FEED THE FUTURE

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

Feed the Future Haiti

Zone of Influence Interim Assessment Report

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USAID

FROM THE AMERICAN PEOPLE

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List of Acronyms

3DCs	Three (USG) Development Corridors
5DE	Five Domains of Empowerment
BFS	Bureau for Food Security
BMI	Body Mass Index
BRIDES	Bureau de Recherche en Informatique et en Développement Économique et Social
CI	Confidence Interval
CPI	Consumer Price Index
DEFF	Design Effect
DC	Development Corridors
DHS	Demographic and Health Survey
EA	Enumeration Area
ECVMAS1	*Enquête sur les Conditions de Vie des Sénages Après le Séisme*
EHH	Eligible Household
EMMUS-V	Enquête Mortalité, Morbidité et Utilisation des Services
FANTA	Food and Nutrition Technical Assistance Project
FTF	Feed The Future
FTFMS	Feed the Future Monitoring System
GDP	Gross Domestic Product
GOH	Government of Haiti
GPI	Gender Parity Index
HTG	Haitian Gourde
HHS	Household Hunger Scale
IFPRI	International Food Policy Research Institute
IHE	Institut Haïtien de L'Enfance
IHSI	Institut Haïtien de Statistiques et d'Informatique
IR	Intermediate Results
LCU	Local Currency Unit
LSMS	Living Standards Measurement Survey
MAD	Minimum Acceptable Diet
MDD-W	Women's Minimum Dietary Diversity
MDG	Millennium Development Goals

MSPP	Ministère de la Santé Publique et de la Population
NGO	Non-Governmental Organization
NRVCC	Nutrient-Rich Value Chain Commodity
PPES	Probability Proportional to Estimated Size
PPP	Purchasing Power Parity
PSU	Primary Sampling Unit
SC	Section Communale
SD	Standard Deviation
USAID	United States Agency for International Development
USD	United States Dollar
USG	United States Government
WDDS	Women's Dietary Diversity Score
WEAI	Women's Empowerment in Agriculture Index
WRA	Women of Reproductive Age
ZOI	Zone of Influence
ZR	Zone Rural

Executive Summary

Background

Feed the Future (FTF), led by the U.S. Agency for International Development (USAID), seeks to reduce poverty and undernutrition in 19 developing countries through its focus on accelerating growth of the agriculture sector, addressing root causes of undernutrition, and reducing gender inequality.

Feed the Future monitors its performance in part by periodic assessments of a number of standardized indicators. These indicators reflect data collected through population-based surveys in the geographic areas targeted by Feed the Future interventions, known as the Feed the Future Zones of Influence (ZOI).

USAID's Mission to Haiti commissioned the Haiti Baseline Survey, 2012 for which data collection was from October through December, 2012 and a single report was published in May 2013. This survey effectively combined two overlapping surveys each with its' own purpose. The first of the two surveys was to obtain baseline point estimates for 12 of FTF's population-based indicators within the Haiti's FTF Zone of Influence (ZOI). The second survey was to obtain point-estimates for key indicators of the Mission's development portfolio within the three USG Development Corridors[1] (3DCs): the Northern Corridor (Northern), the Cul-de-Sac Corridor (Cul-de-Sac), and the St. Marc Corridor (St. Marc). The 3DCs include both urban and rural populations. Data from the 3DCs are imperative for Mission planning and performance monitoring.

A single report was produced for these two surveys with the ZOI estimates presented as rural disaggregates for all but the Women's Empowerment in Agriculture Index (WEAI) data and agriculture production data, which were both collected only from the Zone Rural (ZRs) (rural population) in the sample and, therefore, did not need to be disaggregated.

The FTF ZOI is a subset of the 3DCs being only the rural[2] population within these 3DCs. Rural populations are defined as all households within the geo-political division Zone Rural (ZR). There are 517 ZRs organized within 108 Section Communales (SC) that are, themselves, organized within 25 communes. Of the 25 communes within the

[1] Within the document Post-Earthquake USG Haiti Strategy: Toward Renewal and Economic Opportunity, January 3rd, 2011, the term "*Development Corridors*" is used exclusively except for one occurrence of "Focus Development Corridors" and another single occurrence of "Investment Corridors". Within the document Feed-The-Future Haiti FY2011-2015 multi-year strategy, the three "Development Corridors" are also referred to as "Priority Development Corridors", "Targeted Corridors", "Growth Corridors", "FTF Corridors", "Economic Development Corridors", "Targeted Geographic Corridors", and "Targeted Development Corridors".

[2] Only the rural populations are targeted because the targeted beneficiaries of FTF interventions are smallholder farmers who live, predominantly, in the Zone Rurales.

3DCs, only three are exclusively urban. Of the 108 SCs with rural populations[3], 34 have a mix of rural and urban populations (21 in Northern, six in Cul-de Sac and seven in St. Marc) whereas 74 are exclusively rural. The SCs with mixed rural and urban populations vary considerably in their ratio of urban to rural with some being nearly split 50/50 by in terms of urban and rural population size and/or by the number of Villes/Cartiers to ZC whereas others are predominately urban or rural.

From April 25th to June 8th, 2016, data for the USAID Haiti FTF ZOI Interim Assessment were collected to replicate the dual-purpose Haiti Baseline Survey 2012; this document reports the results of the population-based indicators for the ZOI in Haiti from that assessment.

For the USAID Haiti FTF ZOI Interim assessment, the sample drawn from the 3DCs includes 40 (of the 108 ZOI) SCs being themselves within 21 (of the 25 ZOI) Communes. Eight of the 40 SCs sampled are in Cul-de-Sac, 17 SCs are in Northern, and 15 SCs in Saint-Marc. The 3DCs were selected in partnership with the Government of Haiti (GOH) to facilitate decentralization of the government and de-concentration of the population. These 3DCs were identified for United States Government (USG) investment based on their agricultural potential, number of beneficiaries that can be reached, distance to markets, availability of rural credit, alignment with other USG investments, USAID's prior experience in the area, whether the area has been identified as a priority by the GOH, and related criteria.

This USAID Haiti FTF ZOI interim assessment will provide the USG interagency partners, USAID Bureau for Food Security (BFS), USAID Missions, host country governments, and development partners with information about short-term progress of the ZOI indicators. The assessment is designed for use as a monitoring tool, and as such provides point estimates of the indicators with an acceptable level of statistical precision. However, Feed the Future ZOI sample calculations are not designed to support conclusions of causality or program attribution, nor is the FTF ZOI interim assessment designed to measure change from the baseline.

FTF ZOI Indicators

The Feed the Future indicators included in this assessment are: (1) Daily per capita expenditures (as a proxy for income) in USG-assisted areas; (2) Prevalence of Poverty; (3) Depth of Poverty (4) Percent of women achieving adequacy on the Women's Empowerment in Agriculture Index (WEAI) indicators; (5) Prevalence of households with moderate or severe hunger; (6) Women's Dietary Diversity score; (7) Prevalence of children 6-23 months receiving a minimum acceptable diet (MAD); (8) Prevalence of exclusive breastfeeding among children under 6 months of age; (9) Prevalence of

[3] from among the 113[3] SCs in the 3DCs

underweight women; (10) Prevalence of stunted children under 5 years of age; (11) Prevalence of wasted children under 5 years of age; and (12) Prevalence of underweight children under 5 years of age.

The first interim assessment does not report on the Feed the Future indicator Women's Empowerment in Agriculture Index (WEAI) score, but does report on nine of the ten indicators that comprise the WEAI. These are presented in the Women's Empowerment in Agriculture Section of this report (Section 5). Because adjustments were being made to the WEAI tool for the FTF ZOI interim assessments prior to the data collection for this USAID Haiti FTF ZOI Interim assessment, a streamlined version of the Women's Empowerment in Agriculture module was used that only collected for nine of the ten indicators.

The interim assessment also does not report on the two Feed the Future anemia indicators because changes plausibly associated with Feed the Future's efforts in Haiti are unlikely given the coverage and focus of nutrition programs at this time, and because they require more intrusive data collection, increase the cost of the assessment, and increase the time and complexity of data collection and of obtaining in-country institutional review board approval. There were no targeted nutrient-rich value chain commodities (NRVCC) in Haiti at the time of this Assessment.

Interim Assessment Data Sources

Data for presented in this assessment report are drawn from two sources: the Haiti Baseline Survey, 2012 and the USAID Haiti midterm survey, 2016.

Haiti's ZOI Interim Assessment was conducted by Cultural Practice in conjunction with its data collection partner, the Institut Haïtien de L'Enfance (IHE) and Bureau de Recherche en Informatique et en Développement Économique et Social (BRIDES).

Summary of Key Findings

Household Economic Status

The average daily per capita expenditures in the Haiti ZOI is $3.04 (2010 USD). The prevalence of poverty, defined as the percentage of people living below $1.25 per day (2005 Purchasing Power Parity [PPP]), is 21.9 percent. The depth of poverty (the mean percent shortfall relative to the $1.25 per day poverty line) is 6.0 percent. When using the most recent Haiti (national) poverty threshold of 82.2 Haitian Gourde (HTG), however, the prevalence of poverty in the ZOI is 57.3 percent, and the depth of poverty is 22.5 percent.

Women's Empowerment in Agriculture Index Indicators (WEAI)

This report presents uncensored headcounts for nine of the 10 WEAI indicators. Uncensored headcounts are the percent of women (regardless of their overall empowerment status) who achieve adequacy on each of the WEAI indicators. The interim WEAI uncensored headcounts with the highest levels of surveyed women's achievement in the Haiti ZOI include control over the use of income (98.9 percent), input in productive decisions (95.0 percent), and ownership of assets (85.2 percent). The WEAI uncensored headcounts with the lowest levels of achievement among primary adult female decision-makers are group membership (54.6 percent), access to and decisions on credit (55.4 percent), and purchase, sale or transfer of assets (61.2 percent).

Hunger and Dietary Intake

The prevalence of households with moderate or severe hunger is 58.9 percent, or more than half of all households in the Haiti ZOI. Women's dietary diversity, or the mean number of food groups (of nine possible groups) consumed in the prior 24 hours by women of reproductive age (WRA, 15-49 years), is 4.2 food groups. The prevalence of exclusive breastfeeding among children under 6 months is 45.4 percent; nearly half of all infants in the Haiti ZOI were exclusively breastfed in the prior day. Among children 6-23 months, only 12.5 percent received a minimal acceptable diet (MAD) in the prior day.

There are no targeted nutrient-rich value chain commodities (NRVCC) in the Haiti interim assessment.

Nutritional Status of Women and Children

The prevalence of underweight women of reproductive age (WRA) in the ZOI, defined as a Body Mass Index (BMI) below 18.5, is 12.2 percent; more than one in every 10 non-pregnant WRA in the Haiti ZOI are underweight. Among children less than 5 years, 23.0 percent are stunted, which means that about one in four children under age 5 in the ZOI have low height-for-age; this indicates long term, chronic undernutrition in young children. Approximately 5.6 percent of children under age 5 are wasted, or have low weight-for-height. Wasting is an indicator of acute malnutrition. Finally, 10.7 percent of children are underweight, or have low weight-for-age. Underweight is an indicator of either acute or chronic undernutrition in children.

Presenting baseline and interim values for FTF indicators.

Baseline and interim estimates of indicator values in Haiti's ZOI are shown in the Feed the Future Zone of Influence Indicator Estimates Table below; although the urban

population is not part of the ZOI, Appendix A1.1 presents a similar table comparing the rural (ZOI) and urban populations in the 3DCs for the interim assessment.

Feed the Future Zone of Influence Indicator Estimates: Haiti

Feed the Future Indicator Estimates Table	Baseline (2012)			Interim (2016)		
	Estimate[4]	95% CI[1]	N[2]	Estimate	95% CI	n
Daily per capita expenditures (as a proxy for income) in USG-assisted areas (2010 USD)						
All households	2.9	n/a	n/a	3.04	2.51 - 3.57	1117
Male and female adults	n/a	n/a	n/a	2.91	2.36 - 3.46	762
Female adult(s) only	n/a	n/a	n/a	3.22	2.53 - 3.92	226
Male adult(s) only	n/a	n/a	n/a	4.84	4.18 - 5.51	129
Prevalence of Poverty: Percent of people living on less than $1.25 per day (2005 PPP)						
All households	25.0	n/a	n/a	21.9	15.5 - 30.1	1117
Male and female adults	n/a	n/a	n/a	23.5	16.8 - 31.9	762
Female adult(s) only	n/a	n/a	n/a	18.4	10.6 - 30.1	226
Male adult(s) only	n/a	n/a	n/a	4.2	1.5 - 11.4	129
Depth of Poverty: Mean percent shortfall relative to the $1.25 per day poverty line (2005 PPP)						
All households	n/a	n/a	n/a	6.0	3.5 - 8.5	1117
Male and female adults	n/a	n/a	n/a	6.0	3.7 - 8.3	762
Female adult(s) only	n/a	n/a	n/a	7.0	1.8 - 12.1	226
Male adult(s) only	n/a	n/a	n/a	2.0	-.2 - 4.1	129
Percent of women achieving adequacy on Women's Empowerment in Agriculture Index Indicators [3,4]						
Input in productive decisions	n/a	n/a	n/a	95.0	91.7 – 97.0	489
Ownership of assets	n/a	n/a	n/a	85.2	78.8 – 89.9	489
Purchase, sale or transfer of assets	n/a	n/a	n/a	61.2	52.7 – 69.0	489
Access to and decisions on credit	n/a	n/a	n/a	55.4	44.5 – 65.9	489
Control over use of income	n/a	n/a	n/a	98.9	97.6 – 99.5	489
Group member	n/a	n/a	n/a	54.6	46.6 – 62.3	489
Speaking in public	n/a	n/a	n/a	79.3	69.3 – 86.6	489
Workload	n/a	n/a	n/a	74.8	69.8 – 79.2	489
Leisure	n/a	n/a	n/a	83.8	71.9 – 91.2	489
Autonomy in production	n/a	n/a	n/a	n/a	n/a	n/a
Prevalence of households with moderate or severe hunger						
All households	58.1	n/a	1,562	58.9	50.9 - 66.5	1,131
Male and female adults	n/a	n/a	n/a	56.6	47.3 - 65.5	763
Female adult(s) only	n/a	n/a	n/a	62.8	53.1 - 71.6	228
Male adult(s) only	n/a	n/a	n/a	65.7	55.6 - 74.6	140
Women's Dietary Diversity: Mean number of food groups consumed by WRA						
All women age 15-49	3.6	n/a	316	4.2	3.97 - 4.32	1055

[4] The baseline estimates presented in this table are from the results section of the Haiti Baseline Survey, 2012 and not annex B of that report. Annex B was not used because it does not provide estimates for all the indicators by the rural (i.e. ZOI) disaggregate.

Feed the Future Indicator Estimates Table	Baseline (2012)			Interim (2016)		
	Estimate[4]	95% CI[1]	N[2]	Estimate	95% CI	n
Prevalence of exclusive breastfeeding among children under 6 months of age						
All children	20.7	n/a	84	45.4	26.9 - 65.4	51
Male children	n/a	n/a	n/a	^	^	23
Female children	n/a	n/a	n/a	^	^	28
Prevalence of children 6-23 months receiving a minimum acceptable diet						
All children	18.8	n/a	163	12.5	7.4 - 20.2	141
Male children	n/a	n/a	n/a	7.9	3.1 - 18.6	63
Female children	n/a	n/a	n/a	15.5	8.1 - 27.8	78
Prevalence of underweight women						
All non-pregnant women age 15-49	9.7	n/a	1071	12.2	9.7 - 15.1	988
Prevalence of stunted children under 5 years of age						
All children	20.8	n/a	620	23.0	17.3 - 29.9	623
Male children	n/a	n/a	n/a	30.1	20 - 42.6	302
Female children	n/a	n/a	n/a	16.6	11.1 - 24.2	321
Prevalence of wasted children under 5 years of age						
All children	7.7	n/a	620	5.6	2.2 - 13.6	623
Male children	n/a	n/a	n/a	7.8	3 - 18.6	302
Female children	n/a	n/a	n/a	3.5	1.3 - 9	321
Prevalence of underweight children under 5 years of age						
All children	10.9	n/a	620	10.7	6.5 - 17.2	623
Male children	n/a	n/a	n/a	16.3	9.5 - 26.6	302
Female children	n/a	n/a	n/a	5.7	3.2 - 9.8	321

n/a = not available.

[1] In the Haiti baseline assessment, confidence intervals (CIs) were provided for indicators of prevalence of poverty, prevalence of households with moderate or severe hunger, prevalence of exclusive breastfeeding, prevalence of children receiving a minimum acceptable diet, prevalence of underweight women, prevalence stunted children, prevalence of wasted children, and prevalence of underweight children. CIs were not provided for disaggregate values. However, these CIs appear not to have been calculated without taking into account that the 2nd stage of the sampling were not done randomly so they should not be compared to interim CIs.

[2] For the indicators derived from the household consumption data, The baseline reports "n" as the number of persons in the sample (n=7,183). The interim reports "n" as the number of households (n=1117). Although this indicator is "per capita", the only data collected at both baseline and interim are from household level estimate.

[3] The full WEAI score cannot be calculated because interim data were collected from women only and the autonomy indicator was dropped. As per FTF guidance, the next (2nd) interim survey will collect the full set of data from women and men and will report on the full WEAI.

[4] Feed the Future baseline reports presented censored headcounts of inadequate achievement for these empowerment indicators, while this interim report presents uncensored headcounts of adequate achievement for the interim reporting period. Censored headcounts present the percent of women who are disempowered and achieve adequacy (or inadequacy) in each indicator, while uncensored headcounts present the percent of women who achieve adequacy (or inadequacy) in each indicator regardless of empowerment status.

[5] The indicators for women's and children's consumption of targeted NRVCC were not collected during the baseline or interim rounds of data collection.

Source(s): Haiti Baseline Survey, 2012; USAID Haiti FTF ZOI Interim Assessment, 2016.

Confidence intervals (CIs) are provided only for the interim values because the Haiti Baseline Survey, 2012 does not state the assumptions and/or if an adjustment was made to the CI formula to account for the fact that the 2nd sampling stage at baseline was not random. CIs are provided for the interim indicators of: prevalence of poverty, prevalence of households with moderate or severe hunger, prevalence of exclusive breastfeeding, prevalence of children receiving a minimum acceptable diet, prevalence of underweight women, and prevalence of stunted, wasted, and underweight children.

1. Background

This section provides background information on Feed the Future in Haiti, including a description of the ZOI, demographic information on the ZOI population, and a summary of the agriculture situation in the ZOI.

1.1 Feed the Future Overview

USAID/Haiti's Feed the Future strategy is to increase food security in the ZRs[5] within the 3DCs. The overall goal of increased food security is documented in the Haiti FY 2011-2015 Multi-Year Strategy and aligned with the Post-Earthquake USG Haiti Strategy: Toward Renewal and Economic Activity and the USAID/Haiti Activity, Approval Document for Increased Food Security. Feed the Future Haiti's intermediate results (IR), as documented in the FY 2011-2015 Multi-Year Strategy for Haiti are:

- IR 1: Increase Agricultural Productivity;
- IR 2: Stabilize Watersheds above Selected Plains;
- IR 3: Strengthen Agricultural Markets and
- IR 4: Deliver Nutrition Messages and Services

Increased agricultural productivity targets staple commodities for domestic consumption in the plains and mangoes and cocoa for export in the plains and nearby hillsides.[6] Supported value chains vary by the 3DCs and are accompanied by smaller investments in other crops.[7] These efforts will increase incomes and both rural and urban food

[5] The Feed-The-Future Haiti FY2011-2015 multi-year strategy does not specify rural-only section communes within the three USG Development Corridors. Furthermore, the map on page 15 of that document presents the geographic zones in which FTF will operate (now referred to as the FTF Zone of Influence) as both rural and urban section communales in the USG Development Corridors.

[6] Feed the Future FY 2011-2015 Multi-Year Strategy for Haiti, US Government.

[7] Ibid.

consumption.[8] USAID finances activities that increase agricultural productivity by supporting market-driven access to agricultural inputs and technical assistance; by increasing availability of and access to appropriate agricultural technologies; by improving or expanding irrigation systems; and by promoting land and crop security. Institutional strengthening is a critical component of the strategy.[9]

To protect the increased productivity of the ZOI, activities are financed to help populations control and manage runoff in the associated watersheds complemented by investments in income-generating assets that also stabilize hillsides, notably mango and cocoa trees, and to a lesser extent other trees and vegetative cover, and other conservation measures.

Strengthening agricultural markets is enabling farmers to move their products more easily to a large number of local, regional, and international buyers while concurrently promoting value-adding along value chains through post-harvest handling, storage, and processing that increases farm and off-farm incomes and jobs.[10] Under the IR to strengthen agricultural markets, rural feeder roads are being built or renovated/improved, storage and processing facilities are supported and access to financial products and market information is being increased.[11]

Nutrition activities addressing both chronic and acute malnutrition are an integrated part of the USG's chief objective in the health sector[12]. Nutritional outcomes are targeted specifically by expanding the GOH's community management of its acute malnutrition program[13] and establishing referral sites at health facilities for nutritional treatment, and counseling and education on infant and young child feeding, including the promotion of breastfeeding, to all communities in the ZOI.[14]

Under the IR to "deliver nutrition messages and services, target pregnant women and children under age five to reduce nutrition-related diseases, increasing the availability of foods and higher incomes generated under other FTF activities", interventions give households a greater ability to provide an adequate quantity and variety of foods to ensure proper nutrition for young children, pregnant women, and the family as a whole.[15]

[8] Ibid.
[9] Ibid.
[10] Ibid.
[11] Ibid.
[12] Ibid.
[13] Ibid.
[14] Ibid.
[15] Haiti Baseline Survey, 2012.

1.2 Feed the Future ZOI Profile

The FTF ZOI in Haiti is only the rural population within the 3DCs. Rural populations are defined as all households within the ZR.

A map of the Feed the Future ZOI in Haiti is provided in Figure 1.1. USAID/Haiti's ZOI is the same for the baseline and interim assessment.

Figure 1.1. Map of USAID Haiti's Feed the Future ZOI at the interim measure

1.2.1 Rationale for ZOI Selection

The 3DCs, within which lies Haiti's ZOI, were selected in partnership with the GOH to facilitate decentralization of government and de-concentration of population. Selection criteria included agricultural potential, number of beneficiaries that can be reached, distance to markets, availability of rural credit, alignment with other USG investments, USAID's prior experience in the area, whether the area has been identified as a priority by the GOH and other related criteria. The FTF ZOI in Haiti is restricted to the ZRs within the 3DCs because the targeted beneficiaries of FTF interventions are smallholder farmers who live, predominantly, in these ZRs. Nonetheless, it is recognized that there are dwellers in some of the ZRs that could be classified as urban or peri-urban rather than rural if classification was done at the household level. These 'quasi-urban' residents in the ZOI are included because they are food-insecure and because many are involved in the Feed the Future supported value chains directly or indirectly. There have not been any modifications to the Haiti ZOI since the baseline.

1.2.2 Demography of the ZOI

Tables 1.1 and 1.2 present individual and household population estimates, respectively, for the ZOI for 2016. Estimates of the total population as well as sub-populations of the ZOI are presented. The sub-population categories correspond to the various sub-populations for the Feed the Future indicators and disaggregates (e.g., children age 6-23 months, number of households). The ZOI estimates for the total population of individuals as well as households are also disaggregated by gendered household type.[16]

The ZOI is composed of 517 ZRs organized within 108 SCs that are, themselves, organized within 25 communes. Of the 25 communes within the 3DCs, only three are exclusively urban. Of the 108 SCs with rural populations, 34 have a mix of rural and urban populations (21 in Northern, six in Cul-de Sac and seven in St. Marc) whereas 74 are exclusively rural. The SCs with mixed rural and urban populations vary considerably in their ratio of urban to rural with some being nearly split 50/50 in terms of urban and rural population size and/or the number of Villes/Cartiers to ZC whereas others are predominately urban or predominantly rural.

The ZOI population is estimated at of 723,313 million people in 2016, based on projections from the 2012 and 2015 population estimates prepared by the Institut Haïtien de Statistiques et d'Informatique (IHSI).[17] The majority of households in the ZOI have both a primary male and primary female decision-maker. Households with only a

[16] See Section 2.2.1, Standard Disaggregates, for the definition of gendered household type.
[17] IHSI. (2012).

Female adult (32,521) are found 1.75 times more frequently than male (only) headed households (18,563).[18]

Table 1.1, column three, shows the Haiti ZOI estimated 2016 population of 723,313. Women of reproductive age, children age 0-59 months, and youth age 15-29 years account for 23.5 percent, 12.1 percent, and 25.8 percent of the total ZOI population, respectively. The subpopulation estimates of the children age 0-59 months are further categorized in age groups 0-5 months, 6-23 months, and 6-59 months and are based on the corresponding proportions of the children by age in months. The estimated population in the 3DCs (rural and urban) is presented in column two for comparison.

Table 1.1. Population by category in the 3DCs and ZOI, Haiti 2016

Category of individuals	Estimated population in the 3DCs (urban and rural)	**Estimated population in Haiti's FTF ZOI.**
Total population	4,480,843	**723,313**
Total population, by sub-population		
Women of reproductive age (15-49 years)	1,341,135	**170,037**
Children 0-59 months	498,953	**87,624**
Children 0-5 months	51,931	**9,120**
Children 6-23 months	150,980	**26,514**
Children 6-59 months	447,022	**78,504**
Youth 15-29 years	1,459,151	**186,501**
Total population, by gendered household type		
Male and female adult(s)	3,676,618	**574,714**
Female adult(s) only	619,365	**113,411**
Male adult(s) only	184,860	**35,188**
Child(ren) only (no adults)[1]	0	**0**
Women of reproductive age, by pregnancy status		
Pregnant	57,360	**31,076**
Non-pregnant	1,283,775	**138,961**
Children 0-59 months, by child sex		
Male	249,967	**43,898**
Female	248,986	**43,726**
Children 0-5 months, by child sex		
Male	26,028	**4,571**
Female	25,903	**4,549**
Children 6-23 months, by child sex		
Male	75,730	**13,299**
Female	75,250	**13,215**
Children 6-59 months, by child sex		

[18] IHSI. (2015).

Category of individuals	Estimated population in the 3DCs (urban and rural)	Estimated population in Haiti's FTF ZOI.
Male	223,939	**39,327**
Female	223,083	**39,177**
Youth 15-29 years, by sex		
Male	672,131	**90,719**
Female	787,020	**95,782**

[1] The subgroup populations were estimated from the USAID Haiti FTF ZOI Interim Assessment, 2016. All households encountered during the survey included at least one adult. Therefore, the estimated percentage of households with no adults is 0 percent.

Source: Population figures were projected to 2016 using the 2012 and 2015 population estimates prepared by the IHSI. The 2015 populations were projected using the implied growth rate between the 2012 and 2015 populations. Projections were performed by commune and aggregated to the total of the 3DCs and the ZOI populations. The projected population was then disaggregated into the subgroups reported here using the population characteristics recorded in the ZOI Interim Survey, Haiti 2016.

The distributions of the ZOI population of individuals and households by gendered household type were estimated from the USAID Haiti FTF ZOI interim assessment. As indicated by Table 1.1, among eligible households, the estimated percentages of the population residing in units of male and female adult(s), female adult(s) only, and male adult(s) only household types are 79.4 percent, 15.7 percent, and 4.9 percent, respectively. Child headed households were not eligible for this survey and, therefore, there are none in the sample so this is displayed as not applicable (n/a).

