FEED THE FUTURE

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

Feed the Future Northern Kenya
Zone of Influence Baseline Report
March 2014

USAID
FROM THE AMERICAN PEOPLE

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List of Acronyms

BMI	Body Mass Index
CPC	Carolina Population Center of the University of North Carolina at Chapel Hill
DHS	Demographic and Health Survey
FAO	Food and Agriculture Organization (United Nations)
FTFMS	Feed the Future Monitoring System
GAM	Global Acute Malnutrition
GDP	Gross Domestic Product
GOK	Government of Kenya
GPI	Gender Parity Index
HA	Humanitarian Assistance
HHS	Household Hunger Scale
KMIS	Kenya Malaria Indicator Survey
KNBS	Kenya National Bureau of Statistics
Ksh	Kenya Shillings
LCMS	Living Conditions Monitoring Survey
LSMS	Living Standards Measurement Survey
MAD	Minimum Acceptable Diet
ODK	Open Data Kit
PBS	Population-Based Survey
PDNA	Post-Disaster Needs Assessment
PHS	Post-Harvest Survey
PPP	Purchasing Power Parity
PPS	Probability Proportional to Size
REGAL	Resilience and Economic Growth in the Arid Lands
REGAL AG	Resilience and Economic Growth in the Arid Lands Accelerated Growth
REGAL IR	Resilience and Economic Growth in the Arid Lands Improving Resilience
SEA	Standard Enumeration Area
USAID	United States Agency for International Development
USD	United States Dollar
USG	United States Government

List of Acronyms (continued)

WEAI	Women's Empowerment in Agriculture Index
WFP	World Food Programme
WHO	World Health Organization
WRA	Women of Reproductive Age
ZOI	Zone of Influence

Executive Summary

This document reports baseline values for the northern Kenya Feed the Future population-based survey (PBS). The United States Government's (USG) Feed the Future initiative is led by the United States Agency for International Development (USAID). Feed the Future seeks to reduce poverty and undernutrition in 19 developing countries by focusing on accelerating growth of the agricultural sector, addressing root causes of undernutrition, and reducing gender inequality. The baseline survey seeks to capture data on women's empowerment in agriculture, household food security, consumption, nutrition, and wellbeing of households in the geographic areas targeted by Feed the Future interventions, known as Feed the Future Zones of Influence (ZOI).

The PBS is a product of Feed the Future FEEDBACK (FTF FEEDBACK), which is responsible for performance monitoring and impact evaluation of the Feed the Future initiative. FTF FEEDBACK is implemented by Westat in partnership with TANGO International, the International Food Policy Research Institute (IFPRI), and the Carolina Population Center (CPC) at the University of North Carolina at Chapel Hill.

The current report highlights baseline findings from the Feed the Future ZOI, the geographic areas targeted for Feed the Future interventions in the arid lands of northern Kenya.[1] The ZOI in northern Kenya comprises nine counties and approximately two-thirds of Kenya's total land area. In northern Kenya, the PBS fieldwork was conducted by the Ronto Research Company in collaboration with the Kenya National Bureau of Statistics (KNSB). Westat and TANGO International provided technical and training support. A field team of more than 190 people interviewed people in 1,760 households across 140 standard enumeration areas in six of the nine counties.[2] The fieldwork took place from January 20-February 8, 2013.

The Feed the Future baseline values for northern Kenya draw on primary data. Refer to Annex C for descriptions and calculations of each indicator. Of the 13 Feed the Future indicators, 11 were calculated using the data collected through the PBS. These include: (1) *per capita expenditures*; (2) *prevalence of poverty*; (3) *prevalence of children 6-23 months receiving a minimum acceptable diet*; (4) *prevalence of exclusive breastfeeding*; (5) *Women's Empowerment in Agriculture Index (WEAI)*; (6) *prevalence of households with moderate or severe hunger (Household Hunger Scale)*; (7) *Women's Dietary Diversity Score*; (8) *prevalence of underweight women*; (9) *prevalence of underweight children under 5*; (10) *prevalence of wasting among children under 5*; and (11) *prevalence of stunting among children under 5*.[3] The *prevalence of anemia among women of reproductive age* and *prevalence of anemia among children 6-59 months* indicators are not reported. (Anemia

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[1] Kenya's ZOI is comprised of two distinct areas: one that includes districts in semi-arid lands and one that includes districts in the northern arid lands. This report provides baseline results on the northern arid lands only. For baseline results on the ZOI in semi-arid land districts, please see the report produced by Egerton University's Tegemeo Institute. Throughout this report, references to the ZOI mean the northern Kenya districts.

[2] Due to conflicts near the Somali border, the counties of Garissa, Wajir, and Mandera were not included in the FTF FEEDBACK Baseline PBS. (See Section 2.3 Survey Sample Design).

[3] The Women's Dietary Diversity Score and prevalence of underweight women are measured for women of reproductive age (15-49 years).

data were not collected in any of the FTF FEEDBACK baseline PBS surveys.) Finally, the northern Kenya PBS also included a short module measuring household livelihoods, economic and social resilience, and coping strategies. All northern Kenya baseline values have been entered into the Feed the Future Monitoring System (FTFMS) database. In this report, only differences across subgroups that are statistically significant at the 0.05 level are discussed in the narrative.

The household demographic findings show that male and female adult households in the ZOI have significantly more household members, more females, and more children of every age bracket in the household than other household types.[4] Regarding dwelling characteristics, about 15.3 percent of houses in the ZOI have electricity. Most commonly, houses have walls (45.5 percent) and floors (72.2 percent) made from mud or cow dung, with roofs made from thatch (43.4 percent) or corrugated metal (44.1 percent). Half of all households (50.0 percent) use an improved water source and 11.0 percent use an improved sanitary facility.

FTF FEEDBACK documents high rates of poverty and hunger, even in the post-harvest season when data were collected. Overall, the prevalence of poverty in the ZOI based on the $1.25 per person per day at 2005 purchasing power parity (PPP) is 55.1 percent. The mean poverty gap in the ZOI is 25.3 percent below the poverty line ($1.25/person/day), and average per capita expenditure is $1.98 per day (2010 USD). The baseline PBS data show that the prevalence of moderate or severe hunger is high; about half (50.9 percent) of households report moderate or severe hunger (based on the Household Hunger Scale). Male adult only households report significantly less moderate to severe household hunger (31.2 percent) than households with male and female adults (51.7 percent) or female adults only (57.4 percent).

Nutrition data show poor diet and nutrition outcomes for children and women living in the ZOI. Stunting affects nearly one-third (29.4 percent) of children under 5 years of age in the ZOI, and the stunting prevalence is higher among boys (32.5 percent) than girls (26.3 percent). The prevalence of wasting among children under 5 is 13.2 percent, and 19.7 percent are underweight. Just over half (51.6 percent) of all children under 6 months of age are exclusively breastfed. The prevalence of children 6-23 months with a minimum acceptable diet (MAD) is very low at 5.1 percent. Data related to the nutrition of women of reproductive age show that the Women's Dietary Diversity Score is low, with an average consumption of 2.6 out of nine total food groups. Nearly one in three (31.2 percent) women of reproductive age are considered underweight.

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

The WEAI score in northern Kenya's ZOI is 0.72 out of a maximum possible value of 1.0. Just 31.7 percent of women in the ZOI have achieved adequate empowerment in agriculture (a score of 0.80 or greater). The average value for the Five Domains of Empowerment (5DE) subindex, a measure of women's empowerment, is 0.71. The Gender Parity Index (GPI), which measures the inequality in 5DE scores between the primary adult male and female in each household (among those households with both an adult male and female), is 0.81. Within households with both a male and a female adult, 36.2 percent of women in the survey have achieved adequate gender parity (i.e., a 5DE score equal to or higher than the man in their household).

The WEAI results presented in this report include data from the primary decision maker in each household (excluding the male adult only and child adult only households), including but not limited to women of reproductive age. See Section 3.5 and Annex C for a detailed description of the WEAI.

Additional analyses requested by USAID/Kenya were conducted to determine the extent to which women's empowerment and household income/poverty are associated with the other Feed the Future survey indicators. The analysis shows that households with higher levels of women's empowerment (based on women's WEAI scores) have lower prevalence of poverty (31.6 percent empowered versus 55.6 percent not yet empowered), lower prevalence of moderate or severe hunger (37.4 percent versus 49.8 percent), and greater dietary diversity among women of reproductive age (3.3 food groups versus 2.6). When this analysis is completed by level of women's decision-making a similar trend is observed, with the addition of a significant difference in average daily per capita expenditures between households with women of low versus high decision-making capacity ($1.77 versus $2.64), and no significant difference in prevalence of household hunger by women's decision-making.

Women in households with moderate to severe hunger compared to households with no hunger are significantly less likely to achieve adequacy with respect to the WEAI 5DE indicators of ownership of assets (65.1 percent versus 86.8 percent) and access to and decisions about credit (11.9 percent versus 21.2 percent). Similarly, women in households below the poverty line compared to households at or above the poverty line are significantly less likely to achieve adequacy in four of the ten 5DE indicators: ownership of assets, access to and decisions on credit, group membership, and speaking in public. The analysis of per capita expenditures and selected Feed the Future indicators shows that the hunger, nutrition and WEAI indicator values generally improve moving from the lowest to the highest expenditure quartiles.

The FTF FEEDBACK baseline PBS in northern Kenya also included a module about household resilience. USAID defines resilience as "the ability of people, households, communities, countries, and systems to mitigate, adapt to and recover from shocks and stresses in a manner that reduces chronic vulnerability and facilitates inclusive growth."[5] Within the ZOI, livestock rearing is the main livelihood or income generating activity (45.5 percent), followed by receiving relief (28.6 percent),

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[5] USAID. 2012c.

crop agriculture (27.4 percent), wages (27.1 percent), and self-employment (20.7). The mean number of livelihood activities decreases in stress times from 2.2 to 1.4. About one-third of households (31.3 percent) report that they did not recover from the 2011 drought, and 40.8 percent of households report being unable to cope with future drought or stress. Over two-thirds of ZOI households (68.4 percent) believe a person's future is a matter of destiny, rather than within their own control. Of the 23.5 percent of ZOI households that have made proactive adaptations to their livelihood sources, 62.3 percent report that they have changed food or income sources. About one-third of households have sold large (33.0 percent) or small (33.2 percent) productive assets to cope with the 2011 drought. Of the households that sold assets, nearly three-quarters have been unable to repurchase or recover those assets (72.8 percent for large assets, 74.9 percent for small assets). This report also contains more detailed resilience results, comparing across USAID intervention areas, expenditure quartiles, household hunger status, and household poverty status.

FTF FEEDBACK baseline values will be used to measure changes over time in the Feed the Future indicators in the northern Kenya ZOI. It should be noted that the survey was not designed to make conclusions about causality or to attribute changes to specific Feed the Future investments.

1.   Background

1.1   Feed the Future and FTF FEEDBACK Overview

Feed the Future is a United States Government (USG) initiative that seeks to address global food insecurity by focusing on accelerating growth of the agricultural sector, addressing root causes of undernutrition, and reducing gender inequality in 19 countries. The United States Agency for International Development (USAID) is responsible for leading the government-wide effort to implement the Feed the Future initiative. The high-level target of the initiative is "to reduce by 20 percent the prevalence of poverty and the prevalence of stunted children under 5 years of age in the areas where we work."[6]

Feed the Future FEEDBACK (FTF FEEDBACK) is a USAID-funded project designed to implement specific monitoring and evaluation activities for Feed the Future. FTF FEEDBACK is implemented by Westat in partnership with TANGO International, the International Food Policy Research Institute (IFPRI), and the Carolina Population Center (CPC) of the University of North Carolina at Chapel Hill.

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

To measure progress in addressing global food security, USAID is collecting data through large surveys of households in geographic areas targeted by Feed the Future interventions, known as the Feed the Future Zones of Influence (ZOI). These population-based surveys (PBS), combined with secondary data sources for the ZOI for some countries, determine baseline values for Feed the Future indicators.

The baseline values will be used to measure changes in the Feed the Future indicators over time in northern Kenya. The midterm and final surveys will be conducted in 2015 and 2017, respectively. All baseline indicator values have been entered into the Feed the Future Monitoring System (FTFMS) database for the global Feed the Future initiative.

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[6] USAID. 2013.

1.2   Feed the Future ZOI Profile

1.2.1   Feed the Future Intervention Areas Within the ZOI

The portion of the ZOI in northern Kenya comprises nine counties: Marsabit, Garissa, Isiolo, Wajir, Turkana, Tana River, Mandera, Samburu, and Baringo. Figure 1 shows the nine counties comprising the Feed the Future ZOI that were planned to be part of the FTF FEEDBACK PBS; only six of these counties were included in the PBS survey.[7] Humanitarian assistance (HA) activities are operating in all nine counties in this part of the ZOI. Overlaid on the HA programs are Feed the Future activities. Resilience and Economic Growth in the Arid Lands (REGAL) Improving Resilience (IR) covers the five counties of Turkana, Marsabit, Isiolo, Wajir, and Garissa. REGAL-Accelerated Growth (AG) covers Marsabit and Garissa.[8] The programs are intended to be a mutually reinforcing set of humanitarian and development activities.

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[7] Due to conflicts near the Somali border, the counties of Garissa, Wajir, and Mandera were not included in the FTF FEEDBACK baseline PBS.

[8] Please note that at the time of data collection, REGAL AG covered Marsabit and Garissa. However, at the time of writing this report, REGAL AG covers Marsabit and Isiolo.

Figure 1.   Humanitarian assistance and REGAL programming in northern Kenya

REGAL-IR – stripes overlaid on solid color base	Turkana, Isiolo, Wajir, Marsabit, Garissa
REGAL-IR and AG – dots overlaid on stripes color base	Marsabit, Garissa
HA – dark color	Tana River, Mandera, Samburu, Baringo in addition to REGAL counties
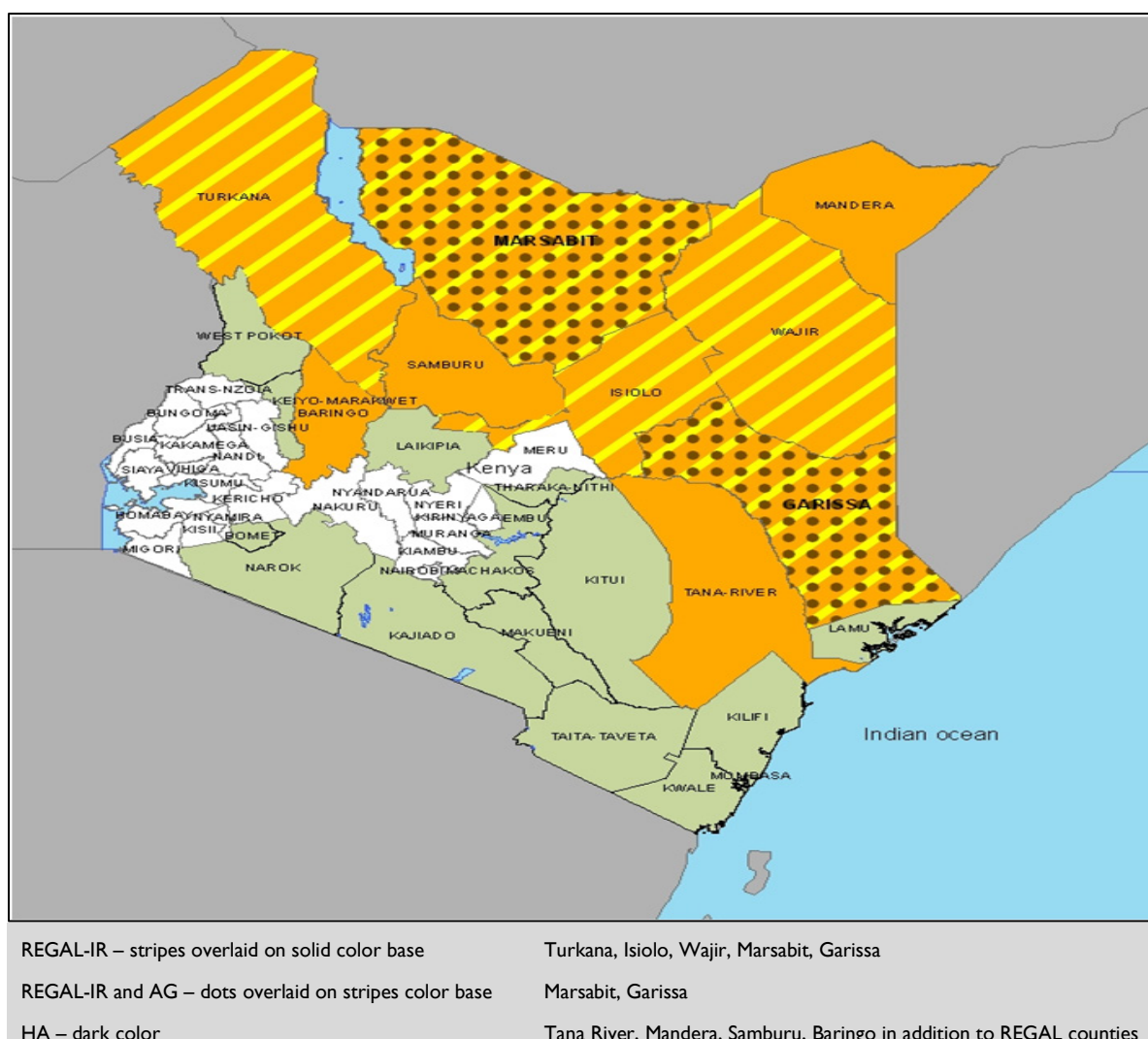
Source: USAID. 2011a.

