15 to 49 years) who are underweight, as defined by a BMI of <18.5. To calculate an individual’s BMI, weight and height data are needed:  $BMI = \text{weight (kg)}/\text{height (in meters)}^2$ .

Table 22 shows the distribution of women’s BMI prevalence among ZOI respondents. Across all women surveyed, the mean BMI is 22.6, or normal weight. Approximately three quarters (73.4 percent) of women are considered normal weight. In the ZOI, there is a higher percentage of overweight/obese women than underweight women. The mean BMI reported in the PBS (22.6) is similar to the DHS 2011 mean BMI (22.3); however, the PBS results have a higher percentage of women whose BMI is categorized as normal, compared to the 2011 national estimate of 69.5 percent (DHS 2011).

**Table 22. Women’s nutritional status**

	Baseline value	n (unweighted)
<b>Mean body mass index (BMI)</b>	<b>22.59</b>	<b>2,083</b>
<b>BMI categories (percent of women)</b>		
<17.0 (moderate/severely underweight)	2.12	2,083
17.0–18.49 (mildly underweight)	5.87	2,083
18.5–24.9 (normal)	73.40	2,083
25.0–29.9 (overweight)	13.92	2,083
≥30.0 (obese)	4.69	2,083
<18.5 (underweight)	7.98	2,083
18.5–24.9 (normal)	73.40	2,083
≥25.0 (overweight/obese)	18.62	2,083

Source: FTF FEEDBACK PBS 2012.

In the ZOI, the combined underweight prevalence is 8.0 percent (Table 22). Approximately 5.9 percent of women are mildly underweight and 2.1 percent moderate/severely underweight. There are no statistically significant differences in women’s underweight between household types (Table 23).

The ZOI baseline 2012 data have a slightly lower prevalence of underweight women, compared to the 2011 national prevalence of 11.7 percent (DHS 2011).

**Table 23. Prevalence of underweight women**

	Baseline value (percent)	n (unweighted)
<b>All households</b>	<b>7.98</b>	<b>2,083</b>
<b>Household type</b>		
Male and female adults	8.19	1,748
Female adult only	6.71	320
Male adult only <sup>^</sup>	-	14
Child no adult <sup>^</sup>	-	1

No differences across subgroups for any of the indicators are statistically significant at the 0.05 level.

<sup>^</sup> = Results not statistically representative; n<30.

Source: FTF FEEDBACK PBS 2012.

Table 24 reports the prevalence of households with underweight women and stunted children under 5 (4.8 percent). There are no significant differences by household type.

**Table 24. Prevalence of households with underweight women and stunted children**

	Baseline value (percent)	n (unweighted)
<b>All households</b>	<b>4.78</b>	<b>1,104</b>
<b>Household type</b>		
Male and female adults	4.92	980
Female adult only	3.55	121
Male adult only <sup>^</sup>	-	3
Child no adult <sup>^</sup>	-	-

No differences across subgroups for any of the indicators are statistically significant at the 0.05 level.

<sup>^</sup> = Results not statistically representative; n<30.

Source: FTF FEEDBACK PBS 2012.

The combined prevalence of overweight and obese (BMI > 25.0) women in households is 18.6 percent in the ZOI (Table 25). As shown previously in Table 22, approximately 13.9 percent of women are overweight and 4.7 percent are obese. There are no statistically significant differences in the prevalence of overweight/obese women by household types. The combined overweight prevalence (BMI > 25.0) in the ZOI is similar to the reported 2011 Uganda national prevalence, at 18.8 percent (DHS 2011).

**Table 25. Prevalence of overweight and obese women**

	Baseline value (percent)	n (unweighted)
<b>Any overweight</b>	<b>18.62</b>	<b>2,083</b>
<b>Household type</b>		
Male and female adults	18.96	1,748
Female adult only	17.29	320
Male adult only <sup>^</sup>	-	14
Child no adult <sup>^</sup>	-	1

No differences across subgroups for any of the indicators are statistically significant at the 0.05 level.

<sup>^</sup> = Results not statistically representative, n<30.

Source: FTF FEEDBACK PBS 2012.

Further analysis compared the prevalence of households with both overweight women and stunted children (Table 26). It is important to note that height and weight measurements were taken from every nonpregnant woman of reproductive age in the household, not necessarily the mother or caregiver of the child. The ZOI baseline prevalence of households with women who are overweight/obese and stunted children is 8.0 percent. There are no significant differences by household type.

**Table 26. Prevalence of households with overweight/obese women and stunted children**

	Baseline value (percent)	n (unweighted)
<b>All households</b>	<b>7.95</b>	<b>1,104</b>
<b>Household type</b>		
Male and female adults	8.09	980
Female adult only	6.72	121
Male adult only <sup>^</sup>	-	3
Child no adult <sup>^</sup>	-	0

No differences across subgroups for any of the indicators are statistically significant at the 0.05 level.

<sup>^</sup> = Results not statistically representative, n<30.

Source: FTF FEEDBACK PBS 2012.

### Women's Intra-Household Dietary Diversity

Women of reproductive age (15 to 49 years) are at risk of multiple micronutrient deficiencies, which can jeopardize their health and their ability to care for their children and participate in income-generating activities. This indicator aims to measure the micronutrient adequacy of the diet and report the mean number of food groups consumed in the previous day by women of reproductive age. To calculate this indicator, nine food groups are used: (1) grains, roots, and tubers; (2) legumes and nuts; (3) dairy products; (4) organ meat; (5) eggs; (6) flesh food and small animal protein; (7) vitamin A-rich dark green leafy vegetables; (8) other vitamin A-rich vegetables and fruits; and (9) other fruits and vegetables. The *mean number of food groups consumed by women of reproductive age* indicator is tabulated by averaging the number of food groups consumed (out of the nine food groups mentioned above) across all women of reproductive age in the sample for whom dietary diversity data were collected.

At baseline, women of reproductive age consumed on average of three out of nine food groups during the previous day (Table 27). Women in urban areas have significantly higher dietary diversity than women in rural areas (3.7 versus 3.3 food groups, respectively; see Table 7). The average number of food groups consumed by women does not differ by gendered household type.

**Table 27. Women’s Dietary Diversity: Mean number of food groups consumed by women of reproductive age**

	Baseline value	SD	n (unweighted)
<b>All households</b>	<b>3.34</b>	<b>1.39</b>	<b>2,311</b>
<b>Household type</b>			
Male and female adults	3.35	1.35	1,956
Female adult only	3.27	1.59	338
Male adult only <sup>^</sup>	-	-	16
Child no adult <sup>^</sup>	-	-	1

No differences across subgroups for any of the indicators are statistically significant at the 0.05 level.

<sup>^</sup> = Results not statistically representative; n<30.

Source: FTF FEEDBACK PBS 2012.

Further analysis was conducted to identify which food groups were most frequently consumed (Table 28). Almost all women eat grains, roots, and tubers (93.8 percent), and a large majority of women eat legumes and nuts (78.3 percent). Less than half of respondents have diets rich in vitamin A (dark green leafy vegetables or other vitamin A-rich vegetables and fruits), animal protein (flesh foods and other small animal protein), and other fruits and vegetables. Only 14.8 percent of surveyed women report consuming dairy, and fewer women consume eggs (6.2 percent) and organ meat (1.3 percent).

**Table 28. Percent of women eating each of the nine food groups**

Food group	Baseline value (percent)	n (unweighted)
Grains, roots, and tubers	93.75	2,311
Legumes and nuts	78.32	2,311
Dairy products	14.75	2,311
Organ meat	1.32	2,311
Eggs	6.16	2,311
Flesh foods and other misc. small animal protein	29.49	2,311
Vitamin A-rich dark green leafy vegetables	43.68	2,311
Other vitamin A-rich vegetables and fruits	38.82	2,311
Other fruits and vegetables	27.83	2,311

Source: FTF FEEDBACK PBS 2012.

The dietary diversity scale was divided into quartiles, and the means of the scores within each quartile were calculated (Table 29). Women in the lowest quartile report eating on average of less than two food groups a day (1.8 food groups). Women in the second quartile report eating on average of about three food groups a day (2.9). Women in the third quartile report eating on average of four food groups (3.6), and women in the top quartile report consuming on average of slightly more than five food groups a day (5.2).

**Table 29. Women’s Dietary Diversity Score average dietary diversity, by quartile**

	Women’s Dietary Diversity Score			
	Quartile 1	Quartile 2	Quartile 3	Quartile 4
Average number of food groups consumed (std dev)	1.83 (0.41)	2.86 (0.35)	3.62 (0.48)	5.19 (1.16)
<b>n (total = 2,311)</b>	<b>577</b>	<b>578</b>	<b>578</b>	<b>578</b>

Source: FTF FEEDBACK PBS 2012.

### *Prevalence of Anemia Among Women of Reproductive Age*

This indicator stresses the importance of women’s micronutrient nutrition both pre-pregnancy and during pregnancy for the growth and development of the child in utero and for a safe delivery and positive birth outcome. Maternal anemia during pregnancy is associated with increased risk of hemorrhage, sepsis, maternal mortality, perinatal mortality, and low birth weight.

Anemia is measured by hemoglobin concentration in the blood, and data are collected among women of reproductive age (15 to 49 years). Nonpregnant women with a hemoglobin concentration less than 12g/dL and pregnant women with a hemoglobin concentration less than 11g/dL are classified as anemic. Although different levels of anemia can be measured, this indicator measures the combined prevalence of mild, moderate, and severe anemia.

The prevalence of anemia among women of reproductive age is 20.2 percent (Table 30). As shown previously in Table 7, pregnant women have a higher prevalence of anemia than nonpregnant women (30.0 percent of pregnant women and 19.0 percent of nonpregnant women), and the difference is statistically significant. Table 30 shows that the prevalence of anemia is similar across male and female adult households and female adult only households.

**Table 30. Prevalence of anemia among women of reproductive age**

	Baseline value (percent)	n (unweighted)
<b>All households</b>	<b>20.20</b>	<b>943</b>
<b>Household type</b>		
Male and female adults	19.99	721
Female adult only	20.09	212
Male adult only <sup>^</sup>	-	10
Child no adult <sup>^</sup>	-	-

No differences across subgroups for any of the indicators are statistically significant at the 0.05 level.

<sup>^</sup> = Results not statistically representative; n<30.

Source: DHS 2011.

Among all women sampled in the ZOI, 15.1 percent are categorized as mildly anemic, 4.1 percent as moderately anemic, and 1.0 percent as severely anemic (Table 31). Overall, the prevalence rates of mild and moderate anemia are lower in the ZOI than the national anemia prevalence among women of reproductive age (overall prevalence 23.0 percent, mild anemia prevalence 17.7 percent, and

moderate anemia prevalence 4.8 percent) (DHS 2011). The ZOI result shows slightly higher severe anemia prevalence than the national prevalence of 0.6 percent (DHS 2011).

**Table 31. Prevalence of mild, moderate, and severe anemia among women of reproductive age**

	Baseline value percent	n (unweighted)
Any anemia Hemoglobin levels: Nonpregnant women (NP) < 12.0 g/dL; pregnant women (P) < 11.0 g/dL	20.20	943
Mild anemia (NP 10.0–11.9 g/dL, P 10.0–10.9 g/dL)	15.09	943
Moderate anemia (NP 7.0–9.9 g/dL, P 7.0–9.9 g/dL)	4.10	943
Severe anemia (NP and P < 7.0 g/dL)	1.01	943

Source: DHS 2011.

## 3.5 Women’s Empowerment

Women play a prominent role in agriculture, and because of the persistent economic constraints they face, women’s empowerment is a main focus of Feed the Future. Empowering women is particularly important to achieving the Feed the Future objective of inclusive agriculture sector growth. The WEAI was developed to track the change in women’s empowerment levels that occurs as a direct or indirect result of interventions under Feed the Future. For more information, the WEAI questionnaires and manual can be found online.<sup>45</sup>

### 3.5.1 WEAI Overview

The WEAI measures the empowerment, agency, and inclusion of women in the agriculture sector in an effort to identify and address the constraints that limit women’s full engagement in the agriculture sector.<sup>46</sup>

For Uganda, the WEAI score is 0.86. The WEAI is composed of two subindices: the five domains of empowerment subindex (5DE) measures the empowerment of women in five areas, and the Gender Parity Index (GPI) measures the relative empowerment of men and women within the household. The WEAI score is computed as a weighted sum of the ZOI-level 5DE and the GPI (both discussed in the following section). Thus, improvements in either the 5DE or GPI will increase the WEAI score. The total formula for the Index is:  $WEAI = 0.9 \times 5DE + 0.1 \times GPI$ .

The WEAI is an aggregate index reported at the ZOI level and is based on *individual*-level data on men and women in the same household, as well as data from women living in households with no adult male. The respondents are primary male/female decision makers in the household. Refer to

<sup>45</sup> IFPRI. (2013).

<sup>46</sup> Alkire, Malapit et al. (2013).

Annex C for further description of this indicator and explanation of the calculation. See Table 32 for the list and definition of WEAI indicators.

### 3.5.2 5DE

The 5DE subindex assesses whether women are empowered across the five domains examined in the WEAI. Each domain is weighted equally, as are each of the indicators within a domain. The five domains, their definitions under the WEAI, the corresponding 10 indicators, and their weights for the 5DE are shown in Table 32.

**Table 32. WEAI indicators**

Domain (each weighted 1/5 of the 5DE subindex)	Definition of domain	Indicators	Weight of indicator in 5DE subindex
<b>Production</b>	Sole or joint decision-making over food and cash-crop farming, livestock, and fisheries, and autonomy in agricultural production	Input in productive decisions	1/10
		Autonomy in production	1/10
<b>Resources</b>	Ownership, access to, and decision-making power over productive resources such as land, livestock, agricultural equipment, consumer durables, and credit	Ownership of assets	1/15
		Purchase, sale, or transfer of assets	1/15
		Access to and decisions on credit	1/15
<b>Income</b>	Sole or joint control over income and expenditures	Control over use of income	1/5
<b>Leadership</b>	Membership in economic or social groups and comfort in speaking in public	Group member	1/10
		Speaking in public	1/10
<b>Time</b>	Allocation of time to productive and domestic tasks and satisfaction with the available time for leisure activities	Workload	1/10
		Leisure	1/10

The 5DE is a measure of empowerment rather than disempowerment. As such, the subindex describes women as “empowered” or “not yet empowered,” rather than disempowered. A woman is defined as empowered in the five domains if she has adequate achievements<sup>47</sup> in 80 percent or more of the weighted indicators. Within the 5DE, the 80 percent threshold is also called the empowerment threshold. For women who are not yet empowered, the 5DE captures the percentage of indicators in which those women have adequate achievement. The 5DE contributes 90 percent of the weight to the WEAI. The 5DE score ranges from zero to one, where higher values indicate greater empowerment.

<sup>47</sup> Having “adequate achievement” means an individual score above an adequacy cutoff established for each indicator.

The 5DE is calculated by first constructing the disempowerment index ( $M_0$ ), and then converting  $M_0$  to empowerment. The formula is:  $5DE = 1 - M_0$ . The disempowerment index is constructed using a multidimensional methodology known as the Alkire Foster Method.<sup>48</sup>  $M_0$  is calculated by multiplying the disempowered headcount (H) and the average inadequacy score (A). The disempowered headcount reflects the proportion of women who are not yet empowered. The average inadequacy score reflects the average percentage of indicators in which women who are not yet empowered did not yet achieve adequacy.<sup>49</sup> In sum, the 5DE is expressed as:  $5DE = 1 - H \times A$ . Of note, Table 33 reports H and A as percentages, but in the 5DE formula, the equivalent proportions are used.

Table 33 shows that the 5DE in Uganda is 0.85. As reflected in the formula above, this score is calculated with the percent of women in the survey who are not yet empowered (disempowered headcount,  $H_n$ ), which is 42.23, and the average inadequacy score (A), which is 35.16 percent.<sup>50</sup>

**Table 33. Women’s 5DE subindex**

	Baseline value
5DE subindex	0.85
Percent of women achieving empowerment (score of 0.80 or greater) ( $1-H_n$ )	57.77
Percent of women not achieving empowerment (score below 0.80) ( $H_n$ )	42.23
Average adequacy score for women not yet empowered ( $1-A$ )	64.84
Average inadequacy score for women not yet empowered (A)	35.16
<b>n</b>	<b>1,801</b>

Source: FTF FEEDBACK PBS 2012.

The results presented in this section do not represent the levels of empowerment of all adult women in the population. These results represent the status of primary decision-makers within the household, who are likely to be the most empowered relative to other adults in the household.

In addition to examining the 5DE for the sample as a whole, 5DE scores were analyzed and compared by household type. As shown in Table 34, there are no statistically significant differences in 5DE scores by household type.

**Table 34. Women’s 5DE score and household type**

	Baseline value	SD	n (unweighted)
<b>Household type</b>			
Male and female adults	0.85	0.20	1,472
Female adult only	0.86	0.20	325

The difference between household types is not statistically significant at the 0.05 level; comparisons across rows.

**NOTE:** Four households did not have data for Module C, gendered household type, resulting in n=1,797 for the household type rows.

Source: FTF FEEDBACK PBS 2012.

<sup>48</sup> University of Oxford. (2013).

<sup>49</sup> Alkire, Meinzein-Dick et al. (2013).

<sup>50</sup> These are the results based on the calculations of this indicator, recognizing that most women in agriculture are subsistence farmers. For more information on the WEAI utilization by Feed the Future, visit the following site: <http://feedthefuture.gov/article/release-womens-empowerment-agriculture-index>. Retrieved May 20, 2013.

Table 35 reports the percentages of primary decision-making females who are not yet empowered and have inadequacy for the 10 indicators within each of the five domains of empowerment (i.e., the censored headcount). Refer to Annex C for descriptions of each of the 10 indicators including adequacy cutoffs. In Table 35, results are shown for all women from both household types who responded to the WEAI module in the survey. Women who score above the 80 percent empowerment threshold are not counted against the censored headcounts. To compute a censored headcount ratio for each indicator, the number of not yet empowered women who did not achieve adequacy on that indicator is divided by the total number of women who responded. The censored headcounts illustrate the profile of inadequate achievements of the not yet empowered. Focusing on women who are not yet empowered is important because it emphasizes specific ways empowerment can be improved. By construction, improvements in the achievements of women who are already empowered do not increase the 5DE score, an important property of the subindex. Discussion of each indicator and domain follows Table 35.

**Table 35. Percent of women who are not yet empowered and who have inadequate achievement (censored headcount) in the 5DE indicators**

Domain	Indicator	Censored headcount <sup>1</sup> (n=1,801)
<b>Production</b>	Input in productive decisions	7.21
	Autonomy in production	5.75
<b>Resources</b>	Ownership of assets	11.46
	Purchase, sale, or transfer of assets	15.80
	Access to and decisions on credit	31.99
<b>Income</b>	Control over use of income	9.40
<b>Leadership</b>	Group member	16.97
	Speaking in public	11.41
<b>Time</b>	Workload	31.60
	Leisure	17.26

<sup>1</sup> The censored headcount ratio for a particular indicator is the number of not yet empowered people who did not achieve adequacy on that indicator divided by the total population.

Source: FTF FEEDBACK PBS 2012.

### **Production Domain**

**Input in Productive Decisions.** Results shown in Table 35 indicate that among women in the Uganda ZOI, 7.2 percent are not yet empowered and have inadequate input into productive decisions.

**Autonomy in Production.** With respect to autonomy in production, 5.8 percent of women are not yet empowered and have inadequacy in the indicator.

### **Resources Domain**

**Ownership of Assets.** Among women in the Uganda ZOI, 11.5 percent are not yet empowered and experience inadequacy in ownership of assets.

**Purchase, Sale, or Transfer of Assets.** The percentage of women who are both not yet empowered and have inadequate achievement in terms of controlling the purchase, sale, or transfer of assets is 15.8 percent.

**Access to and Decisions on Credit.** The indicator tracking access to and decisions on credit shows the highest percentage of inadequacy among women, with 32.0 percent not yet empowered and not having adequate achievement.

**Control Over Use of Income.** The percentage of women who both are not yet empowered and lack adequacy in the control over use of income is 9.4 percent.

### **Leadership Domain**

**Participation in Formal and Informal Groups.** In the ZOI, the percentage of women who are both not yet empowered and experience inadequacy in the group membership indicator is 17.0 percent.

**Speaking in Public.** A lower percentage of women (11.4 percent) are both not empowered and lack adequacy in the speaking in public indicator compared to group membership.

### **Time Allocation Domain**

**Workload.** Compared to all other 5DE indicators, workload exhibits the second highest percentage of women who are both not yet empowered and have inadequate achievement, at 31.6 percent.

**Leisure Time.** The percentage of women in the ZOI who are both not yet empowered and have inadequacy in leisure time is 17.3 percent.

Table 36 provides more detailed data regarding the kinds of assets of which women report ownership. The majority of women reporting ownership of agricultural assets identify farm equipment (non-mechanized) and poultry (chickens, turkeys, and ducks) as their assets (85.7 and 82.3 percent, respectively). Approximately two-thirds (67.1 percent) of women with assets report owning agricultural land, which is lower than woman's ownership of most other asset types (with the exception of mechanized farm equipment).

## **3.5.3 GPI**

The second subindex in the WEAI—the Gender Parity Index (GPI)—measures women's empowerment relative to that of men by comparing the 5DE profiles of women and men in the same households. A woman is assumed to achieve gender parity if her achievements in the five domains are at least as high as the man in her household. The GPI reflects the percentage of women who have achieved parity and, in cases of gender disparity, the average empowerment gap that

**Table 36. Percent of women with ownership of each type of asset**

Type of asset	Mean (percent)	n (unweighted)
Agricultural land	67.10	1,515
Large livestock	70.06	390
Small livestock	79.12	950
Chickens, turkeys, ducks	82.33	1,118
Fishing equipment <sup>^</sup>	-	23
Farm equipment (non-mechanized)	85.65	1,630
Farm equipment (mechanized)	65.66	68

<sup>^</sup> = Results not statistically representative; n<30.

Source: FTF FEEDBACK PBS 2012.

women experience relative to their male counterparts. While the 5DE score is calculated using all women in the sample, the GPI score is calculated using only women living in a household with at least one adult man (often her partner).

The GPI is calculated by multiplying two factors. The first is the percent of women without gender parity ( $H_{GPI}$ ), defined as women with lower achievements in the five domains than that of their male counterparts. Empowered women, meaning those who score above the empowerment threshold of the 5DE, are automatically counted as having parity with their male counterpart. The second factor is the average empowerment gap ( $I_{GPI}$ ), which measures the average percentage shortfall in empowerment between women and men living in households without gender parity across all indicators. The GPI is calculated with the formula:  $GPI = 1 - (H_{GPI} \times I_{GPI})$ . The GPI ranges from zero to one, with higher values indicating greater gender parity.<sup>51</sup>

In Uganda, the GPI is 0.92, which is calculated with the formula above that is based on the percent of women without gender parity (39.0) and the average empowerment gap (19.6). Table 37 shows the breakdown of baseline values by the GPI variables.