Table 1.2 indicates that Haiti's FTF ZOI has an estimated 160,763 households, which is based on the average household size of 4.5 persons from the USAID Haiti FTF ZOI interim assessment. The estimated percentages of households in male and female adult(s), female adult(s) only, and male adult(s) only gendered household types are 68.2 percent, 20.2 percent, and 11.6 percent, respectively. The estimated number of households in the 3DCs (rural and urban) is presented in column two for comparison.

Table 1.2. Number of households by category in the 3DCs and ZOI, Haiti 2016

Category of households	Estimated number in the 3DCs (urban and rural)	Estimated number of households in Haiti's FTF ZOI.
Total number of households in ZOI	961,533	**160,736**
Number of households, by gendered household type		
Male and female adult(s)	687,981	**109,652**
Female adult(s) only	180,957	**32,521**
Male adult(s) only	102,209	**18,563**
Child(ren) only, (no adults)[1]	n/a	**n/a**

Source: Population figures were projected to 2016 using the 2012 and 2015 population estimates prepared by the IHSI (2012). The 2015 populations were projected using the implied growth rate between the 2012 and 2015 populations. Projections were performed by commune and aggregated to the total ZOI population. The projected population was then disaggregated into the subgroups reported here using the population characteristics recorded in the ZOI Interim Survey, Haiti 2016.

1.2.3 Agriculture in the ZOI

Haiti's agriculture products of primary importance to the FTF activities – and therefore identified in the baseline and interim survey instruments - are coffee, mangoes, cocoa, sugarcane, rice, corn, sorghum, bananas, beans, sweet potatoes/yams and cassava. Other crops important to food security and livelihoods of people in the ZOI are peanuts, cabbage, lettuce, spinach, tomatoes, shallots, bell peppers and potatoes as well as tree crops – avocados, oranges and coconut palm. Currently, food grown in Haiti is used almost exclusively to meet domestic needs.

When the FTF FY 2011-2015 Multi-Year Strategy for Haiti was developed, Agriculture employed 60-70 percent of the population but contributed only 25 percent to the gross domestic product (GDP). Crop yields were growing by only 0.4 percent annually, a rate that inadequate to keep up with the 2 percent population growth rate.[19]

Although real GDP rose since the earthquake in 2010 from USD 6.62 Billion to USD 8.88 Billion in 2015,[20] this positive economic indicator has been overshadowed by the fact that agricultural production was thwarted by drought conditions causing sharp production losses in 2014 and 2015. This was accompanied by sharp increases in inflation[21] disproportionately harming the poor.

The agriculture system in Haiti relies on smallholder farmers who cultivate small farms, with an average size of 1.5 hectares.[22] Many farmers plant on the slopes of mountains with limited means of irrigation and transportation, or in the plains, which are subject to frequent flooding that causes substantial agricultural losses. Soil erosion and deforestation have resulted in the loss of the natural forest protection and eroded essential minerals from the soil, thus constraining productivity.

A major challenge for Haiti is be to manage the substantial decrease in donor financing, as well as its access to concessional financing. This likely constrains Haiti's capital investments, which have increased over the last three years, but with limited impact on growth. With scarce resources, efficient and effective use of domestic and external resources remains crucial.[23]

[19] Feed the Future FY 2011-2015 Multi-Year Strategy for Haiti. U.S. Government.
[20] http://www.tradingeconomics.com/haiti/gdp; accessed 11/1/2016
[21] +8.4% (2011), +6.3% (2012), +5.9% (2013), +4.6% (2014) +9.0% (2015) https://www.focus-economics.com/country-indicator/haiti/inflation, accessed 11/1/2016. And fluctuating between a low of 13.3% in January 2016 to a maximum of 15.2% in April 2016. http://www.tradingeconomics.com/haiti/inflation-cpi accessed 11/1/2016
[22] Feed the Future Investment in Haiti: Implications for sustainable food security and poverty reduction, Fuller-Wimbush,D.,,Fils-Aimé, C. 2014 (last updated 2016)
[23] http://www.worldbank.org/en/country/haiti/overview accessed 10May2016.

There are domestic markets in Haiti for fruits and vegetables, coffee, poultry, eggs, tubers, dried beans, and rice with potential to develop these further through productivity gains by increasing yield, improving quality and substantial reductions in pre-harvest, harvest and post-harvest product losses. The transfer of knowledge and skills through the value chain will improve the productivity of small producers.

1.3 Purpose of This Report

The purpose of this interim assessment is to provide the United States Government interagency partners, USAID BFS, USAID Missions, host country governments, and development partners with information about the current status of the ZOI indicators. The assessment is designed for use as a monitoring tool, and as such provides point estimates of the indicators with an acceptable level of statistical precision. However, Feed the Future ZOI sample calculations are not designed to support conclusions of causality or program attribution, nor is the interim assessment designed to measure change from the baseline with statistical precision.

2. Methodologies for Obtaining Interim Values for Feed the Future Indicators

This section describes the methodology used to obtain the population-based Feed the Future indicators. It provides information on the data sources and describes measures and reporting conventions used throughout the report.

2.1 Data Sources

Table 2.1 presents the data sources and dates of data collection for the Feed the Future indicators at baseline and (1st) interim measures. All data used for this report are primary data (i.e., no secondary data were used).

Table 2.1. Data sources and dates of the baseline and interim FTF indicators

Indicator	Baseline		Interim	
	Data source	Date collected	Data source	Date collected
Daily per capita expenditures (as a proxy for income) in USG-assisted areas	Haiti Baseline Survey	Oct-Dec 2012	USAID Haiti FTF ZOI Interim Assessment	Apr-June 2016
Prevalence of Poverty: Percent of people living on less than $1.25 per day	ZOI Baseline	Oct-Dec 2012	USAID Haiti FTF ZOI Interim Assessment	Apr-June 2016
Depth of Poverty: Mean percent shortfall relative to the $1.25 per day poverty line	ZOI Baseline	Oct-Dec 2012	USAID Haiti FTF ZOI	Apr-June 2016

Indicator	Baseline		Interim	
			Interim Assessment	
Women's Empowerment in Agriculture Index indicators	ZOI Baseline	Oct-Dec 2012	USAID Haiti FTF ZOI Interim Assessment	Apr-June 2016
Prevalence of households with moderate or severe hunger	ZOI Baseline	Oct-Dec 2012	USAID Haiti FTF ZOI Interim Assessment	Apr-June 2016
Women's Dietary Diversity: Mean number of food groups consumed by women of reproductive age	ZOI Baseline	Oct-Dec 2012	USAID Haiti FTF ZOI Interim Assessment	Apr-June 2016
Prevalence of exclusive breastfeeding among children under 6 months of age	ZOI Baseline	Oct-Dec 2012	USAID Haiti FTF ZOI Interim Assessment	Apr-June 2016
Prevalence of children 6-23 months receiving a minimum acceptable diet	ZOI Baseline	Oct-Dec 2012	USAID Haiti FTF ZOI Interim Assessment	Apr-June 2016
Prevalence of underweight women	ZOI Baseline	Oct-Dec 2012	USAID Haiti FTF ZOI Interim Assessment	Apr-June 2016
Prevalence of stunted children under 5 years of age	ZOI Baseline	Oct-Dec 2012	USAID Haiti FTF ZOI Interim Assessment	Apr-June 2016
Prevalence of wasted children under 5 years of age	ZOI Baseline	Oct-Dec 2012	USAID Haiti FTF ZOI Interim Assessment	Apr-June 2016
Prevalence of underweight children under 5 years of age	ZOI Baseline	Oct-Dec 2012	USAID Haiti FTF ZOI Interim Assessment	Apr-June 2016

2.1.1 Methods

This section describes the ZOI Interim Survey, including discussion of the sample design (including targeted sample size), questionnaire customization, fieldwork, response rates, and limitations of the survey.

Survey Sample Design

The FTF ZOI is a subset of the 3DCs being only the rural population within these 3DCs. Rural populations are defined as all households within the geo-political division Zone

Rural (ZR). There are 517 ZRs organized within 108 Section Communales (SC) which are, themselves, organized within 25 communes. Of the 25 communes within the 3DCs, only three are exclusively urban. Of the 108 SCs with rural populations, 34 have a mix of rural and urban populations (21 in Northern, six in Cul-de Sac and seven in St. Marc) whereas 74 are exclusively rural. The SCs with mixed rural and urban populations vary considerably in their ratio of urban to rural with some being nearly split 50/50 by in terms of urban and rural population size and/or by the number of Villes/Cartiers to ZC whereas others are predominately urban or rural. The 517 ZRs are further organized into enumeration areas (EA) with known (estimated) population size. The EAs were the primary sampling units (PSUs) of baseline survey and interim assessment.

Because the baseline survey and interim assessment are dual purpose surveys, sampling was done from all EAs in the 3DCs; that is, the sample was drawn from both rural and urban EAs. Sampling was done separately for each DC resulting in a total of 144 EAs selected (48 EAS from each of the 3DCs) using a probability proportional to estimated size (PPES). This resulted in a sample of 63 rural EAs[24] and 81 urban EAs. Stratification by DC was to assure there was enough power to compare point estimates between the 3DCs for non-disaggregated indicators; there was no other stratification done. The data from the (rural) EAs are used for this USAID Haiti FTF ZOI Interim Assessment report.

Sample Size Calculation

The purpose of the interim assessment is to provide estimates of the population-based indicators with an acceptable level of statistical accuracy for monitoring. The interim survey sample sizes were calculated to provide point estimates of indicator values rather than calculating sample sizes to detect change in indicator values over time. Point estimates measure indicators for a point in time with a given level of precision, whereas measuring change over time would compare differences in indicator values between two time periods (e.g. baseline and interim). A sample based on point estimates requires a smaller sample size than a sample designed to measure change over time.

In sample size calculations, the margin of error determines the amount of precision the indicator estimates will have. For continuous variables such as expenditures, the margin of error was based on the mean indicator value times 0.10; the margin of error for proportions (poverty, stunting, and wasting) was equal to 0.10.

Sample sizes were calculated using projected interim indicator values. The interim values for Haiti were projected by assuming a 10 percent change for indicators such as

[24] One EA, in the 5ème Petit Bois (Section Communale) Croix-des-Bouquets (Commune) in the Cul-de-Sac corridor, was not accessible due to flooding so data are, in fact, only from 62 EAs are in the interim sample.

expenditures or a 10 percentage point change for indicators such as prevalence of stunting. The direction of change used for projecting the interim values was determined by assuming positive change in the population – regardless of the reason for that change - since baseline.

All sample sizes were further adjusted for 10 percent non-response rate. The mean number of household members was assumed to be the same as that found in the Haiti Baseline Survey, 2012 (4.8 members per household) and used to calculate the number of eligible households needed for an indicator.[25]

Sample sizes were calculated for the key indicators shown in table 2.2 below. Using estimates from the baseline survey of the average number of children 0-5 months per household, we also calculated sample size needed for capturing 70 children in this age range. Collecting data on at least 70 children was chosen to be large enough to provide some precision in measurement, but not so large as to require a large number of households. Exclusive breastfeeding in general requires a large sample size because there are few children of breastfeeding age.

Table 2.2 shows the minimum sample sizes required for the most commonly used indicators for FTF population-based survey sample size determination. The minimum sample size required to calculate the exclusive breastfeeding indicator also is included in the table. The minimum number of households required to capture 70 infants aged 0-5 months was 910 households. This number exceeds the largest number of households required for the other indicators, so the number of households selected for the sample was determined by the exclusive breastfeeding indicator. It was assumed that at least 21 eligible[26] households (EHH) exist and could be reached in each EA. To allow for the possibility of incomplete responses, inaccessible EAs or because the actual number of EHH in a given EA was not known, four additional EAs per DC were chosen bringing the total number of EAs to 144 (see appendix A3 for list of all EAs by corridor).

[25] Stukel and Deitchler. (2012).

[26] Eligible households are all households except (1) child-only households (2) households from structures with 3+ households that were not selected when the Kish grid was used (explained further in the paragraphs under “Sample Selection”). For the Agricultural questionnaire, only households which had at least one person who did agricultural work were eligible (question B1 on the consent form in the Ag questionnaire)

Table 2.2. Sample size estimate for the key indicators[27] and exclusive breastfeeding

Indicator	Baseline value[28]	DEFF[29]	Estimated interim value	Sample size	Number of households needed
Prevalence of poverty	12.4	2.0	11.16	<100	<100
Prevalence of underweight children	10.5	2.0	9.45	<100	227
Prevalence of stunted children	18.7	2.0	16.83	108	372
Household hunger	53.0	2.0	47.70	192	213
Prevalence of exclusive breastfeeding (minimum sample size)	23.0	2.0	25.30	70	910
WEAI	84.6	2.0	76.14	140	156

Sample Selection

Sampling was based on a three-stage[30] design to the selection of the household.

In the first stage, 144 EAs were chosen from among all EAs in the three corridors using PPES[31] sampling. Each corridor was sampled independently. The 2003 census frame, projected to the 2015 population, was used to select the sample of EAs.

In the second stage, all "Structures" within all EAs were identified using satellite (aerial) images. These structures were enumerated from which a random sample was drawn.

The number of structures found in an EA varied from 87 to 770.[32] A total of 3,092 structures were selected for the survey: 1,006 structures in the Saint-Marc corridor, 1,008 Structures in the Cul-de-Sac corridor and 1,078 Structures in the North corridor.

Just prior to the field work, the randomly selected structures (3,092) were visited by an advance team that identified which structures were definitively commercial or completely destroyed and attempted to identify the number of HH in each that were

[27] Per capita consumption was not used for sample size determination because the standard deviation for the baseline estimate was not known.

[28] Because of the dual purpose of the baseline and interim surveys, the baseline values shown in this table - used for sampling - are for the 3DCs - not just for the ZOI which is rural only. The source of these baseline values is annex B of the Haiti Baseline Survey, 2012.

[29] The DEFF used at baseline or calculated from the baseline data were not reported in Haiti Baseline Survey, 2012 so a default DEFF of 2.0 was used for sampling. The actual DEFFs from this USAID Haiti FTF ZOI Interim Assessment have been calculated and are presented as an appendix.

[30] One might consider this a four-stage design when going to the selection of the individuals because, within a household, not all of the members were interviewed/measured. When more than one member was eligible, they were selected randomly using a Kish grid.

[31] Rural EAs had an average population size of 532 inhabitants (66 min; 2237 max); urban EAs had an average population size of 957 inhabitants (108 min; 3885 max).

[32] The actual number of identified objects in the satellite images ranged from 19 to 2,235 but these were adjusted using MOS approximation resulting in a range of 87 to 770 structures which were enumerated and from which a random selection was taken.

inhabited. The advance team did not have the resources to assure that all of the selected structures were inhabited or what number of EHHs they had; this was finalized by the field teams when they arrived to conduct the interviews. The selected structures which remained after the advance team had eliminated the definitively commercial or destroyed HHs were visited by the field teams who kept an inventory of the type of structures found as well as the number of HH in each of these. (see Appendix A4). If the advance team had not been used, the field teams would have had to visit all of the selected structures so the advance team reduced the amount of time it took the field teams to complete data collection.[33]

In the third stage, the number of households to be interviewed was selected from all of the EHH in a structure.

The average number of households anticipated per EA was 21. When the surveyors reached a structure, they first determined if it was inhabited and, if yes, how many EHHs were within that structure. Then, a number of the EHHs were selected using the Kish grid and interviewed. The number of EHHs in a structure that were selected and interviewed depended upon the total number of EHHs within the structure.

- If a structure had 1 EHH, that EHH was interviewed.
- If a structure had 2 and only 2 EHH, both were interviewed.
- If a structure had 3-5 EHH, 2 were randomly selected using a Kish grid
- If a structure had 6 or more EHH, 3 were randomly selected using a Kish grid

The number of households found in a structure varied from zero to nine.

In the fourth stage, when only certain members of the household were to be interviewed and/or measured for anthropometry, literacy testing, etc., a Kish grid was used to select members to be interviewed when more than one was eligible.

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) number of households from the sampling frame used for selection of EAs, (2) population of the strata (i.e. the 3DCs) from which EAs are drawn, (3) number of structures in each EAs (4) number of households in the selected structures (5) number of households interviewed and (6) response rates at the household and individual (women, men, and children) levels.

[33] The IHE field teams thought that they had to revisit all the structures to verify that they indeed had no EHHs. This was corrected while they were in the field surveying the first of three corridors.

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 Appendix 2.1.

Questionnaire Design

The Haiti Interim Survey instrument included the following modules from the core Feed the Future interim ZOI survey instrument:[34]

Module A. Household Identification Cover Sheet;

Module B. Informed Consent;

Module C. Household Roster and Demographics;

Module D. Dwelling Characteristics;

Module E. Household Consumption Expenditure;

Module F. Household Hunger Scale;

Module G. Women's Empowerment in Agriculture Index;

Module H. Women's Anthropometry and Dietary Diversity (legumes disaggregated by soy and soy products, groundnut and groundnut products, and other foods made from beans, peas, lentils, nuts, seeds; and sweet potatoes that are dark yellow or orange inside disaggregated from any other dark yellow/orange foods such as pumpkin, carrots, squash, or other local dark yellow/orange foods); and

Module I. Child Anthropometry and Infant and Young Child Feeding (legumes disaggregated by soy and soy products, groundnut and groundnut products, and other foods made from beans, peas, lentils, nuts, seeds; and sweet potatoes that are dark yellow or orange inside disaggregated from any other dark yellow/orange foods such as pumpkin, carrots, squash, or other local dark yellow/orange foods).

There are other, non-Feed the Future, modules in the survey instrument but these were not used for this report.

[34] Note that anemia has been excluded from Modules H and I because anemia was not collected at baseline, as USAID Haiti does not have direct interventions aiming at reducing the prevalence of anemia.

Fieldwork

Personnel from two Haitian non-governmental organizations (NGOs) collected the data for this survey. IHE collected the data using for Modules A, B, C, D, E, F, H and I. BRIDES collected data for Module G.[35]

IHE had 13 field teams with each team consisting of a supervisor, a field editor, an anthropometric specialist, and three interviewers. The IHE teams conducted interviews in all of the 144 EAs in the sample within the 3DCs. BRIDES had six teams with each team consisting of a supervisor, a field editor and four interviewers. BRIDES collected data in the 63 rural EAs within the sample. BRIDES teams interviewed only the households in the rural EAs that had been interviewed by IHE and practiced agriculture. In addition to these teams, both IHE and BRIDES had additional supervisors that moved between the teams for quality control.

The IHE teams' departure preceded the BRIDES teams' departure by two weeks. This staggered approach was necessary because the time required for the IHE interviewers to administer her/his questionnaire was much longer than that of the BRIDES teams, and because the BRIDES teams only surveyed in 63 of the 144 EAs surveyed by IHE.

IHE field work took place between April 25 and June 6, 2016 while the BRIDES field work took place between May 8 and June 8, 2016.

The teams collected data using paper survey instruments. The field editors and the supervisors (one of each per team) monitored data quality while the teams were in the field. Completed instruments were sent back to IHE headquarters where a small team of office editors reviewed each completed questionnaire and, in consultation with senior staff, resolved any issues should they exist before passing it on to a team of 30 data clerks that entered the data in a CSPro application prepared for this purpose. Double data entry was done on 100 percent of the questionnaires and the two entries were compared. If there were discrepancies between the two entries, an office editor reviewed the discrepancies and identified if the values in the 1st entry or the 2nd entry were correct and modified the incorrect entry. Once there was 100% agreement between the 1st and 2nd data entry, that questionnaire module was marked as completed.

[35] IHE also collected non-Feed the Future data on governance, public services, health, and literacy; BRIDES also collected data on agriculture production.

Limitations of this, ZOI Interim Assessment, survey and comparing these to the baseline point estimates.

The point estimates from the Haiti Baseline Survey and the point estimates of this USAID Haiti FTF ZOI Interim survey were only to be compared in the Feed the Future Zone of Influence Indicator Estimates Table. This was to be done by presenting the confidence intervals for the point estimates from both points in time and identifying if there was overlap (indicating a high likelihood that there was no statistically significant difference between the baseline and interim time periods) or not. On further review of the survey methodologies, while the instruments and indicator definitions used in both the baseline and interim measures are comparable, the sampling procedure at baseline was not identical to that done for the interim assessment, making this comparison problematic.

For both the baseline and interim measures, the first stage cluster sampling (selection of the EAs) were selected by PPES. The second stage of the sampling at the baseline measure was not done in the same way as the third stage for the interim measure (i.e. the selection of the households).

For the baseline's second stage sampling (of households within each EA), several possible starting points[36] were identified and listed within each EA and one was selected randomly. Several directions from that starting point were then listed and one direction was selected randomly. The interviewers then began walking from the selected starting point in the selected direction and interviewed the EHHs along this path until they had reached their (quota) of 21 households per EA. This baseline sampling at the 2nd stage was not done PPPE nor is it possible to determine the probability of a household being selected post-hoc meaning that probabilistic weighting cannot be done. For the interim assessment, the information required to determine the probability of selection at the third stage of sampling was collected by the advance and field teams (as described in the sampling sections of this report) thereby permitting the calculation of sample weights.

If, at baseline, assumptions were made that justified calculating confidence intervals on the point estimates – or if adjustments were made to account for not knowing the probability of household selection at the 2nd stage - they are not documented in the report.

This difference in sampling means that statistical comparisons between the baseline and interim point estimates cannot be made without making assumptions that are not supported.

[36] The criteria used to identify the universe of possible starting points and the universe of possible directions is not documented in the Haiti Baseline Survey, 2012

The other limitation when comparing baseline to interim estimates is related to the period of data collection. Because data collection for the interim survey was conducted during the hungry season, this must be considered when comparing these estimates to estimates from other surveys conducted during a different time period. Because the Haiti Baseline Survey, 2016 data were collected *before* the hungry season, care should be taken when comparing baseline to interim for certain indicators.[37]

The last census in Haiti was done in 2003. From these data, the population in 2016 was estimated. That the last census was done in 2003 and that there has been documented movement of the population in certain regions (including two of the 3DCs) due to several factors including, but not limited to, urbanization, the economy and the 2010 Earthquake, the sampling error of this USAID Haiti FTF ZOI Interim Assessment is larger than had there been a census conducted since the 2010 earthquake from which the 2016 estimates could have been developed. This limitation, however, affects all population based surveys conducted in Haiti.

ZOI Interim Survey Response Rates

Table 2.3. Results of the household and individual interviews for the ZOI interim survey in Haiti 2016

Response rates[1,2] and components	
Households	
Households selected	1,182
Households occupied	1,161
Households interviewed	1,133
Household response rate[2,3]	97.6
Women's module (Women 15-49 years)	
Number of eligible women	1,093
Number of eligible women interviewed	1,069
Eligible women response rate[3,4]	97.3
Child anthropometry (Children <5 years)	
Number of eligible children	647
Number of children measured	637
Eligible children response rate[3,4]	98.3
Child literacy (Children 6-17 years)	
Number of eligible children	1,000
Number children tested	669
Eligible children response rate[3,4]	91.1
Agriculture module8[5,6,7]	
Number of eligible households	1,133

[37] Any indicator whose values vary with the season. Wasting and underweight indicators are affected by the season as is household consumption, diet diversity, school attendance, etc.

Number of household respondents interviewed	1,017
Eligible household response rate[6]	89.8
Primary adult female decision-makers (age 18+ years)	
Number of eligible women	997
Number of eligible women interviewed	862
Primary adult female response rate[3,4]	86.5

[1] Households are only those inhabited. Because of the type of sampling used in the USAID Haiti FTF ZOI Interim Survey, there were many structures visited (i.e. "possible" households) all of which had cover sheet of the questionnaire completed to document if the structure was, in fact, a household. Structures that were not households were coded as "Other" for the results of the survey". A later version of the cover page included an additional result code for "not a household" but that version was not printed. About 60% of the those cases in the ZOI with "Other" as the result code are not households; they are either commercial structures, cellars, storage areas, garages, partially constructed houses, destroyed, partially destroyed and uninhabited houses.

[2.] Household response rates are calculated as the number of households interviewed divided by the number of households occupied. Unoccupied households were excluded from the response rate calculations. The unoccupied households were those that were found to be vacant, not a dwelling unit, dwelling unit destroyed, or with an extended absence, or other result code.

[3] The written explanations in a sample of the questionnaires that had a results code of "Other" were reviewed and two percent of these should have been recoded as "refused". Thus, the computed response rate of 97.6% for the HH module is 95.6% when adjusted; For the women's module, the computed rate of 97.3% is 95.8% when adjusted; for the child anthropometry module, the computed response rate of 96.5% is 94.5% when adjusted; for the child literacy module, the computed response rate of 99.1% is 97.1% when adjusted; for the primary adult female decision maker, the computed response rate of 86.5% is 84.5% when adjusted.

[4] The eligible count is based on the sampling rate of the individuals. For example, only one child 6-17 was sampled for the literacy module per household. Thus, there is only one eligible child per household.

[5] The agriculture and women's empowerment in agriculture modules were administered to rural households during a separate sitting by a different enumeration teams after the household, women, and children's data were collected. Households that were not interviewed during the household/women's survey (visit by the IHE teams) were not revisited for the agriculture and women's empowerment modules (by the BRIDES teams). These non-response households are not counted among the households that were eligible for the agriculture and women empowerment module.

[6] All households visited for the household/women's survey were visited for the agricultural survey but prior to starting the interview, the respondent was asked if anyone in the household does any agricultural work. If the reply was "no", the interview was stopped and the result code was marked as "Other" or as "Not Applicable" because the Ag questionnaire cover page did not have a code for this situation. HH that did not do any agriculture are considered as "interviewed" and "completed" because they accepted to be interviewed and responded to question #1 in Ag but it just so happens that a "no" response to that question terminates the interview.

About 30% of the Rural HH in the Agricultural survey did not do any agricultural work (i.e. they were not farmers; this includes sharecroppers who were not able to respond to questions in the survey).

Also note that the questionnaire did not make provisions for sharecroppers, about two percent of the sampled farmers were sharecroppers and they could not respond to the agricultural survey as they had no idea how much was spent on inputs, amounts lost pre and post-harvest, etc.

[7] The written explanations in a sample of the agricultural questionnaires that had a results code of "Other" were reviewed: four percent of these should have been recoded as "refused". Thus, the computed response rate of the agricultural module of 89.8 percent was adjusted to 85.8 percent.

2.1.2 Comparability of Data Sources Used for the ZOI Interim Assessment

Because all data used for this report is primary data originating from the same survey, there are no issues of "data source comparability." There are some seasonal issues that should be considered when comparing the interim point estimates to other survey point estimates, including the Haiti Baseline Survey, 2012, which are discussed with the Haitian agricultural calendar[38] presented on the following page. The period when the baseline data (2012) and interim data (2016) were collected has been added to this calendar as has the period when public schools are on summer vacation.

Seasonality

In Haiti, the agricultural calendar is a 12-month calendar with three growing seasons, for seasonal crops,[39] that, for this survey, were identified as:

1. the great/primary rainy season from February through August 2016;
2. the dry season from October 2015 – February 2016; and
3. the small/secondary rainy season from July to December 2015.

The rainy seasons identified for this survey differ slightly from the seasons shown in Figure 2.1 because they allow for the annual variability of when rains actually start and end, as well as the regional variability in the agricultural seasons within Haiti due to its' many micro-climates. This variability in the agricultural season manifests itself within and between the 3DCs. The calendar is, however, still applicable when describing the limitations in comparability of surveys due to seasonality.