1.2.2   Rationale for ZOI Designation

Following the severe drought of 2011, nine counties in Northern Kenya were added to the original Kenya ZOI. REGAL is Feed the Future's intervention activity in this area. The two components of REGAL focus on livestock and pastoralism: REGAL-IR provides a broad range of opportunities for income diversification, improved natural resource management, livestock value chain development, nutrition, conflict resolution, and drought management; whereas REGAL-AG makes investments in livestock value chains to enhance productivity and market development.

According to USAID,[9] the 2011 drought affected an estimated 3.8 million Kenyans, at which time high numbers and percentages of households were in need of food assistance. In the ZOI, the

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[9] USAID. 2011a.

proportion of the population requiring urgent HA ranged from 33 percent in Garissa to 77 percent in Marsabit.[10] At that time, the region was still recovering from the effects of the 2008 drought. The combined impact led to alarming spikes in acute malnutrition, as well as widespread and rapid deterioration of food security. Households' attempts to recover from the droughts provided stark evidence of the extent to which coping capacities of pastoral and agro-pastoral communities have been eroded. Recurring drought is only one of several factors contributing to increasing vulnerability in the ZOI; others factors include population growth, natural resource degradation, land fragmentation, human and animal disease, and conflict. In contrast, increasing demand for labor, livestock and livestock products, eco-tourism, and environmental services are expanding the region's economic opportunities.[11]

USAID summarizes the current situation in the ZOI as the product of decades of underinvestment leaving residents highly vulnerable to the challenges of climate change, food insecurity, and conflict. An estimated 40 to 60 percent of the region's population has never attended school, and less than one in four girls completes primary school (compared to Kenya's national average of 75 percent). Additionally, the ZOI is very remote and isolated. Nearly 400,000 km^2 of land make up the ZOI (nearly 68 percent of Kenya's land),[12] and there is little infrastructure. Of the 1,000 km of runways, most are in disrepair. The average distance to a health facility in the region is 52 km, 10 times further than the national target of 5 km.[13]

1.2.3   Strategic Objectives for Feed the Future in the ZOI

The Feed the Future goals in northern Kenya focus on pastoralists, and the goals are consistent with priorities identified in Kenya's Vision 2030 Development Strategy for Northern Kenya and Other Arid Lands, as well as the Country Action Plan "Ending Drought Emergencies in Kenya." These goals include:

- To develop resilience programming in the context of climate change, including development of community-based disaster risk reduction and natural resource management, with a focus on water and rangelands; improving linkages between "bush" and primary livestock markets and services; strengthening and diversification of livelihoods both within pastoral livestock systems and for those leaving pastoralism; and increased focus on nutritional impacts of water, livestock, and livelihood programming;

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[10] Ibid.
[11] Ibid.
[12] USAID. 2011b.
[13] USAID. 2011a.

- To develop livestock value chains by facilitating improvements in the livestock market system; strengthening market access and aggregation; improving access to service markets, including finance, animal health and breeding services; and improving relationships among value chain actors that yield enhanced benefits to actors all along the chain, especially pastoralists; and

- To build institutional capacity and strengthen local institutions.[14]

1.2.4 Demographics

Table 1 reports population estimates for the six counties included in the FTF FEEDBACK PBS based on Kenya National Bureau of Statistics (KNBS) estimates of population totals, as well as information on various subgroups from the northern Kenya baseline PBS. Table 1 indicates that the area of the baseline FTF FEEDBACK PBS had an estimated total population of 1.6 million people in 2012. This area is remote, sparsely populated, and predominantly rural (58.2 percent). In the survey area, there are an estimated 318,769 women of reproductive age, 53.7 percent of which reside in rural areas. The survey area also includes approximately 250,361 children under 5 years of age.

1.2.5 Livestock

Livestock and pastoralism are the main livelihoods in the ZOI and are important for the overall economy of Kenya. The (northern) region provides approximately 80-90 percent of Kenya's red meat,[15] and the region provides much of Kenya's meat for export. Given this, the REGAL interventions are focused on improving markets for livestock and livestock products, as well as increasing market access within the ZOI.

Table 2 and Table 3 show livestock production and value in Kenya. With the exception of camel meat, which declined below 2005 levels, production has increased slowly since 2005. Beef production dropped after 2009, as did gross production value for most camel and cattle products. Production declines may have been due, in part, to loss of livestock and infrastructure due to the combined effects of droughts, flooding, and conflict in the ZOI. Even though production of goat meat and goat milk have risen, they make up a small share of production value.

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[14] USAID. 2011a.
[15] Farmer, E. and J. Mbwika. 2012.

Table 1.   Baseline FTF FEEDBACK PBS area population (2012)

	ZOI population
Total population	1,607,423
Rural	934,981
Urban	672,442
Population in male and female adults HH	1,309,693
Population in female adults only HH	240,544
Population in male adults only HH	51,730
Population in child no adults HH	5,456
Total households (HH)[1]	293,434
Male and female adults HH	204,716
Female adults only HH	59,611
Male adults only HH	28,882
Child no adults HH	225
Women of reproductive age (15-49 years)	318,769
WRA rural	171,025
WRA urban	147,743
WRA nonpregnant	290,637
WRA pregnant	28,341
Children 0-59 months	250,361
Males 0-59 months	126,240
Females 0-59 months	124,120
Children 6-59 months	222,402
Males 6-59 months	110,406
Females 6-59 months	111,996
Children 0-5 months	27,959
Males 0-5 months	15,835
Females 0-5 months	12,124
Children 6-23 months	75,093
Males 6-23 months	36,382
Females 6-23 months	38,711

[1] This number is the number of households in the ZOI, and not the number of people living in the household.

Source: KNBS data on total population (2009), adjusted to 2012 using CIA World Factbook annual growth rate (2.8%). Subpopulation estimates were calculated using composition information from the Kenya baseline PBS.

Table 2.   Kenya livestock production (tons)

	2005	2006	2007	2008	2009	2010	2011	Annual change
Camel meat	25,500	27,000	27,000	19,820	16,580	23,570	25,000	-0.33%
Camel milk, whole, fresh	25,200	27,000	26,663	28,096	29,166	30,060	30,060	2.90%
Cattle hides	55,961	60,207	62,307	64,113	67,620	64,680	64,050	2.23%
Cattle meat	396,200	430,000	445,000	458,000	483,000	462,000	458,000	2.39%
Goat meat	42,600	44,450	44,670	44,700	46,321	46,900	47,200	1.69%
Goat milk, whole, fresh	129,000	118,000	130,000	134,560	192,360	196,060	197,200	6.83%
Goatskins	13,556	14,140	14,210	14,175	14,700	14,875	15,050	1.73%

Source: FAOSTAT. 2013.

Table 3.   Gross production value (constant 2004-2006, million USD), by year

	2005	2006	2007	2008	2009	2010	2011
Camel live weight	82	15	83	–	176	32	32
Camel meat	40	42	42	31	26	37	39
Camel milk, whole, fresh	13	14	14	15	15	16	16
Cattle live weight	614	995	2,519	637	1,079	961	913
Cattle meat	620	673	696	717	756	723	717
Goat live weight	80	144	128	96	102	122	120
Goat meat	86	90	90	90	94	95	95
Goat milk, whole, fresh	51	47	52	53	76	78	78

Source: FAOSTAT. 2013.

Table 4 shows livestock population in each county of the ZOI and the ZOI share of total livestock population as of 2009. The table shows that the ZOI contains most of Kenya's large livestock. However, the data were collected in 2009 and do not reflect changes in livestock holdings following the 2011 drought. According to the Famine Early Warning Systems Network (FEWS Net),[16] a major effect of droughts in the northeastern pastoral livelihood zone, which includes Mandera, Wajir, Garissa, Tana River, and Isiolo Districts, is depleted water supply. This means increased livestock trekking distances and migrations, which lead to weakened animals because of lack of water and food. Deterioration of animal health also limits milk production. For instance, in many parts of the northern pastoral area, pastoralists have responded by limiting milk consumption.

Table 4.   Livestock population (2009), by type and county within the ZOI

	Cattle	Sheep	Goats	Camels	Donkeys	Pigs	Chickens
Kenya	17,467,774	17,129,606	27,740,153	2,971,111	1,832,519	334,689	31,827,529
Baringo	893,947	482,831	1,771,833	67,077	55,109	338	264,181
Garissa	551,061	900,772	1,741,965	234,683	67,082	58	75,577
Isiolo	198,424	361,836	398,903	39,084	22,189	115	41,789
Mandera	1,076,978	1,632,824	3,929,747	930,819	191,664	6	227,670
Marsabit	424,603	960,004	1,143,480	203,320	63,861	125	50,690
Tana River	269,894	272,852	484,220	49,082	17,590	35	120,711
Turkana	1,719,278	3,904,849	6,545,611	865,286	585,009	757	223,504
Wajir	794,552	1,406,883	1,866,226	533,651	115,503	3	162,247
ZOI total	5,928,737	9,922,851	17,881,985	2,923,002	1,118,007	1,437	1,166,369
ZOI %	33.94%	57.93%	64.46%	98.38%	61.01%	0.43%	3.66%

Source: KNBS, 2009 cited in Behnke, R. and D. Muthami. 2011. The contribution of livestock to the Kenyan economy. IGADLPI Working Paper 0311.

Figure 2 shows the concentration of pastoral livelihoods zones in the northern ZOI, compared to the rest of Kenya. FEWS Net provides detailed descriptions of livelihoods within the ZOI and seasonal timelines for each livelihood area.

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[16] FEWS Net and USAID. 2013.

Figure 2. Kenya livelihood zones

KENYA - GENERALIZED LIVELIHOOD ZONES, 2010

- KE01 - Northwestern Pastoral Zone
- KE02 - Turkwell Riverine Zone
- KE03 - Northwestern Agropastoral Zone
- KE04 - Lake Turkana Fishing Zone
- KE05 - Northern Pastoral Zone
- KE06 - Marsabit Marginal Mixed Farming Zone
- KE07 - Northeastern Agropastoral Zone
- KE08 - Mandera Riverine Zone
- KE09 - Northeastern Pastoral Zone
- KE10 - Eastern Pastoral Zone
- KE11 - Southeastern Pastoral Zone
- KE12 - Coastal Medium Potential Farming Zone
- KE13 - Coastal Marginal Agricultural Mixed Farming Zone
- KE14 - Tana Riverine Zone
- KE15 - Southern Pastoral Zone
- KE16 - Southeastern Marginal Mixed Farming Zone
- KE17 - Southeastern Medium Potential, Mixed Farming Zone
- KE18 - Southern Agropastoral Zone
- KE19 - Central Highlands, High Potential Zone
- KE20 - Western Medium Potential Zone
- KE21 - Western High Potential Zone
- KE22 - Western Lakeshore Marginal Mixed Farming Zone
- KE23 - Lake Victoria Fishing Zone
- KE24 - Western Agropastoral Zone

Updated: March 14, 2011

Source: FEWS Net and USAID. 2011.

1.3   Purpose of This Report

This report presents baseline values established from primary data collected for 11 Feed the Future indicators in the ZOI in northern Kenya, as well as data from additional questions on resilience. This baseline report will be used as a reference point for measuring changes in the indicators over time in the ZOI. Determining change over time for the indicators will be based on comparing baseline performance monitoring data to data collected at the midpoint (2015) and endpoint (2017) of the Feed the Future initiative. The data do not allow for conclusions about attribution or causality.

This report presents the methodology used to obtain and analyze the data (Section 2.0), followed by a description of the findings for each Feed the Future indicator (Section 3.0). The report presents further analysis of findings requested by USAID/Kenya and the resilience findings (Section 4.0).

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

2.1 Data Sources

Where possible, FTF FEEDBACK uses secondary data to tabulate indicators. For Kenya, however, all indicators are from the primary data collected from the baseline PBS. No secondary data sources in Kenya met FTF FEEDBACK criteria of (1) having a large enough sample to estimate values with sufficient precision and power to measure change over time in the ZOI, and (2) being within a recent timeframe (all were 2009 or earlier). Accordingly, FTF FEEDBACK collected primary data to estimate 11 available indicators. Data for the remaining two indicators, women and children's anemia, are not available in the ZOI.[17] Table 5 shows the FTF FEEDBACK indicators and their data sources.

Table 5.   FTF FEEDBACK indicators and data sources

Indicator	Data source	Date collected
Prevalence of underweight children under 5	FTF FEEDBACK PBS	January 2013
Prevalence of poverty	FTF FEEDBACK PBS	January 2013
Prevalence of stunting among children under 5	FTF FEEDBACK PBS	January 2013
Prevalence of wasting among children under 5	FTF FEEDBACK PBS	January 2013
Prevalence of underweight women among women of reproductive age (15-49 years)	FTF FEEDBACK PBS	January 2013
Per capita expenditures (as a proxy for incomes)	FTF FEEDBACK PBS	January 2013
Women's Empowerment in Agriculture Index	FTF FEEDBACK PBS	January 2013
Prevalence of households with moderate or severe hunger	FTF FEEDBACK PBS	January 2013
Prevalence of children 6-23 months receiving a minimum acceptable diet	FTF FEEDBACK PBS	January 2013
Women's Dietary Diversity Score among women of reproductive age (15-49 years)	FTF FEEDBACK PBS	January 2013
Prevalence of exclusive breastfeeding among children under 6 months	FTF FEEDBACK PBS	January 2013
Prevalence of anemia among children 6-59 months	Not available	–
Prevalence of anemia among women of reproductive age (15-49 years)	Not available	–

2.2 Organization of Survey Work

For the Kenya baseline PBS, Ronto Research Company (Ronto), with technical assistance from TANGO International, conducted the training of trainers and supervisors, enumerator training, and survey fieldwork, as well as survey logistics. Ronto worked closely with the KNBS for sample design and selection and to recruit and train supervisors and enumerators. KNBS provided two master

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[17] Women and children's anemia data were not available for the Kenya ZOI from a secondary source. In consultation with the USAID Bureau for Food Security, FTF FEEDBACK did not collect anemia data in the Kenya PBS due to time and budget constraints.

trainers. The Division of Nutrition, under the Kenya Ministry of Public Health and Sanitation, provided a nutritionist to assist with training and to monitor activities during fieldwork. Refer to Annex A for the survey protocol.