**Table 37. GPI**

	Baseline value
GPI	0.92
Percent of women achieving gender parity ( $1 - H_{GPI}$ )	60.98
Percent of women without gender parity ( $H_{GPI}$ )	39.02
Average empowerment gap ( $I_{GPI}$ )	19.58
<b>n</b>	<b>1,012</b>

Source: FTF FEEDBACK PBS 2012.

Table 38 presents men's and women's censored headcounts, or the percent not yet empowered and inadequate in the 10 indicators of 5DE. Note that, unlike Table 35, which showed percentages for all primary decision-making women in the survey, in Table 38, the percentages reported are based only on primary decision-making males and females in dual households, those households with both a male and a female adult.

<sup>51</sup> Alkire, Meinzein-Dick et al. (2013).

Table 38 shows that men and women in dual households report significant differences in nine of the 10 5DE indicators. Significantly more women than men are not empowered and have inadequacy in all the indicators except the autonomy in production indicator.

**Table 38. Percent of men and women who are not yet empowered and have inadequate achievement (censored headcount) in the 10 5DE indicators**

Domain	Indicator	Baseline values	
		Male censored headcount <sup>1</sup> (n=1,012)	Female censored headcount <sup>2</sup> (n=1,012)
<b>Production</b>	Input in productive decisions	2.73 <sup>a</sup>	7.71 <sup>a</sup>
	Autonomy in production	4.96	5.58
<b>Resources</b>	Ownership of assets	1.97 <sup>b</sup>	14.24 <sup>b</sup>
	Purchase, sale, or transfer of assets	3.90 <sup>c</sup>	17.56 <sup>c</sup>
	Access to and decisions on credit	13.41 <sup>d</sup>	32.52 <sup>d</sup>
<b>Income</b>	Control over use of income	2.43 <sup>e</sup>	10.12 <sup>e</sup>
<b>Leadership</b>	Group member	8.76 <sup>f</sup>	16.39 <sup>f</sup>
	Speaking in public	1.91 <sup>g</sup>	10.67 <sup>g</sup>
<b>Time</b>	Workload	12.18 <sup>h</sup>	33.04 <sup>h</sup>
	Leisure	6.85 <sup>i</sup>	18.44 <sup>i</sup>

<sup>a-i</sup> Subgroups with the same superscript are significantly different at the 0.05 level. The comparisons are across columns. Comparison and estimates for men and women living in male and female adult households.

<sup>1</sup> Male censored headcounts are the percentage of men who are not yet empowered and have inadequate achievement in the indicator.

<sup>2</sup> Female censored headcounts are the percentage of women who are not yet empowered and have inadequate achievement in the indicator.

Source: FTF FEEDBACK PBS 2012.

## 4. Analysis of Findings

This section presents results of several analyses requested by USAID/Uganda. Data are presented here on the relationship between women’s empowerment in each WEAI domain and the HHS, and between women’s general empowerment status and select Feed the Future indicators related to nutritional status and hunger. Data are also presented for the relationship between women’s general empowerment status and dwelling characteristics, as well as for the relationship between women’s decision-making capacity and select Feed the Future indicators. Lastly, data on population demographics (rural/urban, household size, and education) are presented for select Feed the Future indicators related to nutritional status and hunger.

### 4.1 Household Hunger and WEAI Indicators

Detailed analysis was conducted to examine the relationship between the severity of household hunger and women’s achievement of the 10 indicators of 5DE.<sup>52</sup> Households were categorized according to whether they reported “moderate to severe hunger” or “little or no hunger.”

<sup>52</sup> Thresholds per each indicator as defined by WEAI standards.

As shown in Table 39, in comparison to women in households reporting little or no hunger, women in households with moderate to severe hunger are significantly less likely to achieve adequacy in autonomy in production, ownership or control of assets, control over the use of income, and satisfaction with leisure time. Women in households with moderate to severe hunger are significantly more likely to achieve adequacy with respect to access to and decisions on credit.

**Table 39. Severity of household hunger according to women’s achievement on WEAI indicators**

WEAI indicator	Household hunger scale categories	
	Moderate to severe hunger (n = 472)	Little or no hunger (n = 1,317)
	Percent	
Input into productive decisions	91.67	92.42
Autonomy in production	87.95 <sup>a</sup>	92.46 <sup>a</sup>
Ownership of assets	81.27 <sup>b</sup>	88.44 <sup>b</sup>
Purchase, sale, or transfer of assets	75.20 <sup>c</sup>	82.70 <sup>c</sup>
Access to and decisions on credit	51.27 <sup>d</sup>	40.73 <sup>d</sup>
Control over use of income	87.72 <sup>e</sup>	91.47 <sup>e</sup>
Group member	82.07	78.18
Speaking in public	85.23	84.34
Workload	40.48	36.52
Leisure	65.01 <sup>f</sup>	73.89 <sup>f</sup>

<sup>a-f</sup> Subgroups with the same superscript are significantly different at the 0.05 level. Comparisons are made across columns.

Source: FTF FEEDBACK PBS 2012.

## 4.2 Women’s Empowerment and Feed the Future Indicators

Analysis was also conducted to determine the extent to which households with empowered women have different outcomes on select Feed the Future hunger- and nutrition-related indicators compared to those households with women not yet empowered (Table 40). There are no statistically significant differences for any of the six indicators when compared between the empowerment categories.

## 4.3 Women’s Empowerment and Dwelling Characteristics

Further analysis of differences in dwelling characteristics based on empowerment status is presented in Table 41. There are no statistically significant differences in dwelling characteristics based on women’s empowerment status.

**Table 40. Values for selected PBS indicators according to Women's Empowerment status**

Feed the Future indicators	Empowered	n	Not yet empowered	n
Prevalence of underweight children under 5 years of age	12.39	981	14.15	786
Prevalence of stunted children under 5 years of age	32.67	981	32.06	786
Prevalence of wasted children under 5 years of age	5.83	981	6.78	786
Prevalence of underweight women	8.30	1,020	7.48	707
Prevalence of households with moderate or severe hunger	26.12	1,013	27.69	776
Women's Dietary Diversity: Mean number of food groups consumed by women of reproductive age (std dev)	3.30 (1.27)	1,123	3.39 (1.43)	788

No differences across subgroups for any of the indicators are statistically significant at the 0.05 level.

Source: FTF FEEDBACK PBS 2012.

**Table 41. Characteristics of household dwelling by Women's Empowerment status**

Feed the Future indicators	Empowered	n	Not yet empowered	n
<b>Water and sanitation</b>				
Households using improved water source	70.68	1,018	73.95	776
Households using improved sanitation source	62.74	1,018	61.92	776
<b>Roof materials</b>				
Thatched/vegetable matter/sticks	23.97	1,018	31.00	776
Iron sheets	75.05	1,018	67.10	776
<b>Floor materials</b>				
Earth/sand	28.68	1,018	34.21	776
Earth/dung	44.80	1,018	42.18	776
Concrete	24.79	1,018	22.18	776
<b>Wall materials</b>				
Mud and poles	42.05	1,018	38.91	776
Unburnt bricks	10.90	1,018	9.52	776
Unburnt bricks with plaster	9.79	1,018	13.35	776
Burnt bricks with mud	7.48	1,018	8.33	776
Burnt bricks with cement	28.18	1,018	27.39	776

Only values for answer options with at least 1 percent of responses are reported.

No differences across subgroups for any of the indicators are statistically significant at the 0.05 level.

Source: FTF FEEDBACK PBS 2012.

## 4.4 Women’s Decision-Making and Feed the Future Indicators

To determine the extent to which a woman’s power to make decisions for the household is associated with outcomes on six Feed the Future indicators, an index was created based on the five decision-making items on the WEAI. Each of the five decision-making items in the WEAI was scored such that a “1” indicates the respondent has adequate freedom to make decisions and a “0” means she does not. The five items were summed and broken into three categories: (1) low, respondent achieved adequacy in zero to three decision-making activities; (2) medium, respondent achieved adequacy in four decision-making activities; and (3) high, respondent achieved adequacy in all five decision-making activities.

The results presented in Table 42 indicate that the only indicator for which there is a statistically significant difference by women’s decision-making capacity in the household is for child wasting. There is a greater prevalence of child wasting (8.1 percent) in households in which women exhibit low decision-making compared to households in which women exhibit high decision-making (5.2 percent). These comparisons are not statistically significant for all other nutrition and hunger-related indicators.

**Table 42. Level of decision-making capacity by selected PBS indicators**

Feed the Future indicators	Decision-making index					
	Low (0–3 decisions)		Medium (4 decisions)		High (5 decisions)	
	Mean	n	Mean	n	Mean	n
Prevalence of underweight children under 5 years of age	14.09	410	11.95	834	14.32	523
Prevalence of stunted children under 5 years of age	29.76	410	32.55	834	34.22	523
Prevalence of wasted children under 5 years of age	8.09 <sup>a</sup>	410	5.99	834	5.22 <sup>a</sup>	523
Prevalence of underweight women	8.91	374	7.79	803	7.64	550
Prevalence of households with moderate to severe hunger	28.63	431	26.36	852	26.01	506
Women’s Dietary Diversity: Mean number of food groups consumed by women of reproductive age (std dev)	3.41 (1.44)	430	3.40 (1.38)	885	3.21 (1.17)	596

<sup>a</sup> Subgroups with the same superscript are significantly different at the 0.05 level. Comparisons are made across columns.

Source: FTF FEEDBACK PBS 2012.

## 4.5 Population Demographics and Feed the Future Indicators

Finally, Table 43 presents select Feed the Future indicators by urban versus rural areas, household size, and education level. The outcomes for children under 5 (underweight and stunting) and for women (underweight and dietary diversity) are more severe in rural areas for all Feed the Future

**Table 43. Values for selected Feed the Future FEEDBACK indicators by urban/rural, household size, and education**

Feed the Future indicators	Urban/rural				Household size						Education			
	Urban	n	Rural	n	1-4 Members	n	5-7 Members	n	> 7 Members	n	At least one HH member with schooling above primary	n	No HH members with schooling above primary	n
Prevalence of underweight children under 5 years	8.28 <sup>a</sup>	354	13.85 <sup>a</sup>	1,716	14.09	376	14.12	888	12.58	806	12.18	920	14.43	1,150
Prevalence of stunted children under 5 years	24.77 <sup>b</sup>	354	33.68 <sup>b</sup>	1,716	30.24	376	34.63	888	32.67	806	30.40	920	35.03	1,150
Prevalence of wasted children under 5 years	4.65	354	6.11	1,716	7.42	376	5.78	888	5.67	806	5.63	920	6.29	1,150
Prevalence of underweight women	5.32 <sup>c</sup>	512	8.31 <sup>c</sup>	1,571	7.35	470	7.34	820	8.96	793	6.98	1,117	8.99	966
Prevalence of households with moderate or severe hunger	19.81 <sup>d</sup>	578	27.44 <sup>d</sup>	1,941	25.85	1036	26.90	911	27.74	572	20.63 <sup>e</sup>	1,141	31.07 <sup>e</sup>	1,378
Women's Dietary Diversity: Mean number of food groups consumed by women of reproductive age	3.70 <sup>e</sup>	563	3.30 <sup>e</sup>	1,748	3.32	552	3.25 <sup>f</sup>	904	3.46 <sup>f</sup>	855	3.55 <sup>h</sup>	1,232	3.13 <sup>h</sup>	1,079

<sup>a-h</sup> Subgroups with the same superscript are significantly different at the 0.05 level. Comparisons are made across columns.

Source: FTF FEEDBACK PBS 2012.

indicators, and the prevalence of household hunger is higher in rural compared to urban areas (27.4 and 19.8 percent, respectively). The differences are statistically significant, and taken together, point to the disadvantage rural residents face relative to their urban counterparts. In addition, household hunger is more prevalent in households in which no one has schooling above the primary level, compared to households with at least one member with education above the primary level (31.1 and 20.6 percent, respectively). For household size, the only significant difference observed is for the Women's Dietary Diversity Score; surprisingly, women in households with more than seven members consume more food groups than those in households with five to seven members (3.5 versus 3.3 food groups). The Women's Dietary Diversity Score is also higher for women in households with at least one member with education above the primary level compared to households with no schooling above primary (3.6 versus 3.1 food groups).

## 5. Conclusion

This document has reported the findings of the Uganda Feed the Future ZOI baseline values. The Feed the Future ZOI baseline reports primary and secondary data for 13 Feed the Future Indicators: seven using primary data and six using secondary data. The FTF FEEDBACK PBS entailed interviews in 2,566 households across 140 EAs in the ZOI, and the secondary data were drawn from the UNHS 2009/2010 and the DHS 2011.

Overall, approximately one in three households in the ZOI live in poverty and more than one-quarter of households face hunger. The prevalence of poverty in the ZOI is 32.9 percent, based on the poverty line of less than \$1.25 per person, per day (2005 PPP), and the poverty gap is 9.4 percent. Daily per capita expenditures are low, with an average of \$1.53 per day (2010 PPP).

The majority of households in the ZOI report little to no hunger (73.3 percent). Over one-fifth (23.8 percent) face moderate hunger, while 2.9 percent suffer from severe hunger. There are no significant differences in household hunger between household types. However, it must be noted that, due to the timing of the project start-up and subsequent data collection, the PBS survey was not collected during the peak hungry season in Uganda.

The findings for household demographics and dwelling characteristics showed that male and female adult households in the ZOI have significantly more household members, more females, and more children of every age bracket in the household, as well as more rooms in the dwelling than other household types. Similarly, male and female adult households are more likely to have electricity than female adult only households (10.1 and 7.7 percent, respectively). In terms of water and sanitation, about three-quarters of households use an improved drinking water source (72.8 percent) while fewer households access an improved sanitation facility (62.0 percent), with no differences across household type.

The nutrition data revealed that one-third (33.0 percent) of children under 5 in the ZOI are stunted (moderate and severe combined), and 13.8 percent are severely stunted, which is comparable to the

national and regional levels. The prevalence of stunting in boys under 5 is significantly higher compared to girls (36.2 and 29.8 percent, respectively); the same trend is observed in the prevalence of severe underweight for boys under 5. However, compared to the national level, the combined and severe wasting prevalence in the ZOI is higher than the national wasting prevalence reported in the 2011 DHS. The prevalence of exclusive breastfeeding for children under 6 months in the ZOI is 60.0 percent; exclusive breastfeeding is significantly higher for boys compared to girls (67.8 and 52.5 percent, respectively). Further analysis shows that male and female adult households have a significantly higher prevalence of exclusive breastfeeding than female adult only households.

Women's Dietary Diversity is low, with women of reproductive age reporting an average consumption of approximately three out of nine total food groups (3.3 food groups). Women in urban areas are significantly more likely to consume more food groups than women in rural areas (3.7 food groups versus 3.3, respectively). In addition, pregnant women in the ZOI have a higher prevalence of anemia than nonpregnant women (30.0 and 19.0 percent, respectively).

The WEAI shows that more than half of women (57.8 percent) in the ZOI are empowered, and the WEAI score is 0.86. Analysis of men and women's censored headcounts, or the percentages not yet empowered and inadequate on the 10 indicators of 5DE (Table 38), reveals that men and women in dual households report significant differences in nine of the indicators. Significantly more women than men are not yet empowered and more women than men have inadequacy in all the indicators except autonomy in production. (It should be noted, however, that these results do not represent the levels of empowerment of all adult women in the population. Rather, these results represent the status of primary decision-makers within the household.) The report also presented country-specific analyses, and the following are some of the key findings with observed statistical significance. Women in households with moderate to severe hunger are significantly less likely than women in households reporting no hunger to achieve adequacy in autonomy in production, ownership or control of assets, control over the use of income, and satisfaction with leisure time. Conversely, women in households with moderate to severe hunger are significantly more likely to achieve adequacy with respect to access to and decisions on credit.

Additional analysis provided associations between population demographics and select Feed the Future indicators. The outcomes for children under 5 and for women are more severe in rural areas of the ZOI for nearly all indicators. The prevalence of household hunger is also higher in rural compared to urban areas (27.4 and 19.8 percent, respectively), and household hunger is more prevalent in households in which no one has schooling above the primary level. The Women's Dietary Diversity Score is higher for women in households with at least one member with education above the primary level compared to households in which no one has schooling above the primary level (3.6 versus 3.1 food groups), as well as higher in households with more than seven members, which is surprising.

Given these findings, further study should examine the factors affecting women's empowerment and gender parity in Uganda. Future study should also explore in more detail the relationships

between women's empowerment and household food security as well as between population demographics and select Feed the Future indicators.

This report will be used to measure changes in the Feed the Future indicators over time in the Uganda ZOI. It should be noted that the survey was not designed to allow for conclusions about attribution or causality.

## Appendix A. References

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## **Annex A. Survey Protocol – Uganda**

### **Protocol for Indicator Calculation in Uganda Based on Secondary Data and Baseline Survey Data Collection for Feed the Future<sup>53</sup>**

#### **Feed the Future FEEDBACK Project**

##### **A.1 Overview**

Part of the monitoring and evaluation system for U.S. Government-supported food security activities in Uganda is reporting on population-based indicators. These indicators are based on analysis of survey data. The United States Agency for International Development (USAID) Mission in Uganda (USAID/Uganda) will report on 13 indicators in the Feed the Future Zone of Influence (ZOI). There are 38 districts in the Feed the Future ZOI.

Where possible, indicators will be estimated based on existing sources of data. Use of existing data sources will save time and reduce the cost of generating estimates for the indicators. These data sources must meet criteria to provide valid baseline estimates of indicators. The data sources must have collected the data in a recent time window, but prior to the start of Feed the Future activities. The data source must have used a sample size large enough to estimate indicator values with sufficient precision and power to measure change over time. The Uganda National Household Survey (UNHS) 2009/2010 and the Uganda Demographic and Health Survey (DHS) 2011 are expected to meet these criteria for six of 13 indicators for the Feed the Future ZOI (see Table A-1). Because the indicators are for the entire zone of influence, it is expected that these surveys will have large enough samples to calculate indicators with sufficient precision. While secondary data has a large enough sample size to calculate wasting and stunting indicators for the Feed the Future PBS, collecting this information through the Feed the Future PBS will not incur additional expenses. It is expected that by collecting data for these two indicators, Feed the Future (FTF) FEEDBACK will also be able to verify the validity of secondary data.

Baseline surveys will be conducted for indicators that cannot be calculated with existing data sources. The Feed the Future ZOI baseline survey will collect data for seven indicators:

(1) Prevalence of underweight children, (2) Prevalence of stunted children; (3) Prevalence of wasted children; (4) Prevalence of underweight women; (5) Women’s Empowerment in Agriculture Index (WEAI); (6) Prevalence of households with moderate or severe hunger (Household Hunger Scale); and (7) Women’s Dietary Diversity. Table A-1 lists the 14 indicators and the source of the data of each for the Feed the Future ZOI indicators.

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<sup>53</sup> This annex includes the agreed protocol, with the omission of discussion about the survey of Mission Focus Districts.

**Table A-1. List of indicators**

Indicator	FTF ZI secondary analysis	FTF ZI baseline survey
Prevalence of underweight children		Yes
Prevalence of poverty	Yes	
Prevalence of stunted children	Yes	Yes
Prevalence of wasted children	Yes	Yes
Prevalence of underweight women		Yes
Per capita expenditures (as a proxy for incomes)	Yes	
Women's Empowerment in Agriculture Index		Yes
Prevalence of households with moderate or severe hunger		Yes
Prevalence of children 6-23 months receiving a minimum acceptable diet	Yes	
Women's Dietary Diversity		Yes
Prevalence of exclusive breastfeeding	Yes	
Prevalence of anemia among children 6-59 months	Yes	
Prevalence of anemia among women of reproductive age	Yes	

## A.2 Indicator Estimates for Feed the Future Zone of Influence Based on Secondary Analysis of Existing Data

Where possible, indicators will be calculated from existing data sources. Westat will calculate indicators for the Feed the Future ZOI based on the DHS 2011 data files, and the Uganda Bureau of Statistics (UBOS) will calculate indicators based on the UNHS 2009/10.

Indicators can be estimated based on existing data sources provided these data sources meet the criteria already mentioned. The UNHS 2009/10 and DHS 2011 meet the criteria for time of data collection and provide the type of data needed for indicators for women and children required for Feed the Future reporting.

The remaining criterion to be filled is to have a sample of sufficient size in the ZOI to be able to estimate indicators with the required precision. Knowing how much of the sample falls into the ZOI requires knowing the district location of households in the sample. The UBOS will assist in the process of determining which enumeration areas (EAs) fall within the ZOI for the DHS and UNHS.

An estimate of the sample size for the ZOI has been calculated based on information from UBOS. There are 141 EAs in the ZOI. Assuming 22 households per EA gives an estimated sample size of 3,102 households. Based on 404 EAs in the DHS 2011, 34.9 percent of the DHS 2011 EAs are in the ZOI. If this percentage is applied to the 8,674 women in the DHS, there will be an estimated 3,027 women in the ZOI. When applied to the 6,775 households UNHS 2009/10, this percentage gives an estimate of 2,364 households in the ZOI.

Based on these estimates of sample size in the zone of influence we can see if there is sufficient sample for measuring indicators with DHS and UNHS. The UNHS clearly has sufficient sample for measuring change from baseline to end line values of poverty and expenditure indicators for the

zone of influence (see Table A-2b in Section 3.2.1). The DHS has sufficient sample for measuring change from baseline to end line values of the exclusive breastfeeding for the zone of influence. For the anthropometric and anemia indicators there is sufficient sample from baseline to end line measurement of some indicators if the full sample of women and children are measured rather than a subsample. The stunted and wasted indicators for children, and anemia for women and children, have sufficient samples for measurement of baseline to end line change. As such, collecting data for stunted and wasted indicators for children would not increase costs and would provide a way to validate secondary data with data collected through the Feed the Future PBS. The measures of underweight are not expected to have sufficient sample size for measuring change.

The general approach to calculating indicators from secondary data is to first match the results at the national level found in the DHS or UNHS reports. SPSS or Stata programs will be written to calculate the indicators at the national level. When the results of these programs closely match those of the DHS or UNHS reports, the programs will be modified to only include the Feed the Future zone of influence.

Getting results that match DHS and UNHS survey reports can be difficult. This process will be facilitated by starting with SPSS or Stata programs that were either used for the survey reports or that are very similar to those used to calculate the indicators for the reports. For DHS surveys the process will be to use SPSS programs that were created for the Multiple Indicator Cluster Survey (MICS). The MICS calculates indicators in a manner very close to the DHS. For the UNHS, UBOS will start with the computer programs UBOS has written for poverty and expenditure calculations at the national level and subset these calculations for the Feed the Future ZOI.