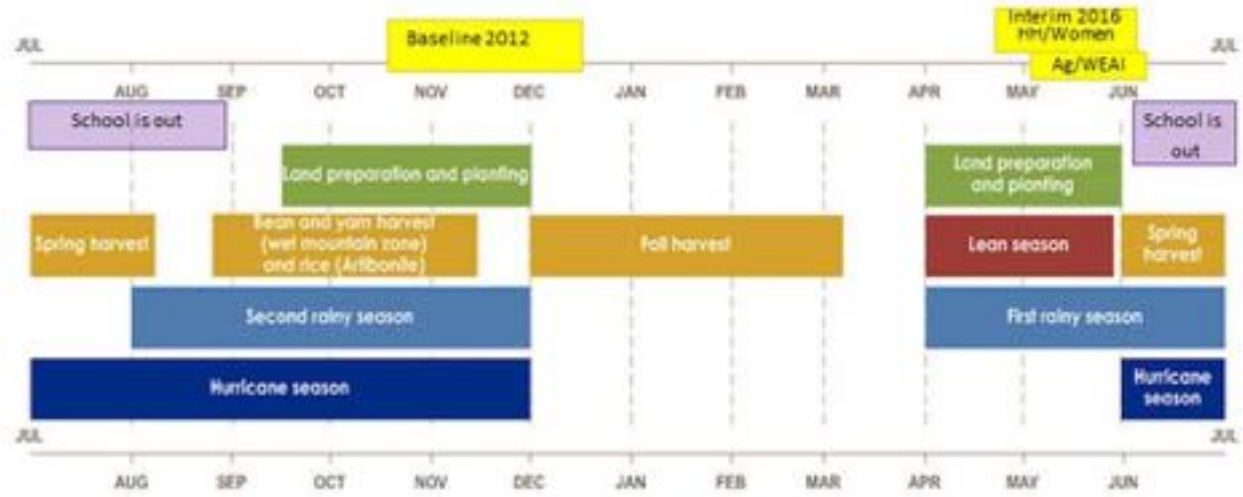
Baseline data were collected from October – December which is not a hungry (lean) season for most farmers. The interim data were collected during the hungry season, the months just before the harvest for the great/primary rainy season crops. In addition to this affecting the ability of farmers to recall crop yield and farm expenses over the past 12 months, it affects comparability of some other FTF indicators such as health, hunger, diet and, especially, those using anthropometry. This difference might also affect indicators related to household income and expenditures because memory recall is best for the most recently past growing season relative to the interview date and is worst for the most chronologically distant growing season.

[38] Haitian Agricultural Calendar source: Famine Early Warning Systems Network (FEWSNET). (2016). http://www.fews.net/central-america-and-caribbean/haiti.

[39] Some crops do not have a defined growing season such as bananas which can be planted and harvested year round.

It is not possible to make adjustments for seasonality differences because there are many variables that would have to be controlled such as the specific mix of crops planted by the farmers, the seasons during which crops were planted, how much of the crops were sold versus consumed and, most important, the variability in growing seasons due to regional and micro-climate differences. Other factors that should be considered when comparing data are annual rainfall and other climatic conditions such as tropical storms and hurricanes as well as inflation and changes in the consumer price index (CPI) but these are beyond the scope of this survey.

Figure 2.1. Haiti seasonal calendar



2.2 Measures and Reporting Conventions Used Throughout This Report

2.2.1 Standard Disaggregates

A standard set of disaggregate variables are used in tables throughout this report. This section lists each of the standard disaggregate variables and defines how the variable is calculated.

Age in Months

The age of children in months is collected in the child nutrition-focused module of the questionnaire, rather than in the household roster, so that the child's parent or primary caregiver can be prompted to provide the most accurate age possible. Children's age in months is presented by monthly age groups as appropriate for the children's dietary intake and anthropometry tables. For example, for the MAD table (Table 6.6), which presents the MAD indicator for children age 6-23 months, children's age in months is disaggregated into six-month age groups as follows: 6-11 months, 12-17 months, and 18- 23 months. For the children's anthropometry tables (Tables 7.2, 7.3, and 7.4), which

present the prevalence of stunting, wasting, and underweight for all children under 5 years of age, children's age in months is disaggregated into 12-month age groups as follows: 0-11 months, 12-23 months, 24-35 months, 36-47 months, and 48-59 months.

Age in Years

Data on respondent's age in years is collected in the household roster. For women age 15-49 and children under age 6, more detailed age data are collected in subsequent questionnaire modules to confirm eligibility to respond to the module questions; these more detailed age data are used where available. Age is generally presented in the tables in 5- or 10-year age groups.

Child Sex

The sex of the child – male or female – is a standard disaggregate for the tables presenting children's indicators, e.g., children's anthropometry (Tables 7.2, 7.3, and 7.4).

Educational Attainment (Household)

Household educational attainment reflects the highest level of education attained by any member of the household, as reported in the household roster of the corresponding questionnaire. This variable is used in tables that present household-level data, and is comprised of four categories: no education (households where no member has received any formal education); less than primary (households with at least one member who has entered the formal schooling system, but with no member who has completed primary); primary (households with at least one member whose highest educational attainment is completed primary, but with no member who has completed secondary); and secondary or more (households with at least one member whose highest educational attainment is completed secondary education or more). Households are categorized in only one of the four categories.

Educational Attainment (Individual)

Educational attainment at the individual level reflects the highest level of education attained by individual household members, as reported in the household roster of the corresponding questionnaire. This variable is comprised of four categories: no education (those who have not received any formal education), less than primary (those who have entered the formal schooling system but whose educational attainment is less than completed primary); primary (those who have completed primary but have not completed secondary); and secondary or more (those who have completed secondary education or more).

Gendered Household Type

Feed the Future Monitoring and Evaluation Guidance Series Volume 6: *Measuring the Gender Impact of FTF* notes that household-level indicators should be disaggregated by *gendered household types* – that is: (1) households where members include both male and female adults;[40] (2) households where members include male adult(s), but no female adults; (3) households where members include female adult(s), but no male adults; and (4) households with only members under age 18 (children), i.e., households with children only and no adult members. This approach to conceptualizing household type is distinct from the standard *head of household* approach, which is embedded with presumptions about household gender dynamics and may perpetuate existing social inequalities and prioritization of household responsibilities that may be detrimental to women (USAID 2014:1).[41]

This variable is calculated using data on age and sex collected in the household roster of the survey questionnaire.

Household Hunger

As described in greater detail in Section 6.1 of this report, the Household Hunger Scale (HHS) characterizes households according to three categories of hunger severity: little to no household hunger, moderate household hunger, and severe household hunger. For the purposes of serving as a disaggregate in selected tables, the HHS is converted to a dichotomous measure reflecting households that report little to no household hunger, and households that report moderate or severe household hunger.

Household Size

For the ZOI surveys, household size is defined as the total number of people who: (1) are reported to be usual members of the household; and (2) who have spent the night in the household within the past six months. This ordinal household size variable is recoded into a categorical variable as follows: small households (1-5 members), medium households (6-10 members), and large households (11 or more members). Note that other household survey programs may use a slightly different definition of household member from that used in the ZOI surveys.

[40] Adult is defined as age 18 or older.
[41] USAID. (2014).

2.2.2 Reporting Conventions

The Feed the Future interim assessment reports are primarily descriptive in nature. This section provides an overview of the conventions used in reporting these descriptive results.

- In the tables throughout this report, weighted point estimates and unweighted sample sizes (denoted by *n*) are presented.
- Most estimates are shown to one decimal place, with the specific exceptions of per capita expenditures and the women's dietary diversity indicators, which are shown to two decimal places. Unweighted sample sizes in all tables and the population estimates in Tables 1.1 and 1.2 are shown as whole numbers.
- Values in the tables are suppressed when the unweighted sample size is insufficient to calculate a reliable point estimate (n<30); this is denoted by the use of the symbol ^ in the designated row and an explanatory footnote.

Statistical significance (p<0.05) is denoted with matched superscripted letters attached to the row (usually the disaggregate variable) and column (usually the outcome variable) headings. Explanatory footnotes following each table clarify the meaning of the significance test annotation, and statistically significant relationships are highlighted in the narrative throughout the report.

3. ZOI Interim Survey Population

This section describes the background characteristics of the ZOI population using data from the ZOI interim survey.

3.1 Demographics

Table 3.1 presents demographic characteristics of the households in the ZOI. Values are shown for all households, as well as by categories of gendered household type. This table presents the average household size, as well as the average number of female adults and children within the household. Household education, defined as the highest level of education of any member of the household, is also presented in this table.

Table 3.1. Household demographic characteristics by gendered household type

Characteristic	Total (All HHs)	By gendered household type[a, 42]			
		Male and female adult	Female adult(s) only	Male adult(s) only	Child only
Mean household size[a]	4.5	5.3	3.5	1.7	-
Mean number of adult female household members[a,1,2,]	1.4	1.5	1.6	0.0	-
Mean number of children (<2 years)[a, 1]	0.2	0.2	0.2	0.0	-
Mean number of children (0-4 years)[a, 1]	0.6	0.7	0.6	0.0	-
Mean number of children (5-17 years)[a, 1]	1.4	1.6	1.4	0.3	-
Mean percentage of adults who are female [1,2]	54.0	49.8	100.0	0.0	-
Highest education level attained[a]					
No education	10.4	7.1	14.6	22.8	-
Less than primary	28.4	25.3	37.9	30.0	-
Primary	41.8	44.6	37.7	31.8	-
Secondary or more	19.4	22.9	9.8	15.5	-
n[3]	1131	763	228	140	n/a

[1] The count is based on household members with known age.

[2] Feed the Future defines adult as an individual age 18 or older. Females age 15-17 are of reproductive age, but are not considered adults by this definition.

[3] Sample n is the unweighted count of all households that responded to the survey.

[a] Significance tests were performed for associations between household characteristics and gendered household type. For example, a test was done between mean household size and gendered household type. When an association is found to be significant ($p<0.05$), a superscript is noted next to the household characteristic.

Source: USAID Haiti FTF ZOI Interim Assessment, 2016.

Among all households in the Haiti ZOI, the average household size is 4.5 people. Male and female adult households have an average of 5.3 members, whereas female adult-only households have an average of 3.5 people and male adult-only households have an average of 1.7 people. As shown in Table 3.1, household size varies significantly by gendered household type.

The average number of adult (age 18 or over) females in ZOI households is 1.4. Regarding children, the average number of children under 2 years is 0.2; the average number of children 0-4 years is 0.6; and the average number of children age 5-17 years is 1.4. As denoted by the superscripts in Table 3.1, all of these household demographic characteristics – mean number of adult females, children under 2, children 0-4, and children 5-17 – vary significantly by gendered household type.

Over half (54.0 percent) of adults in Haiti ZOI households are female. With respect to the educational attainment of household members, about 10.0 percent of ZOI

[42] Gendered Household Type is not synonymous with decision making in the household. FTF defines a male and female household (gendered household type) as one having one adult female and one adult male as usual residents in the household regardless of their decision-making power.

households have no education at all, and 28.4 percent have less than primary education (i.e., they have no members with completed primary school or greater). 41.8 percent of the ZOI households have at least at least one member who has completed their primary education but with no members having completed secondary school or greater. Finally, well 19.4 percent of households have at least one person that completed secondary – or higher - education.

The highest level of education in a household varies significantly by gendered household type. Notably, male and female adult households have the highest levels of education; 22.9 percent having at least one person that completed secondary or higher education. This contrasts with adult female adult only households having only 9.8 percent with a secondary or higher education and male adult only households having 15.5 percent.

At the other end of the education spectrum, male and female adult households have the lowest proportion of members with no education (7.1 percent) while male adult only households have the highest proportion with no education (22.5 percent); female adult only households fall between these gendered household types with 14.6 percent having no education.

Table 3.2 shows characteristics of the primary adult male and female decisionmakers irrespective of the gendered-household classification in the sampled households in the ZOI. The primary male and primary female adult decisionmakers are household members age 18 or over who self-identify as the primary adult male and/or primary adult female responsible for both social and economic decision-making within the household. When they exist within a single household, primary adult male and female decisionmakers are typically, but not necessarily, husband and wife or living together as a husband and wife even though not married. Table 3.2 shows the age group and educational attainment for these household members. These characteristics are shown for all primary adult decisionmakers and for primary adult decisionmakers according to sex.

Table 3.2. Characteristics of the primary male and female adult decisionmakers

Characteristic	Total (All primary adult decisionmakers)		By primary adult decisionmaker sex[a]			
			Male		Female	
	Percent	n	Percent	n	Percent	n
Age						
18-24	8.6	1,720	7.0	757	9.8	963
25-29	10.7	1,720	9.3	757	11.8	963
30-39	22.9	1,720	20.7	757	24.7	963
40-49	19.2	1,720	20.7	757	18.1	963
50-59	17.6	1,720	20.2	757	15.7	963

Characteristic	Total (All primary adult decisionmakers)		By primary adult decisionmaker sex[a]			
			Male		Female	
	Percent	n	Percent	n	Percent	n
60+	20.9	1,720	22.1	757	20.0	963
Educational attainment[a]						
No education	36.0	1712	33.0	755	38.4	957
Less than primary	28.8	1712	27.2	755	30.0	957
Primary	25.4	1712	28.7	755	22.9	957
Secondary or more	9.7	1712	11.1	755	8.7	957

[a] Significance tests were performed for associations between the sex and background characteristics of the decisionmaker. For example, a test was done between sex and age of the decisionmaker. When an association is found to be significant ($p<0.05$), a superscript is noted next to the characteristic.

Source: USAID Haiti FTF ZOI Interim Assessment, 2016.

When the 18-24 and 25-29 age groups of decisionmakers are collapsed, that 18-29 group is 19.3 percent and all other age groups are similar being 22.9, 19.2, 17.6 and 20.9 percent for the groups 30-39, 40-49 and 50-59 and 60+ respectively. The age of household decisionmakers does no vary significantly by sex. The distribution between age groups of male adult decisionmakers is roughly the same as that of the female adult decision makers.

The modal educational category among primary decisionmakers is “no education”, at 36.0 percent. 28.8 percent of primary decisionmakers have less than primary education, and 25.4 percent have a primary education leaving only 9.7 percent with a secondary education or higher. Educational attainment among primary adult decisionmakers is significantly associated with sex, with female decisionmakers exhibiting lower levels of primary and secondary education than their male counterparts.

3.2 Living Conditions

Table 3.3 shows the dwelling characteristics of the households in the ZOI. Many of these measures align with the 2015 Millennium Development Goals (MDG) definitions (UNDG 2003). The table presents the percentage of households who have access to an improved water source, improved sanitation, electricity, and solid cooking fuel. The average number of people per sleeping room, as well as roof, exterior wall, and floor materials are also presented. Values are shown for all households.

Table 3.3 Household dwelling characteristics

Characteristic	Total (All households)	
	Estimate	n
Percent with improved water source[1]	53.8	1131
Percent with improved sanitation[2]	23.0	1131
Mean persons per sleeping room[3]	2.8	1131
Percent using solid fuel for cooking[4]	92.5	1131
Percent with access to electricity	34.8	1131

Characteristic	Total (All households)	
	Estimate	n
Household roof materials (%)[5]		
Natural	3.2	1130
Rudimentary	0.3	1130
Finished	96.5	1130
Household exterior wall materials (%)[6]		
Natural	9.3	1082
Rudimentary	16.5	1082
Finished	74.2	1082
Household floor materials (%)[7]		
Natural	42.0	1121
Rudimentary	0.0	1121
Finished	58.0	1121

[1] Improved water sources include piped water into the dwelling, piped water into the yard, a public tap/standpipe, a tube well/borehole, a protected dug well, a protected spring, and rainwater (WHO and UNICEF 2006). The proportion of the population with sustainable access to an improved water source is the 2015 MDG indicator #30 (UNDG 2003); however, as in most major international survey programs, the measure reported here reflects only access to an improved water source, and not the sustainability of that access.

[2] Improved sanitation facilities are those that separate human excreta from human contact and include the categories flush to piped sewer system, flush to septic tank, flush/pour flush to pit, composting toilet, ventilated improved pit latrine, and a pit latrine with a slab. Because shared and public facilities are often less hygienic than private facilities, shared or public sanitation facilities are not counted as improved (WHO and UNICEF 2006). The proportion of the population with access to improved sanitation is the 2015 MDG indicator #31 (UNDG 2003).

[3] The average number of persons per sleeping room is a common indicator of crowding (UNDG 2003).

[4] Solid fuel is defined as charcoal, wood, animal dung, and agriculture crop residue. The proportion of the population using solid fuels is MDG indicator #29 (UNDG 2003). The "other" and "no food cooked in household" response categories are removed from the analysis (explaining why category the percentage total is still 100%).

[5] Natural roofs include no roof and thatch/palm leaf. Rudimentary roof includes bamboo, wood/plank, and cloth/tent. Finished roofs include metal, wood, cement, and brick. The "other" response category is removed from analysis (explaining why the category percentage total is still 100%).

[6] Natural walls include no walls, cane/palm/trunks, and dirt. Rudimentary walls include bamboo with mud, stone with mud, reused wood, cloth/tent, and cardboard. Finished walls include cement, stone with lime/cement, cement blocks, and wood planks or shingles. The "other" response category is removed from analysis (explaining why the category percentage total is still 100%).

[7] Natural floors include earth/sand and dung. Rudimentary floors include wood/palm. Finished floors include parquet or polished wood, concrete/cement/brick, and ceramic tile/mosaic. The "other" response category is removed from analysis (explaining why the category percentage total is still 100%).

Source: USAID Haiti FTF ZOI Interim Assessment, 2016.

Table 3.3 reveals that only 53.8 percent of households in the Haiti ZOI have access to improved water, and 23.0 percent have improved sanitation. For context, the 2012 Haiti DHS[43] report shows that, nationally, 48.9 percent of rural households, and 64.8 percent of all households (both rural and urban) have access to improved water.[44] Similarly, the DHS report also shows that 19.6 percent of rural Haitian households and 25.7 percent of

[43] The Haiti Demographic and Health Survey (DHS) is the "Enquête Mortalité, Morbidité et Utilisation des Services (EMMUS-V)."

[44] MSPP, IHE, and ICF International. (2013). p.13. Note that total (national) and rural estimates presented in the DHS report exclude "les camps d'hébergement" (displaced persons camps). Estimates for Haiti's displaced persons camps are presented in the DHS report separately, but are not referenced in this report.

all Haitian households nationally have access to improved sanitation.[45] In the ZOI, 34.8 percent of households – about one-third – have access to electricity.

> When interpreting access to improved water, sanitation and electricity, it is important to remember that having access to these neither indicates continuous/consistent access and use nor does an improved source assure a safe source. Also, these are estimates at a particular point in time so having access now does not assure sustainable access to that source.

The average number of people per sleeping room in ZOI households is 2.8, and 92.5 percent of ZOI households rely on solid sources of cooking fuel (e.g., charcoal, wood, dung, etc.). The 2012 Haiti DHS report reveals that 96.3 percent of rural households, and 92.7 percent of all households (nationally), rely on solid sources of cooking fuel.[46]

Table 3.3 also shows that the great majority of households in the Haiti ZOI have finished roofs (96.5 percent) and finished exterior walls (74.2 percent) while a little more than one-half have finished floors (58.0 percent). 42.0 percent of ZOI households have floors made of earth, sand, or dung, but only 3.2 percent and 9.3 percent of ZOI households have natural roofs and natural exterior walls, respectively. (Note that the 2012 Haiti DHS report does not present summary measures for natural/rudimentary/finished roofs, walls, and floors).

3.3 Education

Table 3.4 presents school attendance and educational attainment in the ZOI. The table presents the percent of male, female, and all household members under age 25 who are currently attending school. It also presents the percent of household members over age 9 who have attained a primary level of education. Sex ratios in school attendance and attainment of primary education are also presented. These measures align with MDG education indicators.

Under the traditional education system in Haiti, primary school consists of six years of school from ages 6 to 12, middle school consists of three years from ages 12 to 15, and secondary school consists of four years from ages 15 to 19.[47] Under the reform system, primary school consists of nine years of education, from ages 6 to 15, and secondary school consists of three years, from ages 15 to 18.[48] Data are presented and described using more general age groups for comparability with other FTF countries; this does not impact the interpretation of this indicator (as operationally defined) because similar, high

[45] Ibid., p. 15.
[46] Ibid., p. 16.
[47] Classbase Education Database. (2016). http://www.classbase.com/countries/Haiti/Education-System.
[48] Ibid.

percentages are seen in the three age groups of the 5-19 year olds. The school year generally runs from September through June in Haiti.

Table 3.4. School attendance and educational attainment

Characteristic	Percent		Female to male ratio		N
	Attending school[a, 1]	Attained a primary level of education[b, 2]	Attending school[1]	Attained a primary level of education[2]	
Age group[a,b]					
5-9	86.6	n/a[1]	1.1	n/a[1]	625
10-14	90.2	10.3	1.0	0.8	622
15-19	80.0	56.0	1.0	1.0	530
20-24	38.0	69.4	0.6	1.0	441
25-29	n/a[2]	62.4	n/a[2]	0.9	355
30-34	n/a[2]	55.1	n/a[2]	0.9	290
35-54	n/a[2]	39.8	n/a[2]	0.8	863
55+	n/a[2]	5.9	n/a[2]	0.4	612
Sex[,b]					
Female					
Age group					
5-9	89.1	n/a[1]	n/a[3]	n/a[3]	307
10-14	91.4	9.2	n/a[3]	n/a[3]	305
15-19	78.2	57.4	n/a[3]	n/a[3]	263
20-24	27.2	69.3	n/a[3]	n/a[3]	225
25-29	n/a[2]	60.5	n/a[3]	n/a[3]	193
30-34	n/a[2]	53.1	n/a[3]	n/a[3]	164
35-54	n/a[2]	34.7	n/a[3]	n/a[3]	461
55+	n/a[2]	3.5	n/a[3]	n/a[3]	326
Male					
Age group					
5-9	84.2	n/a[1]	n/a[3]	n/a[3]	318
10-14	89.0	11.4	n/a[3]	n/a[3]	317
15-19	81.6	54.8	n/a[3]	n/a[3]	267
20-24	48.4	69.4	n/a[3]	n/a[3]	216
25-29	n/a[2]	64.5	n/a[3]	n/a[3]	162
30-34	n/a[2]	57.8	n/a[3]	n/a[3]	126
35-54	n/a[2]	45.6	n/a[3]	n/a[3]	402
55+	n/a[2]	9.1	n/a[3]	n/a[3]	286

n/a[1] Not applicable – Children in the age group 5-9 years are not yet old enough to have attained a primary level of education.

n/a[2] Not applicable – Current school attendance applies to school-age children and youth only, ages 5-24.

n/a[3] Not applicable – Female to male ratios cannot be calculated for male-only and female-only disaggregates.

[1] The Haiti ZOI interim survey was administered during the school year.

[2] The goals of achieving universal primary education and achieving gender equity with respect to education are assessed by multiple MDG indicators, typically using administrative school data. This table presents respondent-reported school attendance, primary educational attainment, as well as the ratio of females to males on these measures (UNDG 2003).

[3] The MDG indicators for universal primary education and gender equity within education are assessed through the literacy rate (MDG indicator #8) and the ratio of literate women to men (MDG indicator #10) among young adults, age 15-24 years (UNDG 2003).

[a-c] Significance tests were performed for associations between the indicator in the column heading, and age and sex. For example, a test was done for school attendance by sex, and a test was done for school attendance

by age. When an association is found to be significant ($p<0.05$), the superscript of the column heading will appear next to the sex row heading and/or next to the age group row heading.

Source: USAID Haiti FTF ZOI Interim Assessment, 2016.

Table 3.4 reveals that the age group where school attendance is highest 10-14 yrs with 90.2 percent of this group, in the ZOI, currently attending school. 86.6 percent of 5-9 year-olds and 80.0 percent of 15-19 year-olds are attending school. A little over one-third (38.0 percent) of youth aged 20-24 years are currently attending school in the Haiti ZOI.

Current school attendance varies significantly by age group but it does not vary by sex. Based on this indicator, there is no female disadvantage in school attendance in any of the age groups, with 89.1 percent of females age 5-9 attending school (relative to 84.2 percent of males), 91.4 percent of females age 10-14 attending school (relative to 89.0 percent of males), and 78.2 percent of females age 15-19 attending school (relative to 81.6 percent of males). In the 20-24 age group, the difference between females (27.2 percent) and males (48.4 percent) is not statistically significant.

Table 3.4 also shows that attainment of primary education peaks at the 20-24 year-old age group, where 69.4 percent of ZOI residents have completed primary school. While the youngest age groups, those age 10-14 years (especially) and 15-19 years, may not yet have completed their primary education.

Among the oldest age group of ZOI residents, those age 55 or more, only 5.9 percent – less than one in every twenty – has attained a primary level of education. As with school attendance, attainment of a primary level of education in the Haiti ZOI varies significantly by age group but, unlike school attendance, it also varies by sex. More recently historical sex disparities in attainment of primary education are noticeable for the older age group 35-54 with females being at 34.7 percent compared to males at 45.6 percent. Historical sex disparities are noticeable in the 55+ age group with females at 3.5 percent compared to 9.1 percent although more important than this disparity is that access to education – even in the past 30-50 years, has been very low for both males and females.

> It is important to note that school attendance, as measured through the interim assessment questionnaire, does not indicate that the person has attended school regularly throughout the school year. This might explain – at least in part – the apparent discrepancy between school attendance and attainment.

Table 3.4 also presents female to male sex ratios of the indicators of current school attendance among household members age 5-24 and achievement of primary education among household members age 10 and above. Values less than 1.0 in this

portion of the table illustrate disparities for females, and values greater than 1.0 illustrate disparities for males. In the Haiti ZOI, the greatest disparities between males and females appear to be with school attendance for age 20-24 (sex ratio of 0.6), as well as primary educational attainment for the oldest age group (55 and above), with ZOI females exhibiting the historical disadvantage on these measures relative to similarly-aged males (sex ratio of 0.4).

4. Household Economic Status

This section includes a background discussion of monetary poverty in Haiti, including the logic of the Living Standard Measurement Survey (LSMS)[49] and consumption expenditure methodology.

The poverty prevalence, poverty gap, and mean per capita expenditures indicators for the ZOI interim assessment were derived using data collected on housing characteristics and on household consumption of the USAID Haiti FTF ZOI Interim Assessment, Haiti 2016. These sections are similar to the LSMS, where households' consumption of various food and non-food items is measured to infer household income and well-being. Individuals' per capita expenditures are then derived by dividing total household expenditures by the number of household members. From these data, household expenditure totals are calculated and used as a proxy for household incomes, based on the assumption that a household's consumption is closely related to its income. Household consumption and expenditures are often preferred to income when measuring poverty due to the difficulty in accurately measuring income. According to Deaton, expenditure data are less prone to error, easier to recall, and more stable over time than income data.[50]

4.1 Daily Per Capita Expenditures

Table 4.1 presents daily per capita expenditures, the Feed the Future indicator that measures average daily expenditures within the ZOI per person in 2010 U.S. dollars (USD) after adjusting for 2005 purchasing power parity (PPP). Daily per capita expenditures serve as a proxy for income. This table includes the mean per capita expenditures, distributional information, and the poorest quintile's share of consumption. The percentiles are shown to provide information on the distribution of expenditures. The percentiles are interpreted as the percentage of the population that consumes less than the listed value. For example, the cut off point for the 50th percentile is 3.50. This means that 50 percent of individuals consume less than $3.50 (2010 USD) per day. The 50th percentile is also the median.