Training

Training of supervisors and master trainers started on December 28, 2012 and was followed immediately on January 6, 2013 by a 12-day training of supervisors and enumerators. Supervisors and enumerators traveled to Nairobi for training. Training methods were in alignment with those developed for other FTF FEEDBACK countries where a PBS data collection activity had taken place. These methods are documented in manuals, reports and PowerPoint presentations. (A copy of the training manuals can be obtained from the Development Experience Clearinghouse or by contacting the FTF FEEDBACK project.) Training covered careful review of the quantitative questionnaire, use of electronic tablets, use of weighing and measuring equipment, detailed instruction on interview methods, and human subjects protection. Supervisors received additional training on checking data quality, and uploading data to the Westat server, and making and tracking enumerator assignments. All enumerators and supervisors reviewed and signed confidentiality forms.

Both the paper and digital versions of the questionnaire were in English. Enumerators were provided a local language translation (on paper), based on uniform terms agreed upon in training by the enumerators, supervisors, and master trainers. The local languages included: Borana, Somali, Burji, Turkana, Orma, Gikuy, and Swahili. All questions were asked in the local language and responses were entered in English on the tablet device. Training also included discussion of polygamous families (polygamy rates range from 7 to 36 percent in the ZOI)[18] and adoption of a uniform definition of who is part of a household.[19] After completion of classroom training, the enumerators and supervisors participated in a field test in Nairobi with actual respondents and field conditions. Enumerators conducted final practice rounds after they traveled to survey areas.

Fieldwork

Fieldwork involved 190 people–162 enumerators, 27 supervisors, and one survey coordinator–and covered 140 standard enumeration areas (SEAs). Each supervisor managed a field team of six enumerators. One field team was assigned to each SEA every three days. Field teams were divided into three pairs, one female and one male enumerator per pair. The WEAI required male and female enumerator teams. Male enumerators interviewed male adults and female enumerators interviewed female adults. Enumerators used Google Nexus 7 tablets running Open Data Kit (ODK) software to conduct surveys. At the end of each day, each field team supervisor backed up the data on each

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[18] KNBS. 2010.

[19] Training emphasized the definition of a household as eating from the same pot, or sharing a kitchen. In this context, wives who cooked and ate in different structures were not included in the survey, even if they were inside the selected house at the time of the survey.

tablet. Supervisors also copied all team members' survey data onto their own tablet using the "near field communications tapping" procedure. Supervisors uploaded the data to the Westat secure server whenever they had Internet access.

Fieldwork started on January 20 and ended on February 8, 2013. It was planned in part around the seasonal calendar for Kenya in a typical year (Figure 3). Even though the seasonal calendar shown is for the entire country, it helped to plan the timing of the survey in relation to rain, harvests, and hungry seasons. Peak hunger season in the ZOI is from August through November. Fieldwork was timed to follow the rainy season so that survey teams could reach communities, to produce baseline data prior to implementation of the REGAL programs, and before February campaigning for March elections—when "gifts" from political parties could distort household consumption and respondent households could mistake PBS enumerators for political campaigners. Uncertainty about the after-effects of election results (based on past elections) effectively ruled out conducting fieldwork following elections.

Figure 3.   Kenya seasonal calendar (for a typical year)
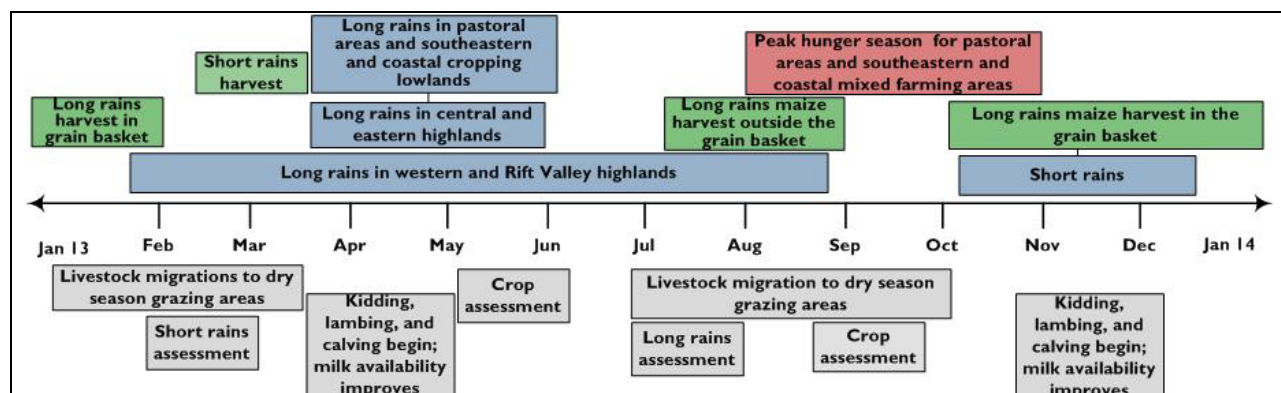
Source: FEWS Net and USAID. 2013.

Data Quality Control

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

Westat data management staff also ran data quality programs that incorporated the data quality checks on the tablet computers, the checks done by field staff, and other general checks. These data quality programs included range checks, checks of skip patterns, consistency checks, and completeness checks done by the tablet computer software, and the checks by field editors and

supervisors. The programs checked for completeness by listing whether all expected questionnaires per SEA had been received; result of the interview (complete, incomplete, etc.); percentage of modules that were completed (by module); and percentage of missing data for select variables, such as age and gender of respondents. All of these data were analyzed by FTF FEEDBACK data management staff to identify data quality problems to be addressed in the field. In addition to producing detailed reports by enumerator, the programs produced summary reports that were used for general data quality control.

Handling of Missing Values

The approach used in this report was to recode "don't know" responses and missing data to a null value – to take the value of "no" (if a yes/no question) or "0" (if a numeric response is required) – and to include the recoded data in the numerator and denominator of indicators.

This approach was generally used unless a specific indicator was defined otherwise (e.g., children who were not weighed and measured and children whose values for weight and height were not recorded were excluded from both the denominator and the numerator for anthropometry indicators). Means were computed for questions whose responses were numerical values.

Data Imputation

Missing or "don't know" values were generally treated as described above and allowed to stay in the data, with the exception of dates missing or "don't know" values for critical events, which are needed to correctly compute indicators for these individuals:

- Date of birth of women 15-49; and

- Date of each birthing of women 15-49 years for living children under 5 years of age.

The procedure followed to impute these dates followed international DHS standards, as described in DHS Data Editing and Imputation.[20]

Methods for Data Analysis

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

- **Percentages.** For values provided in nominal scales (e.g., yes/no responses), percentages were computed using the weighted number of cases that provided a given response as the numerator, and the total weighted number of cases as the denominator.

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[20] Croft, T. n.d.

Single response variables add up to a maximum of 100 percent, while multiple response variables may total to more than 100 percent.

- **Means.** For variables collected in a continuous scale format (e.g., number of household members), means were computed using the weighted sum of values as the numerator and the total weighted number of cases as the denominator.

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

Computed Variables and Indicators[21]

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

1. Housing characteristics and health indicators were computed using DHS standards and definitions, as described in:

   — 2012 DHS Guide to Statistics; and

   — 2012 Tabulation Plan for DHS Final Report.

2. Nutrition and food security indicators were computed using international standards as described in:

   — 2012 Feed the Future Indicator Handbook;

   — 2011 Household Hunger Scale: Indicator Definition and Measurement Guide; and[22]

   — 2010 World Health Organization (WHO) Indicators for Assessing Infant and Young Child Feeding Practices (Part 2 Measurement).[23]

3. Anthropometry indicators were calculated using the child growth standards and data processing programs published by the WHO in 2006.[24]

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[21] Detailed descriptions of handling missing values, data imputation, methods for data analysis, and computed variables and indicators are based in part on P. D Rosell, B. O'Colmain, and H. Howell. Haiti Baseline Survey. Draft Report. ICF Macro Inc. May 2013. Report submitted to USAID/Haiti, pp.12-14.

[22] Ballard, T. et al. 2011.

[23] WHO et al. 2010.

[24] WHO and UNICEF. 2006.

4. Household expenditures were computed following Living Standards Measurement Survey (LSMS) World Bank guidance, adapted to local conditions. General references on guidance for computing expenditures from LSMS modules include: Deaton & Zaidi (2002)[25] and Grosh & Muñoz (1996).[26]

5. WEAI was calculated with guidance and materials provided via the USAID Feed the Future webinar conducted on November 9, 2012 and the Instructional Guide on the WEAI.[27]

The descriptions and calculations of the ZOI indicators are provided in Annex C, and details regarding the weight calculations are provided in Annex B.

2.3 Survey Sample Design

The FTF FEEDBACK ZOI baseline survey was designed and implemented through coordinated efforts between Westat and TANGO International. For security reasons, primarily resulting from the presence of the terrorist group *Al-Shabab*, Garissa, Wajir, and Mandera counties were considered "no-go areas" by the KNBS. They were removed from the sample frame but will be added for future rounds if security improves, as determined by the United States Embassy.

2.3.1 Sample Size Calculation and Design

A sample size of 688 households per stratum was the minimum number of households required to detect a reduction in global acute malnutrition (GAM) from 20 percent to 13 percent (35 percent change) with 95 percent confidence and 80 percent power, assuming a design effect of 2.0. To allow for a nonresponse rate of three percent, the sample size increased to 710 for a total of 2,130 households. The estimated nonresponse rate is based on response rates of 97.7 percent for the 2008-09 DHS and 93 percent for the 2010 Kenya Malaria Indicator Survey. For logistics purposes, the number of households per stratum was increased slightly as shown in Table 6, for a total sample size of 2,140 households. [28]

In order to maximize the number of clusters while at the same time conforming to time constraints and logistics requirements, KNBS used existing listings and protocol to select between 14 and 18 households per cluster resulting in a total projected sample of 2,136 households over 140 clusters. Field teams were unable to access five clusters (78 households). Three of the clusters were excluded because they were inaccessible due to flooding and two were excluded due to long travel times (five day journey to one cluster). Of the remaining 2,058 households, field teams were unable to locate 158 households. Enumerators contacted 1,900 households, of which 1,760 consented to be

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[25] Deaton, A. and S. Zaidi. 2002.
[26] Grosh, M. and J. Muñoz. 1996.
[27] Alkire, S., Malapit, H. et al. 2013.
[28] As noted in the protocol, this sample size is also large enough to detect a change of 20 percent in households in the household hunger scale (HHS) indicator, assuming an initial value for comparison of 50 percent. Demonstrating changes in poverty depth would require a sample that would not have been feasible to collect by the end of January.

interviewed. Survey data were weighted to account for the missing households and clusters. The potential reasons for and implications of the nonresponse rate and smaller than expected sample size for the PBS, including issues of representativeness and detecting change in key indicators over time, are discussed more fully in Section 2.4 Limitations.

Table 6.   Required sample size, disaggregated

Strata/program	County	Households			Clusters		
		Rural	Urban	Total	Rural	Urban	Total
1. HA	Baringo	256	44	306	17	3	20
1. HA	Samburu	162	38	204	10	3	13
1. HA	Tana River	167	33	204	11	2	13
2. HA, REGAL IR	Turkana	383	77	469	26	5	31
2. HA, REGAL IR	Isiolo	128	112	245	9	7	16
3. WFP, REGAL IR&AG, REGAL IR&AG	Marsabit	553	147	712	37	10	47
Total		**1,649**	**451**	**2,140**	**110**	**30**	**140**

2.3.2   Sample Weighting

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. Data for computing sample weights came from KNBS as well as from the FTF FEEDBACK PBS.

The sampling weight was calculated with the design weight corrected for nonresponse for each of the selected clusters. 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 households or individuals (woman, child or WEAI). Design weights were first corrected for cluster-level response rates. The household and individual sampling weights were then calculated as described above. 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. Annex B contains detailed information about the weighting methods.

2.3.3   Questionnaire Design

The PBS questionnaires were developed from the Feed the Future PBS baseline survey guidelines provided in Volume 8 of the Feed the Future M&E Guidance series, "Population-Based Survey Instrument for Feed the Future ZOI Indicators with Revised WEAI Module (October 2012)." The survey questionnaire was designed to conform to existing questionnaires such as the DHS, LSMS, and WEAI, and included an informed consent statement, household roster, dwelling characteristics module, and modules for indicators that could not be calculated with existing data sources. The Kenya questionnaire included all FTF FEEDBACK PBS modules except women's and children's anemia, which were not collected in any of the baseline PBS surveys. The northern Kenya baseline PBS also collected a short module measuring economic and social resilience.

The PBS collected information to enable calculation of the indicators presented in Table 7. Please refer to Annex A for the full survey protocol and questionnaire.

Table 7.   FTF FEEDBACK Kenya baseline survey indicators

Indicator	PBS module
1. Prevalence of poverty: Percent of people living on less than $1.25/day	Module C: Household Roster and Demographics, Module E: Household Consumption Expenditure
2. Per capita expenditures of USG-targeted beneficiaries (2010 USD)	Module C: Household Roster and Demographics, Module E: Household Consumption Expenditure
3. Prevalence of underweight children under 5 years of age	Module I: Child Anthropometry, Infant and Young Child Feeding
4. Prevalence of stunting among children under 5 years of age	Module I: Child Anthropometry, Infant and Young Child Feeding
5. Prevalence of wasting among children under 5 years of age	Module I: Child Anthropometry, Infant and Young Child Feeding
6. Prevalence of underweight women of reproductive age	Module H: Women's Anthropometry and Dietary Diversity
7. Women's Empowerment in Agriculture Index	Module G: WEAI Individual Application
8. Prevalence of households with moderate or severe hunger	Module F: Household Hunger Scale
9. Prevalence of children 6-23 months receiving a minimum acceptable diet	Module I: Child Anthropometry, Infant and Young Child Feeding
10. Women's Dietary Diversity Score: Mean number of food groups consumed by women of reproductive age	Module H: Women's Anthropometry and Dietary Diversity
11. Prevalence of exclusive breastfeeding of children under 6 months of age	Module I: Child Anthropometry, Infant and Young Child Feeding
12. Resilience	Module F: Resilience

2.4   Limitations

There are two main limitations to consider when interpreting the PBS results. The limitations are related to timing of the survey and sampling constraints, which includes discussion related to the representativeness of the sample and the ability to detect change in key Feed the Future indicators over time.

First, fieldwork was timed in order to avoid elections and holidays. By implementing the FTF FEEDBACK PBS outside of election campaigns and holidays, household consumption information was not inflated. However, that meant the survey was not implemented during the lean season. A baseline estimate of food deprivation should reflect the largest number of households likely to experience food insecurity. Thus, household hunger data are optimally collected "during or directly after the worst of the lean season."[29] In northern Kenya, however, it was not possible to conduct the fieldwork during that time. Collecting data outside of the lean season may not be a limitation per se, but is important to consider when contextualizing the results, particularly the household hunger

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[29] Ballard, T. et al. 2011.

findings. For future surveys to assess changes in household food security, the HHS should be administered at the same time of the year.[30]

Second, the sampling constraints including high nonresponse rates and inaccessible geographic areas necessitate discussion on the issues of representativeness of the sample and the ability to detect change over time in key indicators.

The overall nonresponse rate is 17.6 percent, leaving a final sample of 1,760. Nonresponse rates for each survey module were calculated using the final sample size of 1,760 as the denominator. Nonresponse rates were very low for expenditure data (2.0 percent) and the resilience module (1.3 percent), but were higher for the WEAI module (56.9 percent), breastfed children under 6 months of age (28.4 percent), and Women's Dietary Diversity Score (28.6 percent). It is important to discuss the issue of representativeness for these indicators in order to address possible bias and further understand the reasons for the high nonresponse.

According to supervisors, separating husbands and wives for the WEAI module often aroused suspicion and distrust of enumerators, and some men feared that wives would reveal family issues. Statistical tests comparing per capita household expenditures, education, age, and household size of WEAI respondents and non-respondents do not show significant differences between the two groups. Based on this information, there is no evidence that results are biased.