## **A.3 Survey Design**

The design of the Feed the Future ZOI baseline survey consists of two basic components: questionnaire design and sample design. Westat will provide technical assistance for both of these survey components, which are described below.

### **A.3.1 Questionnaire Design**

The survey questionnaire was designed to conform to existing questionnaires such as the DHS, UNHS, and WEAI. The questionnaire will include the informed consent statement, the household roster, dwelling characteristics module, and modules for indicators that cannot be calculated with existing data sources.

The questionnaire includes modules for indicators not adequately covered by secondary data. In the case of the Feed the Future ZOI baseline, there are seven indicators not covered by secondary data. These are: (1) Prevalence of underweight children, (2) Prevalence of stunted children; (3) Prevalence of wasted children; (4) Prevalence of underweight women; (5) Women's Empowerment in Agriculture Index (WEAI); (6) Prevalence of households with moderate or severe hunger (Household Hunger Scale); and (7) Women's Dietary Diversity. The survey questionnaire will be

translated and back-translated into five local languages. During the pretest and training, any problems found in the translations will be corrected.

### **A.3.2 Sample Design**

The sample design for the baseline survey is divided into two parts. The first is the calculation of the sample size for indicators to be measured by the survey. This establishes the size of the surveys in terms of number of households. The second gives the details of the sample design within Uganda.

#### ***Sample Size Estimates***

The sampling strategy will be to collect sufficient data to measure change in as many of the required indicators as practical. While it would be desirable to collect a large enough sample to measure change in all of the indicators, some indicators will require sample sizes beyond what is feasible with the survey budgets.

The sample size for each indicator will vary based on the baseline values and the amount of change expected. To be able to measure change over a two-year period is challenging, because often there will be less change and larger samples will be required to compare two estimates. Tables A-2a and A-2b list the required sample sizes to show statistically significant change from baseline to midterm and from baseline to endline, respectively, for the eight Feed the Future indicators in the Feed the Future zone of influence that may be calculated with existing data sources (secondary data).

Tables A-3a and A-3b list the required sample sizes to show statistically significant change from baseline to midterm and from baseline to endline, respectively, for the seven Feed the Future indicators in the Feed the Future zone of influence that will be in the baseline survey. Per USAID guidance, the Feed the Future ZOI PBS will collect a large enough sample to measure impact of Feed the Future investments from baseline to endline (Table A-3b).

As seen in the sample size calculations, the size of sample needed to show change at midterm would be unrealistically large for most indicators. The midterm survey should focus, therefore, on indicators most likely to show change. The utility of the midterm survey would then be to show some change in selected indicators that can inform program management. In general, if the true change is in a given direction and reasonably large, the midterm value will reflect this, even if the amount of change is not sufficient to be statistically significant.

In all tables, the sample sizes are for the populations associated with the indicator. The sample for prevalence of underweight children is for children aged 6-59 months. The sample for underweight women is for women aged 15-49. The sample for percent living in poverty is for households. All information presented is based on national data available.

**Table A-2a. Required sample size: FTF zone of influence, secondary data – baseline to midterm**

Indicator	Baseline value	Mid-term target value	Required sample size		Estimated size of sample in	
			Baseline	Mid-term	Baseline secondary data	Endline survey
Prevalence of underweight children	14.0	12.3	6,358	6,358	1,018	2,077
Prevalence of poverty	24.5	21.4	4,753	4,753	2,934	2,975
Prevalence of stunted children	33.0	29.7	4,018	4,018	1,018	2,077
Prevalence of wasted children	5.0	3.8	4,381	4,381	1,018	2,077
Prevalence of underweight women	12.0	10.5	9,163	9,163	1,003	2,046
Per capita expenditures	272,700	340,875	508	508	2,934	2,975
Prevalence of children 6-23 months receiving a minimum acceptable diet	NA	NA	NA	NA	NA	NA
Prevalence of exclusive breastfeeding	63	71.5	599	599	347	236
Prevalence of anemia among children 6-59 months	49	41.7	1,455	1,455	927	1,891
Prevalence of anemia among women of reproductive age	23	20.1	5,307	5,307	1,130	2,305

**Table A-2b. Required sample size: FTF zone of influence, secondary data – baseline to endline**

Indicator	Baseline value	Endline target value	Required sample size		Estimated size of sample in	
			Baseline	Endline	Baseline secondary data	Endline survey
Prevalence of underweight children	14.0	10.5	1,538	1,538	1,018	2,077
Prevalence of poverty	24.5	18.4	1,164	1,164	2,934	2,975
Prevalence of stunted children	33.0	26.4	998	998	1,018	2,077
Prevalence of wasted children	5.0	2.5	1,001	1,001	1,018	2,077
Prevalence of underweight women	12.0	9.0	2,211	2,211	1,003	2,046
Per capita expenditures	272,700	409,050	162	162	2,934	2,975
Prevalence of children 6-23 months receiving a minimum acceptable diet	NA	NA	NA	NA	NA	NA
Prevalence of exclusive breastfeeding	63	80	147	147	347	236
Prevalence of anemia among children 6-59 months	49	34.3	372	372	927	1,891
Prevalence of anemia among women of reproductive age	23	17.3	1,074	2,096	1,130	2,305

**Table A-3a. Required sample size: FTF zone of influence survey – baseline to midterm**

Indicator	Baseline value	Midterm target value	Sample size		Number of households	
			Baseline	Mid-term	Baseline	Mid-term
Prevalence of underweight children	14.0	12.3	6,358	6,358	9,096	9,096
Prevalence of stunted children	33.0	29.7	4,018	4,018	5,748	5,748
Prevalence of wasted children	5.0	3.8	4,381	4,381	6,268	6,268
Prevalence of underweight women	12.0	10.5	9,163	9,163	13,299	13,299
Women's Empowerment in Agriculture Index	0.789	0.813	7,208	7,208	8,381	8,381
Prevalence of households with moderate or severe hunger	49.7	42.2	1,158	1,158	1,292	1,292
Women's Dietary Diversity	NA	NA	NA	NA	NA	NA

**Table A-3b. Required sample size: FTF zone of influence survey – baseline to endline**

Indicator	Baseline value	Endline target value	Sample size		Number of households	
			Baseline	Endline	Baseline	Endline
Prevalence of underweight children	14.0	10.5	1,538	1,538	2,200	2,200
Prevalence of stunted children	33.0	26.4	998	998	1,428	1,428
Prevalence of wasted children	5.0	2.5	1,001	1,001	1,432	1,432
Prevalence of underweight women	12.0	9.0	2,211	2,211	3,209	3,209
Women's Empowerment in Agriculture Index	0.789	0.836	1,762	1,762	2,049	2,049
Prevalence of households with moderate or severe hunger	49.7	34.8	296	296	330	330
Women's Dietary Diversity	NA	NA	NA	NA	NA	NA

These sample size calculations have been calculated to measure change over time. These were done with Stata sample size calculation functions for proportions and means as appropriate. The level of significance was set to 5 percent and the power was set to 80 percent.

The sample size calculations have been adjusted for the design effect. The values of design effect were taken from the DHS 2011 and UNHS 2009/2010 where possible. If there was no source for the design effect, it was assumed to be 2.0 except for exclusive breastfeeding. This indicator has a very small number of cases (2.0) in each enumeration area (EA). Such a low number of cases in an EA corresponds to a low design effect.

The sample sizes in Tables A-2a and A-2b compared to Tables A-3a and A-3b have slightly different meanings. Tables A-2a and A-2b are designed to have sample sizes that can be directly compared with those from survey reports. This will help in determining whether the DHS or UNHS have enough sample size in the ZOI to show change over time in indicators. These sample sizes have not been adjusted for nonresponse because the sample sizes in survey reports do not include nonresponse, because those data are missing.

The sample sizes in Tables A-3a and A-3b have been calculated to determine how large a sample to use in the surveys. The last two columns in these tables show the number of households required to achieve the sample sizes for each indicator. These two columns incorporate nonresponse. At least that number of households will need to be interviewed to have enough respondents to show change over time.

Generally, the sample size for a given indicator at baseline and midterm or baseline and endline is the same. An exception to this occurs for women's anemia in Table A-2b for the secondary analysis sample sizes. This exception is required for that indicator, because the sample sizes in the DHS 2011 are artificially small. The DHS 2011 collects anthropometry and anemia data on one third of the households. In the sample design of the midterm and endline surveys, anthropometry and anemia data will be collected for all households, which will increase the sample by three times over the baseline found in the DHS 2011.

Sample size calculations use targets for the amount of change to be measured based on the Uganda Feed the Future strategy or what would be considered a reasonable amount of change. Baseline to midterm targets are set to half of those for baseline to endline. For Tables A-2b and A-3b, the targets for child underweight and stunting, maternal and child anemia, and per capita expenditures are based on the Feed the Future strategy. The target for maternal underweight in these tables is set to be the same as the child underweight target of 25 percent reduction. The prevalence of poverty target in Table A-2b is also set to 25 percent reduction. The breastfeeding prevalence target is set to 27 percent increase in Table A-2b. The Women's Empowerment in Agriculture Index (WEAI) has the target set to a 6 percent increase in Table A-3b, which corresponds to about a 5 percentage point increase. The change for this indicator was set to a modest amount because there is no past trend to estimate the expected amount of change. The target for child wasting is set to 50 percent reduction in Tables A-2b and A-3b, because with a starting value of 5.0 this reduces the value by only 2.5 percentage points.

The sample for the Feed the Future zone of influence survey will include the same EAs that were in the Uganda DHS 2011. Because the DHS EAs are a subset of the UNHS EAs, having the same EAs for the Feed the Future zone of influence survey will make the survey more comparable to both the Uganda DHS 2011 and the UNHS 2009/10. If 22 households are selected in the 141 EAs in the zone of influence, the total sample size will be 3,102 households. This is smaller than the sample in the zone of influence for the Uganda DHS 2011. The sample is smaller than the DHS because it is not necessary to have as large a sample based on the sample size calculations and because it would take longer to complete the survey than is available to meet the USAID deadline for reporting on indicator values.

The proposed sample size will be enough to measure change from baseline to endline for underweight children and women, stunted and wasted children, the WEAI and the prevalence of households with moderate or severe hunger. It will not be enough to measure change from baseline to midterm.

## Survey Sample Design

The sample of households will follow a two-stage sampling design. In this design, EAs are selected by probability proportional to size (PPS) in the first stage. Households within each selected EA are selected randomly from a list of households in the second stage.

The EAs for the Feed the Future ZOI survey will be those DHS 2011 EAs that are in the ZOI. The EAs for the DHS 2011 are a randomly selected subset of the EAs in the UNHS 2009/10. Because the UNHS 2009/10 EAs were selected PPS, the DHS 2011 EAs are also PPS, which implies the Feed the Future zone of influence EAs are PPS.

During the fieldwork, in each EA, all households first will be listed. Then a list of eligible households will be constructed and households for the survey will be randomly selected from that list.

Data required for weighting of survey data will be collected throughout the sampling process. These data will include, but not be limited to: (1) EA population sizes used for selection of EAs, (2) population of strata, from which EAs are drawn, (3) population of EAs at time of listing, and (4) response rates at the household, women's, and men's level. Weights will be calculated for households, women, men, and children in the sample.

## A.4 Fieldwork

The survey fieldwork is the part of the survey process where data are collected in the field. UBOS will conduct the fieldwork with technical assistance from TANGO International.

Prior to fieldwork, the questionnaires will be pretested to discover issues with the instructions to interviewer or interviewee, wording of the questions, wording of response codes, order of questions, and skip patterns. Any problems found during the pretest will be corrected prior to the start of the survey.

Just prior to the fieldwork, there will be an 8-day training of interviewers to prepare them for conducting the interviews. The interviewers will receive instruction on how to initiate contact with a household, obtain informed consent, conduct the interview, and return to households that require call backs. Instructions will be given on the questionnaire content, including review of the questions and the response codes. Survey team leaders will be given additional training on how to supervise the interviewer teams, including conducting the household listing, selection of households from the listed households, making and tracking interview assignments, checking the quality of the interview process, and checking the quality of the data entered for each interview.

During the fieldwork, the survey team leaders will handle the day-to-day management of the field teams. Supervisors will oversee the fieldwork in different regions of the country. For the purpose of the survey, the country will be divided into four regions. These will not correspond to administrative regions. Each survey region will have one supervisor. These supervisors will visit field teams on an

ongoing basis to ensure the quality of interviews and recording of responses on questionnaires, and to troubleshoot any problems encountered during the fieldwork. These supervisors will report to the Survey Coordinator, who will manage the overall survey process.

Field teams for the Feed the Future ZOI survey will consist of three female interviewers, three male interviewers, an editor, and a survey team leader. There will be 12 teams, three for each of the four survey regions. The team will break into three subteams with one female and one male interviewer because the WEAI requires interviews of both the primary male and female members of the household. These subteams will interview respondents in the same household. The female interviewer will interview the primary female member of the household while the male interviewer interviews the primary male member of the household.

## **A.5 Data Management**

Data entry will be done on tablet computers in the field with a computer-assisted personal interviewing (CAPI) system. CAPI will speed the data entry and reduce errors during the interview and data entry process. Because data collected with CAPI will have fewer errors to start, there will be less time required for cleaning of data after the fieldwork is complete. The CAPI data entry system will be programmed with the Open Data Kit (ODK) software.

During the fieldwork, data quality will be maintained in several ways. As an interviewer conducts an interview, the CAPI system will maintain quality through automatic range and consistency checks. At the end of each day, the interviews will be loaded onto the team leader's tablet computer. An editor will check each questionnaire on this tablet computer closely for completeness, consistency, range checks, and skip patterns. The team leader will check a subset of questionnaires in the same way. The team leader will also run computer programs to check the quality of data on these questionnaires. If there are errors/omissions that can be corrected in the field, the interviewers will go back to the household to fill in missing data or correct potentially erroneous data. When the corrections have been completed, the team leader will upload the interviews to the Westat server. Once these data are uploaded, Westat and TANGO staff will perform additional review of data quality, both manually and with computer programs. Field teams will be notified of any problems found during this review.

## **A.6 Analysis and Reporting**

The analysis and reporting process for each survey will be completed one month after the completion of data entry and cleaning for that survey. The Feed the Future zone of influence survey requires reporting on the seven indicators not adequately covered by the secondary analysis. These indicators are to be reported at the level of the zone of influence. In addition to entering data for indicators collected into the Feed the Future Monitoring System (FTFMS), FTF FEEDBACK may also present findings in-country to mission staff, implementing partners, and other stakeholders if desired.

A survey report will present data for these indicators and discussion of the results. Table A-4 provides the shell table for reporting these indicators. Additional tables will report on each variable by urban/rural and required disaggregation as noted in “Feed the Future Indicator Handbook: Definition Sheets.” Comparisons will be made of the results from the secondary analysis and those from this survey for child stunting and wasting indicators.

**Table A-4. FTF zone of influence indicators**

Indicator	Value	Sample size (n)	Standard error	Design effect (DEFF)
Prevalence of underweight children				
Prevalence of stunted children				
Prevalence of wasted children				
Prevalence of underweight women				
Women’s Empowerment in Agriculture Index				
Households with moderate or severe hunger (household hunger scale)				
Women’s Dietary Diversity				

## A.7 Institutional Review Board Approval

FTF FEEDBACK has submitted the general plan for Feed the Future population-based surveys to the Westat institutional review board (IRB). This has approval on the condition that the local IRB requirements are met. Because there is no anemia testing planned for the survey (no blood samples taken), UBOS has stated that UBOS is not required to get IRB approval because UBOS is mandated by Ugandan law to collect data. Westat requires a formal notification of this fact from UBOS in order to satisfy the Westat IRB requirements. UBOS has provided this notification in the form of a letter from the Commissioner of UBOS.

## A.8 Survey Work Plan

The survey work plan is illustrated by the survey timeline, which is broken into separate sections for general planning, secondary analysis of DHS and UNHS data, and the Feed the Future ZOI survey. The general planning section is at the top. This is empty because these steps were completed previously.

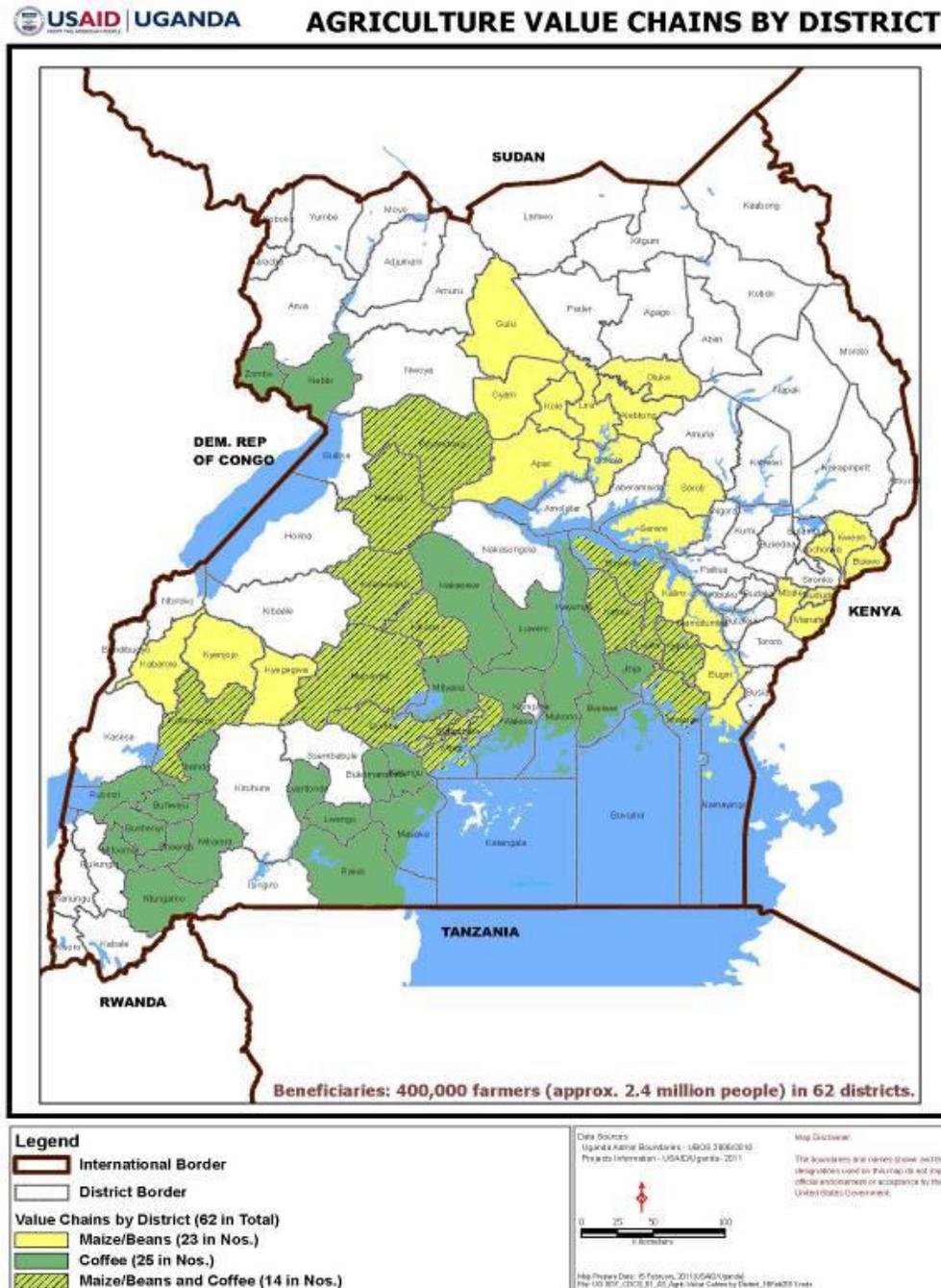
The secondary analysis section follows. A key point is that results from the secondary analysis of DHS 2011 data will become available by early to mid-November. The dotted boxes at the end of the timeline are for extra weeks that may be required to complete a specific task. In the case of the secondary analysis, these dotted boxes are in the timeline because there was some uncertainty on when the 2011 DHS dataset would become available. Receipt of this data was delayed, but is not expected to significantly delay analysis of those data. Analysis of the UNHS expenditure data has been delayed due to delays in the signing of the UBOS subcontract. It may not be possible to complete that analysis by the end of November, but even with a delayed start, the analysis and report writing should be completed before the end of January 2013.

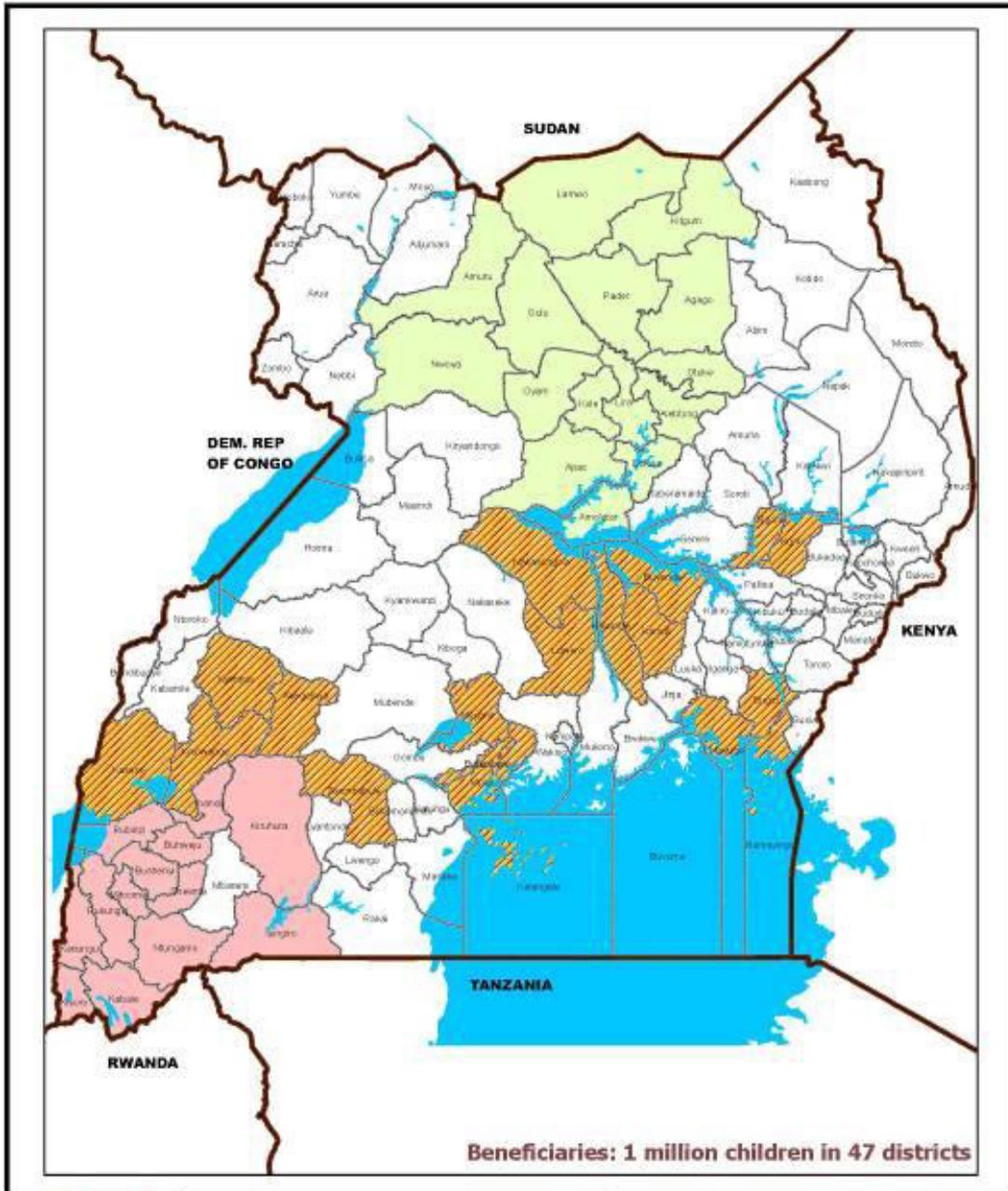
The last section is for the survey. The first set of tasks is related to designing the survey and subcontracting with the local contractor who will carry out the surveys (UBOS). When the subcontract is in place, UBOS can begin preparations for the survey. Some preparatory activities, such as preparing the data entry programs, have begun prior to the signing of the subcontract. Training for the Feed the Future zone of influence survey is scheduled to begin late in October 2012. Survey fieldwork for the Feed the Future zone of influence survey is to begin in early November and be completed by mid-December. Data entry and data cleaning will occur alongside the fieldwork. Analysis will begin during the fieldwork, both to prepare the computer programs and analyze some of the preliminary data. The survey report for the Feed the Future ZOI survey is expected to be finalized by the last week of January 2013.