[49] Grosh, Margaret and Paul Glewwe. (1995).
[50] Deaton. (2008).

Table 4.1. Daily per capita expenditures by household characteristic (in 2010 USD)[1]

Characteristic	Estimate (weighted)						
	Mean[a]	Percentile					n[2]
		10th	25th	50th	75th	90th	
Total (All households)	3.04	0.96	1.50	2.50	3.69	6.02	1117
Gendered household type[a]							
Male and female adults	2.91	0.97	1.44	2.40	3.44	5.74	762
Female adult(s) only	3.22	0.74	1.71	2.71	4.29	6.12	226
Male adult(s) only	4.85	2.05	2.89	4.13	6.69	8.67	129
Household size[a]							
Small (1-5 members)	3.79	1.48	2.24	3.15	4.65	6.97	783
Medium (6-10 members)	2.30	0.89	1.25	1.96	2.75	3.88	309
Large (11+ members)	^	^	^	^	^	^	25
Household educational attainment[a]							
No education	2.72	0.76	1.30	2.16	3.47	5.75	127
Less than primary	2.22	0.80	1.04	1.78	2.71	4.16	344
Primary	2.83	1.13	1.51	2.41	3.67	5.01	469
Secondary or more	4.52	1.79	2.67	3.31	5.98	9.36	176

[1] Per capita expenditures measured in Haitian gourdes (HTG) were converted to 2010 USD using the Consumer Price Index (CPI) and the PPP Index estimated by the World Bank. We used the formula (2005 CPI HTG / 2016CPI HTG) * (1 / PPP 2005) * (2010 USD CPI / 2005 USD CPI) where PPP 2005 = 19.37, 2016 CPI HTG = 231.44, 2005 CPI LCU = 100, 2010 USD CPI =111.65, and 2005 USD CPI = 100. The conversion factor was 0.24905.

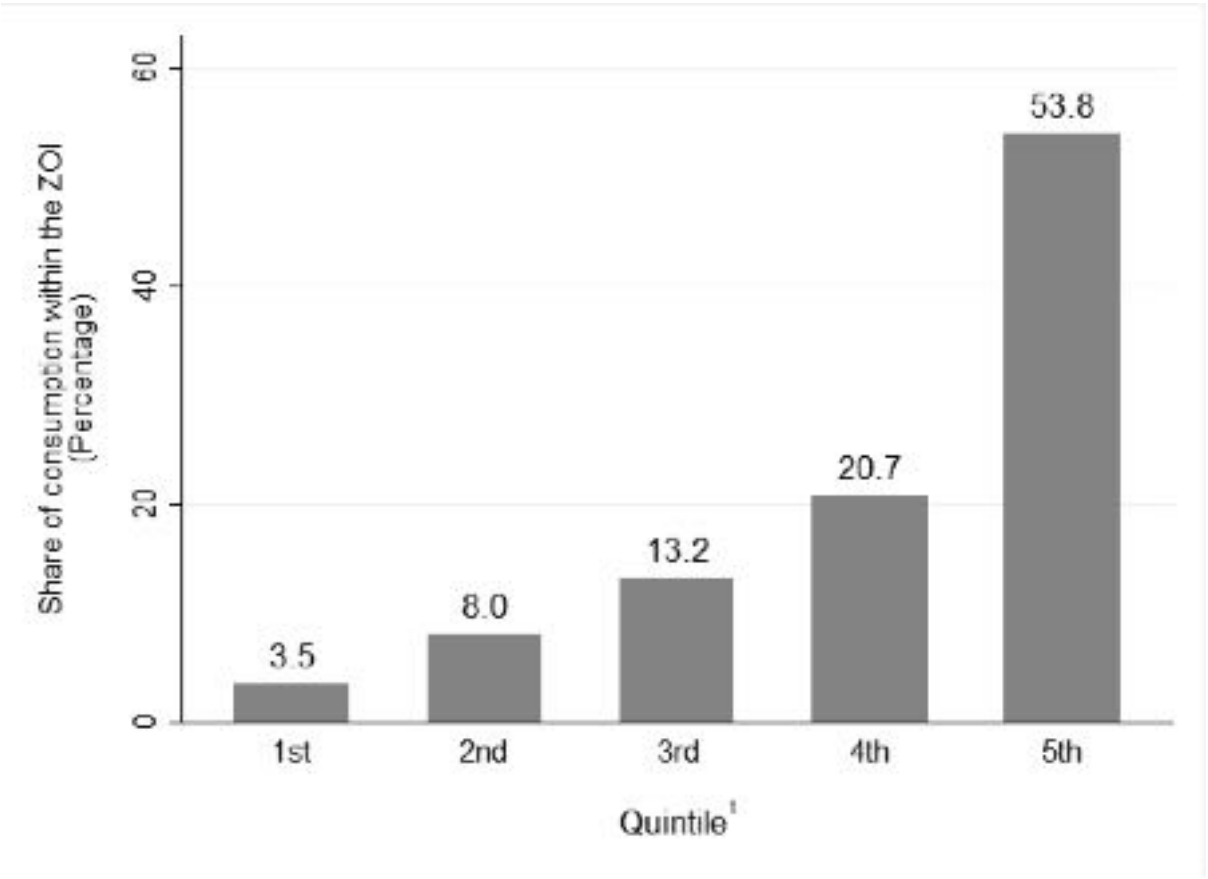
[2] Records missing information for the disaggregate variables have been excluded from the disaggregated estimates. The unweighted sample size reflects this loss in observations; therefore disaggregates' sample sizes may not total to the aggregated sample size.

[a] Significance tests were performed for associations between per capita expenditures and household characteristics. For example, a test was done between per capita expenditures and gendered household type. When an association is found to be significant ($p<0.05$), the superscript is noted next to the household characteristic.

Source: USAID Haiti FTF ZOI Interim Assessment, 2016.

Estimates in Table 4.1 are shown for all households as well as disaggregated by household characteristics, including gendered household type, household size, and household educational attainment. The table shows statistically significant differences between the mean per capita expenditures among the different categories of gendered household type, household size and household educational attainment. Male only adult(s) households have higher consumption than other household types. In general, it appears that households with lower household size or higher levels of education have higher per capita expenditures indicating higher income.

Figure 4.1. Share of consumption per quintile: Feed the Future ZOI



[1] Share of the poorest quintile in national consumption is an MDG indicator that provides information on income inequality (UNDG 2003). The poorest quintile is determined as the poorest fifth of the population. The poorest quintile's share of total consumption is calculated by dividing the consumption of the poorest quintile by total consumption within the ZOI.

Source: USAID Haiti FTF ZOI Interim Assessment, 2016.

Figure 4.1 shows the share of total consumption per quintile in the ZOI. The share of consumption attributed to the lowest quintile (the bottom 20 percent) is a measure of inequality, and an MDG. As is typical of expenditure and income data, these estimates are positively skewed, with the majority of the population consuming/spending very little, and a small portion consuming much more. This figure shows that the poorest 20 percent within the ZOI consumes only 3.5 percent of the total consumption within the ZOI. Conversely, the wealthiest 20 percent within the ZOI consumes 53.8 percent of the total consumption within the ZOI.

4.2 Prevalence and Depth of Poverty in the ZOI

The prevalence of poverty, sometimes called the poverty headcount ratio, is measured by determining the percent of individuals living below a poverty threshold.[51] Estimates of poverty prevalence are sensitive to the poverty thresholds used to identify the poor. A standardized poverty threshold of $1.25 per person per day in adjusted[52] 2005 USD is used to track global changes in poverty across countries and over time, including for the purpose of monitoring progress toward international goals such as the MDG to eradicate extreme poverty and hunger.[53] The $1.25 threshold is in effect the extreme poverty threshold and represents the poverty line typical of the world's poorest countries.[54] Poverty estimates are also presented for Haiti's own national poverty thresholds.

Where the poverty prevalence indicates how *many* individuals are impacted by poverty, it does not speak to how *much* people are impacted by poverty. The depth of poverty, often called the poverty gap, is a useful poverty estimate because it captures the extremity of poverty. This measure indicates the average gap between consumption levels and the poverty line, with the non-poor counted as having a gap of zero. The measure is expressed as a proportion of the poverty line. The depth of poverty or poverty gap estimate represents the entire ZOI population. The average consumption shortfall of the poor, in contrast, is estimated for only those individuals living below the poverty line.

4.2.1 The $1.25 (Extreme) Poverty Threshold

Table 4.2 presents extreme poverty estimates at the $1.25 per day (2005 PPP) threshold. The prevalence of poverty and depth of poverty at the $1.25 per day extreme poverty line are Feed the Future indicators. Similar to the per capita expenditures table, this table presents extreme poverty estimates for all households in the ZOI, as well as disaggregated by household characteristics, including gendered household type, household size, and household educational attainment.

[51] Note that expenditure data are not collected at the individual level but rather at the level of the household; individuals' per capita expenditures are then derived by dividing total household expenditures by the number of household members.

[52] Adjustments are made according to PPP conversions. These conversions are established by the World Bank to allow currencies to be compared across countries in terms of how much an individual can buy in a specific country. The $1.25 in 2005 PPP means that $1.25 could buy the same amount of goods in another country as $1.25 could in the United States in 2005.

[53] The World Bank recently issued 2011 PPPs (see http://data.worldbank.org/indicator/NY.GDP.PCAP.PP.CD) and a revised standardized poverty threshold of $1.90 per person per day in 2011 PPP.

[54] World Bank. 2011. Poverty & Equality Data FAQs. http://go.worldbank.org/PYLADRLUN0. Accessed 15 April 2015.

Table 4.2. (Extreme) Poverty at the $1.25 (2005 PPP)[1] per person per day threshold

Characteristic	Prevalence of poverty[2,5]		Depth of poverty[3,5]		Average consumption shortfall of the poor[4,5]		
	Percent population[a]	n[6]	Percent of poverty line[b]	n[6]	In USD 2005 PPP[c]	Percent of poverty line[c]	n[6]
Total (All households)	21.9	1117	6.0	1117	0.3	27.3	158
Gendered household type[a,b]							
Male and female adults	23.5	762	6.0	762	0.3	25.6	132
Female adult(s) only	18.4	226	7.0	226	^	^	22
Male adult(s) only	4.2	129	2.0	129	^	^	4
Household size[a,b]							
Small (1-5 members)	8.6	783	2.1	783	0.3	24.5	53
Medium (6-10 members)	32.1	309	8.6	309	0.3	26.7	93
Large (11+ members)	^	25	^	25	^	^	12
Household educational attainment[a,b,c]							
No education	29.5	127	9.2	127	^	^	21
Less than primary	36.5	344	11.5	344	0.4	31.5	74
Primary	19.9	469	4.7	469	0.3	23.6	58
Secondary or more	6.7	176	1.3	176			5

^ Results not statistically reliable, n<30.

[1] The Feed the Future poverty indicators are based on the poverty threshold of $1.25 (2005 PPP) per person per day.

[2] The prevalence of poverty is the percentage of individuals living below the $1.25 (2005 PPP) per person per day threshold. Poverty prevalence is sometimes referred to as the poverty incidence or poverty headcount ratio.

[3] The depth of poverty, or poverty gap, is the average consumption shortfall multiplied by the prevalence of poverty.

[4] The average consumption shortfall of the poor is the average amount below the poverty threshold of a person in poverty. This value is estimated only among individuals living in households that fall below the poverty threshold.

[5] A significance test was performed for associations between the indicator in the column heading and each of the variables in the rows. For example, a test was done between prevalence of poverty and gendered household type. When an association between the column indicator and row variable is found to be significant ($p<0.05$), the superscript for the indicator in the column heading is noted next to the row variable.

[6] Records missing information for the disaggregate variables have been excluded from the disaggregated estimates. The unweighted sample size reflects this loss in observations; therefore disaggregates' sample sizes may not total to the aggregated sample size.

[a-c] Superscripts in the column heading indicates significance tests were performed for associations between the indicator in the column heading and each of the variables in the rows. For example, a test was done between prevalence of poverty and gendered household type. When an association between the column indicator and row variable is found to be significant ($p<0.05$), the superscript for the indicator in the column heading is noted next to the row variable

Source: USAID Haiti FTF ZOI Interim Assessment, 2016.

Poverty Prevalence

21.9 percent of the individuals in the ZOI live below the $1.25 poverty threshold. The prevalence of poverty is significantly different between categories of gendered household type, household size and educational attainment. Poverty is lowest in male adult(s) only households, among smaller households, and among households with higher education attainment (primary school or higher). Poverty also appears to increase with increased household size. Poverty is lowest among male adult only households. Poverty among female only adult households is not distinguishable from male and female adult households.

Depth of Poverty

The depth of poverty in the ZOI is 6.0 percent, which indicates that the average gap between consumption levels of the population and the poverty line is $0.075 (2005 PPP).

The depth of poverty provides an indication of the amount of resource transfers that, if *perfectly* targeted to poor households, would be needed to bring everyone (who is currently below the poverty line) up to – but not above - the poverty line. With a ZOI population of around 962,000, the prevalence of poverty at 21.9 percent (for a poverty threshold of $1.25 per day), and a poverty gap of 6.0 percent, about $15,800 (2005 PPP) per day would need to be transferred to the poor to bring their income or expenditures up to the poverty threshold.

The differences in the depth of poverty among the three background characteristics are statistically significant and similar to the poverty prevalence: depth of poverty is lowest in male adult(s) only households, among smaller households, and among households with higher education attainment (primary school or higher).

Average Consumption Shortfall of the Poor

The average *poor* person within the ZOI lives at 27.3 percent of the poverty line, or 75.9 percent below the poverty line. The average value of consumption of a *poor* person is $0.95 (2005 PPP) per day or, stated differently, the average person living in poverty consumes $0.30 less than the $1.25 poverty threshold.

Among poor households, there are no significant differences in the average consumption shortfall among the categories of gendered household type, household size but there is a significant difference for household education attainment with the smaller consumption shortfall being among the more educated.

4.2.2 The National Poverty Threshold

Table 4.3 presents poverty estimates at the national poverty threshold for Haiti. Similar to the $1.25 per day poverty table, this table presents poverty estimates for all households in the ZOI, as well as disaggregated by household characteristics, including gendered household type, household size, and household educational attainment.

The national poverty lines were established using data collected by *Enquête sur les Conditions de Vie des Ménages Après le Séisme* (ECVMAS1) in 2012. The household survey was accompanied by a market survey to identify prices. The poverty lines were estimated using a basic needs approach, which consists of determining a monetary value of food providing a defined number of calories and adding the monetary value of an established minimum level of non-food items and services.[55] The *extreme* poverty line was set at 41.7 HTG per person per day and the poverty line was set at 82.2 HTG per person per day.[56] More information regarding both national poverty thresholds can be found in Appendix 2.2.

Table 4.3. Poverty at the national threshold of 82.2 gourdes/person/day (HTG 2012)[1]

Characteristic	Prevalence of poverty[2]		Depth of poverty[3]		Average consumption shortfall of the poor[4]		
	Percent population[a]	n[5]	Percent of poverty line[b]	n[5]	In USD 2005 PPP[c]	Percent of poverty line[c]	n[5]
Total (All households)	57.3	1117	22.5	1117	1.0	39.3	507
Gendered household type[a,b]							
Male and female adults	60.6	762	23.7	762	1.0	39.0	409
Female adult(s) only	50.5	226	20.6	226	1.0	40.7	84
Male adult(s) only	17.4	129	6.7	129	^	^	14
Household size[a,b,c]							
Small (1-5 members)	24.6	1,965	6.5	1,965	0.65	26.6	489
Medium (6-10 members)	45.3	751	16.0	751	0.87	35.4	403
Large (11+ members)	52.9	48	22.7	48	1.06	43.0	31
Household educational attainment[a,b,c]							
No education	60.6	127	27.3	127	1.1	45.0	50
Less than primary	75.4	344	34.5	344	1.1	45.8	202
Primary	61.3	469	22.2	469	0.9	36.2	211
Secondary or more	26.2	176	7.5	176	0.7	28.6	44

[56] The two documents reviewed present thresholds with negligible differences. We have selected the latter document, prepared by the World Bank as the methodological document (a working paper).

^ Results not statistically reliable, n<30.

[1] The national threshold was adopted for use with the ECVMAS1 in 2012. The national threshold is 82.2 gourdes per person per day. This is 110.22 gourdes when inflated to 2016 prices using the consumer price index for 2012 (172.60) and the average consumer price index for the months of data collection (231.44).

[2] The prevalence of poverty is the percentage of individuals living below the national poverty line. Poverty prevalence is sometimes referred to as the poverty incidence or poverty headcount ratio.

[3] The depth of poverty, or poverty gap, is the average consumption shortfall multiplied by the prevalence of poverty.

[4] The average consumption shortfall of the poor is the average amount below the poverty threshold of a person in poverty. This value is estimated only among individuals living in households that fall below the poverty threshold.

[5] Records missing information for the disaggregate variables have been excluded from the disaggregated estimates. The unweighted sample size reflects this loss in observations; therefore disaggregates' sample sizes may not total to the aggregated sample size.

[a-c] A superscript in the column heading indicates significance tests were performed for associations between the indicator in the column heading and each of the variables in the rows. For example, a test was done between prevalence of poverty and gendered household type. When an association between the column indicator and row variable is found to be significant ($p<0.05$), the superscript for the indicator in the column heading is noted next to the row variable.

Source: USAID Haiti FTF ZOI Interim Assessment, 2016.

Poverty Prevalence

As seen in Table 4.3, 57.3 percent of individuals in the ZOI live below the national poverty threshold. The national poverty line identifies considerably more individuals as poor than does the $1.25 2005 PPP poverty threshold, an extreme poverty line, comparable to the national extreme poverty line of 41.7 HTG, discussed below.

With regard to the disaggregate variables, the poverty prevalence is statistically different among the categories of gendered household type, household size, and household educational attainment consistent with the description of inter-category differences for Table 4.2. As was the case with table 4.2, poverty is lowest in male only adult households while female only adult households are not distinguishable from male and female adult households.

Depth of Poverty

The depth of poverty at the national threshold is 22.5 percent. The depth of poverty is statistically different among the three categories of gendered household type, household size, and household educational attainment consistent with the description of inter-category differences for Table 4.2.

Average Consumption Shortfall of the Poor

The average consumption shortfall of the poor is 39.3 percent, or stated differently, the average poor person in the ZOI lives at approximately 60.7 percent of the national poverty line. The average value of consumption of a poor person is $1.00 2005 PPP or,

stated differently, the average person living in poverty consumes $0.49 less than the $1.25 poverty threshold.

The average consumption shortfall varies significantly with household size and household educational attainment consistent with the relationships described under table 4.2.

4.2.3 The National Extreme Poverty Threshold

Table 4.4 presents poverty estimates at the national *extreme poverty* threshold for Haiti. Similar to prior expenditures and poverty tables, this table presents *extreme poverty* estimates for all households in the ZOI, as well as disaggregated by household characteristics, including gendered household type, household size, and household educational attainment. The national extreme poverty line was set at 41.7 HTG per person per day.[57] The national extreme poverty threshold is essentially the same as the international poverty threshold of $1.25 205 PPP. As such, Table 4.4 (below) is nearly identical to Table 4.2

Table 4.4. Poverty at the national extreme threshold of 41.7 gourdes/person/day (HTG 2012)[1]

Characteristic	Prevalence of poverty[2]		Depth of poverty[3]		Average consumption shortfall of the poor[4]		
	Percent population[a]	n[5]	Percent of poverty line[b]	n[5]	In USD 2005 PPP[c]	Percent of poverty line[c]	n[5]
Total (All households)	21.8	1117	6.0	1117	0.34	27.3	157
Gendered household type[a,b]							
Male and female adults	23.5	762	6.0	762	0.34	27.3	157
Female adult(s) only	17.9	226	6.9	226	0.32	25.4	132
Male adult(s) only	4.2	129	2.0	129	^	^	4
Household size[a,b]							
Small (1-5 members)	8.6	783	2.1	783	0.30	24.3	53
Medium (6-10 members)	31.9	309	8.5	309	0.33	26.7	92
Large (11+ members)	^	25	^	25	^	^	12
Household educational attainment[a,b]							
No education	29.5	127	9.2	127	^	^	21
Less than primary	36.5	344	11.5	344	0.39	31.3	74
Primary	19.7	469	4.7	469	0.30	23.7	57
Secondary or more	6.7	176	1.3	176	^	^	5

^ Results not statistically reliable, n<30.

[57] World Bank. 2014. *Pauvreté et inclusion sociale en Haïti: gains sociaux petits pas.* World Bank: Washington, DC.

[1] The national extreme threshold was adopted for use with the ECVMAS1 in 2012. The national extreme threshold is food poverty threshold of 41.7 gourdes per person per day. This is 55.92 gourdes when inflated to 2016 prices using the consumer price index for 2012 (172.60) and the average consumer price index for the months of data collection (231.44).

[2] The poverty prevalence is the percentage of individuals living below the national extreme poverty line. Poverty prevalence is sometimes referred to as the poverty incidence or poverty headcount ratio.

[3] The depth of poverty, or poverty gap, is the average consumption shortfall multiplied by the prevalence of poverty.

[4] The average consumption shortfall of the poor is the average amount below the poverty threshold of a person in poverty. This value is estimated only among individuals living in households that fall below the poverty threshold.

[5] Records missing information for the disaggregate variables have been excluded from the disaggregated estimates. The unweighted sample size reflects this loss in observations; therefore disaggregates' sample sizes may not total to the aggregated sample size.

[a-c] A superscript in the column heading indicates significance tests were performed for associations between the indicator in the column heading and each of the variables in the rows. For example, a test was done between prevalence of poverty and gendered household type. When an association between the column indicator and row variable is found to be significant ($p<0.05$), the superscript for the indicator in the column heading is noted next to the row variable.

Source: USAID Haiti FTF ZOI Interim Assessment, 2016.

Poverty Prevalence

Nearly 22 percent (21.8) of individuals in the ZOI live below the national *extreme poverty* threshold. These individuals do not have access to enough resources to consume the minimum caloric intake for their age and sex group.

With regard to the disaggregate variables, the *extreme poverty* prevalence is statistically different among the categories of gendered household type, household size, and household educational attainment consistent with the relationships described under table 4.2.

Depth of Poverty

The depth of poverty at the national *extreme* threshold is 6.0 percent. The depth of *extreme poverty* is statistically different among the categories of gendered household type, household size, and household educational attainment and consistent with the relationships described under table 4.2.

Average Consumption Shortfall of the Poor

The average consumption shortfall of the *extremely poor* is 27.3 percent, or stated differently, the average *extremely poor* person in the ZOI lives at approximately 72.7 percent of the national *extreme poverty* line. Their shortfall is an average of $0.34 2005 PPP. The average consumption shortfall is not statistically different between the different household categories.

5. Women's Empowerment in Agriculture

While women play a prominent role in agriculture, they face persistent economic and social constraints. Because of this, women's empowerment is a main focus of Feed the Future. Empowering women is particularly important to achieving the Feed the Future objectives of inclusive agriculture sector growth and improved nutritional status. The WEAI was developed to track the change in women's empowerment that occurs as a direct or indirect result of interventions under Feed the Future and as a programming tool to identify and address the constraints that limit women's full engagement in the agriculture sector.[58] For more information, the WEAI questionnaires and manual can be found online.[59]

5.1 Overview

The WEAI measures empowerment in five domains. The *Production* domain assesses the ability of individuals to provide input and autonomously make decisions about agricultural production. The *Resources* domain reflects individuals' control over and access to productive resources. The *Income* domain monitors individuals' ability to direct the financial resources derived from agricultural production or other sources. The *Leadership* domain reflects individuals' social capital and comfort speaking in public within their community. The *Time* domain reflects individuals' workload and satisfaction with leisure time. The WEAI aggregates information collected for each of the five domains into a single empowerment indicator.

The index is composed of two subindices: the Five Domains of Empowerment (5DE) subindex, which measures the empowerment of women in the five empowerment domains, and the Gender Parity Index (GPI), which measures the relative empowerment of men and women within the household. The WEAI questionnaire is asked of the primary adult male and female decisionmakers in each household and compares their 5DE profiles. The primary adult decisionmakers are individuals age 18 or older who are self-identified as the primary adult male or female decisionmaker during the collection of the household roster.[60] The WEAI score is computed as a weighted sum of the ZOI-level 5DE and the GPI.

The ZOI interim Survey, however, only collects data for nine of the 10 indicators and only for the primary adult *female* decisionmakers, not for primary adult *male* decisionmakers, within sampled households. The data collected during the 2016 interim survey allow calculation of nine of the 10 individual empowerment indicators for primary

[58] Alkire, S. Malapit, H., et al. (2013).
[59] IFPRI. (2013).
[60] The respondents of the WEAI questionnaire are only the primary decisionmakers in the household and, therefore, may not be representative of the entire female populations in the surveyed area.

adult female decisionmakers (referred to hereafter as *surveyed women*), enabling Feed the Future to assess change to the individual indicators or constraints that are affecting women's empowerment in countries' ZOIs. This section presents findings on these nine empowerment indicators.

Since data were not collected from men and the *Autonomy in Production* indicator is excluded, the WEAI score cannot be calculated for the interim assessment. Interim WEAI data collection was streamlined to reduce the overall length of the WEAI module and survey questionnaire, and to address concerns over the validity of the *Autonomy in Production* sub-module used in the baseline surveys. Feed the Future is still working with partners to revise the *Autonomy in Production* sub-module. Data to calculate the full WEAI will be collected during the 2017 interim survey.

Table 5.1 presents the five empowerment domains, their definitions under the WEAI, the corresponding 10 indicators, and the percentage of women who achieve adequacy in the nine indicators assessed in the ZOI interim survey. Because it was not possible to calculate whether a woman is empowered or not based on the complete set of indicators that comprises the 5DE, the percentages presented in Table 5.1 reflect the proportion of all surveyed women with adequacy in individual indicators regardless of their empowerment status (i.e., the uncensored headcount) and not the proportion of surveyed women who are disempowered and achieve adequacy in individual indicators (i.e., the censored headcount).[61] The criteria for determining adequacy in each domain are provided in Appendix A2.3.

Table 5.1. Achievement of adequacy on Women's Empowerment in Agriculture Index indicators[1]

Domain	Definition of domain	Indicators	Percent with adequate achievement	n
Production	Sole or joint decision-making over food and cash crop farming, livestock, and fisheries, and autonomy in agricultural production	Input in productive decisions	95.0	489
		Autonomy in production	n/a	n/a
Resources	Ownership, access to, and decision-making power over productive resources such as land, livestock, agricultural equipment, consumer durables, and credit	Ownership of assets	85.2	489
		Purchase, sale or transfer of assets	61.2	489
		Access to and decisions on credit	55.4	489
Income	Sole or joint control over income and expenditures	Control over use of income	98.9	489

[61] See Appendix 2.3 for the criteria for achieving adequacy in each WEAI indicator.