Nonresponse rates were also high for breastfed children under 6 months of age. The children's nutritional questions (in Module I) were asked at the end of the survey. According to supervisors, the length of the survey contributed to increasing nonresponses in later modules. Respondents complained the questionnaire was too long and repetitive. The Kenya PBS was the longest to date, in terms of the number of questions, in the FTF FEEDBACK project. The average survey length was 90 minutes, but this does not include call backs, which were common. Some household members completed part of the survey, then requested that the enumerator return for the remaining questions, but were unavailable or absent when the enumerator returned. Surveys were longer and nonresponse rates were higher for larger households because dietary, weight, and height information needed to be collected for a greater number of women and children. In addition, for Women's Dietary Diversity Score, dietary recall was difficult for some respondents, especially when they had eaten many different types of food. A survey supervisor reported that other respondents had eaten foods they were "not proud to mention," making it difficult for them to report. Similar tests comparing respondents and non-respondents under six months and for women of reproductive age do not show significant differences.

While the difference between the projected and actual sample size (2,140 and 1,760) did not limit data quality, as data were weighted to account for the difference, the other limiting factor is the issue of detecting change over time. Sample size calculations were based on a 3 percent nonresponse rate. The initial sample size of 2,140 is necessary to detect a change in GAM (wasting) from 20 percent to

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[30] Ibid.

13 percent (35 percent) between baseline and endline. The final sample size is in fact adequate to detect a change in GAM from the projected 20 percent to 12.5 percent (37.5 percent). Thus, a larger change in wasting is detectable with the current sample size. However, the wasting prevalence in the ZOI as measured in the FTF FEEDBACK baseline PBS is 13.2 percent (refer to Table 8) rather than 20 percent. To detect a smaller rate of change (e.g., 20 instead of 35 percent) would require a much larger sample size overall, as well as oversampling because not all households have children under 5. Neither the original sample size estimate, nor the actual sample may be adequate to detect a smaller rate of change in this indicator. Thus, increased sample sizes may be needed in future survey rounds in order to detect change over time.

The other sampling constraint is related to inaccessible geographic areas due to security, flooding and distance. Three of the nine counties comprising the northern Kenya ZOI were excluded from this sample frame but may be included in future survey rounds if the security situation allows. The interpretation of the baseline values should take into account the representation of the ZOI without data from these three counties. Future data analysis may consider the method of imputing extreme values to represent the excluded households or conducting a desk review of other surveys in the excluded areas in comparison to the survey indicators in order to better understand their effect on the results.

Also, five clusters (78 households) in the sample frame were excluded due to flooding and long travel times. While the representativeness of the sample was likely not affected by their exclusion, it contributed to the smaller than expected sample size and important lessons can be learned. Future survey rounds can mitigate such challenges by taking into account the localized rainy seasons, allowing for longer field time for distance travel, and overall, by providing lead-time for adequate logistics planning.

In all, the future midterm and final surveys should consider modifications in survey design, training, sampling, and fieldwork to address these limitations. Based on important lessons learned from the baseline, possible adaptations include: making survey modules shorter by removing or modifying questions; randomly selecting respondents to women's and children's anthropometric modules from within households; administering the survey over a longer time period allowing for multiple visits to households and travel to distant locations; increased time for logistics planning; and increased sample size allowing for oversampling.

Table 8. **FTF FEEDBACK ZOI population-based indicators (11 indicators)**

Feed the Future indicator	n (unweighted)	Value (weighted)	Std dev	95% CI	DEFF	Nonresponse rate	Source[a]
				Baseline values			
Prevalence of poverty: Percentage of people living on less than $1.25/day (2005 PPP)	**1,728**	**55.10**		**49.82-60.37**	**4.96**	**1.82**	**FTF FEEDBACK PBS**
M&F (both male and female adults)	1,232	55.93[a]		50.64-61.23	4.04	2.07	FTF FEEDBACK PBS
FNM (female adult(s) only)	344	57.17[b]		47.54-66.81	2.58	1.15	FTF FEEDBACK PBS
MNF (male adult(s) only)	138	21.24[a,b]		10.37-32.11	1.00	1.43	FTF FEEDBACK PBS
CNA (child no adult HHs)^	14	–		–	–	–	–
Per capita expenditures of USG-targeted beneficiaries (2010 USD)	**1,728**	**1.98**	**3.61**	**1.74-2.22**	**1.95**	**1.82**	**FTF FEEDBACK PBS**
M&F (both male and female adults)	1,232	1.81[a]	2.93	1.58-2.03	1.80	2.07	FTF FEEDBACK PBS
FNM (female adult(s) only)	344	1.89[b]	3.80	1.50-2.28	0.93	1.15	FTF FEEDBACK PBS
MNF (male adult(s) only)	138	6.99[a,b]	14.46	5.16-8.83	0.57	1.43	FTF FEEDBACK PBS
CNA (child no adult HHs)^	14	–	–	–	–	–	–
Prevalence of underweight children under 5 years of age	**1,205**	**19.69**		**16.62-22.76**	**1.83**	**20.98**	**FTF FEEDBACK PBS**
Male	600	22.22		17.89-26.56	1.68	19.79	FTF FEEDBACK PBS
Female	605	17.14		13.42-20.86	1.49	22.08	FTF FEEDBACK PBS
Prevalence of stunting among children under 5 years of age	**1,205**	**29.44**		**26.11-32.78**	**1.65**	**20.98**	**FTF FEEDBACK PBS**
Male	600	32.52[a]		27.70-37.35	1.64	19.79	FTF FEEDBACK PBS
Female	607	26.34[a]		22.18-30.50	1.37	22.08	FTF FEEDBACK PBS

Table 8.   FTF FEEDBACK ZOI population-based indicators (11 indicators) (continued)

Feed the Future indicator	Baseline values						
	n (unweighted)	Value (weighted)	Std dev	95% CI	DEFF	Nonresponse rate	Source[a]
Prevalence of wasting among children under 5 years of age	**1,205**	**13.17**		**10.71-15.62**	**1.62**	**20.98**	**FTF FEEDBACK PBS**
Male	600	13.71		10.10-17.33	1.71	19.79	FTF FEEDBACK PBS
Female	607	12.61		9.11-16.11	1.70	22.08	FTF FEEDBACK PBS
Prevalence of underweight women of reproductive age	**1,200**	**31.17**		**27.06-35.29**	**2.42**	**35.52**	**FTF FEEDBACK PBS**
Women's Empowerment in Agriculture Index	**699**	**0.72**					
Five domains of empowerment	699	0.71	0.24	0.69-0.73	1.32	56.88	FTF FEEDBACK PBS
Gender parity index	632	0.81	0.22	0.78-0.84	1.05	51.35	FTF FEEDBACK PBS
Prevalence of households with moderate or severe hunger	**1,536**	**50.93**		**44.61-57.25**	**6.27**	**12.73**	**FTF FEEDBACK PBS**
M&F (both male and female adults)	1,104	51.72[a]		45.86-57.59	3.75	15.01	FTF FEEDBACK PBS
FNM (female adult(s) only)	301	57.40[b]		47.68-67.13	3.09	6.52	FTF FEEDBACK PBS
MNF (male adult(s) only)	121	31.19[ab]		19.96-42.41	2.21	11.68	FTF FEEDBACK PBS
CNA (child no adult HHs)[^]	10	-		-	-	-	-

Table 8.   FTF FEEDBACK ZOI population-based indicators (11 indicators) (continued)

Feed the Future indicator	Baseline values						
	n (unweighted)	Value (weighted)	Std dev	95% CI	DEFF	Nonresponse rate	Source[a]
Prevalence of children 6-23 months receiving a minimum acceptable diet	**344**	**5.11**		**2.27-7.96**	**1.46**	**11.08**	**FTF FEEDBACK PBS**
Male	167	5.00		0.87-9.13	1.48	13.85	FTF FEEDBACK PBS
Female	177	5.21		1.17-9.25	1.52	8.29	FTF FEEDBACK PBS
Women's Dietary Diversity Score: Mean number of food groups consumed by women of reproductive age	**1,329**	**2.57**	**1.79**	**2.37-2.78**	**4.31**	**28.59**	**FTF FEEDBACK PBS**
Urban	354	2.95[a]	1.48	2.60-3.31	5.21	28.05	FTF FEEDBACK PBS
Rural	975	2.25[a]	1.82	2.06-2.44	2.67	28.78	FTF FEEDBACK PBS
Prevalence of exclusive breastfeeding of children under 6 months of age	**111**	**51.61**		**39.17-64.06**	**1.72**	**28.39**	**FTF FEEDBACK PBS**
Male	60	55.78		39.32-72.23	1.74	26.83	FTF FEEDBACK PBS
Female	51	46.04		29.56-62.52	1.30	30.14	FTF FEEDBACK PBS

[a,b] Subgroups with the same superscript are significantly different at the 0.05 level. Comparisons are between rows within each indicator.

^ = Results not statistically representative, n<30.

Source: FTF FEEDBACK PBS. January 2013.

3. Descriptive Findings

This section describes baseline estimates from the FTF FEEDBACK baseline PBS in Kenya. Table 8 presents a summary of the baseline values for 11 of the 13 Feed the Future indicators, followed later in this section by a detailed description of each indicator.

Within each indicator, statistical differences among subgroups are indicated with superscript letters. Subgroups with the same superscript are significantly different from each other. In this report, only differences across subgroups that are statistically significant at the 0.05 level are discussed in the narrative. No standard deviations were included for indicators that were reported as prevalence because the standard deviation of a proportion or prevalence is implied by the point estimate. Indicators that are reported as prevalence can be contextualized using the 95 percent confidence interval. In this report, disaggregation of indicators by "gendered household type" refers to: households with male and female adults, female adult(s) only, male adult(s) only, or children only (no adults). This categorization intentionally avoids the designation of "head of household."[31]

3.1 Household Characteristics

3.1.1 Demographics

This section presents household demographic information from Module C (the Household Roster) of the FTF FEEDBACK baseline PBS. Enumerators used the household roster to collect age, sex, relationship to primary respondent, and education level for every person in each sampled household. The data are presented in Table 9 and Table 10.

Household Composition

Table 9 presents information about the age-sex composition of households in the ZOI and compares household composition across gendered household types. Of the 1,760 households surveyed, 1,299 were male and female adult households, making up almost three-quarters (73.8 percent) of the total. Female adult only households make up 18.3 percent of the sample, male adult only households make up 7.8 percent of the sample, and child no adult households make up 0.1 percent with just two cases. Household composition for male and female adult households is significantly different than other household types: male and female adult households are larger, averaging 6.5 members compared to 3.9 members in female adult only households and 1.7 members in male adult only households. Male and female adult households also have more female members

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[31] "Head of household" is a highly loaded term because it presumes certain characteristics that may or may not be present in household gender dynamics and often reflects the bias of the researcher or respondent. In addition, the head of household concept may perpetuate existing social inequalities and prioritization of household responsibilities that may be detrimental to women (Volume 6 of the Feed the Future M&E Guidance Series).

(3.1, 2.7, and 0.2 percent, respectively), more children of all ages, and more children attending school than the other household types.

Table 9.   Household demographics

	Household type				
	All households	**Male and female adults**	**Female adult only**	**Male adult only**	**Child no adult^**
	Mean (std dev)				
Number of household members	5.51 (2.88)	6.45 (2.6)[a]	3.93 (2.03)[a]	1.73 (1.20)[a]	–
Number of females in household	2.75 (1.74)	3.12 (1.65)[a]	2.66 (1.46)[a]	0.24 (0.53)[a]	–
Number of children (0-5 years)	0.84 (0.93)	1.00 (0.98)[a]	0.64 (0.78)[a]	0.11 (0.33)[a]	
Number of children (6-23 months)	0.22 (0.44)	0.26 (0.48)[a]	0.19 (0.40)[a]	0.03 (0.15)[a]	–
Number of children (5-17 years)	2.21 (1.88)	2.50 (1.92)[a]	2.00 (1.61)[a]	0.48 (0.99)[a]	–
Number of children attending school (5-17 years)	1.59 (1.64)	1.80 (1.71)[a]	1.48 (1.45)[a]	0.33 (0.79)[a]	–
n (unweighted), (%)	**1,760**	**1,299 (73.81)**	**322 (18.30)**	**137 (7.78)**	**2 (0.11)**

[a]   Subgroups with the same superscript are significantly different at the 0.05 level. Comparisons are across columns.

^   = Results not statistically representative, n<30.

Source: FTF FEEDBACK PBS. January 2013.

Education

Table 10 compares highest education level within each household across gendered household types. Female adult only households have the lowest level of education on average. In nearly half (46.9 percent) of female adult only households, the highest education level for any household member is primary school or no schooling, compared to 31.7 percent for male and female adult households and 22.7 percent for male adult only households. Households with male and female adults are more likely to have a member complete secondary school (23.9 percent) than female adult only households (14.1 percent). Male adult only households have the highest level of education, with 26.9 percent with a household member with higher than secondary level education, compared to 11.9 percent for male and female adult households and 7.2 percent for female adult only households.

Table 10.   Highest education level within the household

	Household type				
	All households	**Male and female adults**	**Female adult only**	**Male adult only**	**Child no adult^**
Education level			**%**		
Primary or none	33.69	31.67[a]	46.94[ab]	22.74[b]	–
Upper primary (Grade 4-8)	32.07	32.62	31.77	28.89	–
Secondary	21.82	23.87[c]	14.12[c]	21.43	–
Above secondary	12.43	11.85[d]	7.16[e]	26.94[de]	–
n (unweighted)	**1,760**	**1,299**	**322**	**137**	**2**

[a-e] Subgroups with the same superscript are significantly different at the 0.05 level. Comparisons are across columns.

^   = Results not statistically representative; n<30.

Source: FTF FEEDBACK PBS. January 2013.

3.1.2 Dwelling Characteristics

Information about dwelling characteristics was collected as part of Module D in the FTF FEEDBACK PBS using a combination of direct observation (e.g., housing construction materials) and self-report (e.g., whether or not households have electricity, type of fuel used for cooking). Results are presented in the following tables, which compare dwelling characteristics (Table 11), housing construction materials (Table 12), and sources of cooking fuel (Table 13) across household types.

According to the data in Table 11, on average households have fewer than two rooms (1.7) and only 15.3 percent of households have electricity. Fewer male and female adult households have electricity (11.5 percent) compared to female adult only households (16.7 percent) and male adult only households (39.7 percent).

Table 11. Dwelling characteristics

	Household type				
	All households	Male and female adults	Female adult only	Male adult only	Child no adult^
Mean number of rooms (std dev)	1.71 (1.11)	1.75 (1.04)	1.60 (1.16)	1.63 (1.31)	–
Percent of households with electricity (%)	15.26	11.50[a]	16.74[a]	39.72[a]	–
n (unweighted)	**1,740**	**1,281**	**320**	**137**	**2**

[a] Subgroups with the same superscript are significantly different at the 0.05 level. Comparisons are across columns.

^ = Results not statistically representative, n<30.

Source: FTF FEEDBACK PBS. January 2013.

Table 12 shows that almost nine out of 10 (87.6 percent) houses have corrugated metal or thatch roofs. About half of households have walls made from earth, mud, or cow dung (45.5 percent), followed by walls of concrete or wood (15.3 and 13.7 percent, respectively). About three-fourths of houses have earthen floors (72.2 percent), and concrete is the next most common flooring material (27.0 percent).

Across gendered household types, male adult only households are more likely to have roofs made of corrugated metal (64.6 percent) and least likely to have roofs of thatch (20.1 percent). There are also differences across gendered household type for wall and floor materials. Male adult only households are more likely to have walls and floors made of concrete/cement (35.5 percent of walls and 59.0 percent of floors) and less likely to use earth/mud/cow dung (23.8 percent of walls and 39.6 percent of floors) as compared to the other household types.