UBOS will conduct the fieldwork for the surveys. Westat will conduct the secondary analysis of DHS data and UBOS will conduct secondary analysis of the UNHS. Technical assistance for the baseline surveys will be provided by TANGO International and Westat.

## A.9 Maps

The two maps below, taken from the Feed the Future Uganda FY 2011-2015 Multi-Year Strategy, indicate the geographic zones of intervention for the agricultural and nutrition strategic objectives.





Legend		Nutrition Focus Areas	
	International Border		NUMAT (15 in Nos.)
	District Border		STRIDES (19 in Nos.)
	Water Bodies		STAR-SW (13 in Nos.)
			None (65 in Nos.)

Data Sources:  
 Uganda Admin Boundaries - UGDS 2008/09  
 Project Information - USAID/Uganda - 2011

Map Disclaimer:  
 The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United States Government.

Map Prepared Date: February 2011 (USAID/Uganda)  
 File: UG-DRM\_A3\_PP\_Nutrition Geographic Focus\_Feb2011.mxd



## A.II Survey Questionnaire

### MODULE A. Household identification cover sheet

Household Identification	Code	Interview details	Code
A01. Household Identification	<input type="text"/>	A17. Name/code of enumerator: _____	<input type="text"/>
A02. Cluster number	<input type="text"/>	A18. Date of first visit (dd/mm/yyyy):	<input type="text"/>
A03. Village	<input type="text"/>	A19. Date of second visit (dd/mm/yyyy):	<input type="text"/>
A04. County	<input type="text"/>	A20. Reason for second visit: _____	
A05. District	<input type="text"/>	A21. Final outcome of interview (enter code)	<input type="text"/>
A06. Region	<input type="text"/>	A22. Name/code of supervisor: _____	<input type="text"/>
A07. Household cell phone number: <input type="text"/>		xx. Signature of supervisor: _____	
A08. GPS Coordinates of household <input type="text"/>		A23. Name/code of data entry operator: _____	<input type="text"/>
A09. Type of household:	<input type="text"/>	A24. Date of data entry(dd/mm/yyyy)::	<input type="text"/>
A10. Primary Respondent Name and ID (from Module C) _____		A03-A06 Create codes if needed	<b>A22</b> <b>OUTCOME OF INTERVIEW</b> Complete..... 1 Incomplete.....2 Absent..... 3 Refused.....4 Could not locate..... 5
A11. Secondary Respondent Name and ID (from Module C) _____			
<b>A09 HOUSEHOLD TYPE</b> <b>Male and female adult</b> - household contains at least one male and one female adult ≥ 18 years old..... 1 <b>Female adult only</b> - household contains at least one female adult and no male adults ≥ 18 years old..... 2 <b>Male adult only</b> - household contains at least one male adult and no female adults ≥ 18 years old ..... 3 <b>Child only</b> - household contains no adults ≥ 18 years old ..... 4			

The **primary and secondary respondents** are those who self-identify as the primary male and female (or female only) members responsible for the decision-making, both social and economic, within the household. In Male and Female Adult Households, they are usually the husband and wife; however they can also be other household members as long as they are aged 18 and over. In Female Adult Only households, there will only be a primary respondent – the principal female decision-maker aged 18 or older. Primary and secondary respondents do not need to be noted for Male Adult Only and Child Only Households, and Module G WEAI should not be applied in Male Adult Only and Child Only Households.

## MODULE B. Informed consent

**Informed Consent:** It is necessary to introduce the household to the survey and obtain the consent of all prospective respondents to participate. If a prospective respondent (e.g., a woman of reproductive age) is not present at the beginning of the interview, be sure to return to this page and obtain consent before interviewing him or her. Ask to speak with a responsible adult in the household.

Thank you for the opportunity to speak with you. We are a research team from Central Statistics Office of Government of Uganda. We are conducting a survey to learn about agriculture, food security, food consumption, nutrition and wellbeing of households in this area. Your household has been selected to participate in an interview that includes questions on topics such as your family background, dwelling characteristics, household expenditures and assets, food consumption and nutrition of women and children. The survey includes questions about the household generally, and questions about individuals within your household, if applicable. These questions in total will take approximately 2-3 hours to complete and your participation is entirely voluntary. If you agree to participate, you can choose to stop at any time or to skip any questions you do not want to answer. Your answers will be completely confidential; we will not share information that identifies you with anyone. After entering the questionnaire into a data base, we will destroy all information such as your name which will link these responses to you.

Do you have any questions about the survey or what I have said? If in the future you have any questions regarding survey and the interview, or concerns or complaints we welcome you to contact Central Statistics Office by contacting 1 253 468. We will leave one copy of this form for you so that you will have record of this contact information and about the study.

Ask the following consent questions of all prospective respondents. As applicable, have the person check and sign the consent box below.

**NOTE:** DIFFERENT COUNTRIES WILL HAVE DIFFERENT AGES BY WHICH INDIVIDUALS CAN GIVE INFORMED CONSENT. IN SOME COUNTRIES, AN ADOLESCENT UNDER 18 YEARS OLD IS NOT ABLE TO GIVE INFORMED CONSENT ALONE; CONSENT OF HER CAREGIVER MAY ALSO BE REQUIRED. THE AGE AT WHICH CAREGIVER CONSENT IS NO LONGER NECESSARY SHOULD BE IDENTIFIED AS PART OF THE ETHICAL REVIEW/INSTITUTIONAL REVIEW BOARD (IRB) PROCESS.”

## MODULE B. Informed consent (continued)

You may be assigned a household that is headed by a minor (< 18 years of age in Uganda). The steps for obtaining participation of a minor household head in the interview is as follows:

- Obtain permission from the adult, guardian, or care taker to speak to the child;
- Explain the research to the child and obtain his/her informed assent; and
- Explain the research to the parent, guardian, or care taker and obtain his/her informed consent.

Thus you first have to ask permission of the child(ren)'s parent, guardian, or care taker before speaking with the child household members. If you encounter a household that appears to be comprised of children, ask if anyone who lives in the household is  $\geq 18$  years of age. If the answer is yes, follow the standard procedures (above) for interviewing that adult head of household. If the answer is no, ask if there is a parent, guardian, or care taker who could be contacted. Do not ask the children any other questions or discuss the survey at this time.

No Parent, Guardian, or Care Taker. If there is no parent, guardian, or care taker, end the interview. Select “Survey Terminated by Participant” on the second screen. This will take you to the “Post Interview Details” section. In response to question A21 *Final Outcome of Interview*, select the option for “ineligible – child-headed household for which consent could not be obtained.”

Parent, Guardian, or Care Taker Available. If the child identifies a parent, guardian, or care taker, attempt to contact that person. This may require calling the person; traveling to the parent, guardian, or care taker's home (if in or near the cluster); or returning to the household when the parent, guardian, or care taker is next expected to visit the household.

If you are unable to contact or meet the parent, guardian, or care taker, follow the procedures described above for concluding and classifying the interview as ineligible.

If you are able to contact or meet the parent, guardian, or care taker, read the informed consent statement, and ask if the guardian approves for the minor to participate in the interview.

If the parent/guardian/care taker agrees to let you speak with the minor, then greet the minor head of household and read the informed consent statement and ask the minor if they agree to participate.

## MODULE B. Informed consent (continued)

If the minor assents to participate in the survey, have the minor sign or mark his/her assent on the printed informed consent sheet. If the minor does not assent to participate in the survey, the survey is terminated (as described above when there is no parent/guardian/care taker).

1. Who is the main male adult (18 years or older) decision-maker in the household? <NAME>, do you agree to participate in the survey?
2. Who is the main female adult decision-maker in the household? <NAME>, do you agree to participate in the survey? Are you under 50 years old? If so, do you agree to be weighed and measured? Do you have children under 5 years of age? If so, do you also agree to have your children weighed and measured?
3. Are there other females 15 to 49 years old in the household? <NAME>, do you agree to participate in of the survey and be weighed and measured? Do you have children under 5 years of age? If so, do you also agree to have your children weighed and measured?
4. Are there any mothers or caregivers of children under 5 in the household with whom I have not yet spoken? <NAME>, do you agree to participate in the survey and have the children weighed and measured?





## MODULE C. Household roster and demographics

**Enumerator: Ask these questions about all household members. Ask the primary or secondary respondent, whoever is most knowledgeable about the age, completed education, and other characteristics of household members.**

First, we would like to ask you about each member of your household. Let me tell you a little bit about what we mean by household. For our purposes today, members of a household are adults or children that live together and eat from the 'same pot', including servants, lodgers, and agricultural laborers. Household members include anyone who has lived in your house for at least 6 of the last 12 months, but does not include anyone who lives here but eats separately. Newborn children less than 6 months old and anyone who has joined the household less than 6 months ago but has the intention of staying for a longer period of time are also considered members of the household. Please do *not* include anyone who died recently, even if he or she lived here more than 6 months in last 12 months, nor anyone who left the household less than 6 months ago with the intention of being away from the household for a longer period of time or permanently (this includes either leaving through marriage, or servants, lodgers, and agricultural laborers have left.)

Please list the names of everyone considered to be a member of this household, starting with the main male (or female, if no adult male) decision maker: **LIST THE NAMES OF ALL HOUSEHOLD MEMBERS. THEN ASK:** Does anyone else live here even if they are not at home now? These may include children in school or household members at work. **IF 'YES,' COMPLETE THE LISTING. THEN, COLLECT THE REMAINING COLUMNS OF INFORMATION FOR EACH MEMBER, ONE PERSON AT A TIME.**

Household identification (in data file, each module must be matched with the HH ID)

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I D  C O D E	Name of household member? [start with primary respondent, continue with the secondary respondent, if applicable, and other members]	What is [NAME's] sex? 1 = M 2 = F	What is [NAME's] relationship to the primary respondent?	What is [NAME's] age? (in years)* If <3, skip C05-08	Can [NAME] read and write?	Is [NAME] currently attending school?	Has [NAME] ever attended school?	What is the highest grade of education completed by [NAME]?
	C01	C02	C03	C04	C05	C06	C07	C08
01								
02								
03								
04								
05								
06								
07								
08								
09								
10								
11								
12								
13								
14								
	<b>C03: Relationship to primary respondent</b>			<b>C05: Literacy</b>		<b>C08: Education level</b>		
	Primary respondent..... 1	Nephew/niece of spouse..... 9		Cannot read and write ..... 1	Less than P1 (or no school) ..... 1			
	Spouse/partner ..... 2	Cousin of primary respondent ..... 10		Can sign (write) only ..... 2	Primary level 1-3..... 2			
	Son/daughter..... 3	Brother/sister-in-law ..... 11		Can read only ..... 3	Primary level 4-6..... 3			
	Son/daughter-in-law..... 4	Mother/father-in-law ..... 12		Can read and write ..... 4	Secondary 1-4..... 4			
	Grandson/granddaughter..... 5	Cousin of primary respondent's spouse ..... 13			Tertiary after O-level..... 5			
	Mother/Father..... 6	Other relative..... 14			Secondary 5-6..... 6			
	Brother/sister ..... 7	Servant/Maid..... 15			University or above ..... 7			
	Nephew/niece ..... 8	Laborer ..... 16			Technical or vocational..... 8			
		Other relationship..... 17			Adult literacy only (no formal education) ..... 9			
					Koranic/religious only (no formal education) ..... 10			
					Don't know (DK)/Non response (NR)/Not applicable (NA)..... 98			

\* Note, it is not necessary to collect age in months for children under 5 years of age. All children under 6 years of age will be screened and their age in months will be determined in Module I to identify those to whom the child feeding and anthropometry modules apply. All children identified as under 6 years of age in the household roster are screened to ensure those under 60 months are accurately captured for anthropometry and anemia, if applicable.

## MODULE D. Dwelling characteristics

Household identification (in data file, each module must be matched with the HH ID)

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**Enumerator:** Ask the person primarily responsible for food preparation

	Response	Response codes		
<b>D01.ENUMERATOR: OBSERVE</b> <b>(DO NOT ASK)</b> Roof top material (outer covering):		<b>D01:Type of roof</b> Tile ..... 1 Thatched/vegetable matter/ Wood ..... 2 Sticks.....5 Corrugated metal ..... 3 Mud/cow dung .....6 Plastic sheeting..... 4 Other .....7		
	<b>D02.ENUMERATOR: OBSERVE</b> <b>(DO NOT ASK)</b> Floor material:		<b>D02:Type of floor</b> Earth/mud ..... 1 Wood.....4 Concrete/flag stone/cement..... 2 Other .....5 Tile/bricks..... 3	
		<b>D03.ENUMERATOR: OBSERVE</b> <b>(DO NOT ASK)</b> Exterior Walls:		<b>D03: Type of walls</b> Earth/mud ..... 1 Wood.....4 Concrete/flag stone/cement..... 2 Thatch/bamboo/reeds Tile/bricks..... 3 Other .....5
			<b>D04.</b> How many rooms are there in this dwelling? (Do not count bathrooms, hallways, garage, toilet, cellar, kitchen)	
	<b>D05.</b> What is the main type of toilets your household uses?		<b>Code 05: Type of toilet</b> Flush, shared ..... 1 Community toilet .....5 Flush, private..... 2 Pan /bucket .....6 Ventilated improved pit latrine (VIP)..... 3 No toilet.....7 Pit latrine ..... 4 Other .....8	
<b>D06.</b> What is the main source of drinking water for your household?		<b>D06:Drinking water source</b> Piped into dwelling ..... 1 Rain water collection .....7 Piped into plot/yard..... 2 Unprotected dug well/springs ...8 Public tap (someone else’s private tap) ..... 3 River/ponds/streams .....9 Tube well/borehole..... 4 Tankers-truck/vendor .....10 Protected dug well..... 5 Bottled water .....11 Protected spring..... 6 Other (specify) .....12		
<b>D07.</b> Does this household have electricity?		Yes = 1 No = 2		
<b>D08.</b> What is the main source of cooking fuel for your household?		<b>D07: Cooking fuel</b> Electricity ..... 1 Firewood.....5 Piped or liquid propane gas (biogas) ..... 2 Animal dung.....6 Kerosene..... 3 Agricultural crop residue.....7 Charcoal..... 4 Other .....8		

## MODULE F. Household hunger scale

Household identification (*in data file, each module must be matched with the HH ID*)

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Enumerator: Ask of the person responsible for Household Food Preparation.

No.	Question	Response	Response code
F01	In the past 30 days was there ever no food to eat of any kind in your house because of lack of resources to get food?		Yes = 1 2 = No >>F03
F02	How often did this happen in the past 30 days?		1 = Rarely (1-2 times) 2 = Sometimes (3-10 times) 3 = Often (more than 10 times)
F03	In the past 30 days did you or any household member go to sleep at night hungry because there was not enough food?		Yes = 1 2 = No >>F05
F04	How often did this happen in the past 30 days?		1 = Rarely (1-2 times) 2 = Sometimes (3-10 times) 3 = Often (more than 10 times)
F05	In the past 30 days did you or any household member go a whole day and night without eating anything at all because there was not enough food?		Yes = 1 2 = No >>end of module
F06	How often did this happen in the past 30 days?		1 = Rarely (1-2 times) 2 = Sometimes (3-10 times) 3 = Often (more than 10 times)

## MODULE G. Women's Empowerment in Agriculture Index

**NOTE:** The information in Module G1 can be captured in different ways; however there must be a way to a) identify the proper individual within the household to be asked the survey, b) link this individual from the module to the household roster, c) code the outcome of the interview, especially if the individual is not available, to distinguish this from missing data, d) record who else in the household was present during the interview. This instrument must be adapted for country context including translations into local languages when appropriate.

*Enumerator: This questionnaire should be administered separately to the primary and secondary respondents identified in the household roster (Section C) of the household level questionnaire. You should complete this coversheet for each individual identified in the "selection section" even if the individual is not available to be interviewed for reporting purposes.*

*Please double check to ensure:*

- *You have completed the roster section of the household questionnaire to identify the correct primary and/or secondary respondent(s);*
- *You have noted the household ID and individual ID correctly for the person you are about to interview;*
- *You have gained informed consent for the individual in the household questionnaire;*
- *You have sought to interview the individual in private or where other members of the household cannot overhear or contribute answers; and*
- *Do not attempt to make responses between the primary and secondary respondent the same—it is ok for them to be different.*



## MODULE G2.      Role in household decision-making around production and income generation

Household identification (in data file, each submodule (G2-G6) must be linked with HH and respondent ID)        
 Respondent ID Code

	Activity	Did you (singular) participate in [ACTIVITY] in the past 12 months (that is during the last [one/two] cropping seasons)?  Yes..... 1 No ..... 2 >> next activity	How much input did you have in making decisions about [ACTIVITY]?	How much input did you have in decisions on the use of income generated from [ACTIVITY]
Activity Code	Activity description	G2.01	G2.02	G2.03
A	Food crop farming: crops that are grown primarily for household food consumption			
B	Cash crop farming: crops that are grown primary for sale in the market			
C	Livestock raising			
D	Non-farm economic activities: Small business, self-employment, buy-and-sell			
E	Wage and salary employment: in-kind or monetary work both agriculture and other wage work			
F	Fishing or fishpond culture			
			<b><u>G2.02/G2.03: Input into decision-making</u></b> No input .....1 Input into very few decisions .....2 Input into some decisions .....3 Input into most decisions.....4 Input into all decisions.....5 No decision made .....6	

## MODULE G3. Access to productive capital

	Does anyone in your household currently have any [ITEM]? Yes ..... 1 No..... 2 >> next item	How many of [ITEM] does your household currently have?	Who would you say owns most of the [ITEM]?	Who would you say can decide whether to sell [ITEM] most of the time?	Who would you say can decide whether to give away [ITEM] most of the time?	Who would you say can decide to mortgage or rent out [ITEM] most of the time?	Who contributes most to decisions regarding a new purchase of [ITEM]?																														
Productive Capital	G3.01a	G3.01b	G3.02	G3.03	G3.04	G3.05	G3.06																														
<b>A</b>	Agricultural land (pieces/plots)																																				
<b>B</b>	Large livestock (oxen, cattle)																																				
<b>C</b>	Small livestock (goats, pigs, sheep)																																				
<b>D</b>	Chickens, Ducks, Turkeys, Pigeons																																				
<b>E</b>	Fish pond or fishing equipment																																				
<b>F</b>	Farm equipment (non-mechanized)																																				
<b>G</b>	Farm equipment (mechanized)																																				
<b>H</b>	Nonfarm business equipment																																				
<b>I</b>	House (and other structures)																																				
<b>J</b>	Large consumer durables (fridge, TV, sofa)																																				
<b>K</b>	Small consumer durables (radio, cookware)																																				
<b>L</b>	Cell phone																																				
<b>M</b>	Other land not used for agricultural purposes (pieces, residential or commercial land)																																				
<b>N</b>	Means of transportation (bicycle, motorcycle, car)																																				
				<b>G3.02-G3.06: Decision-making and control over productive capital</b>																																	
				<table style="width: 100%; border: none;"> <tr> <td style="width: 33%;"></td> <td style="width: 33%;">Self and other household member(s) .....</td> <td style="width: 33%;">Self and other outside people .....</td> </tr> <tr> <td>Self .....</td> <td>1</td> <td>5</td> </tr> <tr> <td>Partner/Spouse.....</td> <td>2</td> <td>Partner/Spouse and other outside people.....</td> </tr> <tr> <td>Self and partner/spouse jointly .....</td> <td>3</td> <td>6</td> </tr> <tr> <td>Other household member.....</td> <td>4</td> <td>Someone (or group of people) outside the household.....</td> </tr> <tr> <td></td> <td></td> <td>7</td> </tr> <tr> <td></td> <td></td> <td>8</td> </tr> <tr> <td></td> <td></td> <td>9</td> </tr> <tr> <td></td> <td></td> <td>10</td> </tr> <tr> <td></td> <td></td> <td>Cannot be sold</td> </tr> </table>					Self and other household member(s) .....	Self and other outside people .....	Self .....	1	5	Partner/Spouse.....	2	Partner/Spouse and other outside people.....	Self and partner/spouse jointly .....	3	6	Other household member.....	4	Someone (or group of people) outside the household.....			7			8			9			10			Cannot be sold
	Self and other household member(s) .....	Self and other outside people .....																																			
Self .....	1	5																																			
Partner/Spouse.....	2	Partner/Spouse and other outside people.....																																			
Self and partner/spouse jointly .....	3	6																																			
Other household member.....	4	Someone (or group of people) outside the household.....																																			
		7																																			
		8																																			
		9																																			
		10																																			
		Cannot be sold																																			