Domain	Definition of domain	Indicators	Percent with adequate achievement	n
Leadership	Membership in economic or social groups and comfort in speaking in public	Group member	54.6	489
		Speaking in public	79.3	489
Time	Allocation of time to productive and domestic tasks and satisfaction with the available time for leisure activities	Workload	74.8	489
		Leisure	83.8	489

[1] The ZOI interim survey includes an abridged version of the empowerment instrument, and the ZOI interim survey did not include information to measure women's autonomy in agricultural production. Due to this omission, censored headcounts and the 5DE sub-index cannot be calculated.

n/a Data for this empowerment indicator were not collected for the ZOI interim surveys.

Source: USAID Haiti FTF ZOI Interim Assessment, 2016.

Among surveyed women in the Haiti ZOI, the 5DE indicators with the highest uncensored (or "raw") headcounts (i.e., the greatest achievement of adequacy) are (1) control over the use of income (98.9 percent), (2) input in productive decisions (95.0 percent), and (3) ownership of assets (85.2 percent). The 5DE indicators with the lowest levels of achievement are (1) group membership (54.6 percent), (2) access to and decisions on credit (55.4 percent), and (3) purchase, sale, or transfer of assets (61.2 percent).

The tables and text in the remainder of Section 5 present further description of the individual components of these 5DE indicators.

5.2 Agricultural Production

Table 5.2 presents economic activities (including agricultural activities) among surveyed women. This table presents the percentage of surveyed women who are involved in agricultural activities (food crop farming, cash crop farming, livestock raising, or fishing), non-farm economic activities, and wage or salaried employment. This table also presents the percentage of women who have input into the decisions made regarding a specific activity.

Table 5.2. Economic activities and input in decision-making on production among surveyed women

Activity	Participates in activity		Has input[1] into decisions about activity	
	Percent	n[2]	Percent	n[1,3]
Total (All surveyed women)	**99.0**	**489**	**98.4**	**480**
Type of activity				
Food crop farming	78.3	489	97.2	378

Activity	Participates in activity		Has input[1] into decisions about activity	
	Percent	n[2]	Percent	n[1,3]
Cash crop farming	71.5	488	97.7	342
Livestock raising	75.9	489	97.9	376
Fishing or fishpond culture	5.2	489	96.2	33
Non-farm economic activities	59.4	489	99.1	297
Wage or salaried employment	48.7	489	99.3	248

[1] *Having input* means that a woman reported having input into some, most or all decisions regarding the activity.

[2] Estimates exclude households who have no primary adult female decisionmaker (PAFD) or whose data are missing/incomplete.

[3] Women who do not participate in an activity or report that no decision was made are excluded from these percentages.

Source: USAID Haiti FTF ZOI Interim Assessment, 2016.

Nearly all surveyed women (99.0 percent) in the Haiti ZOI report participating in a productive activity, and of these women, nearly all (98.4 percent) report having input into the decisions made about the activities. Food crop farming (defined as crops primarily for household food consumption) is the activity with the highest participation, at 78.3 percent of surveyed women in the ZOI. In addition to food crop farming, slightly smaller percentages of women report livestock raising (75.9 percent) and cash crop farming (71.5 percent). The economic activity with the lowest participation in the Haiti ZOI is fishing or fishpond culture (only 5.2 percent of surveyed women).

Women who participate in the specific economic activities (shown in Table 5.2) report extremely high levels of input into decisions regarding the activities. For each respective economic activity, nearly all women (more than 96 percent across each of the six activities) report having input into decision-making. The activity with women's greatest reported input into decision-making is wage or salaried employment; 99.3 percent (of the 48.7 percent of the surveyed women who participate in this activity) report having input into decision-making about wage or salaried employment.

Table 5.3 shows the percentage of surveyed women who have input into the decisions made regarding the use of income derived from an activity.

Table 5.3. Input in decision-making on use of income among surveyed women

Activity	Has input[1] into use of income from activity	
	Percent	n[2,3]
Total (All surveyed women)	**98.6**	**480**
Type of activity		
Food crop farming	97.2	378
Cash crop farming	97.7	342

Activity	Has input[1] into use of income from activity	
	Percent	n[2,3]
Livestock raising	98.3	376
Fishing or fishpond culture	96.2	33
Non-farm economic activities	99.1	297
Wage or salaried employment	99.3	248

[1] *Having input* means that a woman reported having input into some, most or all decisions regarding the use of income generated from the activity.

[2] Estimates exclude households who have no primary adult female decisionmaker or whose data are missing/incomplete.

[3] Women who do not participate in an activity or report that no decision was made are excluded from these percentages.

Source: USAID Haiti FTF ZOI Interim Assessment, 2016.

Nearly all women (98.6 percent) report having input into the use of income generated from the economic activities in which they participate. Similar to the findings shown above in Table 5.2 (which was about input in decisions about specific activities), across all the activities presented in Table 5.3, over 96 percent of women report having input in the use of income from the activity. The activity with the greatest income-related input is wage or salaried employment; 99.3 percent of the sub-group of women participating in this economic activity report having input into the use of income generated from their wage or salaried employment.

In addition to the decision-making of women on broad agricultural and economic activities, the WEAI module collects information on the extent to which women can contribute to specific agricultural and economic activities. **Table 5.4** presents the percent distribution of surveyed women's perceived ability to contribute to decisions regarding various activities. The row percentages total to 100 percent.

Table 5.4. Decision-making on production among surveyed women

Activity	Extent to which respondents feel they can make their own decisions (percent)[1,2]				Not applicable[3]	n
	Not at all	Small extent	Medium extent	High extent		
Getting inputs for agricultural production	7.5	9.7	22.3	43.3	17.2	489
The types of crops to grow	3.5	6.1	24.3	50.1	16.0	489
Whether to take crops to the market	2.4	0.9	4.2	72.8	19.7	489
Livestock raising	1.0	5.0	12.3	61.6	20.2	489
Her own wage or salary employment	0.7	1.1	12.0	73.6	12.6	489
Major household expenditures	3.7	2.2	2.2	13.1	78.8	489
Minor household expenditures	1.5	4.8	15.0	78.6	0.1	489

[1] Estimates exclude households who have no primary adult female decisionmaker or whose data are missing or incomplete. Women who do not participate in an activity, or who report that no decision was made, are excluded from these percentages.

[2] When a primary adult female decisionmaker reports that she alone makes decisions about the specified activities, she is not asked any further questions, and is categorized during analysis as making her own decisions "to a high extent." When she reports making decisions about the specified activities in conjunction with other individuals, she is asked an additional question about the extent to which she feels she could make her own personal decisions on the specified matters, with possible response options being "not at all," "to a small extent," "to a medium extent," or "to a high extent." Responses are recoded accordingly.

[3] This category includes respondents who report participating in the activity, but say that making the specified decision is not applicable to their situation.

Source: USAID Haiti FTF ZOI Interim Assessment, 2016.

Across the various activities shown in Table 5.4, the activity with the highest percentage of women reporting that they have no decision-making ability at all is with respect to getting inputs for agricultural production; 7.5 percent of women report having no decision-making ability in this area. This is followed by decision-making regarding the types of crops to grow, at 3.5 percent of women reporting they have no decision-making ability at all.

When examining the areas where women report the most decision-making ability, the most common activity about which women report their ability to make decisions to a "high extent" is with respect to minor household expenditures (78.6 percent). Over three-quarters of women report that they can make decisions about minor household expenditures (such as food for daily consumption or other household needs) to a high extent. In contrast, Table 5.4 shows that only 13.1 percent of women report their ability to make decisions to a high extent for major household expenditures, such as the purchase of a large appliance for the house such as a refrigerator, etc.).

Tables 5.2, 5.3, and 5.4 present information contributing to two indicators of the WEAI. *Input into productive decisions*, one indicator of the *Production* domain, is measured by the extent to which individuals make decisions or feel they can make decisions on the economic activities listed in the three tables. The *Income* domain is comprised entirely of a single indicator measuring the control over use of income. This indicator captures individuals' ability to make decisions involving the income generated from their productive activity or the extent to which they feel they can make decisions regarding household expenditure and wage income.

5.3 Productive Resources

One of the 10 indicators of the WEAI is the ownership of productive resources. The ability of women to make decisions on the use of productive resources is a second indicator of the *Resource* domain. **Table 5.5** presents households' ownership of productive resources, as reported by surveyed women. Table 5.5 also presents the percentage of women who can make a decision to purchase or to sell, give away, or

rent owned items. Women are counted as having the ability to make a decision if they can solely make a decision or if they can make these decisions with others with any degree of input.

Table 5.5. Household ownership and surveyed women's control over productive resources

Type of resource	Someone in the household owns item		Woman can decide to purchase items		Woman can decide to sell/give/rent owned items	
	Percent	n[1]	Percent	n[1]	Percent	n[1]
Agricultural land	87.5	489	39.2	392	43.9	399
Large livestock	28.0	489	31.4	153	32.7	150
Small livestock	62.5	489	59.4	320	58.4	318
Chickens, ducks, turkeys, and pigeons	59.1	489	81.0	294	81.7	292
Fish pond or fishing equipment	3.5	489	^	25	^	25
Non-mechanized farm equipment	81.2	489	26.6	386	26.2	315
Mechanized farm equipment	1.6	489	^	8	^	8
Nonfarm business equipment	22.2	489	n/a		n/a	
House or other structures	32.4	489	n/a		n/a	
Large consumer durables	19.7	489	n/a		n/a	
Small consumer durables	41.0	489	n/a		n/a	
Cell phone	71.5	489	n/a		n/a	
Non-agricultural land	30.8	489	n/a		n/a	
Means of transportation	11.3	488	n/a		n/a	

^ Results not statistically reliable, n<30.

[1] Estimates exclude households that have no primary adult female decisionmaker or in which Module G data are missing/incomplete. Those who indicate "Not applicable" are excluded from estimates.

n/a Questions regarding who can decide to purchase, sell, give or rent the item were not included in the ZOI interim surveys.

Source: USAID Haiti FTF ZOI Interim Assessment, 2016.

Of the 14 productive resources included in the WEAI module, those most commonly owned by ZOI households in Haiti (technically only the subsample of ZOI households with a primary adult female decisionmaker) include agricultural land (owned by 87.5 percent of households), and non-mechanized farm equipment, such as hand tools or an animal-drawn plow (81.2 percent of households). These assets were reported to be owned by the great majority of the households in the WEAI sample in the Haiti ZOI. The least commonly owned resources are mechanized farm equipment, such as a tractor-

drawn plow, power tiller, etc. (owned by only 1.6 percent of households), and fish pond or fishing equipment (3.5 percent of households).

For the first seven resources shown in Table 5.5, women were asked the extent of their decision-making ability to purchase (the middle set of columns), or to sell, give away, or rent the specific owned item. Of the items with sufficient sample size, the purchase of chicken, ducks, turkeys, and pigeons (i.e., fowl) was the item with the greatest percentage of women's decision-making, at 81.0 percent of women in households which owned this item. This was followed by the purchase of small livestock (e.g., goats, pigs and sheep), at 59.4 percent of women. Regarding women's decision-making over selling, giving away, or renting the owned resources, the items with the highest percentages on this measure were again fowl (chicken, ducks, turkeys, and pigeons, 81.7 percent), and small livestock (58.4 percent).

In other words, to use the estimates for agricultural land as an example, among the 87.5 percent of ZOI households which own agricultural land, only 39.2 percent of primary adult female decisionmakers report the ability to make purchasing decisions (solely or with any degree of input) about agricultural land, and a slightly higher proportion (43.9 percent) report any decision-making ability to sell, give away, or rent agricultural land.

Table 5.6 shows the third indicator of the *Resources* domain, access to, and decision-making on credit. The table presents the percent of surveyed women who report that a member of the household has in the past 12 months received any loan, either an in-kind loan (such as food items or raw materials), or a cash loan. These categories are not mutually exclusive. Further, for women living in households where a household member has received a loan, the table presents the percentage who report having contributed to the decision to take the loan and the subsequent decisions on how to use the loan. These figures are disaggregated by the source of the loan.

Table 5.6. Credit access among surveyed women

Estimate	Any source (percent)	Credit source (percent)[1]				
		Non-governmental organization	Informal lender	Formal lender	Friends or relatives	Group-based micro-finance
Total receiving a loan (All surveyed women)	**64.3**	1.5	3.9	6.7	51.4	21.9
Type of loan						
Any loan	64.3	1.5	3.9	6.7	51.4	21.9
In-kind loan	0.4	0.0	0.0	0.0	0.4	0.0
Cash loan	64.3	1.5	3.9	6.7	51.4	21.9

Estimate	Any source (percent)	Credit source (percent)[1]				
		Non-governmental organization	Informal lender	Formal lender	Friends or relatives	Group-based micro-finance
n[2]	**489**	**489**	**488**	**488**	**488**	**489**
Total contributing to a credit decision (All surveyed women)	**86.2**	^	84.8	65.0	84.7	86.8
Type of decisions						
On whether to borrow	86.0	^	81.9	61.4	84.7	86.8
On how to use loan	83.6	^	84.8	65.0	83.1	82.5
n[2]	**316**	**7**	**31**	**41**	**257**	**108**

^ Results not statistically reliable, n<30.

[1] Percentages sum to more than 100 because loans may have been received from more than one source.

[2] Estimates exclude households who have no primary adult female decisionmaker or whose data are missing/incomplete.

Source: USAID Haiti FTF ZOI Interim Assessment, 2016.

In the Haiti ZOI, nearly two-thirds of the households in the WEAI module (64.3 percent) report a household member receiving any type of loan in the prior year. The most common credit source overall (of the five possible sources) is friends or relatives (51.4 percent). When examining type of loans, the most common type by far is cash loans; 64.3 percent of households received a cash loan, and only 0.4 percent reported receiving an in-kind loan in the prior 12 months.

Among the subsample of women living in households which received a loan in the prior year (n=316), the bottom half of Table 5.6 presents the percentages who reported having contributed to two different decisions surrounding the loan: (1) the decision on whether to borrow, and (2) the decision on how to use the loan (what to do with the money or in kind item(s) loaned). Overall, 86.2 percent of women report contributing to at least one of the credit decisions. Similar percentages of women reported contributing to the decisions on whether to borrow the loan (86.0 percent) and on how to use the loan (83.6 percent).

5.4 Leadership in the Community

The *Leadership* domain measures an individual's influence and involvement with community organizations and issues impacting her community. The first indicator of the domain is an individual's ease speaking in public, which is measured by three questions related to the level of difficulty faced by an individual when voicing her opinion regarding community decisions. On this indicator, 79.3 percent of surveyed women in the ZOI

achieves adequacy in voicing her opinions on community matters (**Table 5.7**). This is also the uncensored headcount for this indicator, as shown in Table 5.1.

Table 5.7. Comfort with speaking in public among surveyed women

Topics for public discussion	Percent	n[1]
	Comfortable speaking in public about selected topics	
Total (All surveyed women)	79.3	489
Topics		
To help decide on infrastructure to be built in the community	79.3	487
To ensure proper payment of wages for public works or other similar programs	67.4	451
To protest the misbehavior of authorities or elected officials	67.0	450

[1] Estimates exclude households who have no primary adult female decisionmaker or whose data are missing/incomplete.

Source: USAID Haiti FTF ZOI Interim Assessment, 2016.

When looking at the three individual topics for public discussion asked about in the WEAI module, women appear to be most comfortable speaking up in public to help decide on infrastructure to be built in the community; 79.3 percent of women report being comfortable speaking up in public about this topic. Similar percentages of women report being comfortable speaking up in public about the remaining two topics: to ensure proper payment of wages for public works or other similar programs (67.4 percent of women feel comfortable), and to protest the misbehavior of authorities or elected officials (67.0 percent of women).

The second indicator of the *Leadership* domain is an individual's participation in a community organization. **Table 5.8** shows the percentage of surveyed women who are active members of an organization in their community.

Table 5.8. Group membership among surveyed women

Group type	Percent[1]	n[2]
	Is an active group member	
Total (All surveyed women)	**54.6**	**489**
Group type		
Agricultural producers' group	8.2	489
Water users' group	3.9	489
Forest users' group	10.9	489
Credit or microfinance group	3.4	489

Group type	Percent[1]	n[2]
	Is an active group member	
Mutual help or insurance group	1.5	489
Trade and business association	1.8	489
Community action group	4.9	489
Political group	0.5	489
Local government	2.0	489
Religious group	41.1	489
Other	9.4	489

[1] The denominator for this percentage includes all surveyed women, even those who reported that no group exists or that she is unaware of the existence of a group in her community. Women who report that no group exists or who are unaware of a group are counted as having inadequate achievement of this indicator.

[2] Estimates exclude households who have no primary adult female decisionmaker or whose data are missing/incomplete.

Source: USAID Haiti FTF ZOI Interim Assessment, 2016.

In the Haiti ZOI, over half of surveyed women (54.6 percent) report membership in at least one group. (This is also the uncensored headcount for this indicator; 54.6 percent of women are adequate on the group membership indicator, as shown in Table 5.1.) The group type in the ZOI with the highest participation among primary adult female decisionmakers is religious groups, at 41.1 percent of surveyed women. Other group types in the ZOI with active participation among surveyed women, albeit at lower percentages, include forest users' groups (10.9 percent of women), and "other" groups (9.4 percent).[62]

5.5 Time Use

The last domain of the WEAI is time use. This domain assesses women's work load as directly measured through a time allocation log, as well as the satisfaction felt by the surveyed woman with her leisure time. **Table 5.9** shows the percentage distribution and average hours spent participating in various activities and chores that women often perform. The percentage of women performing an activity indicates the percentage of women who reported doing an activity within the past 24 hours, irrespective of the length of time spent performing the activity. The average hours spent performing an activity is the average across all women, assigning zero hours to women who did not perform an activity. Both primary and secondary activities are presented in Table 5.9. In the ZOI, 83.8 percent of women reported being satisfied with their leisure time. (This is the uncensored headcount, see Table 5.1.)

[62] Note that in the Haiti ZOI interim survey, two additional groups were included in the questionnaire – community action groups and political groups. These take the place of the "civic or charitable" group.

Table 5.9. Time allocation among surveyed women

Activity	Primary activity		Secondary activity[1]	
	Percent of women	Mean hours devoted	Percent of women	Mean hours devoted
Sleeping and resting	100.0	11.9	1.1	0.0
Eating and drinking	87.6	1.1	10.8	0.1
Personal care	94.7	1.2	1.8	0.0
School and homework	3.4	0.1	0.3	0.0
Work as employed	2.0	0.1	0.0	0.0
Own business work	17.5	1.2	0.9	0.0
Farming/livestock/fishing	25.7	1.1	0.0	0.0
Shopping/getting services	7.8	0.1	0.1	0.0
Weaving, sewing, textile care	0.4	0.0	0.1	0.0
Cooking	81.5	1.8	8.8	0.1
Domestic work (fetching food and water)	80.3	2.0	5.0	0.1
Care for children/adults/elderly	39.7	0.6	15.3	0.5
Travel and commuting	52.0	1.1	0.6	0.0
Watching TV/listening to radio/reading	7.5	0.1	0.4	0.0
Exercising	5.0	0.0	0.2	0.0
Social activities and hobbies	26.1	0.6	1.2	0.0
Religious activities	21.0	0.7	0.8	0.0
Other	5.4	0.1	58.0	12.9
n	**489**	**489**	**489**	**489**

[1] Respondents were allowed to report up to two activities per time use increment (15 minutes) in the prior 24 hours. If two activities were reported, one was designated as a primary and the second as a secondary activity. Some women may not have reported secondary activities for each fifteen minute period.

Source: USAID Haiti FTF ZOI Interim Assessment, 2016.

Of all the activities reported in Table 5.9, the most commonly reported primary activities among surveyed women in the ZOI include sleeping and resting (100.0 percent of women, mean 11.9 hours), personal care (94.7 percent, mean 1.2 hours), and eating and drinking (87.6 percent, mean 1.1 hours). Least common activities include weaving, sewing, and textile care (only reported by 0.4 percent of surveyed women), employed work (2.0 percent of surveyed women), and school and homework (3.4 percent). Beyond activities of daily life such as sleeping and eating, other common work activities include cooking (81.5 percent of women, mean 1.8 hours), and domestic work such as fetching food or water (80.3 percent of women, mean 2.0 hours).

In the Haiti ZOI, relatively few women reported secondary activities, the second set of columns in Table 5.9. Thus the average time spent in secondary activities across all the women (with the exception of the "other" category) is generally less than one hour. In addition to "other," which was reported as a secondary activity by 58.0 percent of

women, the second most commonly reported secondary activity is caring for children or other adults or elderly, reported by 15.3 percent of women.

6. Hunger and Dietary Intake

This section presents findings related to hunger in the ZOI as well as women's and young children's dietary intake.

6.1 Household Hunger

The HHS is used to calculate the prevalence of households in the Haiti ZOI experiencing 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. It has been cross-culturally validated to allow comparison across different food-insecure contexts. The HHS is used to assess, geographically target, monitor, and evaluate settings affected by substantial food insecurity. The HHS is used to estimate the percentage of households affected by three different severities of household hunger: little to no household hunger (HHS score 0-1); moderate household hunger (HHS score 2-3); and severe household hunger (HHS score 4-6). The HHS should be measured at the same time each year, and ideally at the most vulnerable time of year (right before the harvest, during the dry season, etc.).[63,64]

The hunger season in Haiti occurs from April through May (during the first rainy season).[65] Data for the HHS were collected between April and June 2016, which overlaps with the hunger season in the Haiti ZOI.

Table 6.1 presents estimates of household hunger for all households, as well as by household characteristics, including gendered household type, household size, and household educational attainment.

Table 6.1. Household hunger

Characteristic	Percent			n[1]
	Little to no hunger[a]	Moderate hunger	Severe hunger	
Total (All households)	**41.1**	**50.9**	**8.0**	**1131**
Gendered household type				
Male and female adults	43.4	47.9	8.7	763

[63] Deitschler, Ballard, Swindale, & Coates. (2011).
[64] For further description of the household hunger indicator and its calculation, refer to the Feed the Future Indicator Handbook, available at http://feedthefuture.gov/resource/feed-future-handbook-indicator-definitions.
[65] Famine Early Warning Systems Network (FEWSNET). (2016). http://www.fews.net/central-america-and-caribbean/haiti.

Characteristic	Percent			n[1]
	Little to no hunger[a]	Moderate hunger	Severe hunger	
Female adult(s) only	37.2	54.7	8.1	228
Male adult(s) only	34.3	62.1	3.7	140
Household size				
Small (1-5 members)	42.1	50.0	7.9	797
Medium (6-10 members)	37.2	55.1	7.6	309
Large (11+ members)	^	^	^	25
Household educational attainment[a]				
No education	36.8	54.6	8.6	132
Less than primary	29.9	59.4	10.7	349
Primary	41.9	50.0	8.1	472
Secondary or more	57.8	38.7	3.5	177

[1] Records missing information for the disaggregate variables have been excluded from the disaggregated estimates. The unweighted sample size reflects this loss in observations; therefore disaggregates' sample size may not total to the aggregated sample size.

[a] Significance tests were performed for associations between little to no hunger and household characteristics, which is equivalent to testing the association between moderate to severe hunger and household characteristics. For example, a test was done between little to no hunger and gendered household type. When differences were found to be significant ($p<0.05$), the superscript is noted next to the household characteristic.

Source: USAID Haiti FTF ZOI Interim Assessment, 2016.

41.1 percent of the households in the Haiti ZOI experience little to no hunger. 50.9 percent experience moderate hunger, and only 8.0 percent experience severe hunger. As shown in the Feed the Future ZOI Indicator Estimates Table in the Executive Summary (as well as the appendix Table A1.1), 58.9 percent of ZOI households experience moderate or severe hunger, which is the Feed the Future standard indicator.

Significance tests were performed for relationships between little to no hunger and household characteristics. This is equivalent to a significance test for moderate and severe hunger combined. Experiencing little to no hunger is significantly associated with only one of the household characteristics: household education attainment (i.e., the highest level of education attained by any member of the household). Table 6.1 shows that households with the highest educational attainment – those with at least one member with secondary or more schooling – have the lowest prevalence of moderate or severe hunger (42.2 percent).

6.2 Dietary Intake

This section presents information on the dietary diversity of women of reproductive age and on infant and young child feeding in the ZOI.

6.2.1 Dietary Diversity Among Women Age 15-49 Years

Women of reproductive age (15-49 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 (Darnton-Hill et al. 2005). The Feed the Future women's dietary diversity indicator is a proxy for the micronutrient adequacy of women's diets. The dietary diversity indicator reports the mean number of food groups consumed in the previous day by women of reproductive age.

For the ZOI interim survey, two dietary diversity indicators for women are calculated: the Women's Dietary Diversity Score (WDDS) and Women's Minimum Dietary Diversity (MDD-W).

Women's Dietary Diversity Score

The Feed the Future women's dietary diversity indicator, presented in Table 6.2, is based on nine food groups: (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 number of food groups consumed is averaged across all women of reproductive age in the sample for whom dietary diversity data were collected to produce a WDDS.

Table 6.2 shows the mean and median WDDS for all women of reproductive age in the ZOI, and by individual-level and household-level characteristics. Mean WDDS is the Feed the Future high-level indicator. Individual-level characteristics include women's age groups and educational attainment. Household-level characteristics include categories of gendered household type, household size, and household hunger.

Table 6.2. Women's dietary diversity score

Characteristic	Mean [a]	Median	n[1]
Total (All women 15-49)	4.1	4	1055
Age [a]			
15-19	4.1	4	222
20-24	4.3	4	190
25-29	4.1	4	168
30-34	4.6	5	148
35-39	3.9	4	131
40-44	4.1	4	104
45-49	3.9	4	92
Educational attainment [a]			
No education	3.5	3	180

Characteristic	Mean [a]	Median	n[1]
Less than primary	4.0	4	362
Primary	4.3	4	417
Secondary or more	4.6	4	91
Gendered household type			
Male and female adults	4.1	4	813
Female adult(s) only	4.2	4	235
Male adult(s) only	^	^	7
Household size			
Small (1-5 members)	4.2	4	573
Medium (6-10 members)	4.1	4	435
Large (11+ members)	4.2	4	47
Household hunger			
Little to no hunger	4.2	4	439
Moderate or severe hunger	4.1	4	616

^ Results not statistically reliable, n<30.

[1] Records missing information for the disaggregate variables have been excluded from the disaggregated estimates. The unweighted sample size reflects this loss in observations; therefore disaggregates' sample sizes may not total to the aggregated sample size.

[a] Significance tests were performed for associations between mean women's dietary diversity score and individual/household characteristics. For example, a test was done between mean women's dietary diversity score and age. When an association is found to be significant (p<0.05), the superscript is noted next to the characteristic.

Source: USAID Haiti FTF ZOI Interim Assessment, 2016.

In the Haiti ZOI, the WDDS indicator value is 4.1; in other words, women consume an average of 4.1 (just over four) food groups of the nine possible groups. The median value is also four food groups. Mean WDDS varies significantly by age and education attainment although it is only the 30-34 age group that is likely to consume marginally more food groups (4.6) than the lowest of the other age groups (range 3.9 – 4.1); it does not vary by gendered household type, household size, or household hunger status.