Table 12.   Housing construction materials

	Household type				
	All households	**Male and female adults**	**Female adult only**	**Male adult only**	**Child no adult^**
Roof			%		
Tile	0.78	0.39a	0.00b	5.13ab	–
Wood	0.83	0.98	0.70	0.00	–
Corrugated metal	44.13	41.17c	44.61d	64.58cd	–
Plastic sheeting	1.64	1.28	2.59	2.42	–
Thatched/vegetable matter/sticks	43.42	46.47e	44.04f	20.07ef	–
Mud/cow dung	3.06	3.29	3.79	0.00	–
Other	6.14	6.41	4.28	7.80	–
Wall					
Earth/mud/cow dung	45.50	48.21a	46.55b	23.83ab	–
Concrete/cement	15.28	13.63c	10.99d	35.53cd	–
Tile/bricks	3.06	2.18e	2.98f	9.59ef	–
Wood	13.69	12.30g	20.19g	11.35	–
Iron sheet	4.15	3.26h	4.13i	10.23hi	–
Other	18.33	20.41j	15.17	9.47j	–
Floor					
Earth/mud/cow dung	72.16	76.37a	73.33b	39.57ab	–
Concrete/cement	26.96	22.63c	26.51d	59.02cd	–
Tile/bricks	0.46	0.51	0.00	0.94	–
Wood	0.36	0.40	0.17	0.47	–
n (unweighted)	**1,741**	**1,282**	**320**	**137**	**2**

a-j Subgroups with the same superscript are significantly different at the 0.05 level. Comparisons are across columns.

^ = Results not statistically representative, n<30.

Source: FTF FEEDBACK PBS. January 2013.

Table 13 shows that firewood is the main source of cooking fuel for about three-quarters (75.6 percent) of all households, and one of five (20.1 percent) households use charcoal, the second most common source of cooking fuel. Male adult only households are more likely to use propane gas (13.0 percent), kerosene (15.8 percent), or charcoal (34.6 percent) for cooking fuel as compared to the other gendered household types; while male and female adult households are more likely to use firewood for the main source of cooking fuel (81.8 percent).

Table 13.   Main source of cooking fuel

	Household type				
	All households	**Male and female adults**	**Female adult only**	**Male adult only**	**Child no adult^**
Fuel type			%		
Piped or liquid propane gas	1.96	0.84[a]	0.54[b]	12.98[ab]	–
Kerosene	1.90	0.25[a]	0.94[b]	15.84[ab]	–
Charcoal	20.13	16.75[ab]	25.25[a]	34.63[b]	–
Firewood	75.62	81.79[a]	73.05[a]	35.59[a]	–
Animal dung	0.00	0.00	0.22	0.00	–
Biogas	0.15	0.21	0.00	0.00	–
Other	0.17	0.11	0.00	0.95	–
n (unweighted)	**1,740**	**1,282**	**320**	**136**	**2**

[a,b] Subgroups with the same superscript are significantly different at the 0.05 level. Comparisons are across columns.

^ = Results not statistically representative, n<30.

Source: FTF FEEDBACK PBS. January 2013.

3.1.3   Water and Sanitation

According to WHO standards,[32] sources of improved drinking water include piped water to the house or yard, public taps or standpipes, boreholes, protected dug wells, protected springs and rainwater collection. Improved sanitation facilities include flush or pour-flush toilets connected to a piped sewer system, septic tanks, pit latrines with slab, and composting toilets.

As shown in Table 14, half of all households use an improved water source (50.0 percent). A smaller share of households (11.0 percent) use improved sanitation facilities, while a larger share (33.1 percent) use pit latrines, which were not sufficiently specified in the PBS in order to be defined as improved or unimproved sanitation facilities.

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[32] WHO. 2013.

Table 14.   Households with improved water and sanitation facilities

	Household type				
	All households	**Male and female adults**	**Female adult only**	**Male adult only**	**Child no adult^**
	%				
Households using improved water source	50.03	48.15	53.67	56.55	–
Households using improved sanitation facilities (Excluding pit latrines)[1]	10.98	8.58	11.22	27.96	–
Households using pit latrines	33.12	31.67	35.12	39.60	–
n (unweighted)	**1,741**	**1,282**	**320**	**137**	**2**

No significant difference between household types at the 0.05 level.

^ = Results not statistically representative, n<30.

[1] All pit latrines were excluded because the questionnaire did not differentiate between pit latrines with slab (improved) and pit latrines without slab (not improved).

Source: FTF FEEDBACK PBS. January 2013.

3.2   Household Consumption and Expenditures

3.2.1   Prevalence and Depth of Poverty in the ZOI

The Household Roster and Household Expenditure modules (Modules C and E, respectively) are used to calculate prevalence of poverty and per capita expenditure. The prevalence of poverty is defined as the percentage of people living on less than $1.25 per day at 2005 purchasing power parity (PPP). Refer to Annex C for further description of these indicators, as defined through the Millennium Development Goals.

Table 15 shows that more than half (55.1 percent) of the population in the ZOI lives on less than $1.25 per day. According to this measure, male and female adult households (55.9 percent) and female adult only households (57.2 percent) experience more poverty than male adult only households (21.2 percent).

The poverty gap is the mean shortfall from the poverty line (counting the non-poor as having zero shortfall) expressed as a percentage of the poverty line. This measure reflects the depth of poverty as well as its incidence.[33] The poverty gap within the ZOI is 25.3 percent below the poverty line of $1.25 per day (Table 15).[34] This, along with the prevalence of poverty, indicates that on average the

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[33] World Bank. 2013.

[34] According to World Bank Basics of Poverty Reduction & Inequality Analysis. Poverty gap index (PGI) is calculated as
$$\text{PGI} = \frac{1}{N} \sum_{j=1}^{N} \left(\frac{z - y_j}{z} \right)$$
where N is the total population who are living at or below the poverty line, Z is the poverty line, and y_j is the income of the poor household j.

shortfall from the poverty line for those below the $1.25 per day poverty line is $0.31.[35] In other words, on average in the ZOI, individuals living below the poverty line live on $0.94 per day.

Using the national poverty line ($0.83 per day for rural households and $1.55 per day for urban households at 2005 PPP), 45.7 percent of households live in poverty. Further, 24.7 percent live in extreme poverty at the national extreme poverty line ($0.53 per day for rural household and $0.78 per day for urban households at 2005 PPP). The poverty gap based on the national poverty line is 21.5 percent below the national poverty line.

3.2.2   Per Capita Expenditures

Per capita expenditure is an indicator that measures the expenditures of households as a proxy for income, based on the assumption that increased expenditure is strongly related to increased income. Per capita expenditure is often preferred to income, given 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.[36] Refer to Annex C for further description of this indicator.

Per capita expenditures of USG-targeted beneficiaries is $1.98 per day (2010 USD), and much higher for male adult only households ($6.99) than for male and female adult households ($1.81) or female adult only households ($1.89) (Table 15).

3.3   Household Hunger

The Household Hunger Scale (HHS) (Module F) is used to calculate prevalence of households with moderate or severe hunger. The HHS was developed by the USAID-funded Food and Nutrition Technical Assistance II Project in collaboration with the United Nations Food and Agriculture Organization, and has been cross-culturally validated to allow for comparisons across different food-insecure contexts. The approach is based on the idea that the experience of food insecurity causes predictable reactions that can be captured through a survey and summarized in a scale. The HHS is used to assess, geographically target, monitor and evaluate settings affected by substantial food insecurity. 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). This indicator should be measured at the same time each year, ideally at the most vulnerable time of year[37] (right before the harvest, during the dry season, etc.).[38] Refer to Annex C for further description of this indicator.

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[35] This estimation is calculated as (poverty gap/prevalence of poverty)* poverty line.
[36] Deaton, A. 2008.
[37] See the discussion related to the timing of the data collection in the limitations section.
[38] Deitchler, M., et al. 2011.

Table 15.   Poverty and expenditure indicators for the ZOI

Feed the Future indicator	Baseline values				
	n (unweighted)	Baseline value	Std dev	95% CI	DEFF
Prevalence of poverty: Percentage of people living on less than $1.25/day (2005 PPP)	**1,728**	**55.10**		**49.82-60.37**	**4.96**
M&F (both male and female adults)	1,232	55.93[a]		50.64-61.23	4.04
FNM (female adult(s) only)	344	57.17[b]		47.54-66.81	2.58
MNF (male adult(s) only)	138	21.24[ab]		10.37-32.11	1.00
CNA (child no adult HHs)[^]	14	–		–	–
Poverty gap at $1.25/day (2005 PPP)	**1,728**	**25.33**	**30.16**	**21.12-29.55**	**8.65**
M&F (both male and female adults)	1,232	25.40[a]	28.16	21.13-29.68	7.26
FNM (female adult(s) only)	344	28.02[b]	35.57	20.70-35.35	3.73
MNF (male adult(s) only)	138	5.76[ab]	24.67	1.68-9.85	0.97
CNA (child no adult HHs)[^]	14	–	–	–	–
Prevalence of poverty at national level ($0.83/day for rural HHs, $1.55/day for urban HHs at 2005 PPP)	**1,728**	**45.66**		**39.39-51.94**	**7.01**
M&F (both male and female adults)	1,232	45.39[a]		38.93-51.84	5.98
FNM (female adult(s) only)	344	53.01[b]		43.29-62.74	2.58
MNF (male adult(s) only)	138	11.56[ab]		3.34-19.77	0.93
CNA (child no adult HHs)[^]	14	–	–	–	–
Prevalence of extreme poverty at national level ($0.53/day for rural HHs, $0.78/day for urban HHs at 2005 PPP)	**1,728**	**24.70**		**18.77-30.63**	**8.35**
M&F (both male and female adults)	1,232	24.94[a]		18.84-31.05	7.08
FNM (female adult(s) only)	344	26.21[b]		15.90-36.52	3.74
MNF (male adult(s) only)	138	5.85[ab]		0.00-12.23	1.04
CNA (child no adult HHs)[^]	14	–	–	–	–
Poverty gap at national poverty line (2005 PPP)	**1,728**	**21.45**	**29.38**	**16.79-26.11**	**11.11**
M&F (both male and female adults)	1,232	21.17[a]	27.39	16.44-25.91	9.42
FNM (female adult(s) only)	344	25.37[b]	35.14	17.52-33.22	4.39
MNF (male adult(s) only)	138	4.88[ab]	25.21	0.70-9.06	0.97
CNA (child no adult HHs)[^]	14	–	–	–	–

Table 15.   Poverty and expenditure indicators for the ZOI (continued)

Feed the Future indicator	Baseline values				
	n (unweighted)	Baseline value	Std dev	95% CI	DEFF
Poverty gap at national extreme poverty line (2005 PPP)	**1,728**	**10.57**	**21.13**	**7.16-13.98**	**10.51**
M&F (both male and female adults)	1,232	10.25[a]	20.41	6.78-13.73	9.16
FNM (female adult(s) only)	344	12.96[b]	27.72	6.78-19.14	4.37
MNF (male adult(s) only)	138	1.94[ab]	14.74	0.00-4.24	0.86
CNA (child no adult HHs)[^]	14	–	–	–	–
Per capita expenditures of USG-targeted beneficiaries (2010 USD)	**1,728**	**1.98**	**3.61**	**1.74-2.22**	**1.95**
M&F (both male and female adults)	1,232	1.81[a]	2.93	1.58-2.03	1.80
FNM (female adult(s) only)	344	1.89[b]	3.80	1.50-2.28	0.93
MNF (male adult(s) only)	138	6.99[ab]	14.46	5.16-8.83	0.57
CNA (child no adult HHs)[^]	14	–	–	–	–

[a,b] Subgroups with the same superscript are significantly different at the 0.05 level. Comparisons are between rows within each indicator.

[^] = Results not statistically representative, n<30.

Source: FTF FEEDBACK PBS. January 2013.

Overall, the results of the HHS indicate that just over one-half (50.9 percent) of all households experience moderate to severe hunger (Table 8). Male and female adult households (51.7 percent) and female adult only households (57.4 percent) report higher levels of moderate and severe hunger than male adult only households (31.2 percent).

Table 16 shows that 41.1 percent of households experience moderate hunger and nearly one out of 10 households (9.8 percent) experience severe hunger in the ZOI.

Table 16.   Prevalence of little to no, moderate, and severe household hunger

	Baseline value	n (unweighted)
Little to no hunger (0-1 HHS)	49.07	1,536
Moderate hunger (2-3 HHS)	41.10	1,536
Severe hunger (>3 HHS)	9.84	1,536

Source: FTF FEEDBACK PBS. January 2013.

3.4   Nutrition

Data on anthropometry in women and children, Women's Dietary Diversity Score, exclusive breastfeeding, and minimum acceptable diet (MAD)(Modules H and I) present information on diet, height, weight, and age for children under 5 and women of reproductive age (WRA) and are based on standard indicators and questions. The information was used to calculate: the prevalence of stunting, wasting, and underweight among children under 5 years; the prevalence of exclusive breastfeeding among infants under 6 months; the prevalence of children 6-23 months receiving a MAD; the prevalence of underweight (and overweight) WRA (including the body mass index of women); the mean number of food groups consumed by WRA; the percentage of WRA consuming

each of the nine food groups; and the women's average dietary diversity score by quartile. Refer to Annex C for further description of these indicators.

3.4.1   Child Nutritional Status

Measures of Nutritional Status (Stunting, Wasting, Underweight)

This section reports 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). Each indicator is calculated by taking the number of anthropometric measurements of children under 5 in the sample divided by the total number of children under 5 in the sample for which there is measurement data available. For example, stunting prevalence is calculated by the number of children who show signs of stunting divided by the number of children whose height and age data are collected. Data presented in this section are disaggregated by the child's sex and by household type. In this sample, the number of children residing in male adult only households was small (n<30). These results are not statistically representative and data for this category are not reported.

Stunting is an indicator of linear growth retardation, most often due to a prolonged inadequate diet and poor health. Reducing the prevalence of stunting among children, particularly 0-23 months, is important because linear growth deficits accrued early in life are associated with cognitive impairments, poor educational performance, and decreased work productivity among adults. Stunting is a height-for-age measurement that reflects chronic undernutrition. This indicator measures the percentage of children 0-59 months that have a height-for-age Z-score less than two standard deviations from the median of the 2006 WHO Child Growth Standard.[39] This indicator measures the combined prevalence of moderate (below -2SD and above or equal to -3SD) and severe (below -3SD) stunting. While stunting can be difficult to accurately measure among children 0-6 months and most stunting occurs in the 9-23 month range, data for this indicator will be reported for all children under 5 years to capture the impact of interventions over time.

The combined stunting prevalence in the ZOI among children under 5 is 29.4 percent; severe stunting affects 12.0 percent (Table 17). Boys have significantly higher combined stunting prevalence than girls (32.5 and 26.3 percent, respectively). The overall baseline value of 29.4 percent is less than regional levels in the country such as 41.9 percent (Eastern Kenya) and 35.2 percent (Northeastern Kenya) reported in the 2008-2009 Kenya DHS.[40] The differences in stunting rates may be due to health, agriculture, and livelihood initiatives that aim to improve the long-term nutritional outcomes in the region.[41]

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[39] WHO and UNICEF. 2006.

[40] KNBS. 2010.

[41] The DHS was conducted from November 2008 to February 2009, which is a similar time of year as the FTF FEEDBACK PBS data collection. Thus, differences in nutritional indicators are likely not attributable to seasonality of data collection.

Wasting is an indicator of acute malnutrition. Children with wasting have extremely low weight for their height and have a much greater risk of mortality. This indicator measures the percentage of children 0-59 months who are acutely malnourished, as defined by a weight-for-height Z-score less than two standard deviations below the median of the 2006 WHO Child Growth Standard. This indicator measures the combined prevalence of moderate (below -2SD and above or equal to -3SD) and severe (below -3SD) wasting.