## MODULE G3. Access to credit

Lending sources		Has anyone in your household taken any loans or borrowed cash/in-kind from [SOURCE] in the past 12 months?	Who made the decision to borrow from [SOURCE]?	Who makes the decision about what to do with the money/item borrow from [SOURCE]?
Lending source names		G3.07	G3.08	G3.09
A	Non-governmental organization (NGO)/Religious organization			
B	Informal lender			
C	Formal lender (bank/financial institution)			
D	Friends or relatives			
E	Group based micro-finance or lending including VSLAs /SACCOs/merry-go-rounds/Chilumba			
		<b>G3.07 Taken loans</b> Yes, cash .....1 Yes, in-kind .....2 Yes, cash and in-kind .....3 No .....4 >> G3.11A Don't know .....5 >> G3.11A	<b>G3.08/G3.09: Decision-making and control over credit</b> Self ..... 1 Partner/Spouse ..... 2 Self and partner/spouse jointly..... 3 Other household member ..... 4 Self and other household member(s)..... 5 Partner/Spouse and other household member(s)..... 6 Someone (or group of people) outside the household ..... 7 Self and other outside people..... 8 Partner/Spouse and other outside people..... 9 Self, partner/spouse and other outside people..... 10	

## MODULE G4. Individual leadership and influence in the community

QNo.	Question	Response	Response codes
G4.01	Do you feel comfortable speaking up in public to help decide on infrastructure (like small wells, roads, water supplies) to be built in your community?		No, not at all comfortable ..... 1 Yes, but with a great deal of difficulty..... 2
G4.02	Do you feel comfortable speaking up in public to ensure proper payment of wages for public works or other similar programs?		Yes, but with a little difficulty ..... 3 Yes, fairly comfortable ..... 4
G4.03	Do you feel comfortable speaking up in public to protest the misbehavior of authorities or elected officials?		Yes, very comfortable ..... 5

## MODULE G4. Group membership and influence in the group

Group membership		Is there a [GROUP] in your community? Yes.....1 No .....2 >> next group	Are you an active member of this [GROUP]? Yes ..... 1 No .....2 >> <b>G4.07</b>
	<b>Group categories</b>	<b>G4.04</b>	<b>G4.05</b>
<b>A</b>	Agricultural /livestock/fisheries producer's group (including marketing groups)		
<b>B</b>	Water users' group		
<b>C</b>	Forest users' group		
<b>D</b>	Credit or microfinance group (including SACCOs/merry-go-rounds/VSLAs)		
<b>E</b>	Mutual help or insurance group (including burial societies)		
<b>F</b>	Trade and business association		
<b>G</b>	Civic groups (improving community) or charitable group (helping others)		
<b>H</b>	Local government		
<b>I</b>	Religious group		
<b>J</b>	Other women's group (only if it does not fit into one of the other categories)		
<b>K</b>	Other (specify)		

## MODULE G5. Decision-making

	<p>ENUMERATOR: Ask G5.01 for all categories of activities before asking G5.02. Do <u>not</u> ask G5.02 if G5.01 response is 1 and respondent is male OR G5.01 response is 2 and respondent is female.</p> <p>If household does not engage in that particular activity, enter 98 and proceed to next activity.</p>	<p>When decisions are made regarding the following aspects of household life, who is it that normally takes the decision?</p>	<p>To what extent do you feel you can make your own personal decisions regarding these aspects of household life if you want(ed) to?</p> <p>Ask only if G5.01 is 1 and respondent is female, G5.01 is 2 and respondent is male, or G5.01 is 3-7.</p>
		<b>G5.01</b>	<b>G5.02</b>
<b>A</b>	Getting inputs for agricultural production		
<b>B</b>	The types of crops to grow for agricultural production		
<b>C</b>	Taking crops to the market (or not)		
<b>D</b>	Livestock raising		
<b>E</b>	Your own (singular) wage or salary employment		
<b>F</b>	Major household expenditures (such as a large appliance for the house like refrigerator)		
<b>G</b>	Minor household expenditures (such as food for daily consumption or other household needs)		
		<p><b>G5.01: Who makes decision</b></p> <p>Main male or husband..... 1</p> <p>Main female or wife..... 2</p> <p>Husband and wife jointly..... 3</p> <p>Someone else in the household..... 4</p> <p>Jointly with someone else inside the household..... 5</p> <p>Jointly with someone else outside the household..... 6</p> <p>Someone outside the household/other..... 7</p> <p>Household does not engage in activity/Decision not made..... 98</p>	<p><b>G5.02: Extent of participation in decision-making</b></p> <p>Not at all ..... 1</p> <p>Small extent ..... 2</p> <p>Medium extent ..... 3</p> <p>To a high extent ..... 4</p>

## MODULE G5. Motivation for decision-making

<p><i>ENUMERATOR:</i> This set of questions is very important. I am going to give you some reasons why you act as you do in the aspects of household life I just mentioned. You might have several reasons for doing what you do and there is no right or wrong answer. Please tell me how true it would be to say:  <i>[If household does not engage in that particular activity, enter 98 and proceed to next activity.]</i></p>		<p>My actions in [ASPECT] are partly because I will get in trouble with someone if I act differently.</p> <p>[READ OPTIONS: <b>Always True, Somewhat True, Not Very True, or Never True</b>]</p>	<p>Regarding [ASPECT] I do what I do so others don't think poorly of me.</p> <p>[READ OPTIONS: <b>Always True, Somewhat True, Not Very True, or Never True</b>]</p>	<p>Regarding [ASPECT] I do what I do because I personally think it is the right thing to do.</p> <p>[READ OPTIONS: <b>Always True, Somewhat True, Not Very True, or Never True</b>]</p>
		<b>G5.03</b>	<b>G5.04</b>	<b>G5.05</b>
<b>A</b>	Getting inputs for agricultural production			
<b>B</b>	The types of crops to grow for agricultural production			
<b>C</b>	Taking crops to the market (or not)			
<b>D</b>	Livestock raising			
		<p><b>G5.03/G5.04/G5.05: Motivation for activity</b></p> <p>Never true..... 1</p> <p>Not very true..... 2</p> <p>Somewhat true..... 3</p> <p>Always true..... 4</p> <p>Household does not engage in activity/Decision not made ..... 98</p>		

## MODULE G6. Time allocation

Enumerator: **G6.01:** Please record a log of the activities for the individual in the last complete 24 hours (starting yesterday morning at 4 am, finishing 3:59 am of the current day). The time intervals are marked in 15 min intervals and one to two activities can be marked for each time period by drawing a line through that activity. If two activities are marked, they should be distinguished with a *P* for the primary activity and *S* for the secondary activity written next to the lines. Please administer using the protocol in the enumeration manual.

	Night				Morning				Day															
Activity	4		5		6		7		8		9		10		11		12		13		14		15	
A																								
B																								
C																								
D																								
E																								
F																								
G																								
J																								
K																								
L																								
M																								
N																								
P																								
Q																								
T																								
U																								
W																								
X																								



**MODULE G6. Satisfaction with time allocation**

QNo.	Question	Response	Response options/Instructions
G6.02	How satisfied are you with your available time for leisure activities like visiting neighbors, watching TV, listening to the radio, seeing movies or doing sports?		READ: Please give your opinion on a scale of 1 to 10. 1 means you are not satisfied and 10 means you are very satisfied. If you are neither satisfied or dissatisfied this would be in the middle or 5 on the scale.

## MODULE H. Women’s anthropometry and dietary diversity

Household identification (in data file, each respondent must be matched with the HH ID)

*Enumerator Instructions: Ask these questions of each woman of reproductive age (15-49 years) in the household. Check to see if EACH women has given consent to be interviewed in Module B. If a woman has not yet given consent, return to Module B and gain her consent before proceeding. You should carry duplicate copies of this module in case there are more than 5 women of reproductive age in the household.*

No.	Question	Response codes	Woman 1	Woman 2	Woman 3	Woman 4	Woman 5
H01	WOMAN’S ID CODE FROM THE HOUSEHOLD ROSTER		<input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/>	<input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/>	<input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/>	<input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/>	<input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/>
H02	In what month and year were you born?	IF MONTH IS NOT KNOWN, ENTER ‘98’  IF YEAR IS NOT KNOWN, ENTER ‘9998’	<input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/> Month <input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/> Year	<input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/> Month <input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/> Year	<input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/> Month <input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/> Year	<input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/> Month <input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/> Year	<input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/> Month <input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/> Year
H03	Please tell me how old you are. What was your age at your last birthday? RECORD AGE IN COMPLETED YEARS	IF RESPONDENT CANNOT REMEMBER HOW OLD SHE IS, ENTER ‘98’ AND ASK QUESTION H04.  IF RESPONDENT KNOWS HER AGE >> H05	<input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/> Years	<input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/> Years	<input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/> Years	<input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/> Years	<input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/> Years
H04	Are you between the ages of 15 and 49 years old?	1 = Yes 2 = No >> end module 9 = Don’t know >> end module					

## MODULE H. Women's anthropometry and dietary diversity (continued)

No.	Question	Response codes	Woman 1	Woman 2	Woman 3	Woman 4	Woman 5
H05	CHECK H02, H03 AND H04 (IF APPLICABLE): IS THE RESPONDENT BETWEEN THE AGES OF 15 AND 49 YEARS? IF THE INFORMATION IN H02, H03, AND H04 CONFLICTS, DETERMINE WHICH IS MOST ACCURATE.	1 = Yes 2 = No >> end module					
<b>WOMEN'S NUTRITIONAL STATUS</b>							
H06	Are you currently pregnant?	1 = Yes >> skip to H09 2 = No 9=Don't know					
H07	WEIGHT IN KILOGRAMS: WEIGH THE WOMAN		<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> Kg	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> Kg	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> Kg	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> Kg	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> Kg
H08	HEIGHT IN CENTIMETERS: MEASURE THE WOMAN		<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> Cm	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> Cm	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> Cm	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> Cm	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> Cm

## MODULE H. Women’s anthropometry and dietary diversity (continued)

<b>WOMEN’S DIETARY DIVERSITY</b>						
<p>Please describe everything that you ate yesterday during the day or night, whether at home or outside the home.</p> <p><b>(A)</b> Think about when you first woke up yesterday. Did you eat anything at that time?                      IF YES: Please tell me everything you ate at that time. PROBE: Anything else? UNTIL RESPONDENT SAYS NOTHING ELSE, THEN CONTINUE TO PART B.                      IF NO, CONTINUE TO PART B.</p> <p><b>(B)</b> What did you do after that? Did you eat anything at that time?                      IF YES: Please tell me everything you ate at that time. PROBE: Anything else? UNTIL RESPONDENT SAYS NOTHING ELSE.</p> <p>REPEAT QUESTION B ABOVE UNTIL RESPONDENT SAYS SHE WENT TO SLEEP UNTIL THE NEXT DAY.</p> <p>IF RESPONDENT MENTIONS MIXED DISHES LIKE A PORRIDGE, SAUCE, OR STEW, PROBE:  <b>(C)</b> What ingredients were in that [mixed dish]? PROBE: Anything else? UNTIL RESPONDENT SAYS NOTHING ELSE.</p> <p>AS THE RESPONDENT RECALLS FOODS, UNDERLINE THE CORRESPONDING FOOD AND ENTER ‘1’ IN THE COLUMN NEXT TO THE FOOD GROUP. IF THE FOOD IS NOT LISTED IN ANY OF THE FOOD GROUPS BELOW, WRITE THE FOOD IN THE BOX LABELED ‘OTHER FOODS.’ IF FOODS ARE USED IN SMALL AMOUNTS FOR SEASONING OR AS A CONDIMENT, INCLUDE THEM UNDER THE CONDIMENTS FOOD GROUP.</p> <p>ONCE THE RESPONDENT FINISHES RECALLING FOODS EATEN, READ EACH FOOD GROUP WHERE ‘1’ WAS NOT ENTERED, ASK THE FOLLOWING QUESTION AND ENTER ‘1’ IF RESPONDENT SAYS YES, ‘0’ IF NO, AND ‘9’ IF DON’T KNOW.</p> <p>Yesterday during the day or night, did you drink/eat any [food group items]?</p>						
OTHER FOODS: PLEASE WRITE DOWN OTHER FOODS TO THE RIGHT OF THIS BOX THAT RESPONDENT MENTIONED BUT ARE NOT IN THE LIST BELOW. THIS WILL ALLOW THE SURVEY SUPERVISOR OR OTHER KNOWLEDGEABLE INDIVIDUAL TO CLASSIFY THE FOOD LATER.		WRITE FOODS EATEN HERE:				

## MODULE H. Women's anthropometry and dietary diversity (continued)

No.	Question	Response codes	Woman 1	Woman 2	Woman 3	Woman 4	Woman 5
H14	Food made from grains, such as bread, rice, noodles, porridge, Nsima, Tobwa, Samp	1 = Yes 2 = No 9 = Don't Know					
H15	Pumpkin, carrots, squash, or sweet potatoes (batanje/maungo) that are yellow or orange inside	1 = Yes 2 = No 9 = Don't Know					
H16	White potatoes, white yams, manioc, cassava (Chinangwa, Nyumbula, Vikhau), or any other foods made from roots	1 = Yes 2 = No 9 = Don't Know					
H17	Any dark green leafy vegetables such as Munkwani, Gwada, Matepo a nyemba	1 = Yes 2 = No 9 = Don't Know					
H18	Ripe mangoes (mango, paw paw)	1 = Yes 2 = No 9 = Don't Know					
H19	Any other fruits or vegetables (banana, ntochi, guava, amapela)	1 = Yes 2 = No 9 = Don't Know					
H20	Liver, kidney, heart, or other organ meats (Vamkati)	1 = Yes 2 = No 9 = Don't Know					
H21	Any meat, such as beef, pork, lamb, goat, chicken, or duck (Nyama, mbeba)	1 = Yes 2 = No 9 = Don't Know					
H22	Eggs (Mandanda)	1 = Yes 2 = No 9 = Don't Know					

## MODULE H. Women's anthropometry and dietary diversity (continued)

No.	Question	Response codes	Woman 1	Woman 2	Woman 3	Woman 4	Woman 5
H23	Fresh or dried fish, shellfish, or seafood (Nsomba, Kapenta)	1 = Yes 2 = No 9 = Don't Know					
H24	Any foods made from beans, peas, lentils, nuts, or seeds (Chipele, chipondwa)	1 = Yes 2 = No 9 = Don't Know					
H25	Cheese, yogurt, or other milk products (sour milk)	1 = Yes 2 = No 9 = Don't Know					
H26	Any oil, fats, or butter, or foods made with any of these (Saladi)	1 = Yes 2 = No 9 = Don't Know					
H27	Any sugary foods such as chocolates, sweets, candies, pastries, cakes, or biscuits (sugar, keke, switi, bisikiti, uchi)	1 = Yes 2 = No 9 = Don't Know					
H28	Condiments for flavor, such as chilies, spices, herbs, or fish powder (Mpili-mpili, sabora, curry)	1 = Yes 2 = No 9 = Don't Know					
H29	Grubs, snails, or insects (Vinkubala, Inswa, Ntete, Fulufute)	1 = Yes 2 = No 9 = Don't Know					
H30	Foods made with red palm oil, red palm nut, or red palm nut pulp sauce (Chinkondya)	1 = Yes 2 = No 9 = Don't Know					

## MODULE I. Child anthropometry and anemia and infant and young child feeding

Household identification (in data file, each respondent must be matched with the HH ID)

*Enumerator Instructions: Ask these questions of the primary caregiver of each child aged 0–59 months in the household. Check to see if EACH caregiver has given consent to be interviewed in Module B. If a caregiver has not yet given consent, return to Module B and gain caregiver consent before proceeding. You should carry duplicate copies of this module in case there are more than 5 children 0-59 months old in the household.*

No.	Question	Response codes	Child 1	Child 2	Child 3	Child 4	Child 5
I01	CAREGIVER'S ID CODE FROM THE HOUSEHOLD ROSTER		<input style="width: 30px; height: 20px;" type="text"/>				
I02	CHILD'S ID CODE FROM THE HOUSEHOLD ROSTER		<input style="width: 30px; height: 20px;" type="text"/>				
I03	What is [child's name]'s sex?	0 = Male 1 = Female					
I04	I would like to ask you some question about [child's name]. In what month and year was [child's name] born? What is [his/her] birthday?		<input style="width: 30px; height: 20px;" type="text"/> Day				
	IF THE RESPONDENT DOES NOT KNOW THE EXACT BIRTHDATE ASK:		<input style="width: 30px; height: 20px;" type="text"/> Month				
	Does [child's name] have a health/vaccination card with the birth date recorded?  IF THE HEALTH/VACCINATION CARD IS SHOWN AND THE RESPONDENT CONFIRMS THE INFORMATION IS CORRECT, RECORD THE DATE OF BIRTH AS DOCUMENTED ON THE CARD.		<input style="width: 40px; height: 20px;" type="text"/> Year				
I05	How old was [child's name] at [his/her] last birthday? RECORD AGE IN COMPLETED YEARS		<input style="width: 30px; height: 20px;" type="text"/> Years				

## MODULE I. Child anthropometry and anemia and infant and young child feeding (continued)

No.	Question	Response codes	Child 1	Child 2	Child 3	Child 4	Child 5
I06	How many months old is [child's name]? RECORD AGE IN COMPLETED MONTHS		<input type="text"/> <input type="text"/> Months				
I07	CHECK I04, I05, AND I06 TO VERIFY CONSISTENCY  <b>A) IS THE YEAR RECORDED IN I04 CONSISTENT WITH THE AGE IN YEARS RECORDED IN I05?</b>  <b>B) ARE YEAR AND MONTH OF BIRTH RECORDED IN I04 CONSISTENT WITH AGE IN MONTHS RECORDED IN I06?</b>  IF THE ANSWER TO A OR B IS 'NO,' RESOLVE ANY INCONSISTENCIES. IF THE BIRTHDATE WAS RECORDED ON A HEALTH CARD, THIS MAY BE USED AS THE CORRECT DATA SOURCE.	1 = Yes 2 = No  1 = Yes 2 = No					
I08	CHECK I06. IS THE CHILD UNDER 60 MONTHS?	1 = Yes 2 = No >> end module 9 = Don't know >> end module					
I09	DOES CHILD HAVE EDEMA?	1 = Yes 2 = No					
I10	WEIGHT IN KILOGRAMS: WEIGH THE CHILD		<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> Kg	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> Kg	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> Kg	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> Kg	<input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> Kg

## MODULE I. Child anthropometry and anemia and infant and young child feeding (continued)

No.	Question	Response codes	Child 1	Child 2	Child 3	Child 4	Child 5
<b>STUNTING</b>							
I11	CHILDREN UNDER 24 MONTHS SHOULD BE MEASURED LYING DOWN; CHILDREN 24 MONTHS OR OLDER SHOULD BE MEASURED STANDING UP.  HEIGHT IN CENTIMETERS: MEASURE THE CHILD		<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> . <input type="text"/> <input type="text"/>
<b>EXCLUSIVE BREASTFEEDING AND MINIMUM ACCEPTABLE DIET</b>							
I12	CHECK QUESTION I05. IS THE CHILD UNDER 2 YEARS OF AGE?	1 = Yes 2 = No >> end module					
I13	Has [child's name] ever been breastfed?	1 = Yes 2 = No >> skip to I18 9 = Don't Know >> skip to I18					
I14	Was [child's name] breastfed yesterday during the day or at night?	1 = Yes >> skip to I19 2 = No 9 = Don't Know					

## MODULE I. Child anthropometry and anemia and infant and young child feeding (continued)

No.	Question	Response codes	Child 1	Child 2	Child 3	Child 4	Child 5
I15	<p>Sometimes babies are fed breast milk in different ways, for example by spoon, cup, or bottle. This can happen when the mother cannot always be with her baby. Sometimes babies are breastfed by another woman or given breast milk from another woman by spoon, cup, bottle, or some other way. This can happen if a mother cannot breastfeed her own baby.</p> <p>Did [child's name] consume breast milk in any of these ways yesterday during the day or at night?</p>	1 = Yes 2 = No 9 = Don't Know					
I16	<p>Now I would like to ask you about some medicines and vitamins that are sometimes given to infants.</p> <p>Was [child's name] given any vitamin drops or other medicines as drops yesterday during the day or at night?</p>	1 = Yes 2 = No 9 = Don't Know					
I17	<p>Was [child's name] given rehydration solution (Madzi a moyo) yesterday during the day or at night?</p>	1 = Yes 2 = No 9 = Don't Know					
<p>READ THE QUESTIONS BELOW. READ THE LIST OF LIQUIDS ONE BY ONE AND MARK YES OR NO, ACCORDINGLY.</p> <p>Next I would like to ask you about some liquids that [child's name] may have had yesterday during the day or at night.</p> <p>Did [child's name] have any <u>[item from list]</u>?:                      READ THE LIST OF LIQUIDS STARTING WITH 'PLAIN WATER.'</p>							
I18	<p>Plain water?</p>	1 = Yes 2 = No 9 = Don't Know					

## MODULE I. Child anthropometry and anemia and infant and young child feeding (continued)

No.	Question	Response codes	Child 1	Child 2	Child 3	Child 4	Child 5
I19	Infant formula (mukaka wa ana wa ma tini)?	1 = Yes 2 = No >> skip to I24 9 = Don't Know >> skip to I24					
I20	How many times yesterday during the day or at night did [child's name] consume any formula?	98 = Don't know	<input type="text"/> <input type="text"/>				
			Times	Times	Times	Times	Times
I21	Did [child's name] have any milk such as tinned, powdered, or fresh animal milk?	1 = Yes 2 = No >> skip to I26 9 = Don't Know >> skip to I26					
I22	How many times yesterday during the day or at night did [child's name] consume any milk?	98 = Don't know	<input type="text"/> <input type="text"/>				
			Times	Times	Times	Times	Times
I23	Did [child's name] have any juice or juice drinks?	1 = Yes 2 = No 9 = Don't Know					
I24	Clear broth?	1 = Yes 2 = No 9 = Don't Know					
I25	Yogurt?	1 = Yes 2 = No >> skip to I30 9 = Don't Know >> skip to I30					