Women's Minimum Dietary Diversity

The Feed the Future MDD-W indicator is a new measure introduced in the interim assessments and uses the following 10 food groups: (1) grains, roots, and tubers; (2) legumes and beans; (3) nuts and seeds; (4) dairy products; (5) eggs; (6) flesh foods, including organ meat and miscellaneous small animal protein; (7) vitamin A-rich dark green leafy vegetables; (8) other vitamin A-rich vegetables and fruits; (9) other fruits; and (10) other vegetables.[66] Achievement of MDD-W is defined as having consumed foods from five of the 10 food groups in the past 24 hours. Thus this indicator is a

[66] The differences between the nine food groups used for the WDDS (Table 6.2), which is the current standard Feed the Future indicator, and the 10 food groups used for the new MDD-W measure (Table 6.3) include: (1) legumes and beans are separated from nuts and seeds; (2) meat (flesh foods) and organ meat are combined into one group; and (3) other fruits and other vegetables are separated into two groups.

dichotomous variable, and the measure is reported as the percentage of women who achieve a minimum dietary diversity.[67]

Table 6.3 shows the percentage of all women of reproductive age in the ZOI who have achieved the minimum dietary diversity threshold by individual-level and household-level characteristics. Individual-level characteristics include women's age groups and educational attainment. Household-level characteristics include categories of gendered household type, household size, and household hunger.

Table 6.3. Women's minimum dietary diversity

Characteristic	Percent [a]	n[1]
Total (All Women 15-49)	37.8	1055
Age		
15-19	33.8	222
20-24	41.8	190
25-29	36.7	168
30-34	51.4	148
35-39	33.0	131
40-44	39.3	104
45-49	26.7	92
Educational attainment		
No education	23.0	180
Less than primary	33.9	362
Primary	42.6	417
Secondary or more	46.7	91
Gendered household type		
Male and female adults	37.2	813
Female adult(s) only	40.0	235
Male adult(s) only	^	7
Household size		
Small (1-5 members)	39.4	573
Medium (6-10 members)	36.7	435
Large (11+ members)	34.1	47
Household hunger		
Little to no hunger	40.0	439
Moderate or severe hunger	36.2	616

^ Results not statistically reliable, n<30.

[67] For more information, refer to Volume 11: Guidance on the First Interim Assessment of the Feed the Future Zone of Influence Population-Level Indicators (October 2014), Section 4.2, available for download at http://www.feedthefuture.gov/sites/default/files/resource/files/ftf_guidanceseries_vol11_interimassessment_oct2014.pdf.

[1] Records missing information for the disaggregate variables have been excluded from the disaggregated estimates. The unweighted sample size reflects this loss in observations; therefore disaggregates' sample sizes may not total to the aggregated sample size.

[a] Significance tests were performed for associations between women's minimum dietary diversity and individual/household characteristics. For example, a test was done between women's minimum dietary diversity and age. When an association is found to be significant ($p<0.05$), the superscript is noted next to the characteristic.

Source: USAID Haiti FTF ZOI Interim Assessment, 2016.

Nearly two in every five women in the Haiti ZOI (37.8 percent) meet the MDD-W threshold of five food groups. None of the individual and household characteristics presented in Table 6.3, including age, educational attainment, gendered household type, household size, and household hunger, are significantly associated with the women's MDD-W indicator.

Table 6.4 shows the percentages of women age 15-49 years who consume each of the 10 food groups by dietary diversity achievement status. The percentages who consume each of the 10 food groups are shown for women who achieve a minimum dietary diversity and for women who do not achieve a minimum dietary diversity.

Table 6.4. Consumption of foods by women's minimum dietary diversity status

Category	Percent of women according to achievement of a minimum dietary diversity [a]	
	Achieving	Not achieving
Women consuming a specific food group		
Grains, roots and tubers[a]	99.6	94.2
Legumes and beans[a]	91.2	68.7
Nuts and seeds[a]	16.8	1.7
Dairy products[a]	47.3	17.7
Meat and organ meats[a]	73.4	32.1
Eggs[a]	36.3	3.2
Vitamin A-rich dark green leafy vegetables[a]	62.4	17.6
Other Vitamin A-rich vegetables and fruits[a]	90.5	56.0
Other fruits[a]	19.0	3.5
Other vegetables[a]	59.3	18.9
N	415	640

[a] Significance tests were performed for associations between women's achievement of minimum dietary diversity and consumption of a specific food group. For example, a test was done between women's achievement of minimum dietary diversity and consumption of grains, roots and tubers. When an association is found to be significant ($p<0.05$), a superscript is noted next to the food group.

Source: USAID Haiti FTF ZOI Interim Assessment, 2016.

Among the sub-group of women who do not achieve a minimum dietary diversity, only three of the 10 food groups are consumed by at least half of the women: grains, roots, and tubers (consumed by 94.2 percent of women in this "not achieving MDD-W" group); legumes and beans (68.7 percent); and other vitamin A-rich vegetables and fruits (56.0

percent). For the other seven food groups, the percentage of women consuming each group falls below 35 percent (ranging from 32.1 percent of women consuming meat and organ meats, down to 1.7 percent of women consuming nuts and seeds).

In contrast to the sub-group of women not achieving minimum dietary diversity, the sub-group of women who do meet the minimum dietary diversity threshold consume six of the ten groups are consumed by at least half of the women: grains, roots, and tubers (consumed by 99.6 percent in this "achieving MDD-W" group); other vitamin A-rich vegetables and fruits (90.5 percent); legumes and beans (91.2 percent); meat and organ meats (73.4 percent); other vegetables (59.3 percent); and vitamin A-rich dark green leafy vegetables (62.4 percent).

Moreover, as shown in the superscripts in Table 6.4, women's achievement of a minimum dietary diversity is significantly associated with consumption of all 10 of the specific food groups.[68]

6.2.2 Infant and Young Child Feeding

This section presents young children's dietary intake measures, including the Feed the Future indicators of exclusive breastfeeding among babies 0-5 months and the MAD indicator among children 6-23 months.

Exclusive Breastfeeding

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 expressed breast milk or breast milk 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 0-5 months of age who were exclusively breastfed during the day preceding the survey.

Table 6.5 shows the prevalence of exclusive breastfeeding among children 0-5 months in the ZOI. Estimates are shown for all children, as well as by children's sex and by educational attainment of the child's mother. The mother's educational categories include no education, less than primary, completed primary and completed secondary or more.

[68] The real difference between the two sub-groups for grains, roots and tubers (96.6 vs 94.2 percent) is statistically significant but programmatically unimportant. That 3.4 and 5.8 percent of these two groups do not report eating any grains, roots and tubers is surprising but might be explained by the categorization of bananas – even green cooking bananas – as a fruit.
Similarly, even though the differences between the two sub-groups for nuts/seeds and other (non Vitamin-A rich fruits) fruits are statistically significant, both groups are very low in the consumption of these two food groups.

Table 6.5. Prevalence of exclusive breastfeeding among children under 6 months

Characteristic	Percent [a]	n[1]
Total (All children under 6 months)	**45.4**	**51**
Child sex		
Male	^	23
Female	^	28
Mother's educational attainment[2]		
No education	^	8
Less than primary	^	21
Primary	^	18
Secondary or more	^	4

^ Results not statistically reliable, n<30.

[1] Records missing information for the disaggregate variables have been excluded from the disaggregated estimates. The unweighted sample size reflects this loss in observations; therefore disaggregates' sample sizes may not total to the aggregated sample size.

[2] The Haiti Mid-term Survey identified the youngest child of sampled women to measure exclusive breastfeeding. The person in this measure is the child's biological mother.

[a] Significance tests were performed for associations between exclusive breastfeeding and child/caregiver characteristics. For example, a test was done between exclusive breastfeeding and the child's sex. When an association is found to be significant ($p<0.05$), the superscript is noted next to the characteristic.

Source: USAID Haiti FTF ZOI Interim Assessment, 2016.

Among all infants less than 6 months of age in the Haiti ZOI, almost one-half (45.4 percent) are exclusively breastfed. Significance tests were run for differences in children's exclusive breastfeeding by the disaggregate variables shown in Table 6.5: exclusive breastfeeding is not significantly associated with either child's sex or mother's educational attainment.

Minimum Acceptable Diet

The prevalence of children 6-23 months receiving a MAD measures the proportion of young children who receive a MAD apart from breastfeeding. This composite indicator measures both the minimum feeding frequency and minimum dietary diversity based on mothers' reports of the frequency with which the child was fed in the past 24 hours, and what foods were consumed during the past 24 hours. Tabulation of the indicator requires data on children's age in months, breastfeeding status, dietary diversity, number of semi-solid or solid feeds, and number of milk feeds.

Table 6.6 presents the Feed the Future MAD indicator for children in the ZOI. Estimates are shown for all children, as well as by characteristics of the children, mother, and household. Children's characteristics include children's sex and age group. Mothers' characteristics include educational attainment. Household characteristics include gendered household type, household size, and household hunger.

Table 6.6. Percentage of children age 6-23 months who receive a minimum acceptable diet

Characteristic	Percent [a]	n[1]
Total (All children 6-23 months)	**12.5**	**141**
Child sex		
Male	7.9	63
Female	15.5	78
Child age		
6-11 months	14.7	43
12-17 months	9.0	49
18-23 months	13.1	43
Care-giver educational attainment [a, 2]		
No education	^	25
Less than primary	7.1	60
Primary	30.0	46
Secondary or more	^	9
Gendered household type		
Male and female adults	12.0	110
Female adult(s) only	15.4	30
Male adult(s) only	^	1
Household size		
Small (1-5 members)	14.4	61
Medium (6-10 members)	11.9	77
Large (11+ members)	^	3
Household hunger		
Little to no hunger	12.4	53
Moderate or severe hunger	12.5	88

^ Results not statistically reliable, n<30.

[1] Records missing information for the disaggregate variables have been excluded from the disaggregated estimates. The unweighted sample size reflects this loss in observations; therefore disaggregates' sample sizes may not total to the aggregated sample size.

[2] The Haiti mid-term identified the youngest child of sampled women to measure dietary diversity and exclusive breastfeeding. The person in this measure is the child's biological mother.

[a] Significance tests were performed for associations between children receiving a minimum acceptable diet and child/caregiver/household characteristics. For example, a test was done between children receiving a minimum acceptable diet and child's sex. When an association is found to be significant ($p<0.05$), the superscript is noted next to the characteristic.

Source: USAID Haiti FTF ZOI Interim Assessment, 2016.

In the Haiti ZOI, only 12.5 percent of children age 6-23 months receive a MAD. Significance tests were run for differences in the prevalence of MAD by children's sex, age group, mother's educational attainment, gendered household type, household size, and household hunger. The only significant association found was between care-giver

educational attainment and prevalence of MAD; children with care-giver's having a primary level education are more likely to receive a MAD.

Table 6.7 presents the percentage of children achieving the MAD components (e.g., minimum meal frequency, minimum dietary diversity) and consuming each of the food groups of the minimum dietary diversity indicator. Estimates are shown for all children, as well as by specific age groups, and presented separately for breastfed children and non-breastfed children.

Achievement of the minimum meal frequency component for breastfed children is defined as two or more feedings for children 6-8 months, and three or more feedings for children 9-23 months. For non-breastfed children, in contrast, achievement of a minimum meal frequency is defined as four or more feedings for all non-breastfed children (6-23 months), and at least two of those feedings must be milk feeds. Achievement of the minimum dietary diversity component for breastfed children is defined as receiving four or more food groups (of seven possible groups), whereas non-breastfed children must receive four or more groups of six food groups (excluding the dairy products group).[69]

Table 6.7. Components of a minimum acceptable diet among children age 6-23 months

MAD components and food groups	Percent			
	All children [a]	By child age (in months)		
		6 to 11	12 to 17	18 to 23
Breastfed children				
Achieving minimum meal frequency	30.5	49.8	13.5	^
Achieving minimum dietary diversity	35.2	27.6	39.5	^
Consuming				
Grains, roots, and tubers[a]	84.3	78.6	87.0	^
Legumes and nuts	41.3	32.7	57.4	^
Dairy products	31.4	43.0	30.6	^
Flesh foods	35.1	25.1	40.1	^
Eggs[a]	6.1	2.9	7.5	^
Vitamin A-rich fruits and vegetables	73.3	71.3	64.0	^
Other fruits and vegetables	25.2	25.6	22.0	^
n	**101**	**48**	**34**	**19**
Non-breastfed children				
Achieving minimum meal frequency	30.5	^	^	24.1
Achieving minimum milk feeding frequency	27.0	^	^	^
Achieving minimum dietary diversity	31.3	^	^	41.1

[69] For additional detail regarding the children's MAD indicator, please refer to the Feed the Future Indicator Handbook, available at http://feedthefuture.gov/resource/feed-future-handbook-indicator-definitions.

MAD components and food groups	Percent			
	All children [a]	By child age (in months)		
		6 to 11	12 to 17	18 to 23
Consuming				
Grains, roots, and tubers[a]	98.2	^	^	97.5
Legumes and nuts	63.4	^	^	75.2
Dairy products	30.5	^	^	24.0
Flesh foods	26.7	^	^	38.0
Eggs[a]	21.2	^	^	26.8
Vitamin A-rich fruits and vegetables	67.7	^	^	71.2
Other fruits and vegetables	28.0	^	^	22.1
n	**40**	**1**	**9**	**30**

^ Results not statistically reliable, n<30.

[a] Significance tests were performed for associations between MAD components/food groups for breastfed and non-breastfed children. For example, a test was done for achieving minimum meal frequency and breastfeeding status. When an association is found to be significant ($p<0.05$), a superscript is noted next to the breastfed and non-breastfed row headings corresponding to the MAD component/food group.

Source: USAID Haiti FTF ZOI Interim Assessment, 2016.

Table 6.7 reveals that among breastfed children in the Haiti ZOI, 30.5 percent receive a minimum meal frequency and 35.2 percent receive a minimum dietary diversity. Among non-breastfed children, the group shown in the bottom panel of the table, 30.5 percent receive a minimum meal frequency, 31.3 percent receive a minimum dietary diversity, and only about one in four of the non-breastfed subgroup of children (27.0 percent) receive the minimum milk feeding frequency.

When examining the individual food groups, Table 6.7 shows that the most common food group for both groups of children (both breastfed and non-breastfed) is grains, roots, and tubers; 84.3 percent of breastfed children and 98.2 percent of non-breastfed children received foods from this group in the prior 24 hours. The second highest food group consumed by both breastfed and non-breastfed are vitamin A-rich fruits and vegetables (73.3 and 67.7 percent respectively). The least common food group for both groups is eggs, consumed by only 6.1 percent of breastfed children and 21.2 percent of non-breastfed children in the Haiti ZOI.

Significance tests were run for associations between the MAD component measures (achievement of a minimum meal frequency and achievement of a minimum dietary diversity) and breastfeeding status. Neither the minimum meal frequency nor the minimum dietary diversity component measures are significantly associated with breastfeeding status in the Haiti ZOI.

In addition, significance tests were run for associations between the consumption of individual food groups and breastfeeding status. Consumption of two food groups (of the seven groups presented in Table 6.7) is significantly associated with breastfeeding

status: grains, roots, tubers and eggs. For these food groups, consumption is higher among non-breastfed children than among breastfed children.

7. Nutritional Status of Women and Children

This section presents findings related to the Feed the Future indicators of women's underweight and children's anthropometry (stunting, wasting, and underweight).

7.1 Body Mass Index of Women Age 15-49 Years

Table 7.1 presents women's mean BMI as well as the BMI categories of underweight (BMI < 18.5), normal weight (18.5 ≤ BMI < 25.0), overweight (25.0 ≤ BMI < 30.0), and obese (BMI ≥ 30.0). Estimates are shown for all non-pregnant women age 15-49, as well as disaggregated by individual-level and household-level characteristics. Individual characteristics include age and educational attainment. Household characteristics include gendered household type, household size, and household hunger.

Table 7.1. Prevalence of underweight, normal weight, overweight, and obese (non-pregnant) women

Characteristic	Mean BMI[a]	Body Mass Index (BMI) category (percent)[b]				n[1]
		Under-weight[c]	Normal weight	Over-weight	Obese	
Total (All non-pregnant women age 15-49)	23.2	12.2	57.3	22.4	8.1	988
Age[a,b,c]						
15-19	20.6	26.5	65.8	7.2	0.6	211
20-24	22.0	7.5	72.7	17.0	2.7	172
25-29	23.3	13.3	55.0	25.2	6.5	152
30-34	25.0	3.3	50.1	29.5	17.0	134
35-39	24.9	8.7	47.2	30.1	14.0	127
40-44	25.4	4.4	45.4	32.0	18.2	101
45-49	24.7	9.1	47.6	34.6	8.7	91
Educational attainment[,						
No education	23.3	10.2	57.3	26.1	6.5	169
Less than primary	22.9	11.6	60.3	22.3	5.9	343
Primary	23.0	12.7	58.5	21.6	7.2	390
Secondary or more	24.9	14.1	46.0	21.2	18.7	81
Gendered household type						
Male and female adults	23.3	10.7	57.6	24.0	7.7	761
Female adult(s) only	23.2	16.7	56.6	17.0	9.7	221
Male adult(s) only	^	^	^	^	^	6
Household size						
Small (1-5 members)	23.4	12.3	55.4	22.7	9.5	529

Characteristic	Mean BMI[a]	Body Mass Index (BMI) category (percent)[b]				n[1]
		Under-weight[c]	Normal weight	Over-weight	Obese	
Medium (6-10 members)	23.0	11.8	61.1	20.7	6.3	414
Large (11+ members)	23.5	12.7	50.3	28.2	8.7	45
Household hunger						
Little to no hunger	23.5	10.8	55.9	25.5	7.7	415
Moderate or severe hunger	23.0	13.1	58.4	20.1	8.3	573

^ Results not statistically reliable, n<30.

[1] Records missing information for the disaggregate variables have been excluded from the disaggregated estimates. The unweighted sample size reflects this loss in observations; therefore disaggregates' sample sizes may not total to the aggregated sample size.

[a-c] Superscript in the column heading indicates significance tests were performed for associations between the indicator in the column heading and each of the variables in the rows. For example, a test was done between BMI and the woman's age. When an association between the column indicator and row variable is found to be significant ($p<0.05$), the superscript for the indicator in the column heading is noted next to the row variable.

Source: USAID Haiti FTF ZOI Interim Assessment, 2016.

Among non-pregnant women age 15-49 in the Haiti ZOI, the average BMI is 23.2, which falls in the category of 'normal weight'. As shown in Table 7.1, 12.2 percent of women in the Haiti ZOI are underweight (BMI <18.5, the Feed the Future standard indicator). More than half (57.3 percent) of women in the Haiti ZOI are normal weight, and 22.4 percent and 8.1 percent are overweight and obese, respectively.

Mean BMI in the Haiti ZOI varies significantly by women's age group. Women's average BMI values increase with increasing age. Among the youngest women (age 15-19) mean BMI is 20.6 (still in the 'normal weight' group); among the oldest women (age 45-59) mean BMI is 24.7.

BMI category (underweight, normal weight, overweight, and obese) also varies significantly by age group as does the prevalence of women's underweight, the Feed the Future standard indicator. Women in the youngest age group (15-19) exhibit the highest prevalence of underweight (26.5 percent). The ZOI prevalence of underweight for the other age groups is considerably less ranging from 13.3 percent (25-29 yrs) to 3.3 percent (30-34 yrs) as shown in Table 7.1.

7.2 Stunting, Wasting, and Underweight among Children Under 5 Years

This section reports on three anthropometric measurements of undernutrition among children under 5 years in the ZOI: stunting (height-for-age), wasting (weight-for-height), and underweight (weight-for-age).

7.2.1 Stunting (Height-for-Age)

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 0-23 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 (Black et al. 2008, Victora et al. 2008). Stunting is a height-for-age measurement that reflects chronic undernutrition. This indicator measures the percentage of children 0-59 months who are stunted, as defined by a height-for-age Z-score more than two standard deviations (SD) below the median of the 2006 WHO Child Growth Standard (<-2SD).[70] The stunting measures presented below include the Feed the Future stunting indicator of moderate or severe stunting combined (<-2SD) as well as the indicator for severe stunting (<-3SD). Mean Z-scores are also presented.

Table 7.2 shows the prevalence of stunting, severe stunting, and mean Z-scores for children under 5 years in the ZOI. Estimates are presented for all children and by child, caregiver, and household characteristics. Children's characteristics include sex and age. Caregivers' characteristics include educational attainment. Household characteristics include gendered household type, household size, and household hunger.

Table 7.2. Stunting (height-for-age) among children under 5 years old

Characteristic	% Stunted (<-2 SD)[a]	% Severely stunted (<-3 SD)	Mean Z-score [b]	n[1]
Total (All children under 5 years)	23.0	8.3	-1.0	623
Child sex[b]				
Male	30.1	11.1	-1.3	302
Female	16.6	5.8	-0.8	321
Child age[a]				
0-11 months	7.1	3.5	-0.6	108
12-23 months	19.2	5.0	-0.9	108
24-35 months	34.6	11.6	-1.3	137
36-47 months	26.3	10.8	-1.2	145
48-59 months	22.9	8.6	-1.1	125
Caregiver's educational attainment[a, 2]				
No education	30.2	13.5	-1.3	170
Less than primary	26.3	10.4	-1.3	230
Primary	16.7	3.0	-0.8	180

[70] WHO. (2006).

Characteristic	% Stunted (<-2 SD)[a]	% Severely stunted (<-3 SD)	Mean Z-score [b]	n[1]
Secondary or more	2.4	0.0	0.0	34
Gendered household type				
Male and female adults	23.5	8.3	-1.1	492
Female adult(s) only	21.5	8.6	-0.8	128
Male adult(s) only	^	^	^	3
Household size [a, b]				
Small (1-5 members)	11.8	1.3	-0.8	262
Medium (6-10 members)	31.8	13.0	-1.3	313
Large (11+ members)	25.7	14.4	-0.6	48
Household hunger				
Little to no hunger	17.9	7.2	-0.9	264
Moderate or severe hunger	26.5	9.1	-1.1	359

^ Results not statistically reliable, n<30.

[1] Records missing information for the disaggregate variables have been excluded from the disaggregated estimates. The unweighted sample size reflects this loss in observations; therefore disaggregates' sample sizes may not total to the aggregated sample size.

[2] Whenever the biological mother of the child resided in the household, the biological mother's education was reported. When the mother did not live with the child, the primary caregiver's level of education was used.

[a-b] A superscript in the column heading indicates significance tests were performed for associations between the indicator in the column heading and each of the variables in the rows. For example, a test was done between percent stunted and the child's sex. When an association between the column indicator and row variable is found to be significant (p<0.05), the superscript for the indicator in the column heading is noted next to the row variable.

Source: USAID Haiti FTF ZOI Interim Assessment, 2016.

In the Haiti ZOI, 23.0 percent of children under age 5 are stunted, and 8.3 percent are severely stunted. The mean height-for-age Z-score in the ZOI is -1.0 being one standard deviation lower than the WHO reference population to which it is compared.

Significance tests were run for both the FTF stunting among children indicator (< -2SD) as well as the mean height-for-age Z-scores. The prevalence of stunting in children is significantly associated with children's age group, caregivers' education attainment, and household size. Stunting prevalence by children's age group appears to follow an inverse "U" shape, first increasing with increasing age and then declining at the oldest age groups. Stunting prevalence is 7.1 percent among children age 0-11 months, then peaks at 34.6 percent among children 24-35 months, then declines to 22.9 percent among children 48-59 months.

Similarly, the prevalence of stunting is also significantly associated with caregivers' education. Nearly one-third (30.2 percent) of children whose caregivers have no education are stunted compared to only 2.4 percent of children whose caregivers have completed secondary school or have gone further in their studies. Child stunting prevalence also varies by household size, with children residing in small (1-5 members)

households having less stunting and those with medium and/or large households (6+ members) having more stunting

In addition, and as shown in Table 7.2, ZOI children's mean height-for-age Z-scores are significantly associated with children's sex and household size with mean stunting being greater in males compared to females and larger households being more stunted than smaller households.

7.2.2 Wasting (Weight-for-Height)

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 0-59 months who are acutely malnourished, as defined by a weight-for-height Z-score more than two SD below the median of the 2006 WHO Child Growth Standard. The wasting measures presented below include the Feed the Future wasting indicator of moderate or severe wasting combined (<-2SD) as well as the indicator for severe wasting (<-3SD), and the percentage of children who are overweight (>+2SD) and obese (>+3SD). Mean Z-scores are also presented.

Table 7.3 shows the prevalence of wasting, severe wasting, overweight, obesity, and mean Z-scores for children under 5 years in the ZOI. Estimates are presented for all children and by child, caregiver, and household characteristics. Children's characteristics include sex and age. Caregivers' characteristics include educational attainment. Household characteristics include gendered household type, household size, and household hunger.

Table 7.3. Wasting (weight-for-height) among children under 5 years old

Characteristic	% Wasted (<-2 SD) [a]	% Severely wasted (<-3 SD)	% Overweight (> +2SD) [b]	% Obese (> +3SD)	Mean Z-score [c]	n[1]
Total (All children under 5 years)	5.6	0.7	1.3	0.6	-0.2	623
Child sex[a]						
Male	7.8	1.2	2.2	1.3	-0.2	302
Female	3.5	0.2	0.5	0.0	-0.1	321
Child age						
0-11 months	11.3	3.5	0.8	0.0	-0.2	108
12-23 months	5.4	0.0	0.0	0.0	-0.3	108
24-35 months	4.1	0.0	1.4	0.0	-0.1	137
36-47 months	4.4	0.5	0.7	0.0	-0.2	145
48-59 months	4.0	0.0	3.4	3.0	-0.1	125

Characteristic	% Wasted (<-2 SD) [a]	% Severely wasted (<-3 SD)	% Overweight (> +2SD) [b]	% Obese (> +3SD)	Mean Z-score [c]	n[1]
Caregiver's educational attainment[b, 2]						
No education	5.0	0.0	0.3	0.0	-0.2	170
Less than primary	7.6	0.3	0.9	0.2	-0.2	230
Primary	1.9	0.0	0.3	0.0	0.0	180
Secondary or more	9.2	8.2	11.2	7.8	0.0	34
Gendered household type						
Male and female adults	4.8	0.7	1.3	0.8	-0.2	492
Female adult(s) only	8.4	0.6	1.2	0.0	-0.2	128
Male adult(s) only	^	^	^	^	^	3
Household size[a, b]						
Small (1-5 members)	3.7	0.0	0.8	0.0	-0.1	262
Medium (6-10 members)	8.0	1.4	0.9	0.2	-0.3	313
Large (11+ members)	0.8	0.0	5.7	5.7	0.1	48
Household hunger[a, c]						
Little to no hunger	2.8	0.3	2.1	1.4	0.1	264
Moderate or severe hunger	7.4	0.9	0.8	0.2	-0.3	359

^ Results not statistically reliable, n<30.

[1] Records missing information for the disaggregate variables have been excluded from the disaggregated estimates. The unweighted sample size reflects this loss in observations; therefore disaggregates' sample sizes may not total to the aggregated sample size.

[2] Whenever the biological mother of the child resided in the household, the biological mother's education was reported. When the mother did not live with the child, the primary caregiver's level of education was used.

[a-c] A superscript in the column heading indicates significance tests were performed for associations between the indicator in the column heading and each of the variables in the rows. For example, a test was done between the percent wasted and the child's sex. When an association between the column indicator and row variable is found to be significant ($p<0.05$), the superscript for the indicator in the column heading is noted next to the row variable.

Source: USAID Haiti FTF ZOI Interim Assessment, 2016.

In the Haiti ZOI, 5.6 percent of children under age 5 are wasted, and 0.7 percent are severely wasted. With respect to overweight (> +2SD) and obese (> +3SD), 1.3 percent of children under age 5 are overweight, and 0.6 percent are obese. The mean weight-for-height Z-score for children under age 5 in the Haiti ZOI is -0.2, which indicates that, on average, the weight-for-height of children in the ZOI is only slightly lower than that of the WHO global reference population.