Among children under 5 in the ZOI, the prevalence of combined moderate and severe wasting, the FTF FEEDBACK indicator, is 13.2 percent and the prevalence of severe wasting is 4.3 percent (Table 17). This falls within the range of regional wasting rates reported in the 2008-2009 Kenya DHS, with 18.4 percent in Northeastern Kenya and 6.7 percent in Eastern Kenya.[42]

As seen across gendered household types in Table 17, male children in male and female adult households have higher rates of wasting (15.5 percent) and severe wasting (6.7 percent) than male children in female adult only households (8.2 percent and 1.6 percent, respectively). Male children in male and female adult households also have higher rates of severe wasting (6.7 percent) than female children in male and female adult households (2.8 percent). High rates of combined moderate and severe wasting as well as severe wasting for male children compared to female children are also reported in the 2008-2009 Kenya DHS (6.7 percent for male children compared to 4.9 percent for female children).[43]

Underweight is a weight-for-age measurement and it is a reflection of acute and/or chronic undernutrition. This indicator measures the percentage of children 0-59 months that are underweight, as defined by a weight-for-age Z-score less than two standard deviations below the median of the 2006 WHO Child Growth Standard. This indicator measures the combined prevalence of moderate (below -2SD and above or equal to -3SD) and severe (below -3SD) underweight.

Among all children under 5, 19.7 percent are underweight and 4.8 percent are severely underweight (Table 17). There are no significant differences by gendered household type or by sex of the child. This is comparable to the 2008-2009 Kenya DHS reported rates of underweight in children under 5 of 31.1 percent in Northeastern Kenya and 25.2 percent in Eastern Kenya.[44]

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[42] KNBS. 2010.
[43] Ibid.
[44] Ibid.

Table 17.   Nutritional status of children under 5 years

	Height-for-age (stunting)		Mean Z-score (SD)	Weight-for-height (wasting)		Mean Z-score (SD)	Weight-for-age (underweight)		Mean Z-score (SD)	Number of children
	% below -3 SD	% below -2 SD		% below -3 SD	% below -2 SD		% below -3 SD	% below -2 SD		
All children under 5	**11.96**	**29.44**	**-0.86 (2.00)**	**4.28**	**13.17**	**-0.62 (1.47)**	**4.81**	**19.69**	**-0.93 (1.30)**	**1,205**
Male children	12.43	32.52[a]	-1.00 (2.01)	5.61	13.71	-0.62 (1.55)	4.79	22.22	-1.00 (1.33)	600
Female children	11.49	26.34[a]	-0.73 (1.98)	2.94	12.61	-0.61 (1.38)	4.84	17.14	-0.86 (1.26)	605
Household type										
Male and female adults										
All children	11.63	29.52	-0.86 (2.03)	4.73	13.61	-0.62 (1.51)	5.10	19.74	-0.93 (1.33)	1,001
Male children	11.95	32.77	-0.96 (2.06)	6.67[ab]	15.51[c]	-0.63 (1.66)	5.15	22.14	-0.99 (1.39)	494
Female children	11.32	26.36	-0.76 (1.99)	2.84[a]	11.76	-0.61 (1.36)	5.05	17.40	-0.88 (1.28)	507
Female adult only										
All children	15.31	30.71	-0.95 (1.93)	2.10	11.95	-0.53 (1.32)	3.15	20.10	-0.89 (1.16)	165
Male children	15.98	33.33	-1.16 (1.88)	1.58[b]	8.17[c]	-0.61 (1.10)	3.20	23.85	-1.05 (1.07)	84
Female children	14.55	27.75	-0.72 (1.95)	2.68	16.22	-0.45 (1.55)	3.09	15.87	-0.72 (1.24)	81
Male adult only^										
All children	–	–	–	–	–	–	–	–	–	28
Male children	–	–	–	–	–	–	–	–	–	16
Female children	–	–	–	–	–	–	–	–	–	12
Child no adult^										
All children	–	–	–	–	–	–	–	–	–	11
Male children	–	–	–	–	–	–	–	–	–	6
Female children	–	–	–	–	–	–	–	–	–	5

[a-c] Subgroups with the same superscript are significantly different at the 0.05 level. Comparisons are across rows.

^ = Results not statistically representative, n<30.

Source: FTF FEEDBACK PBS. January 2013.

Infant and Young Child Feeding

Exclusive breastfeeding provides children with significant health and nutrition benefits, including protection from gastrointestinal infections and reduced risk of mortality due to infectious disease. Exclusive breastfeeding means the infant received breast milk (including expressed milk or breast milk from a wet nurse) and may have received oral rehydration solution, vitamins, minerals and/or medicines, but did not receive any other food or liquid. This indicator measures the percentage of children under 6 months who were exclusively breastfed during the day preceding the survey. Refer to Annex C for further description of this indicator.

Across the East Africa region,[45] there is a large disparity in exclusive breastfeeding practices. National prevalence of exclusive breastfeeding of children under 6 months ranges from approximately 32 percent in Zimbabwe and Kenya to 85 percent in Rwanda.[46]

In the northern Kenya ZOI, 51.6 percent of infants under 6 months are exclusively breastfed (Table 18). Due to the very small number of infants residing in female adult only households (n=11) or male adult only households (n=3), comparison of the prevalence of breastfeeding among infants by categories of gendered household type is not possible.

Table 18.   Prevalence of exclusive breastfeeding of children under 6 months

	Baseline value (%)	n (unweighted)
All children < 6 months	51.61	111
Household type		
Male and female adults	53.86	97
Female adult only^	–	11
Male adult only^	–	3
Child no adult^	–	0

^ = Results not statistically representative, n<30.

Source: FTF FEEDBACK PBS. January 2013.

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[45] USAID/MEASURE DHS East African countries include: Kenya, Madagascar, Malawi, Mozambique, Rwanda, Sudan, Tanzania, Uganda, Zambia, and Zimbabwe.
[46] Data abstracted from USAID/MEASURE STATCompiler (Zimbabwe DHS 2010-11 and Kenya DHS 2008-09); limited to DHS, which were conducted from 2007-2012.

The *prevalence of children 6-23 months receiving a MAD* measures the proportion of children 6-23 months of age who receive a MAD apart from breastfeeding. This indicator measures both the minimum feeding frequency and minimum dietary diversity given to the child in the past 24 hours. Tabulation of the indicator requires data on:

- Consumption of milk or milk products (children who are breastfed meet this requirement). Nonbreastfed children's diet should include at least two feedings of commercial infant, fresh, tinned, or powdered animal milk;

- Dietary diversity (consumption of four or more food groups); and

- Frequency of feeding semi-solid/solid foods and number of milk feeds (minimum times or more).

Dietary diversity for children 6-23 months is defined as four or more food groups out of the following seven groups: (1) dairy products (infant formula, milk other than breast milk, cheese, yogurt); (2) grains, roots, and tubers; (3) vitamin A-rich fruits and vegetables; (4) other fruits and vegetables; (5) eggs; (6) meat, fish, poultry, and organ meats; and (7) legumes and nuts. The minimum necessary feeding frequency varies by breastfed and nonbreastfed child. Refer to Annex C for further description of this indicator.

Baseline survey results indicate that 5.1 percent of children 6-23 months receive a MAD (Table 19). There are no significant differences by gendered household type.

Table 19.   Prevalence of children 6-23 months receiving a MAD

	Baseline value (%)	n (unweighted)
All children 6-23 months	5.11	344
Household type		
Male and female adults	4.15	283
Female adult only	10.68	52
Male adult only^	–	8
Child no adult^	–	1

No significant differences between household types at the 0.05 level.

^ = Results not statistically representative, n<30.

Source: FTF FEEDBACK PBS. January 2013.

The MAD indicator was disaggregated by component and breastfeeding status (Table 20). Among children 6-23 months, less than one in 10 (9.4 percent) receive the minimum dietary diversity (four or more food groups). About one-third (33.6 percent) receive the minimum feeding frequency. Nonbreastfed children 6-23 months receive significantly higher feeding frequency than breastfed children of the same age (68.0 percent versus 26.5 percent, respectively).

Table 20.   Components of MAD among children 6-23 months

	Baseline value (%)	n (unweighted)
Breastfed children 6-23 months		
4 or more food groups	7.86	290
Minimum times or more	26.46[a]	290
MAD	4.97	290
Nonbreastfed children 6-23 months		
Milk or milk products	80.46	54
4 or more food groups	16.68	54
Minimum times or more	68.02[a]	54
MAD	5.78	54
All children 6-23 months		
Breast milk, milk, or milk products	96.64	344
4 or more food groups	9.37	344
Minimum times or more	33.60	344
MAD	5.11	344

[a]   Subgroups with the same superscript are significantly different at the 0.05 level. Comparisons are across rows.

Source: FTF FEEDBACK PBS. January 2013.

3.4.2   Women's Nutrition

Measures of Nutritional Status

The *prevalence of underweight and overweight WRA* (15-49 years) are indicators that provide information about the extent to which women's diets meet their caloric requirements. Undernutrition among WRA is associated with increased morbidity and poor food security, and can result in adverse birth outcomes. This Feed the Future indicator measures the percent of nonpregnant women of reproductive age who are underweight, as defined by a body mass index (BMI) of less than 18.5. To calculate an individual's BMI, weight and height data are needed: BMI = weight (kg)/height (m)^2. Refer to Annex C for further description of this indicator.

Table 21 shows the distribution of women's BMI among ZOI respondents. Across all WRA surveyed, the mean BMI is 20.8, or normal weight. Around half (56.3 percent) of WRA are considered normal weight. In the ZOI, 12.5 percent of WRA are overweight or obese and 31.2 percent of women are underweight. The percentage of underweight women is higher than reported in the 2008-2009 Kenya DHS (26.4 percent of women in Northeastern Kenya and 17.0 percent in Eastern Kenya).[47] Among women of reproductive age in the ZOI, approximately 18.6 percent are mildly underweight and 12.5 percent are moderate/severely underweight.

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[47] KNBS. 2010.

Compared to other recent national averages,[48] northern Kenya's ZOI underweight prevalence of 31.2 percent is higher than the average East African[49] national prevalence of underweight women, which ranges from about 12 percent in Zimbabwe to 28 percent in Madagascar.

Table 21.   Women's body mass index

	Baseline value	n (unweighted)
Mean body mass index (BMI)	**20.76 (4.20)**	**1,200**
BMI categories	**%**	
< 17.0 (moderate/severely underweight)	12.53	1,200
17.0-18.49 (mildly underweight)	18.64	1,200
18.5 – 24.9 (normal)	56.30	1,200
25.0-29.9 (overweight)	7.94	1,200
≥ 30.0 (obese)	4.58	1,200
<18.5 (underweight)	31.17	1,200
18.5-24.9 (normal)	56.30	1,200
≥ 25.0 (overweight/obese)	12.52	1,200

Source: FTF FEEDBACK PBS. January 2013.

Table 22 shows the prevalence of underweight women disaggregated by gendered household type. There are no significant differences in this indicator by gendered household type.

Table 22.   Prevalence of underweight women

	Baseline value (%)	n (unweighted)
All women	**31.17**	**1,200**
Household type		
Male and female adults	31.26	981
Female adult only	29.95	210
Male adult only^	–	8
Child no adult^1	–	1

No significant differences between household types at the 0.05 level.

^ = Results not statistically representative, n<30.

1 Households classified as Child no adult have no members age 18 or older, but underweight women include females age 15-17 years, so child no adult households may have females measured for BMI.

Source: FTF FEEDBACK PBS. January 2013.

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[48] Data abstracted from USAID/MEASURE STAT Compiler (Zimbabwe DHS 2010-2011 and Madagascar DHS 2008-2009); limited to DHS surveys conducted between 2007-2012.

[49] USAID/MEASURE DHS East African countries include: Kenya, Madagascar, Malawi, Mozambique, Rwanda, Sudan, Tanzania, Uganda, Zambia, and Zimbabwe.

Table 23 shows that 13.1 percent of households have both underweight women of reproductive age and stunting in children under 5. It is important to note that height and weight measurements were taken from every nonpregnant woman of reproductive age in the household, not necessarily the mother or caregiver of the child.

Table 23.   Prevalence of households with underweight women and stunting in children under 5

	Baseline value (%)	n (unweighted)
All households	**13.13**	**640**
Household type		
Male and female adults	11.90	541
Female adult only	19.38	93
Male adult only^	–	5
Child no adult^	–	1

No significant differences between household types at the 0.05 level.

^ = Results not statistically representative; n<30.

Source: FTF FEEDBACK PBS. January 2013.

Overweight and obesity are associated with higher risk of hypertension, diabetes, and adverse maternal and neonatal outcomes. Table 24 shows that the prevalence of overweight/obese women (BMI > 25) in households is 12.5 percent in the ZOI.

Table 24.   Prevalence of overweight and obese women

	Baseline value (%)	n (unweighted)
Any overweight	**12.5**	**1,200**
Household type		
Male and female adults	12.6	981
Female adult only	12.4	210
Male adult only^	–	8
Child no adult^	–	1

No significant differences between household types at the 0.05 level.

^ = Results not statistically representative, n<30.

Source: FTF FEEDBACK PBS. January 2013.

Further analysis compared the prevalence of households with overweight women and stunting in children under 5. As mentioned above, height and weight measurements were taken from every consenting nonpregnant woman of reproductive age in the sampled household; not necessarily the mother or caregiver of the specific child. The ZOI baseline prevalence of households with both women who are overweight and obese and children under 5 who are stunted is 2.9 percent (Table 25). There are no significant differences in this measure by gendered household type.

Table 25.   Prevalence of households with overweight/obese women and stunting in children under 5

	Baseline value (%)	n (unweighted)
All households	**2.94**	**640**
Household type		
Male and female adults	3.38	541
Female adult only	0.71	93
Male adult only^	–	5
Child no adult^	–	1

No significant differences between household types at the 0.05 level.

^ = Results not statistically representative, n<30.

Source: FTF FEEDBACK PBS. January 2013.

Women's Intra-Household Dietary Diversity Score

Women of reproductive age are at risk of multiple micronutrient deficiencies, which can jeopardize their health and ability to care for their children and to participate in income-generating activities. The Women's Dietary Diversity Score is a validated proxy measure of the micronutrient adequacy of a woman's diet and reports the mean number of food groups consumed in the previous day by WRA (15-49 years).

To calculate this indicator, nine food groups are used: (1) grains, roots, and tubers; (2) legumes and nuts; (3) dairy products; (4) organ meat; (5) eggs; (6) flesh food and small animal protein; (7) vitamin A-rich dark green leafy vegetables; (8) other vitamin A-rich vegetables and fruits; and (9) other fruits and vegetables. The mean number of food groups consumed by women of reproductive age is tabulated by averaging the number of food groups consumed (out of the nine food groups mentioned above) across all women of reproductive age for whom dietary diversity data were collected. Refer to Annex C for further description of this indicator.

At baseline, women consumed on average 2.6 out of nine food groups during the previous day, which is low dietary diversity for WRA (Table 26). As shown in Table 8, women in urban areas consume significantly more food groups (3.0) than women in rural areas (2.3). There are no significant differences in this indicator by gendered household type.

Table 26. Women's Dietary Diversity Score: Mean number of food groups consumed by WRA

	Baseline value	Std dev	n (unweighted)
All women	**2.57**	**1.79**	**1,329**
Household type			
Male and female adults	2.53	1.79	1,088
Female adult only	2.78	1.76	229
Male adult only^	–	–	11
Child no adult^	–	–	1

No significant differences between household types at the 0.05 level.

^ = Results not statistically representative, n<30.

Source: FTF FEEDBACK PBS. January 2013.

Further analysis examined which food groups were most frequently consumed by women in the northern Kenya ZOI (Table 27). The overwhelming majority of women (82.9 percent) eat grains, roots, and tubers, while 38.3 percent eat vitamin A-rich dark green leafy vegetables, and about one-third of the women (33.2 percent) consume protein-rich foods such as flesh food and other miscellaneous small animal protein. The consumption of other food groups includes legumes and nuts (29.1 percent), dairy products (14.0 percent), eggs (16.1 percent), and organ meat (5.9 percent). Overall, most women have a diet rich in carbohydrates and starches but lower in protein and micronutrients such as vitamin A.