## MODULE I. Child anthropometry and anemia and infant and young child feeding (continued)

No.	Question	Response codes	Child 1	Child 2	Child 3	Child 4	Child 5
I26	How many times yesterday during the day or at night did [child's name] consume any yogurt?	98 = Don't know	<input type="text"/> Times				
I27	Did [child's name] have any thin porridge?	1 = Yes 2 = No 9 = Don't Know					
I28	Any other liquids such as <b>tobwa</b> ?	1 = Yes 2 = No 9 = Don't Know					
I29	Any other liquids?	1 = Yes 2 = No 9 = Don't Know					
<p>Please describe everything that [child's name] ate yesterday during the day or night, whether at home or outside the home.</p> <p><b>(A)</b> Think about when [child's name] first woke up yesterday. Did [child's name] eat anything at that time?            IF YES: Please tell me everything [child's name] ate at that time. PROBE: Anything else? UNTIL RESPONDENT SAYS NOTHING ELSE. THEN CONTINUE TO PART B).            IF NO, CONTINUE TO PART B).</p> <p><b>(B)</b> What did [child's name] do after that? Did [child's name] eat anything at that time?            IF YES: Please tell me everything [child's name] ate at that time. PROBE: Anything else? UNTIL RESPONDENT SAYS NOTHING ELSE.            REPEAT QUESTION B) UNTIL THE RESPONDENT SAYS THE CHILD WENT TO SLEEP UNTIL THE NEXT DAY.</p> <p>IF RESPONDENT MENTIONS MIXED DISHES LIKE A PORRIDGE, SAUCE, OR STEW, PROBE:</p> <p><b>(C)</b> What ingredients were in that [mixed dish]? PROBE: Anything else? UNTIL RESPONDENT SAYS NOTHING ELSE</p> <p>AS THE RESPONDENT RECALLS FOODS, UNDERLINE THE CORRESPONDING FOOD AND ENTER '1' IN THE RESPONSE BOX NEXT TO THE FOOD GROUP. IF THE FOOD IS NOT LISTED IN ANY OF THE FOOD GROUPS BELOW, WRITE THE FOOD IN THE BOX LABELED 'OTHER FOODS.' IF FOODS ARE USED IN SMALL AMOUNTS FOR SEASONING OR AS A CONDIMENT, INCLUDE THEM UNDER THE CONDIMENT'S FOOD GROUP.</p> <p>ONCE THE RESPONDENT FINISHES RECALLING FOODS EATEN, READ EACH FOOD GROUP WHERE '1' WAS NOT ENTERED IN THE RESPONSE BOX, ASK THE FOLLOWING QUESTION AND ENTER '1' IF RESPONDENT SAYS YES, '0' IF NO, AND '9' IF DON'T KNOW:            Yesterday, during the day or night, did [child's name] drink/eat any [food group items]?</p>							

## MODULE I. Child anthropometry and anemia and infant and young child feeding (continued)

No.	Question	Response codes	Child 1	Child 2	Child 3	Child 4	Child 5
	OTHER FOODS: PLEASE WRITE DOWN OTHER FOODS (TO THE RIGHT OF THIS BOX) THAT RESPONDENT MENTIONED BUT ARE NOT IN THE LIST BELOW. THIS WILL ALLOW THE SURVEY SUPERVISOR OR OTHER KNOWLEDGEABLE INDIVIDUAL TO CLASSIFY THE FOOD LATER.		WRITE FOODS MENTIONED HERE:				
I30	Food made from grains, such as bread, rice, noodles, porridge, Nsima, Tobwa, Samp	1 = Yes 2 = No 9 = Don't Know					
I31	Pumpkin, carrots, squash, or sweet potatoes (batanje/maungo) that are yellow or orange inside	1 = Yes 2 = No 9 = Don't Know					
I32	White potatoes, white yams, manioc, cassava, (Chinangwa, Nyumbula, Vikhau) or any other foods made from roots	1 = Yes 2 = No 9 = Don't Know					
I33	Any dark green leafy vegetables such as Munkwani, Gwada, Matepo a nyemba	1 = Yes 2 = No 9 = Don't Know					
I34	Ripe mangoes, ripe papayas (mango, paw paw)	1 = Yes 2 = No 9 = Don't Know					
I35	Any other fruits or vegetables (banana, ntochi, guava, amapela)	1 = Yes 2 = No 9 = Don't Know					
I36	Liver, kidney, heart, or other organ meats (Vamkati)	1 = Yes 2 = No 9 = Don't Know					
I37	Any meat, such as beef, pork, lamb, goat, chicken, or duck (Nyama, mbeba)	1 = Yes 2 = No 9 = Don't Know					

## MODULE I. Child anthropometry and anemia and infant and young child feeding (continued)

No.	Question	Response codes	Child 1	Child 2	Child 3	Child 4	Child 5
I38	Eggs (Mandanda)	1 = Yes 2 = No 9 = Don't Know					
I39	Fresh or dried fish, shellfish, or seafood (Nsomba, Kapenta)	1 = Yes 2 = No 9 = Don't Know					
I40	Any foods made from beans, peas, lentils, nuts, or seeds such as (Chipele, chipondwa)	1 = Yes 2 = No 9 = Don't Know					
I41	Cheese, yogurt, or other milk products (sour milk)	1 = Yes 2 = No 9 = Don't Know					
I42	Any oil, fats, or butter, or foods made with any of these (Saladi)	1 = Yes 2 = No 9 = Don't Know					
I43	Any sugary foods such as chocolates, sweets, candies, pastries, cakes, or biscuits (sugar, keke, switi, bisikiti, uchi)	1 = Yes 2 = No 9 = Don't Know					
I44	Condiments for flavor, such as chilies, spices, herbs, or fish powder (Mpili-mpili, sabora, curry)	1 = Yes 2 = No 9 = Don't Know					
I45	Grubs, snails or insects (Vinkubala, Inswa, Ntete, Fulufute)	1 = Yes 2 = No 9 = Don't Know					
I46	Foods made with red palm oil, red palm nut, or red palm nut pulp sauce (Chinkondya)	1 = Yes 2 = No 9 = Don't Know					
	CHECK CATEGORIES 33-49	If all 'no' >> go to I50 If at least one 'yes' or all 'DK' >> I51					

## MODULE I. Child anthropometry and anemia and infant and young child feeding (continued)

No.	Question	Response codes	Child 1	Child 2	Child 3	Child 4	Child 5
I47	<p>Did [child's name] eat any solid, semi-solid, or soft foods yesterday during the day or at night?</p> <p>IF 'YES' PROBE: What kind of solid, semi-solid, or soft foods did [child's name] eat?</p>	<p>1 = Yes &gt;&gt; go back to I33–I49 and record foods eaten. Then continue with I51.</p> <p>2 = No &gt;&gt; end module</p> <p>9 = Don't Know &gt;&gt; end module</p>					
I48	<p>How many times did [child's name] eat solid, semi-solid, or soft foods other than liquids yesterday during the day or at night?</p>	98 = Don't Know	<input style="width: 30px; height: 20px; border: 1px solid black;" type="text"/>	<input style="width: 30px; height: 20px; border: 1px solid black;" type="text"/>	<input style="width: 30px; height: 20px; border: 1px solid black;" type="text"/>	<input style="width: 30px; height: 20px; border: 1px solid black;" type="text"/>	<input style="width: 30px; height: 20px; border: 1px solid black;" type="text"/>
			Times	Times	Times	Times	Times

## A.12 Enumerator Team Daily Control Sheet

Date \_\_\_\_\_  
 Supervisor Code \_\_\_\_\_  
 Enumerator 1 Code \_\_\_\_\_  
 Enumerator 2 Code \_\_\_\_\_  
 District Code \_\_\_\_\_  
 Cluster Code \_\_\_\_\_

Ward code	Village name	SEA code	HH xode	HH head name	# Visit to HH <i>1=1<sup>st</sup> visit</i> <i>2=2<sup>nd</sup> visit</i> <i>2=3<sup>rd</sup> visit</i>	Sections completed (tick completed)								# Women measured	# Children measured
						A	B	C	D	F	G	H	I		

**Instructions:** Each day, the enumerator team will receive fill out the top section of this form. The supervisor will assign households for each supervisor to visit each day. The first 5 columns of the table will be provided to the enumerator team by the supervisor. Initially, 3 households will be assigned for each day. If any substitutions must be made, they can be added to the table. Code the number of the visit to the HH in the 6<sup>th</sup> column. If households are revisited on later date, enter the information about the revisit on the form for the date of date of the revisit. Tick all sections completed in the 7<sup>th</sup> – 14<sup>th</sup> columns. Record the number of women measured in the 15<sup>th</sup> column, and the number of children measured in the last column.

## A.13 Supervisor Daily Control Sheet

Date: \_\_\_\_\_

Supervisor Code: \_\_\_\_\_

Cluster Code: \_\_\_\_\_

Enumerator team	HH head names assigned	SEA code	HH code	Modules completed									Reviewed by supervisor <i>0=No 1=Yes</i>	Accepted <i>0=No 1=Yes</i>
				<i>Enter the date that each module was completed (use form for date of first interview)</i>										
				A	B	C	D	F	G	H	I			
Team 1														
Team 2														

Total number interviews accepted

	Number
Complete ( <i>all modules are completed</i> )	
Incomplete	

## Annex B. Weight Calculation

The Uganda survey sample was drawn with two-stage, stratified cluster sampling, following the DHS sample design. Design weights were calculated based on the separate sampling probabilities for each sampling stage and for each cluster. We have:

$P_{1hi}$  = first-stage sampling probability of the  $i$ -th cluster in stratum  $b$  (region and by urban/rural).

$P_{2hi}$  = second-stage sampling probability within the  $i$ -th cluster (household selection).

The probability of selecting cluster  $i$  in the sample is:

$$P_{1hi} = \frac{m_h \times N_{hi}}{N_h}$$

The second-stage probability of selecting household in cluster  $i$  is:

$$P_{2hi} = \frac{n_{hi}}{L_{hi}}$$

where

$m_h$  = number of sample clusters selected in stratum  $b$ .

$N_{hi}$  = total population in the frame for the  $i$ -th sample cluster in stratum  $b$ .

$N_h$  = total population in the frame in stratum  $b$ .

$n_{hi}$  = number of sample households selected for the  $i$ -th sample cluster in stratum  $b$ .

$L_{hi}$  = number of households listed in the household listing for the  $i$ -th sample cluster in stratum  $b$ .

Total population of each stratum  $N_h$  was calculated as sum of projected 2012 population of all districts within the stratum based on 2002 census population data.

Total population of the selected cluster  $N_{hi}$  was estimated by the product of average household size  $S_{hi}$  and number of households listed for the cluster:

$$N_{hi} = S_{hi} \times L_{hi}$$

The overall selection probability of each household in cluster  $i$  of stratum  $h$  is the product of the selection probabilities of the two stages:

$$P_{hi} = P_{1hi} \times P_{2hi} = \frac{m_h \times N_{hi}}{N_h} \times \frac{n_{hi}}{L_{hi}} = \frac{m_h \times S_{hi} \times n_{hi}}{N_h}$$

The design weight for each household in cluster  $i$  of stratum  $h$  is the inverse of its overall selection probability:

$$W_{hi} = \frac{1}{p_{hi}} = \frac{N_h}{m_h \times S_{hi} \times n_{hi}}$$

## Annex C. Indicator Descriptions and Calculations

**NOTE:** The following indicator descriptions are from the Feed the Future Indicator Handbook: Definition Sheets (Updated October 18, 2013).<sup>54</sup>

**INDICATOR TITLE: Prevalence of Poverty: Percent of people living on less than \$1.25/day\* (R)**

\*The Millennium Development Goals define this level as those living in extreme poverty. Although we do not use the word *extreme* in this title, we are referring to the same measure used by the UN for the Millennium Development Goals.

*DEFINITION:*

This indicator measures Millennium Development Goal Target 1a. Halving extreme poverty refers to the period 1990 to 2015. The applicable poverty line has been updated to \$1.25 dollars per person per day, converted into local currency at 2005 Purchasing Power Parity (PPP) exchange rates. The use of PPP exchange rates ensures that the poverty line applied in each country has the same real value. Measurement is based on the value of average daily consumption expenditure per person, where food and other items that a household consumes out of its own production are counted as if the household purchased those items at market prices. For example, all members of a household of four people are counted as poor if its average daily consumption expenditures are less than \$5 per day at 2005 PPP after adjusting for local inflation since 2005. The poverty rate is estimated by dividing the measured number of poor people in a sample of households by the total population in the households in the sample.

Data for this indicator must be collected using the Consumption Expenditure methodology of the Living Standards Measurement Survey (LSMS). Missions are encouraged to use the LSMS Integrated Survey in Agriculture Consumption Expenditure module, which has been incorporated in the Feed the Future M&E Guidance Series Volume 8: Population-Based Survey Instrument for Feed the Future Zone of Influence Indicators. Feed the Future will collect consumption-expenditure data in order to calculate prevalence of poverty for this indicator, as well as per capita expenditures to be used as a proxy for income. Expenditures are used instead of income because of the difficulty in accurately measuring income and because expenditure data are less prone to error, easier to recall and are more stable over time than income data.

The most convenient single source is the World Bank's online DataBank (<http://databank.worldbank.org/ddp/home.do?Step=12&id=4&CNO=2>).

Using data from the DataBank, Table 2 shows, for each FtF country, the 2005 PPP exchange rate,<sup>55</sup> annual average values of the Consumer Price Index (CPI) for years 2006-2011, and finally the local currency equivalent of \$1.25 at 2005 PPP, adjusted by cumulative inflation since 2005 as outlined above. Values for additional countries can be downloaded from the DataBank. To calculate the local currency equivalent to the \$1.25 line at the prices prevailing in a given month—for example, the household survey data cited in the example above—requires monthly CPI data. These are compiled by the International Monetary Fund in its publication International Financial Statistics. USAID employees can gain access to those data through the Economic Analysis and Data Services (EADS). Alternatively, E3 staff can download data from this source. Currently, all IMF CPI data are normalized so that 2005=100, which makes the calculation described above particularly simple.

*RATIONALE:*

This measures the first goal of the Feed the Future Initiative as well as a Millennium Development Goal. It is the purpose of the Feed the Future Initiative. All objectives, program elements, and projects are designed to reduce poverty.

<sup>54</sup> USAID. (2013b).

<sup>55</sup> The PPPs used for this purpose apply to “individual consumption expenditure by households,” or “private consumption.” They differ from PPPs measured over GDP, used to compare the size of national economies. The original source is Global Purchasing Power Parities and Real Expenditures, 2005 International Comparison Program, Table 1: Purchasing power parities, local currency units per US\$ (pages 28 and following), in the column labeled “Individual Consumption Expenditures by Households.”

**INDICATOR TITLE: Prevalence of Poverty: Percent of people living on less than \$1.25/day\* (R)**

\*The Millennium Development Goals define this level as those living in extreme poverty. Although we do not use the word *extreme* in this title, we are referring to the same measure used by the UN for the Millennium Development Goals.

*UNIT:*

Percent

Enter the indicator value for the overall indicator and for each disaggregate category. Enter the total ZOI subpopulation covered by each disaggregate for the disaggregate categories only, and FTFMS will sum across disaggregates to get the total population in the ZOI.  
Enter:

1. Percentage of people from sample living on <\$1.25/day
2. Percentage of people in FNM households from sample living on <\$1.25/day
3. Total population of people in FNM households in the ZOI
4. Percentage of people in MNF households from sample living on <\$1.25/day
5. Total population of people in MNF households in the ZOI
6. Percentage of people in M&F households from sample living on <\$1.25/day
7. Total population of people in M&F households in the ZOI
8. Percentage of people in CNA households from sample living on <\$1.25/day
9. Total population of people in CNA households in the ZOI

*TYPE:*

Impact

*DATA SOURCE:*

Secondary data if the data were collected within the previous two years and a large enough sample was collected from clusters within the ZOI, or population-based surveys conducted by M&E contractor in the Feed the Future ZOI.

*MEASUREMENT NOTES:*

- **LEVEL OF COLLECTION:** This indicator should be collected in the Feed the Future ZOIs (i.e., the targeted population/subnational level) through population-based surveys.
- **WHO COLLECTS DATA FOR THIS INDICATOR:** An M&E contractor will collect this data for the Feed the Future ZOI.
- **HOW SHOULD IT BE COLLECTED:** Data are drawn from one of two sources: (1) the Living Standards Measurement Survey or similar national-level survey, if the data were collected within the previous two years and a large enough sample was collected from clusters within the ZOI; or (2) primary data collected via a population-based survey conducted in the ZOI by a Feed the Future Monitoring and Evaluation (M&E) contractor, using the country-specific LSMS methodology and the Feed the Future M&E Guidance Series Volume 8: Population-Based Survey Instrument for Feed the Future ZOI Indicators.
- **FREQUENCY OF COLLECTION:** Data should be collected in the ZOI for baseline, midterm (ideally), and final reporting.

*DISAGGREGATE BY:*

Gendered Household Type: Adult Female No Adult Male (FNM), Adult Male No Adult Female Adult (MNF), Male and Female Adults (M&F), Child No Adults (CNA)

*DIRECTION OF CHANGE:*

Lower is better

**INDICATOR TITLE: Per capita expenditures (as a proxy for income) in USG-assisted areas (R)\***

\*Indicator title has been changed slightly from the title in FactsInfo. FTFMS and FactsInfo numbering is the same.

*DEFINITION:*

This indicator will measure the expenditures of rural households as a proxy for income, based on the assumption that increased expenditures is strongly correlated to increased income. Data for this indicator must be collected using the Consumption Expenditure methodology of the Living Standards Measurement Survey (LSMS). Missions are encouraged to use the LSMS Integrated Survey in Agriculture Consumption Expenditure module, which has been incorporated in the Feed the Future M&E Guidance Series Volume 8: Population-Based Survey Instrument for Feed the Future Zone of Influence Indicators. Feed the Future will collect consumption-expenditure data in order to calculate prevalence of poverty as well as per capita expenditures to be used as a proxy for income.

Expenditures are used instead of income because of the difficulty in accurately measuring income and because expenditure data are less prone to error, easier to recall, and are more stable over time than income data.

The daily per capita expenditure figure must be converted to constant 2010 USD. The steps to convert daily per capita expenditure data collected in the country's local currency units (LCU), e.g., Honduran lempira, Ghana cedis, Tanzania shillings; to constant 2010 USD (2005 PPP adjusted to 2010 US prices) are:

1. Convert LCU at the time of the survey to LCU at 2005 prices, by dividing by the Consumer Price Index (CPI) for the survey month and year (you will need to divide the CPI for the survey month/year by the CPI for 2005 if 2005 is not the base year for the country's CPI.)
2. Convert 2005 LCU to 2005 US\$ by dividing by the 2005 PPP conversion rate.
3. Convert US\$ in 2005 prices to US\$ in 2010 prices by multiplying by 111.65, which is the US CPI for 2010.

*RATIONALE:*

There is a relationship between increased incomes and improved food security, reduced poverty, and improved nutrition. The usefulness of an income proxy methodology derives from the importance of a change in household income and its impact on the overarching Feed the Future goal of reducing poverty and hunger. Thus, measurement of household income (through this proxy) is one logical choice for monitoring the effects of policies and programs oriented toward accomplishing this goal.

*UNIT:*

2010 US dollar

Enter the indicator value for the overall indicator and for each disaggregate category. Enter the total ZOI subpopulation covered by each disaggregate for the disaggregate categories only, and FTFMS will sum across disaggregates to get the total population in the ZOI. Enter:

1. Average daily per capita expenditures (in 2010 USD) of sample
2. Average daily per capita expenditures (in 2010 USD) of FNM households from sample
3. Total population of people in FNM households in the ZOI
4. Average daily per capita expenditures (in 2010 USD) MNF households from sample
5. Total population of people in MNF households in the ZOI
6. Average daily per capita expenditures (in 2010 USD) in M&F households from sample

*DISAGGREGATE BY:*

Gendered Household type: Adult Female No Adult Male (FNM), Adult Male No Adult Female (MNF), Male and Female Adults (M&F), Child No Adults (CNA)

**INDICATOR TITLE: Per capita expenditures (as a proxy for income) in USG-assisted areas (R)\***

7. Total population of people in M&F households in the ZOI

8. Average daily per capita expenditures (in 2010 USD) in CNA households from sample

9. Total population of people in CNA households in the ZOI

*TYPE:*

Outcome

*DIRECTION OF CHANGE:*

Higher is better

*DATA SOURCE:*

Secondary data if the data were collected within the previous two years and a large enough sample was collected from clusters within the ZOI, or population-based surveys conducted by M&E contractor in the Feed the Future ZOI.

*MEASUREMENT NOTES:*

- **LEVEL OF COLLECTION:** This indicator should be collected in the Feed the Future ZOIs (i.e., the targeted population/subnational level) through population-based surveys.
- **WHO COLLECTS DATA FOR THIS INDICATOR:** An M&E contractor will collect this data in the Feed the Future ZOI.
- **HOW SHOULD IT BE COLLECTED:** Data are drawn from one of two sources: (1) the Living Standards Measurement Survey or similar national-level survey, if the data were collected within the previous two years and a large enough sample was collected from clusters within the ZOI; or (2) primary data collected via a population-based survey conducted in the ZOI by a Feed the Future Monitoring and Evaluation (M&E) contractor, using the country-specific LSMS methodology and the Feed the Future M&E Guidance Series Volume 8: Population-Based Survey Instrument for Feed the Future ZOI Indicators.
- **FREQUENCY OF COLLECTION:** Data should be collected in the ZOI for baseline, midterm (ideally), and final reporting.

**INDICATOR TITLE: Prevalence of stunted children under 5 years of age (R)****DEFINITION:**

Stunting is a height-for-age measurement that is a reflection of chronic undernutrition. This indicator measures the percent of children 0-59 months who are stunted, as defined by a height for age Z score < -2. Although different levels of severity of stunting can be measured, this indicator measures the prevalence of all stunting, i.e., both moderate and severe stunting combined. While stunting is difficult to measure in children 0-6 months and most stunting occurs in the 9-23 month range (1,000 days), this indicator reports on all children under 59 months to capture the impact of interventions over time and to align with DHS data.

The numerator for this indicator is the total number of children 0-59 months in the sample with a height-for-age Z score < -2. The denominator is the total number of children 0-59 months in the sample with height-for-age Z score data.

**RATIONALE:**

Stunted, wasted, and underweight children under 5 years of age are the three major nutritional indicators. Stunting is an indicator of linear growth retardation, most often due to prolonged exposure to an inadequate diet and poor health. Reducing the prevalence of stunting among children, particularly 0-23 months, is important because linear growth deficits accrued early in life are associated with cognitive impairments, poor educational performance, and decreased work productivity among adults. Better nutrition leads to increased cognitive and physical abilities, thus improving individual productivity in general, including improved agricultural productivity.

**UNIT:** Percent**DISAGGREGATE BY:**

Enter the indicator value for the overall indicator and for each disaggregate category. Enter the total ZOI subpopulation covered by each disaggregate for the disaggregate categories only, and FTFMS will sum across disaggregates to get the total population in the ZOI.  
Enter:

Sex: Male, Female

1. Percent of children 0-59 months of age in the sample that is stunted
2. Percent of male children 0-59 months of age in the sample that is stunted
3. Total population of male children 0-59 months of age in the ZOI
4. Percent of female children 0-59 months of age in the sample that is stunted
5. Total population of female children 0-59 months of age in the ZOI

**TYPE:****DIRECTION OF CHANGE:**

Impact

Lower is better

**DATA SOURCE:**

Population-based survey and official DHS data (see notes below).

**MEASUREMENT NOTES:**

- **LEVEL OF COLLECTION:** Feed the Future monitors this indicator in the ZOI (i.e., our targeted subnational regions/districts targeted by USG interventions) to measure results attributable to Feed the Future assistance. Missions or the M&E contractor should enter ZOI-level values under the “High Level Indicators” mechanism in the FTFMS. Missions should also monitor this indicator at the national level. Missions should only enter national-level values into the PPR the year the data become available. Do not enter ZOI values in the PPR.
- **WHO COLLECTS DATA FOR THIS INDICATOR:** An M&E contractor will collect this data for the Feed the Future ZOI. MEASURE-DHS collects national-level through Demographic and Health Surveys (DHS).