Table 7.3 also includes the results of significance tests for the child wasting measure (< -2SD, the FTF standard indicator), the overweight measure (> +2SD), and mean weight-for-height Z-scores. The wasting indicator is significantly associated with children's sex, household size and hunger. The prevalence of wasting is higher among males than females and higher in households with 6-10 members compared to households with

only 1-5 members. Wasting is also more prevalent in households experiencing moderate or severe hunger (7.4 percent) than those with little or no hunger (2.8 percent). This difference is significant, although amounting to only 4.6 percentage points.

Table 7.3 also shows that the children's overweight measure varies by caregiver educational attainment with the proportion of overweight children being higher among caregivers with a secondary education or higher (11.2 percent) than the other three caregiver education attainment groups (ranging from 0.3 to 0.9 percent).

Overweight children are more likely when living in extremely large households (11+ members) compared to small and medium sized households (5.7 percent for 11+ member households compared to 0.8/0.9 for small and medium size households respectively).

Finally, the children's mean weight-for-height Z-score measure is significantly associated with household hunger; households experiencing little or no hunger have a marginally higher mean Z-score than households with moderate or severe hunger.

7.2.3 Underweight (Weight-for-Age)

Underweight is a weight-for-age measurement and is a reflection of acute and/or chronic undernutrition. This indicator measures the percentage of children 0-59 months who are underweight, as defined by a weight-for-age Z-score of more than two SD below the median of the 2006 WHO Child Growth Standard. The underweight measures presented below include the Feed the Future underweight indicator of moderate or severe underweight combined (<-2SD) as well as the indicator for severe underweight (<-3SD). Mean Z-scores are also presented.

Table 7.4 shows the prevalence of underweight, severe underweight, and mean Z-scores for children under 5 years in the ZOI. Estimates are presented for all children and by child, caregiver, and household characteristics. Children's characteristics include sex and age. Caregivers' characteristics include educational attainment. Household characteristics include gendered household type, household size, and household hunger.

Table 7.4. Underweight (weight-for-age) among children under 5 years old

Characteristic	% Underweight (<-2 SD)[a]	% Severely underweight (<-3 SD)	Mean Z-score[b]	n[1]
Total (All children under 5 years)	10.7	4.0	-0.7	623

Characteristic	% Underweight (<-2 SD)[a]	% Severely underweight (<-3 SD)	Mean Z-score[b]	n[1]
Child sex[a, b]				
Male	16.3	6.0	-0.9	302
Female	5.7	2.2	-0.6	321
Child age				
0-11 months	12.7	6.3	-0.6	108
12-23 months	8.2	1.1	-0.7	108
24-35 months	13.4	4.3	-0.7	137
36-47 months	9.7	4.6	-0.8	145
48-59 months	9.8	3.6	-0.7	125
Caregiver's educational attainment[2]				
No education	13.3	2.6	-0.9	170
Less than primary	13.3	6.5	-0.9	230
Primary	4.9	0.6	-0.5	180
Secondary or more	8.2	8.2	0.0	34
Gendered household type				
Male and female adults	11.1	3.9	-0.7	492
Female adult(s) only	8.9	4.5	-0.6	128
Male adult(s) only	^	^	^	3
Household size[a, b]				
Small (1-5 members)	5.5	0.5	-0.5	262
Medium (6-10 members)	14.5	7.0	-0.9	313
Large (11+ members)	13.9	3.2	-0.3	48
Household hunger[,b]				
Little to no hunger	8.1	0.7	-0.5	264
Moderate or severe hunger	12.5	6.2	-0.9	359

^ Results not statistically reliable, n<30.

[1] Records missing information for the disaggregate variables have been excluded from the disaggregated estimates. The unweighted sample size reflects this loss in observations; therefore disaggregates' sample sizes may not total to the aggregated sample size.

[2] Whenever the biological mother of the child resided in the household, the biological mother's education was reported. When the mother did not live with the child, the primary caregiver's level of education was used.

[a-b] A superscript in the column heading indicates significance tests were performed for associations between the indicator in the column heading and each of the variables in the rows. For example, a test was done between the percent underweight and the child's sex. When an association between the column indicator and row variable is found to be significant ($p<0.05$), the superscript for the indicator in the column heading is noted next to the row variable.

Source: USAID Haiti FTF ZOI Interim Assessment, 2016.

In the Haiti ZOI, 10.7 percent of children under 5 years are underweight, and 2.8 percent are severely underweight. The mean weight-for-age Z-score in the ZOI is -0.7, which indicates that on average the weight-for-age for children in the ZOI is below that for the global reference population.

Significance tests were run for both children's underweight (< -2SD), the FTF standard indicator, as well as the mean weight-for-age Z-scores. The prevalence of underweight indicator varies significantly by children's sex and household size. Males are more likely to be underweight than females (16.3 percent vs 5.7 percent respectively) and children in medium and large households are more likely to be underweight (14.5 and 13.9 percent respectively) than those in small households (5.5 percent).

Table 7.3 also shows that mean weight-for-age Z-scores in the Haiti ZOI vary by sex, household size and hunger. Males have a slightly lower mean z-score than do females (-0.9 vs -0.6). Medium size households have children more underweight (-.09) than do small and large member households (-0.5 and -0.3 respectively).

8. Summary and Conclusions

This report presents the results of the first interim assessment for the FTF Haiti ZOI. The Haiti ZOI which are the rural areas of the 3DCs. All indicators for the Haiti interim assessment were calculated with primary data, specifically the USAID Haiti FTF ZOI Interim Survey, 2016 for which data were collected between April 25 and June 8, 2016. Baseline indicator values presented in the FTF ZOI Indicator Estimates Table are from the report Haiti Baseline Survey, 2012. Fieldwork for the Haiti ZOI interim survey took place. Sample size from these data is sufficient to provide point estimates in the Haiti ZOI for the standard FTF indicators; they were not designed to be large enough to measure change in indicator values from the Haiti Baseline Survey, 2012.

The Feed the Future indicators included in this assessment are: (1) Daily per capita expenditures (as a proxy for income) in USG-assisted areas; (2) Prevalence of Poverty; (3) Depth of Poverty (4) Percent of women achieving adequacy on the Women's Empowerment in Agriculture Index (WEAI) indicators; (5) Prevalence of households with moderate or severe hunger; (6) Women's Dietary Diversity score; (7) Prevalence of children 6-23 months receiving a minimum acceptable diet (MAD); (8) Prevalence of exclusive breastfeeding among children under 6 months of age; (9) Prevalence of underweight women; (10) Prevalence of stunted children under 5 years of age; (11) Prevalence of wasted children under 5 years of age; and (12) Prevalence of underweight children under 5 years of age.

8.1 Summary of Key Findings

8.1.1 Household Economic Status

The average daily per capita expenditures in the Haiti ZOI is $3.04 (2010 USD). The prevalence of poverty, defined as the percentage of people living below $1.25 per day (2005 Purchasing Power Parity [PPP]), is 21.9 percent. The depth of poverty (the mean

percent shortfall relative to the $1.25 per day poverty line) is 6.0 percent. When using the most recent Haiti (national) poverty threshold of 82.2 Haitian Gourde (HTG), however, the prevalence of poverty in the ZOI is 57.3 percent, and the depth of poverty is 22.5 percent.

8.1.2 WEAI Indicators

While neither the full WEAI nor its component sub-indices can be calculated for this interim assessment, this report presents uncensored headcounts for nine of the 10 WEAI indicators. Uncensored headcounts are the percent of primary adult female decisionmakers who "achieve adequacy" on each of the WEAI indicators, regardless of their overall empowerment status. The interim WEAI uncensored headcounts with the highest levels of surveyed women's achievement in the Haiti ZOI include control over the use of income (98.9 percent), input in productive decisions (95.0 percent), and ownership of assets (85.2 percent). The WEAI uncensored headcounts with the lowest levels of achievement among primary adult female decision-makers are group membership (54.6 percent), access to and decisions on credit (55.4 percent), and purchase, sale or transfer of assets (61.2 percent).

8.1.3 Hunger and Dietary Intake

The prevalence of households with moderate or severe hunger is 58.9 percent, or more than half of all households in the Haiti ZOI. Women's dietary diversity, or the mean number of food groups (of nine possible groups) consumed in the prior 24 hours by women of reproductive age (WRA, 15-49 years), is 4.2 food groups. The prevalence of exclusive breastfeeding among children under 6 months is 45.4 percent; nearly half of all infants in the Haiti ZOI were exclusively breastfed in the prior day. Among children 6-23 months, only 12.5 percent received a minimal acceptable diet (MAD) in the prior day. There are no targeted nutrient-rich value chain commodities (NRVCC) in the Haiti interim assessment.

8.1.4 Nutritional Status of Women and Children

The prevalence of underweight women of reproductive age (WRA) in the ZOI, defined as a Body Mass Index (BMI) below 18.5, is 12.2 percent; more than one in every 10 non-pregnant WRA in the Haiti ZOI are underweight. Among children less than 5 years, 23.0 percent are stunted which means that about one in four children under age 5 in the ZOI have low height-for-age; this indicates long term, chronic undernutrition in young children. Approximately 5.6 percent of children under age 5 are wasted, or have low weight-for-height. Wasting is an indicator of acute malnutrition. Finally, 10.7 percent of children are underweight, or have low weight-for-age. Underweight is an indicator of either acute or chronic undernutrition in children.

8.2 Conclusions

Tables 3.1 through 7.4 present the results of this ZOI interim assessment and, for many tables, the results of significance tests for associations between the indicator and the categories are presented. Many significant differences were found; only those that are most notable are mentioned in the conclusions.

Gendered HH type is significantly associated with mean daily per capita expenditures at the interim measure whereas there is no significant difference in daily per capita expenditures between male/female adult households and female adult(s) only households.

For programmatic purposes, it is useful to create three groups of the WEAI indicator based on their point estimates at interim. These are:

WEAI Indicator Group		Indicators	Notes
A	Indicators with values at interim greater than 90%	• Input in productive decisions • Control over use of income	Significantly different from the other seven WEAI indicators and significantly different from each other.
B	Indicators with values at interim greater than 75% but less than 90%	• Ownership of assets • Speaking in public • Workload • Leisure	Significantly different from the other five WEAI indicators but not significantly different from each other
C	Indicators with values at interim < 75%	• Purchase, sale or transfer of assets • Access to and decisions on credit • Group member	Significantly different from the other six indicators but not significantly different from each other

Of the three anthropometric, nutritional status indicators[71] for children significant differences between males and females for Wasting and Underweight were found with

[71] Prevalence of children: (1) < 5 yrs who are stunted (< -2 SD ht/age) (2) < 5 yrs who are wasted (< -2 SD wt/ht) and (3) < 5 years who are underweight (< -2 SD wt/age)

males having higher prevalence than females. Stunting is not significantly different between males and females.

The mean household (HH) size for male adult(s) only HHs (1.7) is significantly different from at the male and female HH type (5.3) and maybe from the female(s) only HH type (3.5).

The indicator for school attendance used at interim[72] shows extremely high levels ranging from 86.6 to 90.2 percent for 5 to 19 year olds but this indicator does not capture if students attend school regularly.

Stunting and wasting are more prevalent among males under 5 years old than among female.

Education levels within the household, household size and gendered household type are frequently discriminators for indicators presented in this report.

- In the ZOI, mean daily per capita expenditures are significantly higher in male(s) only HHs, in smaller HHs and in HHs where at least one person has a secondary or higher level of education.
- The prevalence of poverty and depth of poverty in ZOI HHs are lowest among male(s) only HHs, lowest in smaller HHs and lowest in HHs with at least one person having a secondary or higher level of education. This is true whether the international or national thresholds of poverty are used and whether looking at the poverty or extreme poverty prevalence.
- Households with at least one person having a secondary education or higher have significantly less hunger than other households.
- Women's dietary diversity is significantly lower in HHs with no education and children's dietary diversity is significantly lower in households where the caregiver has less than a primary education.
- Stunting and wasting are more likely in HHs where caregivers have less education and in large HHs.
- Overweight children under 5 years old are more likely found in HHs with caregivers that have a secondary or higher education and in large (11+ member) HHs.

[72] The operational definition of school attendance used at interim is identical to that used at baseline.

References

Alkire, S., Malapit, H., Meinzen-Dick, R., Peterman, A., Quisumbing, A., Seymour, G., and Vaz, A. (2013). *Instructional Guide on the Women's Empowerment in Agriculture Index*. International Food Policy Research Institute (IFPRI). (2013). Retrieved from http://www.ifpri.org/publication/womens-empowerment-agriculture-index.

Alkire, S., Meinzen-Dick, R., Peterman, A., Quisumbing, A., Seymour, G., and Vaz, A. (2013). The Women's Empowerment in Agriculture Index. *World Development*, 52(C), 71-91.

Ballard, T.; Coates, J.; Swindale, A.; and Deitchler, M. (2011). *Household Hunger Scale: Indicator Definition and Measurement Guide*. Washington, DC: Food and Nutrition Technical Assistance II Project, FHI 360.

Black, R.E., et al. (2008). Maternal and Child Undernutrition: Global and Regional Exposures and Health Consequences. *The Lancet*. 371(9608):243-260.

Classbase Education Database. (2016). *Education System in Haiti*. http://www.classbase.com/countries/Haiti/Education-System. Accessed August 22, 2016.

Darnton-Hill, I., et al. (2005). Micronutrient deficiencies and gender: social and economic costs. *American Journal of Clinical Nutrition*, May 2005, 81(Supplement): 1198S-1205S.

Deaton, A. (2008). *The Analysis of Household Surveys: A microeconomic approach to development policy*. Baltimore: The Johns Hopkins University Press.

Deaton, A., and S. Zaidi. (2002). "Guidelines for constructing consumption aggregates for welfare analysis, Working Paper No. 135. Washington, DC: The World Bank.

Deitchler, M., Ballard, T., Swindale, A., and Coates, J. (2011). *FANTA Technical Note No. 12: Introducing a Simple Measure of Household Hunger for Cross-Cultural Use.* Washington, DC: USAID.

Famine Early Warning Systems Network (FEWSNET). (2016). *Haiti Seasonal Calendar: Typical Year.* http://www.fews.net/central-america-and-caribbean/haiti Accessed August 12, 2016.

Foster, J., Suman S., Lokshin, M., and Sajaia, Z. (2013). *A Unified Approach to Measuring Poverty and Inequality: Theory and Practice*. Washington, DC: The World Bank.115-118.

Grosh, M.E., and Munoz, J. (1996). A manual for planning and implementing the living standards measurement study survey. *Living Standards Measurement Study Group Working Paper No. 126*. Washington, DC: The World Bank.

Grosh, M., and Glewwe, P. (1995). A Guide to Living Standards Measurement Study Surveys and Their Data Sets. *Living Standards Measurement Study Group Working Paper No. 120*. Washington, DC: The World Bank.

Haughton, J., and Khandker, S. (2009). *Handbook on poverty and inequality*. Washington, DC: The World Bank.

Kaplinsky, R., and Morris, M. (2001). *A Handbook for Value Chain Analysis*. Ottawa, Canada: International Development Research Center.

IHSI. (2012). Population Totale, Population de 18 Ans et Plus Menages et Densites Estimes en 2012.

IHSI. (2015). Population Totale, Population de 18 Ans et Plus Menages et Densites Estimes en 2015.

Ministère de la Santé Publique et de la Population (MSPP), l'Institut Haïtien de l'Enfance (IHE), and ICF International. (2013). Enquête Mortalité, Morbidité et Utilisation des Services, Haïti, 2012. Calverton, Maryland.

Stukel, D., and Deitchler, M. (2012). Addendum to FANTA Sampling Guide by Robert Magnani (1999). Washington, D.C.: FHI 360/FANTA.

United Nations Development Group (UNDG). (2003). *Indicators for monitoring the Millennium Development Goals: definitions, rationale, concepts and sources*. New York: United Nations.

University of Oxford. (2013). *Alkire Foster Method: OPHI's method for multidimensional measurement*. Oxford Poverty & Human Development Initiative (OPHI). Retrieved from http://www.ophi.org.uk/research/multidimensional-poverty/alkire-foster-method.

USAID. (2013a). *Feed the Future Indicator Handbook: Definition Sheets* (updated October 18, 2014).

USAID. (2014b). *Volume 11: Guidance on the First Interim Assessment of the Feed the Future Zone of Influence Population-Level Indicators (October 2014)*.

Victora, C.G., et al. (2008). Maternal and Child Undernutrition: Consequences for Adult Health and Human Capital. *The Lancet*. 371(9608):340-357.

Webber, C.M., and Labaste, P. (2010). *Building Competitiveness in Africa's Agriculture : A Guide to Value Chain Concepts and Applications*. Washington, DC: The World Bank. https://openknowledge.worldbank.org/handle/10986/2401.

WHO and UNICEF. (2006). *WHO Child Growth Standards and the Identification of Severe Acute Malnutrition in Infants and Children*. World Health Organization and United Nations Children's Fund.

WHO/UNICEF/USAID/AED/FANTA 2/UC DAVIS/IFPRI/UNICEF. (2010). *Indicators for Assessing Infant and Young Child Practices* (Part 2 Measurements).

Zhang, L.C. (1999). A note on post-stratification when analyzing binary survey data subject to nonresponse. *Journal of Official Statistics*, 15(2): 329-334.

Appendix 1. Supplementary Data and Figures

A1.1 Urban vs Rural interim values for FTF indicators.

Urban and ZOI/Rural estimates of indicator values in the 3DCs are shown in the Feed the Future Zone of Influence Indicator Estimates table below. Indicators which show non-overlapping confidence intervals between urban and ZOI populations are bold.

Table A1.1 FTF SOI Indicator Estimates Rural VS Urban[1]: Haiti

Table A1.1	Urban Interim 2016			ZOI (Rural) Interim (2016)		
Feed the Future Indicator	**Estimate**	**95% CI**	**N**	**Estimate**	**95% CI**	**n**
Daily per capita expenditures (as a proxy for income) in USG-assisted areas (2010 USD)						
All households	6.0	3.0 – 9.0	1647	3.04	2.51 - 3.57	1117
Male and female adults	6.2	2.6 - 9.7	1172	2.91	2.36 - 3.46	762
Female adult(s) only	4.8	3.9 - 5.6	328	3.22	2.53 - 3.92	226
Male adult(s) only	6.9	5.9 - 7.9	147	4.84	4.18 - 5.51	129
Prevalence of Poverty: Percent of people living on less than $1.25 per day (2005 PPP)						
All households	**4.4**	**2.9 - 6.5**	**1647**	**21.9**	**15.5 - 30.1**	**1117**
Male and female adults	**4.5**	**3.2 - 6.3**	**1172**	**23.5**	**16.8 - 31.9**	**762**
Female adult(s) only	5.0	1.9 - 12.4	328	18.4	10.6 - 30.1	226
Male adult(s) only	**0.0**	**- - -**	**147**	**4.2**	**1.5 - 11.4**	**129**
Depth of Poverty: Mean percent shortfall relative to the $1.25 per day poverty line (2005 PPP)						
All households	**0.8**	**0.3 - 1.4**	**1647**	**6.0**	**3.5 - 8.5**	**1117**
Male and female adults	**0.8**	**0.3 - 1.3**	**1172**	**6.0**	**3.7 - 8.3**	**762**
Female adult(s) only	1.3	0 - 2.6	328	7.0	1.8 - 12.1	226
Male adult(s) only	0.0	- - -	147	2.0	-.2 - 4.1	129
Prevalence of households with moderate or severe hunger						
All households	**43.6**	**38.4 - 48.9**	**1655**	**58.9**	**50.9 - 66.5**	**1,131**
Male and female adults	42.3	36.3 - 48.5	1171	56.6	47.3 - 65.5	763
Female adult(s) only	51.0	43.1 - 58.8	329	62.8	53.1 - 71.6	228
Male adult(s) only	**39.6**	**29.8 - 50.4**	**155**	**65.7**	**55.6 - 74.6**	**140**
Women's Dietary Diversity: Mean number of food groups consumed by WRA						
All women age 15-49	4.04	3.89 - 4.20	1908	4.15	3.97 - 4.32	1055
Prevalence of exclusive breastfeeding among children under 6 months of age						
All children	29.5	15.8 - 48.3	58	45.4	26.9 - 65.4	51
Male children	^	^	29	^	^	23
Female children	^	^	29	^	^	28
Prevalence of children 6-23 months receiving a minimum acceptable diet						
All children	15.5	10.2 - 22.8	176	12.5	7.4 - 20.2	141
Male children	13.2	7.1 – 23.0	94	7.9	3.1 - 18.6	63
Female children	18.2	10.9 - 28.7	82	15.5	8.1 - 27.8	78

Table A1.1	Urban Interim 2016			ZOI (Rural) Interim (2016)		
Feed the Future Indicator	**Estimate**	**95% CI**	**N**	**Estimate**	**95% CI**	**n**
Prevalence of underweight women						
All non-pregnant WRA 15-49	9.3	7.6 - 11.4	1815	12.2	9.7 - 15.1	988
Prevalence of stunted children under 5 years of age						
All children	15.6	11.5 - 20.7	744	23.0	17.3 - 29.9	623
Male children	14.6	8.5 - 23.9	**353**	30.1	20 - 42.6	302
Female children	16.3	11.2 - 23.2	**391**	16.6	11.1 - 24.2	321
Prevalence of wasted children under 5 years of age						
All children	4.9	3.4 – 7.0	744	5.6	2.2 - 13.6	623
Male children	6.2	3.9 - 9.8	353	7.8	3.0 - 18.6	302
Female children	3.9	2.0 - 7.3	391	3.5	1.3 - 9.0	321
Prevalence of underweight children under 5 years of age						
All children	9.2	6.1 - 13.7	744	10.7	6.5 - 17.2	623
Male children	7.0	4.1 - 11.6	353	16.3	9.5 - 26.6	302
Female children	10.9	6.2 - 18.4	391	5.7	3.2 - 9.8	321

[1] The WEAI score cannot be compared because it was conducted exclusively within the rural population

Source(s): USAID Haiti FTF ZOI Interim Assessment, 2016.

A1.2. Interim Feed the Future Indicator Estimates

Unweighted sample sizes, point estimates, standard deviations, confidence intervals, non-response rates, and design effects (DEFF), for the interim Feed the Future indicators for the Zone of Influence.

Table A1.2 Feed the Future indicator	Estimate				n
	Indicator	SD	95% CI	DEFF	
Daily per capita expenditures (as a proxy for income) in USG-assisted areas (2010 USD)					
All households	3.04	2.23	2.51 - 3.57	15.6	1117
Male and female adults	2.91	1.96	2.36 - 3.46	15.1	762
Female adult(s) only	3.22	2.70	2.53 - 3.92	3.8	226
Male adult(s) only	4.85	4.77	4.18 - 5.51	0.6	129
Prevalence of Poverty: Percent of people living on less than $1.25 per day (2005 PPP)					
All households	21.9	-	15.5 - 30.1	8.7	1117
Male and female adults	23.5	-	16.8 - 31.9	7.1	762
Female adult(s) only	18.4	-	10.6 - 30.1	2.7	226
Male adult(s) only	4.2	-	1.5 - 11.4	0.5	129
Depth of Poverty: Mean percent shortfall relative to the $1.25 per day (2005 PPP) poverty line					
All households	6	13.7	3.5 - 8.5	9.1	1117
Male and female adults	6	12.0	3.7 - 8.3	7.3	762
Female adult(s) only	7	19.8	1.8 - 12.1	3.8	226
Male adult(s) only	2	16.9	-0.2 - 4.1	0.5	129
Percent of women achieving adequacy on Women's Empowerment in Agriculture Index Indicators[1]					
Input in productive decisions	95.0	-	91.7 – 97.0	1.6	489
Autonomy in production	n/a	n/a	n/a	n/a	n/a
Ownership of assets	85.2	-	78.8 – 89.9	2.9	489
Purchase, sale or transfer of assets	61.2	-	52.7 – 69.0	3.4	489
Access to and decisions on credit	55.4	-	44.5 – 65.9	5.7	489
Control over use of income	98.9	-	97.6 – 99.5	0.8	489
Group member	54.6	-	46.6 – 62.3	3.0	489
Speaking in public	79.3	-	69.3 – 86.6	5.4	489
Workload	74.8	-	69.8 – 79.2	1.4	489
Leisure	83.8	-	71.9 – 91.2	7.9	489
Prevalence of households with moderate or severe hunger					
All households	58.9	-	50.9 - 66.5	7.3	1131
Male and female adults	56.6	-	47.3 - 65.5	6.7	763
Female adult(s) only	62.8	-	53.1 - 71.6	2.1	228
Male adult(s) only	65.7	-	55.6 - 74.6	1.3	140
Women's Dietary Diversity: Mean number of food groups consumed by women of reproductive age					
All women age 15-49	4.15	1.6	3.97 - 4.32	3.2	1055
Prevalence of exclusive breastfeeding among children under 6 months of age					
All children	45.4	-	26.9 - 65.4	2	51
Male children	^	^	^	^	23

Table A1.2 Feed the Future indicator	Estimate				n
	Indicator	SD	95% CI	DEFF	
Female children	^	^	^	^	28
Prevalence of children 6-23 months receiving a minimum acceptable diet					
All children	12.5	-	7.4 - 20.2	1.1	141
Male children	7.9	-	3.1 - 18.6	0.9	63
Female children	15.5	-	8.1 - 27.8	1.4	78
Prevalence of underweight women					
All non-pregnant women age 15-49	12.2	-	9.7 - 15.1	1.7	988
Prevalence of stunted children under 5 years of age					
All children	23.0	-	17.3 - 29.9	3.5	623
Male children	30.1	-	20.0 - 42.6	4.6	302
Female children	16.6	-	11.1 - 24.2	2.5	321
Prevalence of wasted children under 5 years of age					
All children	5.6	-	2.2 - 13.6	7.9	623
Male children	7.8	-	3.0 - 18.6	5.2	302
Female children	3.5	-	1.3 – 9.0	2.7	321
Prevalence of underweight children under 5 years of age					
All children	10.7	-	6.5 - 17.2	4.5	623
Male children	16.3	-	9.5 - 26.6	3.9	302
Female children	5.7	-	3.2 - 9.8	1.6	321

[1] The full WEAI score cannot be calculated because interim data were collected from women only and the autonomy indicator was dropped. The second interim survey will collect the full set of data from women and men and will report on the full WEAI.

Source: USAID Haiti FTF ZOI Interim Assessment, 2016.

Appendix 2. Methodology

A2.1 Sampling and Weighting

Sampling

The sample of households for the interim survey followed a three-stage cluster sampling design to the HH level. Stratification is on the three development corridors; there is no further stratification in the sample. In the first stage, 144 enumeration areas (EAs) were selected from the 2003 Haiti Census in 3 corridors by probability proportional to estimated size sampling (PPES). There are 48 EAs in each of the three corridors. In the second stage, structures were first selected within each of the sampled EAs using satellite images. In the second stage, structures were first identified using satellite images then enumerated and selected randomly within each of the sampled EAs. A total of 3092 structures were selected for the survey: 1006 structures in the Saint-Marc Corridor, 1008 in the Cul-de-Sac corridor and 1078 in the North corridor.