Table 27. Percent of women consuming each food group daily

	Baseline value (%)	n (unweighted)
Food group		
Grains, roots, and tubers	82.89	1,329
Legumes and nuts	29.11	1,329
Dairy products	13.98	1,329
Organ meat	5.92	1,329
Eggs	16.10	1,329
Flesh foods and other misc. small animal protein	33.22	1,329
Vitamin A-rich dark green leafy vegetables	38.33	1,329
Other vitamin A-rich vegetables and fruits	29.98	1,329
Other fruits and vegetables	7.90	1,329

Source: FTF FEEDBACK PBS. January 2013.

Table 28 presents the distribution of Women's Dietary Diversity Scores among respondents. The sample was divided into quartiles, and Table 28 reports the average dietary diversity score for each quartile. Women in the top quartile report eating an average of 4.8 of the nine food groups, which is almost nine times higher than women in the lowest quartile (0.6 food groups). The findings of the distribution of Women's Dietary Diversity Scores are similar to the low percentage of households who provided diverse diets (four or more food groups) to their 6-23 month old child.

Table 28.   Women's Dietary Diversity Score, by quartile

| | Women's Dietary Diversity Score | | | |
	Quartile 1	Quartile 2	Quartile 3	Quartile 4
Average number of food groups consumed (std dev)	0.56 (0.53)	1.51 (0.52)	2.59 (0.49)	4.82 (1.00)
n (total n=1,329)	**332**	**332**	**332**	**333**

Source: FTF FEEDBACK PBS. January 2013.

3.5   Women's Empowerment

Women play a prominent role in agriculture and because of the persistent economic constraints they face, women's empowerment is a main focus of Feed the Future. Empowering women is particularly important to achieving the Feed the Future objective of inclusive agriculture sector growth. The WEAI was developed to track the change in women's empowerment levels that occurs as a direct or indirect result of interventions under Feed the Future. For more information, the WEAI questionnaires and manual can be found online.[50]

3.5.1   WEAI Overview

The WEAI measures the empowerment, agency, and inclusion of women in the agriculture sector in an effort to identify and address the constraints that limit women's full engagement in the agriculture sector.[51]

For northern Kenya, the WEAI score is 0.72. The WEAI is composed of two subindices: the 5 Domains of Empowerment subindex (5DE) measures the empowerment of women in five areas, and the Gender Parity Index (GPI) measures the relative empowerment of men and women within the household. The WEAI score is computed as a weighted sum of the ZOI-level 5DE and the GPI (both discussed in the following section). Thus, improvements in either the 5DE or GPI will increase the WEAI score. The total formula for the Index is: WEAI = 0.9 x 5DE + 0.1 x GPI.

The WEAI is an aggregate index reported at the ZOI level and is based on *individual*-level data on men and women in the same household, as well as data from women living in households with no adult male. The respondents are primary male/female decision-makers in the household. Refer to Annex C for further description of this indicator and explanation of the calculation. See Table 29 for the list and definition of WEAI indicators.

3.5.2   5DE

The 5DE subindex assesses whether women are empowered across the five domains examined in the WEAI. Each domain is weighted equally, as are each of the indicators within a domain. The five

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[50] IFPRI. 2013.
[51] Alkire, S., Malapit, H. et al. 2013.

domains, their definitions under the WEAI, the corresponding 10 indicators, and their weights for the 5DE are shown below in Table 29.

Table 29.   WEAI indicators

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

The 5DE is a measure of empowerment rather than disempowerment. As such, the subindex describes women as "empowered" or "not yet empowered," rather than disempowered. A woman is defined as empowered in the five domains if she has adequate achievements[52] in 80 percent or more of the weighted indicators. Within the 5DE, the 80 percent threshold is also called the empowerment threshold. The 5DE contributes 90 percent of the weight to the WEAI. The 5DE score ranges from zero to one, where higher values indicate greater empowerment.

The 5DE is calculated by first constructing the disempowerment index (M_0), and then converting M_0 to empowerment. The formula is: 5DE = 1- M_0. The disempowerment index is constructed using a multidimensional methodology known as the Alkire Foster Method.[53] M_0 is calculated by multiplying the disempowered headcount (H) and the average inadequacy score (A). The disempowered headcount reflects the proportion of women who are not yet empowered. The average inadequacy score reflects the average percentage of indicators in which women who are not yet empowered did

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[52] Having "adequate achievement" means an individual score above an adequacy cutoff established for each indicator.
[53] University of Oxford. 2013.

not yet achieve adequacy.[54] In sum, the 5DE is expressed as: 5DE = 1 – H x A. Of note, Table 30 reports H and A as percentages, but in the 5DE formula, the equivalent proportions are used.

Table 30 shows that the 5DE in northern Kenya is 0.71. As reflected in the formula above, this score is calculated with the percent of women in the survey who are not yet empowered (disempowered headcount), which is 68.4, and the average inadequacy score, which is 42.5 percent.[55]

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

Table 30. Women's 5DE subindex

	Baseline value
5DE	0.71
Percent of women achieving empowerment (score of 0.80 or greater) (1-H_n)	31.65
Percent of women not achieving empowerment (score below 0.80) (H_n)	68.35
Average adequacy score for women not yet empowered (1-A)	57.46
Average inadequacy score for women not yet empowered (A)	42.54
n	**699**

Source: FTF FEEDBACK PBS. January 2013.

In addition to examining the 5DE for the sample as a whole, 5DE scores were analyzed and compared by household type. As shown in Table 31, the 5DE score is significantly lower for women in male and female adult households (0.69) as compared to women in female adult only households (0.80).

Table 31. Women's 5DE score and household type

	Baseline value	Std dev	n (unweighted)
All households	**0.71**	**0.24**	**699[1]**
Household type			
Male and female adults	0.69[a]	0.25	576
Female adult only	0.80[a]	0.19	119

[a] Subgroups with the same superscript are significantly different at the 0.05 level. Comparisons are across rows.

[1] Four households did not have data for Module C gendered household type, resulting in n=695 for the type of Household rows.

Source: FTF FEEDBACK PBS. January 2013.

Table 32 reports the percentages of primary decision-making females who are not yet empowered and have inadequacy for the 10 indicators within each of the five domains of empowerment (i.e., the censored headcount). Refer to Annex C for descriptions of each of the 10 indicators including adequacy cutoffs.

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[54] Alkire, S., Meinzein-Dick, R. et al. 2013.

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

In Table 32, results are shown for all women from both household types who responded to the WEAI module in the survey. Women who score above the 80 percent empowerment threshold are not counted against the censored headcounts. To compute a censored headcount for each indicator, the number of not-yet-empowered women who did not achieve adequacy on that indicator is divided by the total number of women who responded. The censored headcounts illustrate the profile of inadequate achievements of the not yet empowered. Focusing on women who are not yet empowered is important because it emphasizes specific ways empowerment can be improved. By construction, improvements in the achievements of women who are already empowered do not increase the 5DE score, an important property of the subindex. Discussion of each indicator and domain follows Table 32.

Table 32.   Percent of women who are not yet empowered and who have inadequate achievement (censored headcount) in the 5DE indicators

Domain	Indicator	Censored headcount[1] (n=699)
Production	Input in productive decisions	29.97
	Autonomy in production	13.51
Resources	Ownership of assets	22.45
	Purchase, sale, or transfer of assets	37.26
	Access to and decisions on credit	63.21
Income	Control over use of income	20.46
Leadership	Group member	26.56
	Speaking in public	38.70
Time	Workload	41.77
	Leisure	17.38

[1]   The censored headcount ratio for a particular indicator is the number of not-yet-empowered people who are deprived on that indicator divided by the total population.

Source: FTF FEEDBACK PBS. January 2013.

Production Domain

Input in Productive Decisions. Results shown in Table 32 indicate that among women in the ZOI, 30.0 percent are not yet empowered and have inadequate input into productive decisions.

Autonomy in Production. With respect to autonomy in production, 13.5 percent of women in the ZOI are not yet empowered and have inadequacy in this indicator.

Resources Domain

Ownership of Assets. Among women in the northern Kenya ZOI, 22.5 percent are not yet empowered and experience inadequacy in ownership of assets.

Purchase, Sale, or Transfer of Assets. The percentage of women who are both not yet empowered and inadequate in terms of controlling the purchase, sale, or transfer of assets is 37.3 percent.

Access to and Decisions on Credit. The indicator tracking access to and decisions on credit shows the highest percentage of inadequacy among women, with 63.2 percent not yet empowered and not having adequate achievement.

Control Over Use of Income. The percentage of women who both are not yet empowered and lack adequacy in the control over use of income is 20.5 percent.

Leadership Domain

Participation in Formal and Informal Groups. In the ZOI, the percentage of women who are both not yet empowered and experience inadequacy in the group membership indicator is 26.6 percent.

Speaking in Public. A higher percentage of women are both not empowered and lack adequacy in the speaking in public indicator (38.7 percent) compared to group membership.

Time Allocation Domain

Workload. Compared to all other 5DE indicators, workload exhibits the second highest percentage of women who are both not yet empowered and experience inadequacy, at 41.8 percent.

Leisure Time. The percentage of women in the ZOI who are both not yet empowered and have inadequacy in leisure time is 17.4 percent.

3.5.3   GPI

The second subindex in the WEAI, the GPI, measures women's empowerment relative to that of men by comparing the 5DE profiles of women and men in the same households. A woman is assumed to achieve gender parity if her achievements in the five domains are at least as high as the man in her household. The GPI reflects the percentage of women who have achieved parity and, in cases of gender disparity, the average empowerment gap that women experience relative to their male counterparts. While the 5DE score is calculated using all women in the sample, the GPI score is calculated using only women living in a household with at least one adult man (often her partner).

The GPI is calculated by multiplying two factors. The first is the percent of women without gender parity (H_{GPI}), defined as women with lower achievements in the five domains than that of their male counterparts. Empowered women, meaning those who score above the empowerment threshold of the 5DE, are automatically counted as having parity with their male counterpart. The second factor is the average empowerment gap (I_{GPI}), which measures the average percentage shortfall in empowerment between women and men living in households without gender parity across all

indicators. The GPI is calculated with the formula: GPI $= 1 - (H_{GPI} \times I_{GPI})$. The GPI ranges from zero to one, with higher values indicating greater gender parity.[56]

In northern Kenya, the GPI is 0.81, which is calculated with the formula above that is based on the percent of women without gender parity (63.8) and the average empowerment gap (29.6). Table 33 shows the breakdown of baseline values by the GPI variables.

Table 33. GPI

	Baseline value
GPI	0.81
Percent of women achieving gender parity (1-H_{GPI})	36.18
Percent of women without gender parity (H_{GPI})	63.82
Average Empowerment Gap (I_{GPI})	29.57
n	**254[1]**

[1] The sample size for the GPI subindex (254) is lower than that reported in Table 31 (576) because the GPI requires both a male and a female Module G (WEAI) record from the Male and Female Adult (e.g., dual adult) households.

Source: FTF FEEDBACK PBS. January 2013.

Table 34 presents men's and women's censored headcounts, or the percent not yet empowered and inadequate in the 10 indicators of 5DE. Note that, unlike Table 32, which showed percentages for all women in the survey, in Table 34, the percentages reported are based only on males and females in dual households, those households with both a male and a female adult.

Table 34 shows that men and women in dual households report significant differences in eight of the 10 5DE indicators. Significantly more women than men are not empowered and have inadequacy in input in productive decisions; autonomy in production; ownership and control of assets; purchase, sale, or transfer of assets; access to and decisions on credit; control of household income; speaking in public; and workload. There are no significant differences between men and women with respect to the group membership and satisfaction with leisure time indicators.

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[56] Alkire, S., Meinzein-Dick, R. et al. 2013.

Table 34.   Percent of men and women who are not yet empowered and have inadequate achievement (censored headcount) in the 10 5DE indicators

Domain	Indicator	Baseline values	
		Male censored headcount[1] (n=254)	Female censored headcount[2] (n=254)
Production	Input in productive decisions	5.41[a]	35.26[a]
	Autonomy in production	5.25[b]	17.86[b]
Resources	Ownership of assets	0.66[c]	28.81[c]
	Purchase, sale, or transfer of assets	4.84[d]	37.89[d]
	Access to and decisions on credit	28.86[e]	65.12[e]
Income	Control over use of income	1.84[f]	21.89[f]
Leadership	Group member	16.89	24.23
	Speaking in public	3.16[g]	37.46[g]
Time	Workload	21.12[h]	43.95[h]
	Leisure	13.50	16.21

[a-h] Subgroups with the same superscript are significantly different at the 0.05 level. The comparisons are across columns. Comparison and estimates for men and women living in male and female adult households.

[1]   Male censored headcounts are the percentage of men who are not yet empowered and have inadequate achievement in the indicator.

[2]   Female censored headcounts are the percentage of women who are not yet empowered and have inadequate achievement in the indicator.

Source: FTF FEEDBACK PBS. January 2013.

4.   Analysis of Findings

This section presents country-specific analyses requested by USAID/Kenya. First, data are presented on the relationship between women's empowerment (using WEAI data) and other FTF FEEDBACK indicators. Second, analyses on the relationships between household expenditures and poverty and Feed the Future indicators are presented. Third, results from the resilience module (Module F) are presented and discussed.

4.1   Analyses Requested by USAID/Kenya

4.1.1 Women's Empowerment and Feed the Future Indicators

Table 35 presents values for indicators measured in the FTF FEEDBACK PBS disaggregated by whether women are empowered or not yet empowered. Only the women's WEAI scores are used. In sum, the table shows that households with higher levels of women's empowerment have lower prevalence of poverty, lower prevalence of moderate or severe hunger, and higher dietary diversity scores among women of reproductive age.

Table 35.   Values for selected indicators according to Women's Empowerment status

Feed the Future indicator	Empowered	n	Not yet empowered	n
Prevalence of poverty: Percent of people living on less than $1.25/day (2005 PPP)	31.62[a]	202	55.62[a]	484
Per capita expenditures of USG-targeted beneficiaries (2010 USD)	2.39 (2.67)	202	1.89 (4.20)	484
Prevalence of underweight children under 5 years of age	18.21	136	21.93	403
Prevalence of stunting among children under 5 years of age	27.64	136	31.12	403
Prevalence of wasting among children under 5 years of age	12.39	136	15.58	403
Prevalence of underweight women	29.54	169	33.34	397
Prevalence of households with moderate or severe hunger	37.42[b]	189	49.82[b]	439
Prevalence of children 6-23 months receiving a minimum acceptable diet	8.56	36	3.18	120
Women's Dietary Diversity Score: Mean number of food groups consumed by women of reproductive age	3.28[c] (1.65)	188	2.55[c] (1.84)	430
Prevalence of exclusive breastfeeding of children under 6 months of age[^]	–	17	43.17	43

[a-c] Subgroups with the same superscript are significantly different at the 0.05 level. Comparisons are across columns.

[^]   = Results not statistically representative, n<30.

Source: FTF FEEDBACK PBS. January 2013.

The prevalence of poverty among households where women are empowered is 31.6 percent, which is significantly lower than the 55.6 percent among households where women are not yet empowered. The percentage of households reporting moderate to severe hunger is 37.4 percent in households where women are empowered, which is significantly lower than the 49.8 percent in households where women are not yet empowered. Women's Dietary Diversity Scores are significantly higher in households where women are empowered (3.3 food groups) than in households where women are not yet empowered (2.6 food groups).

WEAI Indicators and Household Hunger

Table 36 presents the relationship between the household hunger scale and women's achievement for each of the 10 indicators of the 5DE subindex of WEAI. Results indicate statistically significant differences between the two household hunger groups in two 5DE indicators: ownership of assets (65.1 and 86.8 percent, respectively), and access to and decisions on credit (11.9 and 21.2 percent, respectively). Women in households with no hunger are more likely to achieve adequacy in asset ownership and access to credit compared to women in households with moderate or severe hunger.