**INDICATOR TITLE: Prevalence of stunted children under 5 years of age (R)**

- **HOW SHOULD IT BE COLLECTED:** ZOI data are drawn from one of two sources: (1) the DHS, if the data were collected within the previous two years and a large enough sample was collected from clusters within the ZOI; or (2) primary data collected via a population-based survey conducted in the ZOI by a Feed the Future M&E contractor, using the official DHS method of collection and the Feed the Future M&E Guidance Series Volume 8: Population-Based Survey Instrument for Feed the Future ZOI Indicators ([http://feedthefuture.gov/sites/default/files/resource/files/ftf\\_vol8\\_populationbasedsurveyinstrument\\_oct2012.pdf](http://feedthefuture.gov/sites/default/files/resource/files/ftf_vol8_populationbasedsurveyinstrument_oct2012.pdf))
- **FREQUENCY OF COLLECTION:** Data should be collected in the ZOI for baseline, midterm (ideally), and final reporting. DHS data are collected every 5 years. Information on the frequency of DHS by country can be obtained at: [http://measuredhs.com/aboutsurveys/search/metadata.cfm?surv\\_id=228&ctry\\_id=33&SrvyTp=country](http://measuredhs.com/aboutsurveys/search/metadata.cfm?surv_id=228&ctry_id=33&SrvyTp=country).

**INDICATOR TITLE: Prevalence of underweight children under 5 years of age (R)**

*DEFINITION:*

Underweight is a weight-for-age measurement. Underweight is a reflection of acute and/or chronic undernutrition. This indicator measures the percent of children 0-59 months who are underweight, as defined by a weight-for-age Z score < -2. Although different levels of severity of underweight can be measured, this indicator measures the prevalence of all underweight, i.e., both moderate and severe underweight combined.

The numerator for this indicator is the total number of children 0-59 months in the sample with a weight-for-age Z score < -2. The denominator is the total number of children 0-59 months in the sample with weight-for-age Z score data.

*RATIONALE:*

Reducing the prevalence of underweight children under 5 is the goal of the Feed the Future Initiative. The prevalence of underweight children is also an indicator to monitor the Millennium Development Goal 1.8 —Halving the number of people who are hungry. Monitoring the prevalence of underweight children 0-59 months therefore allows USAID and its partners to show the contribution of Feed the Future programs to the Millennium Development Goal.

*UNIT: Percent*

*DISAGGREGATE BY:*

Enter the indicator value for the overall indicator and for each disaggregate category. Enter the total ZOI subpopulation covered by each disaggregate for the disaggregate categories only, and FTFMS will sum across disaggregates to get the total population in the ZOI. Enter:

Sex: Male, Female

1. Percent of children 0-59 months of age in the sample that is underweight
2. Percent of male children 0-59 months of age in the sample that is underweight
3. Total population of male children 0-59 months of age in the ZOI
4. Percent of female children 0-59 months of age in the sample that is underweight
5. Total population of female children 0-59 months of age in the ZOI

*TYPE:*

*DIRECTION OF CHANGE:*

Impact

Lower is better

*DATA SOURCE:*

Population-based survey and official DHS data (see notes below).

*MEASUREMENT NOTES:*

- **LEVEL OF COLLECTION:** Feed the Future monitors this indicator in the ZOI (i.e., our targeted subnational regions/districts targeted by USG interventions) to measure results attributable to Feed the Future assistance. Missions or the M&E contractor should enter ZOI-level values under the “High Level Indicators” mechanism in the FTFMS. Missions should also monitor this indicator at the national level. Missions should only enter national-level values into the PPR the year the data become available. Do not enter ZOI values in the PPR.
- **WHO COLLECTS DATA FOR THIS INDICATOR:** An M&E contractor will collect this data for the Feed the Future ZOI. MEASURE-DHS collects national-level through Demographic and Health Surveys (DHS).

**INDICATOR TITLE: Prevalence of underweight children under 5 years of age (R)**

- **HOW SHOULD IT BE COLLECTED:** ZOI data are drawn from one of two sources: (1) the DHS, if the data were collected within the previous two years and a large enough sample was collected from clusters within the ZOI; or (2) primary data collected via a population-based survey conducted in the ZOI by a Feed the Future M&E contractor, using the official DHS method of collection and the Feed the Future M&E Guidance Series Volume 8: Population-Based Survey Instrument for Feed the Future ZOI Indicators ([http://feedthefuture.gov/sites/default/files/resource/files/ftf\\_vol8\\_populationbasedsurveyinstrument\\_oct2012.pdf](http://feedthefuture.gov/sites/default/files/resource/files/ftf_vol8_populationbasedsurveyinstrument_oct2012.pdf).)
- **FREQUENCY OF COLLECTION:** Data should be collected in the ZOI for baseline, midterm (ideally), and final reporting. DHS data are collected every 5 years. Information on the frequency of DHS by country can be obtained at: [http://measuredhs.com/aboutsurveys/search/metadata.cfm?surv\\_id=228&ctry\\_id=33&SrvyTp=country](http://measuredhs.com/aboutsurveys/search/metadata.cfm?surv_id=228&ctry_id=33&SrvyTp=country).

**INDICATOR TITLE: Prevalence of wasted children under 5 years of age (R)***DEFINITION:*

This indicator measures the percent of children 0-59 months who are acutely malnourished, as defined by a weight-for-height Z score < -2. Although different levels of severity of wasting can be measured, this indicator measures the prevalence of all wasting, i.e., both moderate and severe wasting combined.

The numerator for the indicator is the total number of children 0-59 months in the sample with a weight-for-height Z score < -2. The denominator is the total number of children 0-59 months in the sample with weight-for-height Z score data.

*RATIONALE:*

Stunted, wasted, and underweight children under 5 years of age are the three major nutritional indicators. Wasting is an indicator of acute malnutrition. Children who are wasted are too thin for their height, and have a much greater risk of dying than children who are not wasted.

*UNIT:* Percent*DISAGGREGATE BY:*

Enter the indicator value for the overall indicator and for each disaggregate category. Enter the total ZOI subpopulation covered by each disaggregate for the disaggregate categories only, and FTFMS will sum across disaggregates to get the total population in the ZOI. Enter:

Sex: Male, Female

1. Percent of children 0-59 months of age in the sample that is wasted
2. Percent of male children 0-59 months of age in the sample that is wasted
3. Total population of male children 0-59 months of age in the ZOI
4. Percent of female children 0-59 months of age in the sample that is wasted
5. Total population of female children 0-59 months of age in the ZOI

*TYPE:**DIRECTION OF CHANGE:*

Impact

Lower is better

*DATA SOURCE:*

Population-based survey and official DHS data (see notes below).

*MEASUREMENT NOTES:*

- **LEVEL OF COLLECTION:** Feed the Future monitors this indicator in the ZOI (i.e., our targeted subnational regions/districts targeted by USG interventions) to measure results attributable to Feed the Future assistance. Missions or the M&E contractor should enter ZOI-level values under the “High Level Indicators” mechanism in the FTFMS. Missions should also monitor this indicator at the national level. Missions should only enter national-level values into the PPR the year the data become available. Do not enter ZOI values in the PPR.
- **WHO COLLECTS DATA FOR THIS INDICATOR:** An M&E contractor will collect this data for the Feed the Future ZOI. MEASURE-DHS collects national-level through Demographic and Health Surveys (DHS).

**INDICATOR TITLE: Prevalence of wasted children under 5 years of age (R)**

- **HOW SHOULD IT BE COLLECTED:** ZOI data are drawn from one of two sources: (1) the DHS, if the data were collected within the previous two years and a large enough sample was collected from clusters within the ZOI; or (2) primary data collected via a population-based survey conducted in the ZOI by a Feed the Future M&E contractor, using the official DHS method of collection and the Feed the Future M&E Guidance Series Volume 8: Population-Based Survey Instrument for Feed the Future ZOI Indicators  
([http://feedthefuture.gov/sites/default/files/resource/files/ftf\\_vol8\\_populationbasedsurveyinstrument\\_oct2012.pdf](http://feedthefuture.gov/sites/default/files/resource/files/ftf_vol8_populationbasedsurveyinstrument_oct2012.pdf).)
- **FREQUENCY OF COLLECTION:** Data should be collected in the ZOI for baseline, midterm (ideally), and final reporting. DHS data are collected every 5 years. Information on the frequency of DHS by country can be obtained at: [http://measuredhs.com/aboutsurveys/search/metadata.cfm?surv\\_id=228&ctry\\_id=33&SrvyTp=country](http://measuredhs.com/aboutsurveys/search/metadata.cfm?surv_id=228&ctry_id=33&SrvyTp=country).

**INDICATOR TITLE: Prevalence of underweight women (R)***DEFINITION:*

This indicator measures the percent of nonpregnant women of reproductive age (15-49 years) who are underweight, as defined by a body mass index (BMI) < 18.5. To calculate an individual's BMI, weight and height data are needed: BMI = weight (in kg) ÷ height (in meters) squared.

The numerator for this indicator is the number of nonpregnant women 15-49 years in the sample with a BMI < 18.5. The denominator for this indicator is the number of nonpregnant women 15-49 years in the sample with BMI data.

*RATIONALE:*

This indicator provides information about the extent to which women's diets meet their caloric requirements. Adequate energy in the diet is necessary to support the continuing growth of adolescent girls and women's ability to provide optimal care for their children and participate fully in income generation activities. Undernutrition among women of reproductive age is associated with increased morbidity, poor food security, and can result in adverse birth outcomes in future pregnancies. Improvements in women's nutritional status are expected to improve women's work productivity, which may also have benefits for agricultural production, linking the two strategic objectives of FTF.

*UNIT:*

1. Percent of women of reproductive age in the sample that is underweight
2. Total population of women of reproductive age in zone of influence

*DISAGGREGATE BY:*

None

*TYPE:*

Impact

*DIRECTION OF CHANGE:*

Lower is better

*DATA SOURCE:*

Population-based survey and official DHS data (see notes below).

*MEASUREMENT NOTES:*

- **LEVEL OF COLLECTION:** Feed the Future monitors this indicator in the ZOI (i.e., our targeted subnational regions/districts targeted by USG interventions) to measure results attributable to Feed the Future assistance. Missions or the M&E contractor should enter ZOI-level values under the "High Level Indicators" mechanism in the FTFMS. Missions should also monitor this indicator at the national level. Missions should only enter national-level values into the PPR the year the data become available. Do not enter ZOI values in the PPR.
- **WHO COLLECTS DATA FOR THIS INDICATOR:** An M&E contractor will collect this data for the Feed the Future ZOI. MEASURE-DHS collects national-level through Demographic and Health Surveys (DHS).
- **HOW SHOULD IT BE COLLECTED:** ZOI data are drawn from one of two sources: (1) the DHS, if the data were collected within the previous two years and a large enough sample was collected from clusters within the ZOI; or (2) primary data collected via a population-based survey conducted in the ZOI by a Feed the Future M&E contractor, using the official DHS method of collection and the Feed the Future M&E Guidance Series Volume 8: Population-Based Survey Instrument for Feed the Future ZOI Indicators [http://feedthefuture.gov/sites/default/files/resource/files/ftf\\_vol8\\_populationbasedsurveyinstrument\\_oct2012.pdf](http://feedthefuture.gov/sites/default/files/resource/files/ftf_vol8_populationbasedsurveyinstrument_oct2012.pdf)
- **FREQUENCY OF COLLECTION:** Data should be collected in the ZOI for baseline, midterm (ideally), and final reporting. DHS data are collected every 5 years. Information on the frequency of DHS by country can be obtained at: [http://.measuredhs.com/aboutsurveys/search/metadata.cfm?surv\\_id=228&ctry\\_id=33&SrvyTp=country](http://.measuredhs.com/aboutsurveys/search/metadata.cfm?surv_id=228&ctry_id=33&SrvyTp=country).

**INDICATOR TITLE: Women's Empowerment in Agriculture Index Score (R)**

*DEFINITION:*

The Women's Empowerment in Agriculture Index (WEAI) measures the empowerment, agency, and inclusion of women in the agriculture sector in an effort to identify and address the constraints that hinder women's full engagement in the agriculture sector. The WEAI is composed of two subindexes; the Five Domains of Empowerment subindex (5DE) measures the empowerment of women in five areas; and the Gender Parity Subindices (GPI) measures the average level of equality in empowerment of men and women within the household. The WEAI is an aggregate index reported at the Zone of Influence level and is based on individual-level data on men and women within the same households and data on women living in households with no adult male.

The 5DE subindex assesses whether women are empowered across the five domains examined in the WEAI. Each domain is weighted equally, as are each of the indicators within a domain. The five domains, their definitions under the WEAI, the corresponding indicators, and their weights for the 5DE are:

Domain (each weighted 1/5 of 5DE subindex)	Definition of domain	Indicators	Weight of indicator in 5DE subindex
<b>Production</b>	Sole or joint decision-making over food and cash-crop farming, livestock, fisheries, and autonomy in agricultural production	Input in productive decisions	1/10
		Autonomy in production	1/10
<b>Resources</b>	Ownership, access to, and decision-making power over productive resources such as land, livestock, agricultural equipment, consumer durables, and credit	Ownership of assets	1/15
		Purchase, sale or transfer of assets	1/15
		Access to and decisions on credit	1/15
<b>Income</b>	Sole or joint control over income and expenditures	Control over use of income	1/5
<b>Leadership</b>	Membership in economic or social groups and comfort in speaking in public	Group member	1/10
		Speaking in public	1/10
<b>Time</b>	Allocation of time to productive and domestic tasks and satisfaction with the available time for leisure activities	Workload	1/10
		Leisure	1/10

**INDICATOR TITLE: Women's Empowerment in Agriculture Index Score (R)**

The 5DE is a measure of empowerment rather than disempowerment. A woman is defined as empowered in the 5DE if she reaches the threshold of empowerment in 80 percent or more of the weighted indicators. For not yet empowered women, the 5DE also shows the percentage of indicators in which those women meet the threshold of empowerment. The 5DE contributes 90 percent of the weight to the WEAI.

The GPI reflects the percentage of women who are as empowered as the men in their households. It is a relative equality measure that demonstrates the equality in 5DE profiles between the primary adult male and female in each household. In most cases, these are husband and wife, but they can be the primary male and female decision-makers regardless of their relationship to each other. For households that have not achieved gender parity, the GPI shows the gap that needs to be closed for women to reach the same level of empowerment as men. By definition, households without a primary adult male are excluded from this measure, and thus the aggregate WEAI uses the mean GPI value of dual-adult households. The GPI contributes 10 percent of the weight to the WEAI.

The 5DE score ranges from zero to one, where higher values indicate greater empowerment. It is constructed using a robust multidimensional methodology known as the Alkire Foster Method (see <http://.ophi.org.uk/research/multidimensional-poverty/alkire-foster-method/> for information on the method). The score has two components. First, it reflects the percentage of women who are empowered ( $H_e$ ). Second, it reflects the percentage of domains in which those women who are not yet empowered ( $H_n$ ) still have adequate achievements ( $A_a$ ). The 5DE formula is:  $5DE = \{H_e + (H_n \times A_a)\}$ , where  $H_e + H_n = 100$  percent and  $0 < A_a < 80$  percent.<sup>56</sup>

The GPI also ranges from zero to one, with higher values indicating greater gender parity, and is constructed with two factors. First, it shows the percentage of women whose empowerment scores are lower than the men's in the household ( $H_{GPI}$ ).<sup>57</sup> Second, the GPI shows the percentage shortfall in empowerment scores ( $I_{GPI}$ ) for those women who do not have gender parity. The overall formula is the product of these two numbers, following the Foster Greer Thorbecke —poverty gap measure:  $GPI = \{1 - (H_{GPI} \times I_{GPI})\}$ . The WEAI score is computed as a weighted sum of the Zone of Influence-level 5DE and the GPI. Thus, improvements in either the 5DE or GPI will increase the WEAI. The total WEAI score =  $0.9 \{H_e + (H_n \times A_a)\} + 0.1 \{1 - (H_{GPI} \times I_{GPI})\}$ .

**RATIONALE:**

Feed the Future supports the inclusion of poorer and more economically vulnerable populations in economic growth strategies in the agriculture sector in order to have a transformational effect on regional economies and restructure local production, distribution, and consumption patterns for long-term, sustainable development. Because women play a prominent role in agriculture and due to the persistent economic constraints they face, women's empowerment is a main focus of Feed the Future. Empowering women is particularly important to achieving the Feed the Future objective of inclusive agriculture sector growth. The WEAI was developed to track the change in women's empowerment levels that occurs as a direct or indirect result of interventions under Feed the Future.

**UNIT:**

1. Score for 5DE subindex
2. Score for GPI subindex
3. Total population in Zone of Influence

**DISAGGREGATE BY:**

None

**TYPE:**

Impact

**DIRECTION OF CHANGE:**

Higher is better

**DATA SOURCE:**

Population-based surveys conducted by an M&amp;E contractor in the ZOI.

<sup>56</sup> This corrects an error in the WEAI brochure

([http://www.ifpri.org/sites/default/files/publications/weai\\_brochure.pdf](http://www.ifpri.org/sites/default/files/publications/weai_brochure.pdf)).

<sup>57</sup> This notation ( $H_{GPI}$ ) is different from that used in the WEAI brochure, but is the same as that used in the WEAI Instructional Guide ([http://www.ifpri.org/sites/default/files/weai\\_instructionalguide.pdf](http://www.ifpri.org/sites/default/files/weai_instructionalguide.pdf)) and published articles.

**INDICATOR TITLE: Women's Empowerment in Agriculture Index Score (R)**

*MEASUREMENT NOTES:*

- **LEVEL OF COLLECTION:** This indicator should be collected in the Feed the Future ZOIs (i.e., the targeted population/subnational level) through population-based surveys.
- **WHO COLLECTS DATA FOR THIS INDICATOR:** An M&E contractor will collect the data for the Feed the Future ZOI.
- **HOW SHOULD IT BE COLLECTED:** For the ZOI survey, the M&E contractor should conduct a population-based survey using the WEAI methodology and the Feed the Future M&E Guidance Series Volume 8: Population-Based Survey Instrument for Feed the Future ZOI Indicators.
- **FREQUENCY OF COLLECTION:** Data should be collected in the Zones of Influence for baseline, midterm, and final reporting.

**INDICATOR TITLE: Prevalence of households with moderate or severe hunger (RiA)**

*DEFINITION:*

This indicator measures the percent of households experiencing moderate or severe hunger, as indicated by a score of 2 or more on the household hunger scale (HHS). To collect data for this indicator, respondents are asked about the frequency with which household members experienced three events in the last four weeks: (1) no food at all in the house; (2) went to bed hungry, (3) went all day and night without eating. For each question, four responses are possible (never, rarely, sometimes or often), which are collapsed into the follow three responses: never (value=0), rarely or sometimes (value=1), often (value=2). Values for the three questions are summed for each household, producing a HHS score ranging from 0 to 6.

The numerator for this indicator is the total number of households in the sample with a score of 2 or more on the HHS. The denominator is the total number of households in the sample with HHS data.

For more information on the HHS, including guidance for collection and tabulation of the prevalence of households with moderate or severe hunger, refer to the FANTA-2 website: [fanta-2.org](http://fanta-2.org)

*RATIONALE:*

Measurement of household hunger provides a tool to monitor global progress of USG-supported food security initiatives. A decrease in household hunger is also a reflection of improved household resilience. The indicator has been validated to be meaningful for cross-cultural use using datasets from seven diverse sites.

*UNIT: Percent*

Enter the indicator value for the overall indicator and for each disaggregate category. Enter the total ZOI number of households covered by each disaggregate for the disaggregate categories only, and FTFMS will sum across disaggregates to get the total number of households in the ZOI. Enter:

1. Percent of households in the sample with moderate to severe hunger
2. Percent of FNM households in the sample with moderate to severe hunger
3. Total population of FNM households in the ZOI
4. Percent of MNF households in the sample with moderate to severe hunger
5. Total population of MNF households in the ZOI
6. Percent of M&F households in the sample with moderate to severe hunger
7. Total population of M&F households in the ZOI
8. Percent of CNA households in the sample with moderate to severe hunger
9. Total population of CNA households in the ZOI

*TYPE:*

Impact

*DATA SOURCE:*

Population-based survey and official DHS data (see notes below). USAID/W will work to get these HHS questions incorporated into the DHS in applicable countries. Then, the DHS will also be able to show this data at the national level.

*DISAGGREGATE BY:*

Gendered Household type: Adult Female No Adult Male (FNM), Adult Male No Adult Female (MNF), Male and Female Adults (M&F), Child No Adults (CNA)

*DIRECTION OF CHANGE:*

Lower is better

**INDICATOR TITLE: Prevalence of households with moderate or severe hunger (RiA)**

*MEASUREMENT NOTES:*

This indicator should always be measured at the same time each year, ideally at the most vulnerable part of the year (e.g., right before harvest, during the dry season, etc.). Although this indicator will be collected in the ZOI by an M&E contractor, USAID/W is also working with HQ and Missions to have the HHS added as a module to the DHS. Missions direct which modules the DHS should add to the default set of survey questions, and Focus Countries should request that the HHS module be added to any upcoming DHS for collection of the national-level data.

- **LEVEL OF COLLECTION:** Feed the Future monitors this indicator in the ZOI (i.e., our targeted subnational regions/districts targeted by USG interventions) to measure results attributable to Feed the Future assistance. Missions or the M&E contractor should enter ZOI-level values under the “High Level Indicators” mechanism in the FTFMS. If the appropriate module is included in a country’s DHS, missions should also monitor this indicator at the national level. Missions should only enter national-level values into the PPR the year the data become available. Do not enter ZOI values in the PPR.
- **WHO COLLECTS DATA FOR THIS INDICATOR:** An M&E contractor will collect this data for the Feed the Future ZOI. MEASURE-DHS collects national-level through Demographic and Health Surveys (DHS), if the appropriate optional module is included.
- **HOW SHOULD IT BE COLLECTED:** ZOI data are drawn from one of two sources: (1) the DHS, if the appropriate data were collected within the previous two years and a large enough sample was collected from clusters within the ZOI; or (2) primary data collected via a population-based survey conducted in the ZOI by a Feed the Future M&E contractor, using the official DHS method of collection and the October 2013 update 22
- **Feed the Future M&E Guidance Series Volume 8: Population-Based Survey Instrument for Feed the Future ZOI Indicators**  
([http://feedthefuture.gov/sites/default/files/resource/files/ftf\\_vol8\\_populationbasedsurveyinstrument\\_oct2012.pdf](http://feedthefuture.gov/sites/default/files/resource/files/ftf_vol8_populationbasedsurveyinstrument_oct2012.pdf).)
- **FREQUENCY OF COLLECTION:** Data should be collected in the ZOI for baseline, midterm (ideally), and final reporting. DHS data are collected every 5 years. Information on the frequency of DHS by country can be obtained at: [http://.measuredhs.com/aboutsurveys/search/metadata.cfm?surv\\_id=228&ctry\\_id=33&SrvyTp=country](http://.measuredhs.com/aboutsurveys/search/metadata.cfm?surv_id=228&ctry_id=33&SrvyTp=country).