Because the number of eligible households (EHH) within each structure could not be determined from the satellite images, the number was determined by the surveyors during field work for all of the selected structures. Then, the third stage, a number of the EHHs were selected using the Kish grid and interviewed. How many EHHs in a structure were selected and interviewed depended upon the total number of EHHs within the structure as described in the methodology section of this report. The maximum number of EHHs selected in a structure is three.

Weighting

Data required for weighting of survey data were collected throughout the sampling process, and included: (1) EA measure of size (where size is in terms of number of population or number of households) used for selection of EAs; (2) Strata measure of size; (3) measure of size of EAs at time of listing; and (4) response rates among households, women, and men. Weights were calculated for households, women, men, and children in the sample.

Design weights were calculated based on the separate sampling probabilities for each sampling stage and for each cluster. We have:

P_{1i} = first-stage sampling probability of the *i*-th cluster.

P_{2i} = Second-stage sampling probability within the *i*-th cluster (household selection).

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

$$P_{1i} = \frac{m \times N_i}{N}$$

The second-stage probability of selecting a household *j* in cluster *i* is:

$$P_{2ij} - \frac{n_i}{L_i} \times \frac{S_{ij}}{T_{ij}}$$

where:

m = number of sample EAs selected.

N_i = total population in the frame for the *i*-th sample cluster.

N = total population in the frame.

n_i = number of sample structures selected for the *i*-th sample cluster.

L_i = number of structures determined from the satellite images for the *i*-th sample cluster.

S_{ij} = number of households selected from the structure where the *j*-th household belongs to for the *i*-th sample cluster.

T_{ij} = total number of eligible households determined in the structure where the *j*-th household belongs to for the *i*-th sample cluster.

The overall selection probability of the *j*-th household in cluster *i* is the product of the selection probabilities of the two stages:

$$P_{ij} - P_{1i} \times P_{2ij} - \frac{m \times N_i}{N} \times \frac{n_i}{L_i} \times \frac{S_{ij}}{T_{ij}}$$

The design weight for the *j*-th household in cluster *i* is the inverse of its overall selection probability:

$$W_{ij} - \frac{1}{P_{ij}} - \frac{N \times L_i \times T_{ij}}{m \times N_i \times n_i \times S_{ij}}$$

The sampling weight was calculated with the design weight corrected for non-response for each of the selected EAs. Response rates were calculated at the cluster level as ratios of the number of interviewed units over the number of eligible units, where units could be household or individual (woman, child).

A2.2 Poverty Prevalence and Expenditure Methods

Data Source

The poverty prevalence, poverty gap, and mean per capita expenditures indicators for the ZOI Interim Assessment were derived using data collected in Section 5 on housing characteristics and Section 8 on household consumption of the Haiti 2016 ZOI interim survey. These sections are similar in content to the information collected by Living Standards Measurement Survey (LSMS),[73] and broadly, the analysis follows the methodology described by Deaton and Zaidi.[74] The representative survey included 2,789 completed household interviews, and among these, 2,764 households provided the requisite data for on household consumption, expenditures, and assets.

The poverty and expenditure analysis is best considered as two distinct phases: (1) calculating household consumption aggregates from the raw data and (2) calculating indicator values from the consumption aggregates. The first phase was guided by the Deaton and Zaidi "approach," which is a set of guidelines that are followed in preparing the consumption aggregates. Moreover, where feasible, decisions were made and measures were constructed following the methods used at the baseline, as described in the baseline report.

Consumption Aggregates

Food Consumption

Food consumption on 57 food items was measured with a seven day recall period. This included the total quantity of a food item that was consumed in the period, the cost of the purchased amount, and the quantity and price of the food as it is typically purchased. Roughly 94 percent of the approximately 63,000 records of consumed items were cases where the purchased and consumed quantities were the same. In these cases, the value of the consumed food (Question 807) was used as the value.

If more was consumed than was purchased, we would compute the median local cost per unit using the purchase value (Question 803) or as you reference specific question numbers, we should attach the questionnaire as reference the consumed from purchase value (Question 807). This imputed value would be applied to the quantity consumed

[73] Grosh, Margaret and Paul Glewwe. 1995. "A Guide to Living Standards Measurement Study Surveys and Their Data Sets." *Living Standards Measurement Study Group.* Working paper No. 120. The World Bank, Washington, DC.

[74] Deaton, A. 2008. The Analysis of Household Surveys: A microeconomic approach to development policy. Baltimore: The Johns Hopkins University Press.

within the past week (Question 806). In the case that an item was still missing or erroneous, we imputed the local median per capita cost of consumption and applied that to the household.

In many LSMS-like surveys, quantities are converted to kilograms or liters based on a market survey or other known conversions. We do not have evidence that conversions to kilogram / liters were performed at baseline. Moreover, we do not have access to market survey data in order to calculate these conversions. As such, the approach taken has been to calculate prices for each unit without converting the quantities to a common metric. For example, the price of corn per small pot, the price of corn per big pot, etc. will be calculated. Where logical, we have condensed units to produce more reliable price per unit estimates. We have converted gallons to liters and pounds and grams to kilograms. We have also converted quantities reported in “Dozen,” “Lot,” “Lot of 3,” “Lot of 13,” “Lot of 24,” “Head,” and “Bottle” into “Unit.” These are all measures of an item in its singular form.

We identify the price per unit as reported in question 802 / 803 and 806 / 807. Based on these prices, we estimate the median “local” price based on the most local area that will provide 20 or more pieces of data to establish price per unit. In the case that there are fewer than 20 instances of an item being purchased in a unit, the price per unit will not be calculated. In these cases, we impute the value of the consumed food based on the per capita median of the consumption value in “local” households.

Expenditure on Durable Goods

Purchases of durable goods and assets are large and infrequent. Represent large and relatively infrequent expenses, and only a small number of households will make these kind of purchases in the recall period of the survey. As indicated by Deaton and Zaidi (2002), “From the point of view of household welfare, rather than using expenditure on purchase of durable goods during the recall period, the appropriate measure of consumption of durable goods is the value of services that the household receives from all the durable goods in its possession over the relevant time period.”[75]

The annual rental equivalent of owning an item was calculated at baseline. This approach was followed at the mid-term. The rental equivalent was computed as the interest lost on the income that was tied up in the durable good and the depreciated value of the item.

The baseline and interim calculations of the durable good consumption aggregate differed due to translation differences in the surveys. At baseline, respondents reported the initial purchase price of a good and the current value of the item in its current

[75] Deaton and Zaidi. 2002. p. 33.

condition. The mid-term survey asked about the initial purchase price and the current purchase price of the item. The translation of the current price question did not reflect the depreciation or age of the item, and as such, the difference in the two measures cannot be used to calculate the items' depreciation as was done at baseline.

We have used the average real interest rate for Haiti from 1999 to 2014, which is 11.81.

The rate of depreciation was calculatedly differently at interim. Question 842 was poorly translated, and as a result, we cannot calculate the asset rental values as was done at baseline. Question 842 was intended to solicit the current value of the item in its current state. However, as it was translated, respondents report how much it would cost to purchase the item today. Therefore, the difference between the purchase value and the value reported in question 842 reflects the respondents' perception of inflation in price of the object, rather than an assessment of the item's depreciation.

In order to calculate the rental value of assets, we first calculate a depreciation rate and then estimate a current value based on the estimated depreciation rate. The depreciation rates were calculated as constant annualized depreciation rate for each item. Therefore, objects will lose more value in absolute terms when it is newer than when it is older. The rate was calculated with an expected lifespan of an item that was estimated to be two times the average age of the item. We have assumed that the majority of an objects value has depreciated at the end of its life span. We assume that five percent of the value of the item remains at the end of its life span. Thus, we create an annualized rate following the following formula.

$$\text{Rate (R)} - \frac{\ln(5/100)}{\text{Expected Life Span}}$$

Having derived the depreciation rate, we estimate the current value (Vt) of the item by applying the depreciation rate to the original purchase price (V0) and the age of the item (T) as shown in the following formula.

$$V_t - V_0\, e^{RT}$$

As performed at baseline, the asset rental value is the value of money invested in the durable good (i.e., the interest) and the amount of money lost to depreciation. We measure this in a manner identical to baseline. The rental value of the asset (R) is calculated as the interest rate (I) times the current value of the item (Vt) plus the amount of value lost to depreciation between its current value and the following year

$$\text{Rental Value} = \text{Interest} + \text{Depreciation Loss}$$

$$\text{Interest} = V_t * I$$

$$\text{Depreciation Loss} = V_0 - V_0 e^{R}$$

Expenditure on Housing

The value of housing is estimated as the monthly rental value of a dwelling, divided by 30.

The interim survey collects information on household rental values, for renters. For all households various household characteristics were measured. The measurement of rental values for renters is straightforward. For non-renters, a rental equivalent was estimated using a hedonic Ordinary Least Squares (OLS) regression model as suggested by Grosh and Muñoz (1996). The model was built on the sample of households reporting non-zero rent, with the log of rent paid by renters as a dependent variable and several predictor variables.

The model used at the interim followed the baseline hedonic model in spirit, but was performed with different predictor variables. While variations in regional rental markets are important, we did not include fixed effects of local areas. As renters will tend to be concentrated in certain areas with more robust rental markets, the inclusion of very specific, local measures (e.g., local fixed effects) will limit the ability of the overall model to predict the rental value of non-renters based on housing characteristics. In addition, the step-wise regression approach taken at baseline likely produced a model that was overly sensitive to the idiosyncrasies of the baseline data.

We have developed a model that includes the following variables: Corridor, urban, number of rooms, log of the household size, indicator that the household has a bank account, log of value of household assets, whether the household has improved flooring material, whether the household has improved wall material, whether the household has a cement roof, whether the household has improved sanitation, whether the household has access to electricity, and the number of hectares of agricultural land available to the household. The model includes the same housing characteristics used at baseline. It is different in that is only includes measures that have sufficient sample sizes or variation to provide useful predication, and it does not include geographic variables beyond the level of corridor and area type.

The final model had an adjusted R-square of .63, which is slightly better than the baseline model, due to the limited number of variables. As with baseline, we use the model coefficients to predict a fitted rental value for non-renting or households with missing values.

Calculating Indicator Values From Consumption Aggregates

Total per capita consumption in 2016 HTG is used to calculate the poverty prevalence (or poverty headcount ratio) – PH(z), the poverty gap – PG(z), and the average expenditure shortfall among the poor – PIG(z). Please consult the World Bank's poverty

measurement publication for a detailed discussion of the poverty headcount ratio and poverty gap.[76]

The poverty headcount ratio is the ratio of the number of individuals whose total daily expenditures falls below a poverty threshold, q, divided the total population, N. The average expenditure shortfall of the poor is the average amount of expenditures necessary to bring a poor individual to the poverty threshold. The computation of the average expenditure shortfall is shown in equation 1, where the expenditure shortfall (z – xn) is normalized by z such that the average expenditure shortfall is expressed as a percentage of the poverty threshold.

Equation 1:

$$P_{IG}(z) = \frac{1}{q}\sum_{n=1}^{q}\frac{z - x_n}{z}$$

The poverty gap can be easily derived from the average expenditure shortfall of the poor and the poverty prevalence. This manner of calculating the poverty gap is presented in equation 2. As the average expenditure shortfall is normalized, the poverty gap is also normalized.

Equation 2:

$$P_G(z) = P_H(z) * P_{IG}(z)$$

The average expenditure shortfall of the poor and the poverty gap can be expressed in the currency metric of the poverty threshold. The normalized (i.e., percentage) estimates can be multiplied by the poverty threshold to produce the shortfall and gap in terms of the threshold's currency metric.

Currency Conversions using CPI and PPP

- The Haiti 2016 CPI used for all conversions is the average CPI reported for April and May of 2016. These are the two months of data collection for which CPI values had been published by the IHSI. [77] The CPI values were rebased to 2015 and then rebased again using annual CPI values provided by the World Bank. The 2016 CPI value used in this analysis 231.44 (2005=100).

[76] Foster, James, Suman Seth, Michael Lokshin and Zurab Sajaia. 2013. *A Unified Approach to Measuring Poverty and Inequality: Theory and Practice*. The World Bank, Washington, DC. 115-118.

[77] IHSI. 2016. Indice des Prix à la Consommation. January 2015 – May 2016. Retrieved June 23, 2016. Retrieved from http://www.ihsi.ht/produit_economie_indice_coins_statistique.htm.

- Other than the 2016 CPI value, the CPI values used for the currency conversions\ were taken from the World Bank's Databank.[78] CPI values were adjusted to a base year of 2005 from a base year of 2010.

- The $1.25 2005 PPP poverty threshold was converted to 2016 HTG by using the Haiti 2005 PPP value of 19.37 and the Haiti 2016 CPI of 231.44 (2005=100). The $1.25 2005 PPP threshold is equivalent to 56.04 HTG, per person, per day in 2016 prices. These calculations are shown in the formulas below.

$$Threshold\ in\ HTG_{2016} = 1.25_{2005} * PPP_{2005} * {CPI_{2016,HTG}}/{CPI_{2005,HTG}}$$

$$56.04 = 1.25 * 19.37 * {231.44}/{100}$$

- The national poverty thresholds were established with the ECVMAS1 in 2012. We used the annual CPI for 2012, which is 172.60 (2005=100), to inflate the thresholds to 2016 prices. Specifically, we multiplied the poverty thresholds by 1.34 (i.e., 231.44 / 172.60), as shown in the following formulas.

$$Threshold\ in\ HTG_{2016} = Threshold_{2012} * {CPI_{2016,HTG}}/{CPI_{2012,HTG}}$$

$$Moderate\ national\ threshold = 110.22 = 82.2 * {231.44}/{172.60}$$

$$Extreme\ national\ treshold = 55.92 = 41.7 * {231.44}/{172.60}$$

- Consumption aggregates were converted to 2010 USD by adjusting for 2005 PPP. We converted to 2010 USD by using the formula (HTI CPI 2005 / HTI CPI 2016) * (1/PPP 2005)* (2010 USD CPI /2005 USD CPI) where HTI CPI 2016 = 231.44, HTI CPI 2005 = 100, PPP 2005 = 19.37, 2010 USD CPI =111.65, and 2005 USD CPI = 100. The conversion factor was 0.024905.

$$Conversion\ Factor = {CPI_{2005,HTG}}/{CPI_{2016,HTG}} * {1}/{PPP_{2005}} * {CPI_{2010,USD}}/{CPI_{2005,USD}}$$

$$024905 = {100}/{231.44} * {1}/{19.37} * {111.65}/{100}$$

- All indicators and analyses presented in this report have utilized the 2005 PPP to convert between HTG and USD. The only use of the 2011 PPP was to create Table A1.2. The $1.90 2011 PPP poverty threshold was converted to 2016 HTG by using the Haiti 2011 PPP value of 20.71. The $1.90 2011 PPP threshold is equivalent to 39.35 HTG per person per day in 2011 prices. Using the 2011 CPI of 162.41 (2005=100) and the 2016 CPI of 231.44 (2005=100), the $1.90 2011 PPP threshold is 56.07 HTG in 2016 prices.

[78] World Bank. 2015a.

$$Threshold\ in\ HTG_{2016} = 1.90_{2011} * PPP_{2011} * {}^{CPI_{2016,HTG}}/_{CPI_{2011,HTG}}$$

$$56.07 = 1.90 * 20.71 * {}^{231.44}/_{162.41}$$

Poverty Thresholds

The national poverty lines were established using data collected by ECVMAS1 in 2012. The household survey was accompanied by a market survey to identify prices. The poverty lines were estimated using a basic needs approach, which consists of determining a monetary value of food that provides a defined number of calories and adding to this monetary value of the established minimum of non-food items and services.[79] The food poverty line was set at 41.7 HTG per person per day and the total poverty line was set at 82.2 HTG per person per day.[80,81]

Table A2.1 presents poverty thresholds for the international thresholds of $1.25 2005 PPP and $1.90 2011 PPP, the national thresholds, and the national extreme thresholds. To aid in comparisons, threshold values have been converted between the 2005 PPP, 2011 PPP, 2016 HTG. The 2016 HTG conversions correspond to the period when the Haiti ZOI Interim Survey was collected.

Table A2.1. Poverty thresholds

Table A2.1 Threshold	Daily, per capita values		
	2005 PPP	2011 PPP	2016 HTG
International extreme thresholds			
$1.25 2005 PPP, per person per day	1.25	n/a	56.04
$1.90 2011 PPP, per person per day	n/a	1.90	56.07
National thresholds (HTG 2012)			
Moderate (82.2 per person per day)	2.46	3.73	110.22
Extreme (41.7 per person per day)	1.25	1.89	55.92

Weights

Expenditure estimates are reflective of the consumption and poverty of individuals within the ZOI. The data are collected at the household level, and individual estimates are produced by multiplying the household sampling weight by the number of *usual* household members in the household.

[79] Marzo, F., P. Backiny-Yetna, and N. Garbiras. 2014. *Pauvreté à Haïti: Éléments méthodologiques: Version de travail*. IHSI: Port-au-Prince, Haïti.

[80] World Bank. 2014. *Pauvreté et inclusion sociale en Haïti: gains sociaux à petits pas*. World Bank: Washington, DC.

[81] The two documents reviewed present thresholds with negligible differences. We have selected the latter document, prepared by the World Bank as the methodological document is a working paper.

A2.3 Criteria for Achieving Adequacy for Women's Empowerment in Agriculture Indicators

The below table presents the Women's Empowerment in Agriculture five dimensions of empowerment, their corresponding empowerment indicators, the survey questions that are used to elicit the data required to establish adequacy or inadequacy for each empowerment indicator, and how adequacy criteria are defined for each empowerment indicator.

A2,3 WEAI Dimension	Indicator name	Survey questions	Aggregation of adequacy criteria	Inadequacy criteria
Production	Input in productive decisions	G2.02 A-C, F How much input did you have in making decisions about: food crop farming, cash crop farming, livestock raising, fish culture; G5.02 A-D To what extent do you feel you can make your own personal decisions regarding these aspects of household life if you want(ed) to: agriculture production, what inputs to buy, what types of crops to grow for agricultural production, when or who would take crops to market, livestock raising	Must have at least some input into or can make own personal decisions in at least two decision-making areas	Inadequate if individual participates BUT does not have at least some input in decisions; or she does not make the decisions nor feels she could.
Resources	Ownership of assets	G3.02 A-N Who would you say owns most of the [ITEM]? Agricultural land, Large livestock, Small livestock, chicks etc.; Fish pond/equip; Farm equipment (non-mechanized); F arm equip (mechanized); Nonfarm business equipment ;House; Large durables; Small durables; Cell phone; Non-agricultural land (any); Transport	Must own at least one asset, but not only one small asset (chickens, non-mechanized equipment, or small consumer durables)	Inadequate if household does not own any asset or only owns one small asset, or if household owns the type of asset BUT she does not own most of it alone
	Purchase, sale, or transfer of assets	G3.03-G3.05 A-G Who would you say can decide whether to sell, give away, rent/mortgage [ITEM] most of the time? G3.06 A-G Who contributes most to decisions regarding a new purchase of [ITEM]? Ag land; Large livestock, Small livestock; Chickens etc.; Fish pond; Farm	Must be able to decide to sell, give away, or rent at least one asset, but not only chickens and non-mechanized	Inadequate if household does not own any asset or only owns one small asset, or household owns the type of asset BUT she does

A2,3 WEAI Dimension	Indicator name	Survey questions	Aggregation of adequacy criteria	Inadequacy criteria
		equipment (non-mechanized); Farm equipment (mechanized)	farming equipment	not participate in the decisions (exchange or buy) about it
	Access to and decisions on credit	G3.08-G3.09 A-E Who made the decision to borrow/what to do with money/item borrowed from [SOURCE]? Non-governmental organization (NGO); Informal lender; Formal lender (bank); Friends or relatives; ROSCA (savings/credit group)	Must have made the decision to borrow or what to do with credit from at least one source	Inadequate if household has no credit OR used a source of credit BUT she did not participate in ANY decisions about it
Income	Control over use of income	G2.03 A-F How much input did you have in decisions on the use of income generated from: Food crop, Cash crop, Livestock, Non-farm activities, Wage & salary, Fish culture; G5.02 E-G To what extent do you feel you can make your own personal decisions regarding these aspects of household life if you want(ed) to: Your own wage or salary employment? Minor household expenditures?	Must have some input into decisions on income, but not only minor household expenditures	Inadequate if participates in activity BUT she has no input or little input on decisions about income generated
Leadership	Group member	G4.05 A-K Are you a member of any: Agricultural / livestock/ fisheries producer/ market group; Water, forest users', credit or microfinance group; Mutual help or insurance group (including burial societies); Trade and business association; Civic/charitable group; Local government; Religious group; Other women's group; Other group.	Must be an active member of at least one group	Inadequate if not an active member of a group or if unaware of any group in the community or if no group in community

A2,3 WEAI Dimension	Indicator name	Survey questions	Aggregation of adequacy criteria	Inadequacy criteria
	Speaking in public	G4.01 – G4.03 Do you feel comfortable speaking up in public: To help decide on infrastructure (like small wells, roads) to be built? To ensure proper payment of wages for public work or other similar programs? To protest the misbehavior of authorities or elected officials?	Must feel comfortable speaking in at least one public setting	Inadequate if not at all comfortable speaking in public
Time	Workload	G6 Worked more than 10.5 hours in previous 24 hours.	Total summed hours spent toward labor must be less than 10.5	Inadequate if works more than 10.5 hours a day
	Leisure	G6.02 How would you rate your satisfaction with your available time for leisure activities like visiting neighbors, watching TV, listening to radio, seeing movies or doing sports?	Must rate satisfaction level as at least five out of 10	Inadequate if not satisfied (<5)

Appendix A3 Sampled EAs for Haiti's 2016 FTF ZOI Interim Assessment

CORRIDOR	DEPART-EMENT	COMMUNE	SECTION_COMMUNALE
Cul de Sac	Ouest	CARREFOUR	4ème Procy
Cul de Sac	Ouest	CROIX-DES-BOUQUETS	3ème Petit Bois
Cul de Sac	Ouest	CROIX-DES-BOUQUETS	3ème Petit Bois
Cul de Sac	Ouest	GANTHIER	2ème Balan
Cul de Sac	Ouest	KENSCOFF	5ème Grand Fond
Cul de Sac	Ouest	PÉTION-VILLE	3ème Etang du Jonc
Cul de Sac	Ouest	PÉTION-VILLE	5ème Bellevue Chardonnières
Cul de Sac	Ouest	THOMAZEAU	2ème Grande Plaine
Cul de Sac	Ouest	CROIX-DES-BOUQUETS	**5ème** Petit Bois (inaccessible at time of survey)
Northern	Nord	ACUL DU NORD	2ème Bas de l'Acul (Basse Plaine)
Northern	Nord	ACUL DU NORD	3ème Mornet
Northern	Nord	BAS LIMBÉ	2ème Petit Howard (La Fange)
Northern	Nord	CAP-HAÏTIEN	3ème Petite Anse
Northern	Nord	LIMBÉ	2ème Chabotte
Northern	Nord	LIMBÉ	5ème Ravine Desroches
Northern	Nord	LIMBÉ	6ème Ilot à Corne
Northern	Nord	LIMONADE	2ème Bois de Lance
Northern	Nord	LIMONADE	2ème Bois de Lance
Northern	Nord	MILOT	2ème Bonet à l'Evèque
Northern	Nord	MILOT	3ème Genipailler
Northern	Nord	PLAINE DU NORD	1ère Morne Rouge
Northern	Nord	PLAINE DU NORD	3ème Grand Boucan
Northern	Nord	QUARTIER MORIN	1ère Basse Plaine
Northern	Nord	QUARTIER MORIN	3ème Morne Pelé
Northern	Nord-Est	OUANAMINTHE	1ère Haut Maribahoux
Northern	Nord-Est	OUANAMINTHE	2ème Acul des Pins
Northern	Nord-Est	OUANAMINTHE	3ème Savane Longue
Northern	Nord-Est	TROU DU NORD	2ème Roucou
St. Marc	Artibonite	GRANDE SALINE	1ère Poteneau
St. Marc	Artibonite	GRANDE SALINE	1ère Poteneau
St. Marc	Artibonite	SAINT MARC	2ème Bois Neuf
St. Marc	Artibonite	SAINT MARC	2ème Bois Neuf
St. Marc	Artibonite	SAINT MARC	3ème Goyavier
St. Marc	Artibonite	SAINT MARC	4ème Lalouère

CORRIDOR	DEPART-EMENT	COMMUNE	SECTION_COMMUNALE
St. Marc	Artibonite	SAINT MARC	5ème Bocozelle
St. Marc	Artibonite	SAINT MARC	5ème Bocozelle
St. Marc	Artibonite	SAINT MARC	5ème Bocozelle
St. Marc	Artibonite	SAINT MARC	5ème Bocozelle
St. Marc	Artibonite	SAINT MARC	5ème Bocozelle
St. Marc	Artibonite	SAINT MARC	5ème Bocozelle
St. Marc	Artibonite	SAINT MARC	5ème Bocozelle
St. Marc	Artibonite	SAINT MARC	5ème Bocozelle
St. Marc	Artibonite	SAINT MARC	5ème Bocozelle
St. Marc	Artibonite	SAINT MARC	6ème Charrette
St. Marc	Artibonite	SAINT MARC	6ème Charrette
St. Marc	Ouest	ARCAHAIE	2ème Fonds Baptiste
St. Marc	Ouest	ARCAHAIE	2ème Fonds Baptiste
St. Marc	Ouest	ARCAHAIE	2ème Fonds Baptiste
St. Marc	Ouest	ARCAHAIE	3ème des Vases
St. Marc	Ouest	ARCAHAIE	3ème des Vases
St. Marc	Ouest	ARCAHAIE	4ème Montrouis
St. Marc	Ouest	ARCAHAIE	4ème Montrouis
St. Marc	Ouest	ARCAHAIE	4ème Montrouis
St. Marc	Ouest	ARCAHAIE	4ème Montrouis
St. Marc	Ouest	ARCAHAIE	5ème Délices
St. Marc	Ouest	ARCAHAIE	5ème Délices
St. Marc	Ouest	ARCAHAIE	6ème Matheux
St. Marc	Ouest	ARCAHAIE	6ème Matheux
St. Marc	Ouest	CABARET	1ère Boucassin
St. Marc	Ouest	CABARET	1ère Boucassin
St. Marc	Ouest	CABARET	2ème Boucassin
St. Marc	Ouest	CABARET	3ème Source Matelas
St. Marc	Ouest	CABARET	4ème Fonds des Blancs (Casale)

Appendix A4: log/inventory - composition of structures found by field teams

Appendix A

ENQUETE INTERMEDIAIRE USAID/HAITI
COMPOSITION DES STRUTURES

CORRIDOR: Cul de Sac

COMMUNE: Port-au-Prince

SECTION COMMUNALE: 3ème Martissant

NUMERO DE LA SDE: 001

Numero de la Struture	Residentiel? (1=oui, 2=non)	Nombre de menage	Nombre de menages selectionnes	Commentaire (en particulier si ce n'est pas un menage)
1	2	0		Garage
2	1	1	1	
3	1	2	2	
4	1	1	1	
5	1	2	2	
6	1	2	2	
7	1	1	1	
8	1	1	1	
9	1	0		Maison vide
10	1	1	1	
11	1	1	1	
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				

Note: Si la structure n'a pas de menages, utlisez les deux dernieres colonnes pour donner brievement un explication. Par exemple, une raison peut etre que la structure est en construction ou encore ce n'est pas une maison mais un commerce.