**INDICATOR TITLE: Prevalence of children 6-23 months receiving a minimum acceptable diet (RiA)**

*DEFINITION:*

This indicator measures the proportion of children 6-23 months of age who receive a minimum acceptable diet (MAD), apart from breast milk. The minimum acceptable diet indicator measures both the minimum feeding frequency and minimum dietary diversity, as appropriate for various age groups. If a child meets the minimum feeding frequency and minimum dietary diversity for his or her age group and breastfeeding status, then they are considered to receive a minimum acceptable diet.

Tabulation of the indicator requires that data on breastfeeding, dietary diversity, number of semi-solid/solid feeds and number of milk feeds be collected for children 6-23 months the day preceding the survey. The indicator is calculated from the following two fractions:

Breastfed children 6-23 months of age in the sample who had at least the minimum dietary diversity and the minimum meal frequency during the previous day/breastfed children 6-23 months of age in the sample with MAD component data

and

Nonbreastfed children 6-23 months of age who received at least two milk feedings and had at least the minimum dietary diversity not including milk feeds and the minimum meal frequency during the previous day/nonbreastfed children 6-23 months of age in the sample with MAD component data.

Minimum dietary diversity for breastfed children 6-23 months is defined as four or more food groups out of the following seven food groups (refer to the WHO IYCF operational guidance document cited below):

1. Grains, roots, and tubers
2. Legumes and nuts
3. Dairy products (milk, yogurt, cheese)
4. Flesh foods (meat, fish, poultry, and liver/organ meats)
5. Eggs
6. Vitamin A-rich fruits and vegetables
7. Other fruits and vegetables

Minimum meal frequency for breastfed children is defined as two or more feedings of solid, semi-solid, or soft food for children 6-8 months and three or more feedings of solid, semi-solid, or soft food for children 9-23 months.

For the MAD indicator, minimum dietary diversity for nonbreastfed children is defined as four or more food groups out of the following six food groups:

1. Grains, roots, and tubers
2. Legumes and nuts
3. Flesh foods (meat, fish, poultry, and liver/organ meats)
4. Eggs
5. Vitamin A-rich fruits and vegetables
6. Other fruits and vegetables

**INDICATOR TITLE: Prevalence of children 6-23 months receiving a minimum acceptable diet (RiA)**

Minimum meal frequency for nonbreastfed children is defined as four or more feedings of solid, semi-solid, soft food, or milk feeds for children 6-23 months. For nonbreastfed children to receive a minimum adequate diet, at least two of these feedings must be milk feeds.

For detailed guidance on how to collect and tabulate this indicator, refer to the WHO document: Indicators for assessing infant and young child feeding practices, Part 2, Measurement, available at [http://whqlibdoc.who.int/publications/2010/9789241599290\\_eng.pdf](http://whqlibdoc.who.int/publications/2010/9789241599290_eng.pdf).

*RATIONALE:* Appropriate feeding of children 6-23 months is multidimensional. The minimum acceptable diet indicator combines standards of dietary diversity (a proxy for nutrient density) and feeding frequency (a proxy for energy density) by breastfeeding status; and thus provides a useful way to track progress at simultaneously improving the key quality and quantity dimensions of children's diets.

*UNIT:* Percent

*DISAGGREGATE BY:*

Enter the indicator value for the overall indicator and for each disaggregate category. Enter the total ZOI subpopulation covered by each disaggregate for the disaggregate categories only, and FTFMS will sum across disaggregates to get the total population in the ZOI. Enter:

Sex: Male, Female

1. Percent of children 6-23 months in the sample receiving a minimum acceptable diet
2. Percent of male children 6-23 months in the sample receiving a minimum acceptable diet
3. Total population of male children 6-23 months in the ZOI
4. Percent of female children 6-23 months in the sample receiving a minimum acceptable diet
5. Total population of female children 6-23 months in the ZOI

*TYPE:*

*DIRECTION OF CHANGE:*

Outcome

Higher is better

*DATA SOURCE:*

Population-based survey and official DHS data (see notes below).

**INDICATOR TITLE: Prevalence of children 6-23 months receiving a minimum acceptable diet (RiA)**

*MEASUREMENT NOTES:*

- **LEVEL OF COLLECTION:** Feed the Future monitors this indicator in the ZOI (i.e., our targeted subnational regions/districts targeted by USG interventions) to measure results attributable to Feed the Future assistance. Missions or the M&E contractor should enter ZOI-level values under the “High Level Indicators” mechanism in the FTFMS. Missions should also monitor this indicator at the national level. Missions should only enter national-level values into the PPR the year the data become available. Do not enter ZOI values in the PPR.
- **WHO COLLECTS DATA FOR THIS INDICATOR:** An M&E contractor will collect this data for the Feed the Future ZOI. MEASURE-DHS collects national-level through Demographic and Health Surveys (DHS).
- **HOW SHOULD IT BE COLLECTED:** ZOI data are drawn from one of two sources: (1) the DHS, *if* the data were collected within the previous two years *and* a large enough sample was collected from clusters within the ZOI; or (2) primary data collected via a population-based survey conducted in the ZOI by a Feed the Future M&E contractor, using the official DHS method of collection and the Feed the Future M&E Guidance Series Volume 8: Population-Based Survey Instrument for Feed the Future ZOI Indicators ([http://feedthefuture.gov/sites/default/files/resource/files/ftf\\_vol8\\_populationbasedsurveyinstrument\\_oct2012.pdf](http://feedthefuture.gov/sites/default/files/resource/files/ftf_vol8_populationbasedsurveyinstrument_oct2012.pdf)).
- **FREQUENCY OF COLLECTION:** Data should be collected in the ZOI for baseline, midterm (ideally), and final reporting. DHS data are collected every 5 years. Information on the frequency of DHS by country can be obtained at: [http://.measuredhs.com/aboutsurveys/search/metadata.cfm?surv\\_id=228&ctry\\_id=33&SrvyTp=country](http://.measuredhs.com/aboutsurveys/search/metadata.cfm?surv_id=228&ctry_id=33&SrvyTp=country).

**INDICATOR TITLE: Women's Dietary Diversity: Mean number of food groups consumed by women of reproductive age (S)**

*DEFINITION:*

This validated indicator aims to measure the micronutrient adequacy of the diet and reports the mean number of food groups consumed in the previous day by women of reproductive age (15-49 years). To calculate this indicator, nine food groups are used:

(1) Grains, roots, and tubers; (2) Legumes and nuts; (3) Dairy products (milk, yogurt, cheese); (4) Organ meat; (5) Eggs; (6) Flesh foods and other misc. small animal protein; (7) Vitamin A-rich dark green leafy vegetables; (8) Other Vitamin A-rich vegetables and fruits; (9) Other fruits and vegetables.

The *Mean number of food groups consumed by women of reproductive age* indicator is tabulated by averaging the number of food groups consumed (out of the nine food groups above) across all women of reproductive age in the sample with data on dietary diversity.

To collect data for this indicator, a more disaggregated set of food groups than the nine food groups above should be used in the questionnaire (See Feed the Future M&E Guidance Series Volume 8: Population-Based Survey Instrument for Feed the Future Zone of Influence Indicators.) For collection and tabulation of this indicator, foods used in condiment amounts should not be counted as having been consumed.

*RATIONALE:*

Women of reproductive age are at risk for multiple micronutrient deficiencies, which can jeopardize their health and ability to care for their children and participate in income generating activities. Maternal micronutrient deficiencies during lactation can directly impact child growth and development but the potential consequences of maternal micronutrient deficiencies are especially severe during pregnancy, when there is the greatest opportunity for nutrient deficiencies to cause long term, irreversible development consequences for the child in-utero. Dietary diversity (assessed here as the number of food groups consumed) is a key dimension of a high quality diet with adequate micronutrient content; and thus, important to ensuring the health and nutrition of both women and their children.

*UNIT:*

Number

*DISAGGREGATE BY:*

None

Please enter these two data points:

1. Mean number of food groups consumed by women 15-49 years in the sample
2. Total population of women of reproductive age (15-49 years) in zone of influence

*TYPE:*

Outcome

*DIRECTION OF CHANGE:*

Higher is better

**INDICATOR TITLE: Women's Dietary Diversity: Mean number of food groups consumed by women of reproductive age (S)**

*DATA SOURCE:*

Population-based survey and official DHS data (see notes below).

*MEASUREMENT NOTES:*

Although this indicator will be collected in the ZOI by an M&E contractor, USAID/W is also working with HQ and Missions to have WDDS added as a module to the DHS. Missions direct which modules the DHS should add to the default set of survey questions. Focus Countries should request that the WDDS module be added to upcoming DHS for collection of the national-level data.

- **LEVEL OF COLLECTION:** Feed the Future monitors this indicator in the ZOI (i.e., our targeted subnational regions/districts targeted by USG interventions) to measure results attributable to Feed the Future assistance. Missions or the M&E contractor should enter ZOI-level values under the “High Level Indicators” mechanism in the FTFMS. If the appropriate module is included in a country’s DHS, missions should also monitor this indicator at the national level. Missions should only enter national-level values into the PPR the year the data become available. Do not enter ZOI values in the PPR.
- **WHO COLLECTS DATA FOR THIS INDICATOR:** An M&E contractor will collect this data for the Feed the Future ZOI. MEASURE-DHS collects national-level through Demographic and Health Surveys (DHS), if the appropriate optional module is included.
- **HOW SHOULD IT BE COLLECTED:** ZOI data are drawn from one of two sources: (1) the DHS, if the appropriate data were collected within the previous two years and a large enough sample was collected from clusters within the ZOI; or (2) primary data collected via a population-based survey conducted in the ZOI by a Feed the Future M&E contractor, using the official DHS method of collection and the Feed the Future M&E Guidance Series Volume 8: Population-Based Survey Instrument for Feed the Future ZOI Indicators ([http://feedthefuture.gov/sites/default/files/resource/files/ftf\\_vol8\\_populationbasedsurveyinstrument\\_oct2012.pdf](http://feedthefuture.gov/sites/default/files/resource/files/ftf_vol8_populationbasedsurveyinstrument_oct2012.pdf)).
- **FREQUENCY OF COLLECTION:** Data should be collected in the ZOI for baseline, midterm (ideally), and final reporting. DHS data are collected every 5 years. Information on the frequency of DHS by country can be obtained at: [http://.measuredhs.com/aboutsurveys/search/metadata.cfm?surv\\_id=228&ctry\\_id=33&SrvyTp=country](http://.measuredhs.com/aboutsurveys/search/metadata.cfm?surv_id=228&ctry_id=33&SrvyTp=country).

**INDICATOR TITLE: Prevalence of exclusive breastfeeding of children under 6 months of age (RiA)**

*DEFINITION:*

This indicator measures the percent of children 0-5 months of age who were exclusively breastfed during the day preceding the survey. Exclusive breastfeeding means that the infant received breast milk (including milk expressed or from a wet nurse) and may have received ORS, vitamins, minerals and/or medicines, but did not receive any other food or liquid, including water.

The numerator for this indicator is the total number of children 0-5 months in the sample exclusively breastfed on the day and night preceding the survey. The denominator is the total number of children 0-5 months in the sample with exclusive breastfeeding data.

For detailed guidance on how to collect and tabulate this indicator, refer to the WHO document: Indicators for assessing infant and young child feeding practices, Part 2, Measurement, available at [http://whqlibdoc.who.int/publications/2010/9789241599290\\_eng.pdf](http://whqlibdoc.who.int/publications/2010/9789241599290_eng.pdf).

*RATIONALE:*

Exclusive breastfeeding for 6 months provides children with significant health and nutrition benefits, including protection from gastrointestinal infections and reduced risk of mortality, due to infectious disease.

*UNIT:* Percent

*DISAGGREGATE BY:*

Enter the indicator value for the overall indicator and for each disaggregate category. Enter the total ZOI subpopulation covered by each disaggregate for the disaggregate categories only, and FTFMS will sum across disaggregates to get the total population in the ZOI. Enter:

Sex: Male, Female

1. Percent of children 0-5 months of age in the sample who are exclusively breastfed
2. Percent of male children 0-5 months of age in the sample who are exclusively breastfed
3. Total population of male children 0-5 months of age in the ZOI
4. Percent of female children 0-5 months of age in the sample who are exclusively breastfed
5. Total population of female children 0-5 months of age in the ZOI

*TYPE:* OUTPUT/OUTCOME

*DIRECTION OF CHANGE:*

Outcome

Higher is better

*DATA SOURCE:*

Population-based survey and official DHS data (see notes below).

*MEASUREMENT NOTES:*

- **LEVEL OF COLLECTION:** Feed the Future monitors this indicator in the ZOI (i.e., our targeted subnational regions/districts targeted by USG interventions) to measure results attributable to Feed the Future assistance. Missions or the M&E contractor should enter ZOI-level values under the “High Level Indicators” mechanism in the FTFMS. Missions should also monitor this indicator at the national level. Missions should only enter national-level values into the PPR the year the data become available. Do not enter ZOI values in the PPR.
- **WHO COLLECTS DATA FOR THIS INDICATOR:** An M&E contractor will collect this data for the Feed the Future ZOI. MEASURE-DHS collects national-level through Demographic and Health Surveys (DHS).

**INDICATOR TITLE: Prevalence of exclusive breastfeeding of children under 6 months of age (RiA)**

- **HOW SHOULD IT BE COLLECTED:** ZOI data are drawn from one of two sources: (1) the DHS, if the data were collected within the previous two years and a large enough sample was collected from clusters within the ZOI; or (2) primary data collected via a population-based survey conducted in the ZOI by a Feed the Future M&E contractor, using the official DHS method of collection and the Feed the Future M&E Guidance Series Volume 8: Population-Based Survey Instrument for Feed the Future ZOI Indicators ([http://feedthefuture.gov/sites/default/files/resource/files/ftf\\_vol8\\_populationbasedsurveyinstrument\\_oct2012.pdf](http://feedthefuture.gov/sites/default/files/resource/files/ftf_vol8_populationbasedsurveyinstrument_oct2012.pdf).)
- **FREQUENCY OF COLLECTION:** Data should be collected in the ZOI for baseline, midterm (ideally), and final reporting. DHS data are collected every 5 years. Information on the frequency of DHS by country can be obtained at: [http://measuredhs.com/aboutsurveys/search/metadata.cfm?surv\\_id=228&ctry\\_id=33&SrvyTp=country](http://measuredhs.com/aboutsurveys/search/metadata.cfm?surv_id=228&ctry_id=33&SrvyTp=country).

**INDICATOR TITLE: Prevalence of anemia among women of reproductive age (RiA)**

*DEFINITION:*

Anemia is measured by hemoglobin concentration in the blood and, for this indicator, is collected among women of reproductive age (15-49 years). Nonpregnant women (NPW) with a hemoglobin concentration less than 12g/dl and pregnant women (PW) with a hemoglobin concentration less than 11g/dl are classified as anemic. Although different levels of severity of anemia can be measured, this indicator measures the prevalence of all anemia, i.e., mild, moderate and severe anemia combined.

The numerator for this indicator is the total number of anemic women 15-49 years in the sample. The denominator is the total number of women 15-49 years in the sample with hemoglobin data.

*RATIONALE:*

This indicator emphasizes the importance of women's micronutrient nutrition both pre-pregnancy and during pregnancy for the growth and development of the child in-utero and for a safe delivery and positive birth outcome. Maternal anemia during pregnancy is associated with increased risk of hemorrhage, sepsis, maternal mortality, perinatal mortality, and low birth weight. Maternal micronutrient nutrition (including adequate iron stores) is also necessary to support optimal maternal care for the child, including nutrient content of breastmilk fed to the child, during infancy, and early childhood. This IR emphasizes use of nutrition services with the assumption that if people use the health and nutrition services, anemia in women of reproductive age will drop.

*UNIT:* Percent

*DISAGGREGATE BY:*

Enter the indicator value for the overall indicator and for each disaggregate category. Enter the total ZOI subpopulation covered by each disaggregate for the disaggregate categories only, and FTFMS will sum across disaggregates to get the total population in the ZOI. Enter:

Physiological status: Pregnant, Nonpregnant

1. Percent of women 15-49 years in the sample with anemia
2. Percent of pregnant women 15-49 years in the sample with anemia
3. Total population of pregnant women of reproductive age (15-49 years) in the ZOI
4. Percent of nonpregnant women 15-49 years in the sample with anemia
5. Total population of nonpregnant women of reproductive age (15-49 years) in the ZOI

*TYPE:*

*DIRECTION OF CHANGE:*

Outcome

Lower is better

*DATA SOURCE:*

Population-based survey and official DHS data (see notes below).

*MEASUREMENT NOTES:*

- **LEVEL OF COLLECTION:** Feed the Future monitors this indicator in the ZOI (i.e., our targeted subnational regions/districts targeted by USG interventions) to measure results attributable to Feed the Future assistance. Missions or the M&E contractor should enter ZOI-level values under the "High Level Indicators" mechanism in the FTFMS. Missions should also monitor this indicator at the national level. Missions should only enter national-level values into the PPR the year the data become available. Do not enter ZOI values in the PPR.
- **WHO COLLECTS DATA FOR THIS INDICATOR:** An M&E contractor will collect this data for the Feed the Future ZOI. MEASURE-DHS collects national-level through Demographic and Health Surveys (DHS).

**INDICATOR TITLE: Prevalence of anemia among women of reproductive age (RiA)**

- **HOW SHOULD IT BE COLLECTED:** ZOI data are drawn from one of two sources: (1) the DHS, *if* the data were collected within the previous two years *and* a large enough sample was collected from clusters within the ZOI; or (2) primary data collected via a population-based survey conducted in the ZOI by a Feed the Future M&E contractor, using the official DHS method of collection and the Feed the Future M&E Guidance Series Volume 8: Population-Based Survey Instrument for Feed the Future ZOI Indicators ([http://feedthefuture.gov/sites/default/files/resource/files/ftf\\_vol8\\_populationbasedsurveyinstrument\\_oct2012.pdf](http://feedthefuture.gov/sites/default/files/resource/files/ftf_vol8_populationbasedsurveyinstrument_oct2012.pdf).)
- **FREQUENCY OF COLLECTION:** Data should be collected in the ZOI for baseline and final reporting. DHS data are collected every 5 years. Information on the frequency of DHS by country can be obtained at: [http://measuredhs.com/aboutsurveys/search/metadata.cfm?surv\\_id=228&ctry\\_id=33&SrvyTp=country](http://measuredhs.com/aboutsurveys/search/metadata.cfm?surv_id=228&ctry_id=33&SrvyTp=country).

**INDICATOR TITLE: Prevalence of anemia among children 6-59 months (S)***DEFINITION:*

Anemia is measured by hemoglobin concentration in the blood and, for this indicator, is collected among children 6-59 months. Children with a hemoglobin concentration less than 11g/dl are classified as anemic. Although different levels of severity of anemia can be measured, this indicator measures the prevalence of all anemia, i.e., mild, moderate, and severe anemia combined.

The numerator for this indicator is the total number of anemic children 6-59 months. The denominator is the total number of children 6-59 months in the sample with hemoglobin data.

Note that a similar indicator (#3.1.3-42) exists in the List of Standard Indicators from F, but is used to measure anemia as associated with malaria. Although it may be difficult to determine whether a child's anemia is being caused by malaria or nutritional factors, report results under this indicator when measuring as part of a nutrition-related intervention and report results under #3.1.3-42 when measuring as part of a malaria-related intervention.

*RATIONALE:*

This indicator highlights the importance of micronutrient nutrition (iron status, in particular) for child health and development. Child anemia is associated with adverse consequences for child growth and development, including increased morbidity and impaired cognitive development.

*UNIT:* Percent*DISAGGREGATE BY:*

Enter the indicator value for the overall indicator and for each disaggregate category. Enter the total ZOI subpopulation covered by each disaggregate for the disaggregate categories only, and FTFMS will sum across disaggregates to get the total population in the ZOI. Enter:

Sex: Male, Female

1. Percent of children 6-59 months in the sample with anemia
2. Percent of male children 6-59 months of age in the sample with anemia
3. Total population of male children 6-59 months of age in the ZOI
4. Percent of female children 6-59 months of age in the sample with anemia
5. Total population of female children 6-59 months of age in the ZOI

*TYPE:**DIRECTION OF CHANGE:*

Outcome

Lower is better

*DATA SOURCE:*

Population-based survey and official DHS data (see notes below).

*MEASUREMENT NOTES:*

- **LEVEL OF COLLECTION:** Feed the Future monitors this indicator in the ZOI (i.e., our targeted subnational regions/districts targeted by USG interventions) to measure results attributable to Feed the Future assistance. Missions or the M&E contractor should enter ZOI-level values under the "High Level Indicators" mechanism in the FTFMS. Missions should also monitor this indicator at the national level. Missions should only enter national-level values into the PPR the year the data become available. Do not enter ZOI values in the PPR.
- **WHO COLLECTS DATA FOR THIS INDICATOR:** An M&E contractor will collect this data for the Feed the Future ZOI. MEASURE-DHS collects national-level through Demographic and Health Surveys (DHS).

**INDICATOR TITLE: Prevalence of anemia among children 6-59 months (S)**

- **HOW SHOULD IT BE COLLECTED:** ZOI data are drawn from one of two sources: (1) the DHS, if the data were collected within the previous two years and a large enough sample was collected from clusters within the ZOI; or (2) primary data collected via a population-based survey conducted in the ZOI by a Feed the Future M&E contractor, using the official DHS method of collection and the Feed the Future M&E Guidance Series Volume 8: Population-Based Survey Instrument for Feed the Future ZOI Indicators ([http://feedthefuture.gov/sites/default/files/resource/files/ftf\\_vol8\\_populationbasedsurveyinstrument\\_oct2012.pdf](http://feedthefuture.gov/sites/default/files/resource/files/ftf_vol8_populationbasedsurveyinstrument_oct2012.pdf).)
- **FREQUENCY OF COLLECTION:** Data should be collected in the ZOI for baseline and final reporting. DHS data are collected every 5 years. Information on the frequency of DHS by country can be obtained at: [http://measuredhs.com/aboutsurveys/search/metadata.cfm?surv\\_id=228&ctry\\_id=33&SrvyTp=country](http://measuredhs.com/aboutsurveys/search/metadata.cfm?surv_id=228&ctry_id=33&SrvyTp=country).