Table 36. Severity of household hunger according to women's achievement on WEAI indicators

	Household hunger scale categories	
	Moderate to severe hunger (n=309)	**No hunger (n=319)**
WEAI (5DE) Indicator	**%**	**%**
Input into productive decisions	63.73	72.95
Autonomy in production	88.38	84.80
Ownership of assets	65.11[a]	86.80[a]
Purchase, sale, or transfer of assets	56.77	62.22
Access to and decisions on credit	11.90[b]	21.19[b]
Control over use of income	74.76	82.94
Group member	70.47	70.88
Speaking in public	54.00	59.23
Workload	42.75	44.47
Leisure	79.61	78.20

[a,b] Subgroups with the same superscript are significantly different at the 0.05 level. Comparisons are across columns.

Source: FTF FEEDBACK PBS. January 2013.

WEAI Indicators and Household Poverty Status

Data presented in Table 37 show the prevalence of households below the $1.25/day (2005 PPP) poverty line compared to households at or above the poverty line by women's achievement in the 10 indicators of the 5DE subindex of WEAI. Findings indicate that women in households at or above the poverty line are significantly more likely to achieve adequacy in four of the 10 5DE indicators than women in households below the poverty line. The four indicators are: ownership of assets (82.3 and 69.3 percent, respectively); access to and decisions on credit (20.8 and 10.2 percent, respectively); group membership (73.9 and 65.7 percent, respectively); and speaking in public (61.1 and 49.7 percent, respectively).

Table 37.   WEAI indicators, by household poverty status

	Household poverty status	
	Households below poverty line (n=307)	Households at or above poverty line (n=379)
WEAI (5DE) indicator	%	%
Input into productive decisions	65.48	71.59
Autonomy in production	88.38	84.34
Ownership of assets	69.25[a]	82.33[a]
Purchase, sale, or transfer of assets	59.05	60.18
Access to and decisions on credit	10.16[b]	20.84[b]
Control over use of income	74.32	83.44
Group member	65.65[c]	73.92[c]
Speaking in public	49.66[d]	61.09[d]
Workload	42.84	43.84
Leisure	76.69	82.72

[a-d] Subgroups with the same superscript are significantly different at the 0.05 level. Comparisons are across columns.

Source: FTF FEEDBACK PBS. January 2013.

Women's Decision-Making and Select Feed the Future Indicators

Each of the five decision-making domains in the WEAI was scored such that "one" indicates the respondent has adequate freedom to make decisions and "zero" means she does not. The five items were summed and broken down into three categories: *Low*, respondent achieved adequacy in zero to three decision-making activities; *Medium*, respondent achieved adequacy in four decision-making activities; *High*, respondent achieved adequacy in all five decision-making activities.

Table 38 reports values of selected Feed the Future indicators by women's level of decision-making. High levels of decision-making capacity for women are associated with lower prevalence of poverty (21.5 percent), higher daily per capita expenditures ($2.64 in 2010 USD), and higher Women's Dietary Diversity Scores (3.4 food groups) as compared with women with low or medium decision-making capacity. There are no significant differences in children's anthropometric indicators by women's level of decision-making.

Table 38.   Level of decision-making, by selected Feed the Future indicators

Feed the Future indicator	Level of decision-making					
	Low (0-3 decisions)		Medium (4 decisions)		High (5 decisions)	
	Value	n	Value	n	Value	n
Prevalence of poverty: Percentage of people living on less than $1.25/day (2005 PPP) (%)	53.31[a]	364	47.94[b]	254	21.47[ab]	68
Per capita expenditures of USG-targeted beneficiaries, 2010 USD (std dev)	1.77 (1.69)	364	2.26 (5.53)	254	2.64[c] (2.04)	68
Prevalence of underweight children under 5 years of age (%)	22.54	309	18.37	195	19.76	35
Prevalence of stunting among children under 5 years of age (%)	33.01	309	26.31	195	25.43	35
Prevalence of wasting among children under 5 years of age (%)	17.12	309	11.74	195	9.06	35
Prevalence of underweight women (%)	35.32	291	30.76	210	22.44	65
Prevalence of households with moderate or severe hunger (%)	48.37	331	44.56	233	37.48	64
Prevalence of children 6-23 months receiving a minimum acceptable diet^ (%)	1.97	95	6.95	52	-	9
Women's Dietary Diversity Score: Mean number of food groups consumed by women of reproductive age (std dev)	2.38[de] (1.74)	324	3.16[d] (1.74)	225	3.40[e] (1.86)	69
Prevalence of exclusive breastfeeding of children under 6 months of age^ (%)	47.60	32	–	22	–	6

[a-e] Subgroups with the same superscript are significantly different at the 0.05 level. Comparisons are across columns.

^   = Results not statistically representative, n<30.

Source: FTF FEEDBACK PBS. January 2013.

4.1.2   Per Capita Expenditures, Household Poverty, and Feed the Future Indicators

Table 39 shows selected Feed the Future indicators by daily per capita expenditure quartiles as well as bottom and top expenditure deciles.[57] Indicator values generally improve moving from the lowest to the highest expenditure quartiles. The same pattern holds for household hunger and Women's Dietary Diversity Scores when comparing the bottom and top expenditure deciles.

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[57] Expenditure quartiles, and bottom and top expenditure deciles in 2010 USD cover the following ranges:
Quartile 1   0.06 to 0.79
Quartile 2   0.79 to 1.44
Quartile 3   1.44 to 2.58
Quartile 4   2.58 to 95.51
Decile 1   0.06 to 0.45
Decile 10   5.22 to 95.51

Table 39.   Selected Feed the Future indicators, by category of per capita expenditure

	Quartiles				Deciles	
	1	2	3	4	Bottom	Top
Prevalence of stunting among children under 5 years of age (%)	32.55	29.09	28.41	28.43	28.44	36.83
Prevalence of underweight among children under 5 years of age (%)	27.02[abc]	19.85[a]	14.34[b]	13.53[c]	23.38	16.76
Prevalence of wasting among children under 5 years of age (%)	16.81	14.47	11.29	8.33	9.69	12.80
Prevalence households with moderate or severe hunger (HHS) (%)	86.48[d]	60.66[d]	43.59[d]	20.81[d]	93.76[e]	16.30[e]
Prevalence of children 6-23 months with minimum acceptable diet (%)[^]	2.87	1.43[fg]	9.10[f]	8.65[g]	–	–
Women's Dietary Diversity Score (std dev)	1.72[hi] (1.42)	2.39[h] (1.69)	2.61[i] (1.56)	3.61[hi] (1.83)	1.64[j] (1.39)	4.16[j] (1.85)
Prevalence of exclusive breastfeeding (%)[^]	–	45.52	37.22	–	–	–
Women's Empowerment in Agriculture Index	0.65	0.68	0.73	0.78	0.63	0.78

[a-j] Subgroups with the same superscript are significantly different at the 0.05 level. Comparisons are across columns.

[^] = Results not statistically representative, n<30.

Source: FTF FEEDBACK PBS. January 2013.

Household Poverty and Household Characteristics

Table 40 describes the housing conditions of households below the poverty line ($1.25/person/day at 2005 PPP) compared to households above the poverty line. Comparing water, sanitation, and dwelling characteristics of households below and above the $1.25/day poverty line shows that a significantly lower percentage of households below the poverty line uses improved water sources compared to households above the poverty line (42.7 percent and 56.2 percent, respectively). Households below the poverty line also have lower access to improved sanitation (3.6 percent compared to 17.4 percent). Nearly all households below the poverty line (90.3 percent) live in houses with mud floors, and most live in houses with thatched roofs (60.9 percent) and mud walls (53.3 percent). In contrast, households above the poverty line are significantly more likely to use durable construction materials, including corrugated metal roofing (59.5 percent) and both floors (42.0 percent) and walls (23.0 percent) of concrete or cement.

Table 40. **Values for selected dwelling characteristics according to poverty status**

Household characteristics	Below poverty line	n	At or above poverty line	n
Households using improved water source	42.66[a]	834	56.21[a]	888
Households using improved sanitation source	3.62[b]	834	17.37[b]	888
Households using pit latrine	20.77[c]	834	43.44[c]	888
Roof				
Tile	0.00	834	1.45	888
Wood	1.07	834	0.55	888
Corrugated metal	26.23[d]	834	59.51[d]	888
Plastic sheeting	2.34[e]	834	0.84[e]	888
Thatched/vegetable matter/sticks	60.86[f]	834	28.80[f]	888
Mud/cow dung	3.51	834	2.46	888
Other	5.99	834	6.39	888
Floor				
Earth/mud/cow dung	90.34[g]	834	56.79[g]	888
Concrete/cement	9.17[h]	834	41.98[h]	888
Wall				
Earth/mud/cow dung	53.31[i]	834	39.38[i]	888
Concrete/cement	6.25[j]	834	22.98[j]	888
Tile/bricks	0.56[k]	834	5.21[k]	888
Wood	12.73	834	14.27	888
Iron sheet	2.15[l]	834	5.63[l]	888
Other	24.99[m]	834	12.53[m]	888

[a-m] Subgroups with the same superscript are significantly different at the 0.05 level. Comparisons are across columns.

Source: FTF FEEDBACK PBS. January 2013.

NOTE: The table only reports values for response options with at least 1 percent of responses.

4.2 Resilience

The FTF FEEDBACK baseline PBS in northern Kenya included an additional module on household resilience. The resilience questions were added to Module F of the questionnaire, which also included the questions about household hunger. This section reports baseline results from the questions covering resilience, providing information on household livelihoods and livelihood diversification, the role of informal social institutions for sharing resources, the household capacity to recover from and adapt to shocks, and the coping strategy of household asset sales. The nonresponse rate for the resilience module was low, at 1.4 percent. The Resilience Module of the baseline survey can be found in Annex D.

USAID defines resilience as "the ability of people, households, communities, countries, and systems to mitigate, adapt to and recover from shocks and stresses in a manner that reduces chronic

vulnerability and facilitates inclusive growth."[58] The FTF FEEDBACK PBS provided an opportunity to collect household level data on multiple aspects of resilience, producing household level data to support the REGAL programs.

The survey sample was designed to be sufficient to report results by strata corresponding to USAID intervention areas. Within the USAID intervention areas, the first strata (HA only) includes households that may receive humanitarian assistance only, and have not participated in any of the other components of the REGAL project. The second strata (HA+REGAL IR) includes households that may receive humanitarian assistance in emergencies and are within the operational area of REGAL IR. The third strata (HA+REGAL IR+REGAL AG) includes households that may receive humanitarian assistance and are in the operational areas of both REGAL IR and REGAL AG. The results presented in this section are based on the stratification in place at the time of the survey. HA includes survey data from Tana River, Samburu, and Baringo; HA+REGAL IR added survey data from Isiolo and Turkana to the HA areas; and HA+REGAL IR+REGAL AG added survey data from Marasbit to the HA+REGAL IR areas. After the data for this baseline were collection, Isiolo has been added to HA+REGAL IR+REGAL AG. This is not reflected in the tables.

It should be noted that project implementation had not started at the time of the baseline data collection; thus, the tables and figures in this section represent the pre-REGAL intervention values for these indicators and show pre-existing differences among program areas. Of the five clusters in the sample frame that could not be reached during the survey, one cluster comprised of 18 households was in the HA only area; three clusters made up of 45 households were in the HA+REGAL IR intervention area; and one cluster comprised of 15 households was in the HA+REGAL IR+REGAL AG intervention area. Also, the conflict areas–Garissa, Wajir, and Madera–were not included in the survey, which represent the intervention areas of HA+REGAL IR+REGAL AG, HA+REGAL IR, and HA only, respectively.

This section presents resilience-related findings for the following main topics: livelihood diversification, social capital, adaptive capacity, and asset sales and recovery. For each topic the results are presented for the overall ZOI and for the three USAID intervention areas (HA only, HA + REGAL IR, and HA+REGAL IR+REGAL AG), as well as additional analyses by quartiles of per capita daily expenditure, household hunger status (households reporting moderate to severe hunger and households reporting no hunger), and household poverty status (below and above the FTF poverty line of $1.25 per person, per day [2005 PPP]). It should be noted that the sample sizes reported in the tables are unweighted (designated by "n").

4.2.1   Livelihood Diversification

The topic of livelihood diversification provides information about household income or food sources and number of household livelihood activities during the last 12 months and during stress

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[58] USAID. 2012c.

times.[59] These sources were ranked by the households in terms of the proportion of income or food they provide for the household, with seasonal sources identified.

The livelihood diversification results are presented for the overall ZOI and for the three USAID intervention areas (HA only, HA + REGAL IR, and HA+REGAL IR+REGAL AG), as well as additional analyses by quartiles of per capita daily expenditure,[60] household hunger status (households reporting moderate to severe hunger and households reporting no hunger), and household poverty status (below and at or above the $1.25/day poverty line).

Livelihood Diversification in the ZOI

Table 41 lists the main livelihood activities in the last 12 months reported by all households in the ZOI (n=1,735-1,738). Among those households which reported activities, households listed the activities employed during stress times and by season. Overall, the data show the importance of livestock in the ZOI, with livestock rearing reported as the most common livelihood activity by nearly half (45.5 percent) of households. Of the households engaged in livestock rearing (n=963), 62.7 percent report engaging in that activity both in times of stress and year-round.

Relief is the second most common source of household income, or food for 28.6 percent of households in the ZOI (Table 41). For those households that received relief in the last 12 months (n=544), nearly half (48.8 percent) rely on relief during stress times, and more households receive relief in the dry season (61.2 percent) than year-round (37.8 percent). Crop agriculture is a livelihood activity for 27.4 percent of households in the ZOI, which occurs mainly during the wet season (82.4 percent), but the activity is given up by most households in stress times. Specifically, only 37.1 percent of households that engage in crop agriculture during normal times (n=505) continue to grow crops in times of stress.

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[59] A limitation of this data is the possible variation around the meaning of "stress" among households.
[60] For more information on the method of quartile categorization, refer to Table 39.

Table 41.   Livelihood activities in the last 12 months, in stress times and by season

Activity	HH activity in last 12 months[1] %	n	Last 12 months and in stress times[1] %	n[2]	By season Dry (only) %	Wet (only) %	Year-round %	n[2]
Livestock	45.47	1,737	62.74	963	13.18[a]	24.16[a]	62.66[a]	963
Relief	28.63	1,737	48.77	544	61.19[ab]	1.03[a]	37.78[b]	544
Crops	27.44	1,738	37.12	505	3.43[a]	82.44[ab]	14.13[b]	505
Wages	27.09	1,738	56.18	421	11.93	11.06	77.01	421
Self-employment	20.71	1,737	65.63	288	7.69[a]	3.70[a]	88.60[a]	288
Borrowing	16.24	1,735	44.20	294	41.30[a]	4.71[a]	53.99[a]	294
Salaried work	14.24	1,736	71.37	196	0.83[a]	0.83[b]	98.35[ab]	196
Wild products trade	13.69	1,738	59.23	228	28.76[a]	4.72[a]	66.52[a]	228
Gifts	6.00	1,737	31.68	106	31.37[a]	11.76[a]	56.86[a]	106
Remittance	4.94	1,737	52.38	81	15.66[a]	3.61[a]	80.72[a]	81
Wild food consumption	4.89	1,736	50.00	92	31.33[a]	34.94[a]	33.73[a]	92
Fishing	2.29	1,738	23.08	34	12.82[a]	20.51[b]	66.67[ab]	34
Barter trade^	1.41	1,737	–	28	–	–	–	28
Sale of land or non-livestock assets^	1.35	1,738	–	22	–	–	–	22
Mining^	1.00	1,737	–	17	–	–	–	17
Raiding^	0.24	1,735	–	6	–	–	–	6

[a,b] Subgroups with the same superscript are significantly different at the 0.05 level. Comparisons are across columns.

^   = Results not statistically representative, n<30.

[1]   Percentages sum to more than 100 because respondents could choose multiple responses.

[2]   Subsample of households reporting that they have engaged in the activity during the last 12 months.

Source: FTF FEEDBACK PBS. January 2013.

Table 42 presents the mean and median number of livelihood activities during the last 12 months and in stress time. This table shows that the mean and median numbers of livelihood activities are significantly lower in times of stress (1.4 and 1.0 activities, respectively) compared to the last 12 months (2.2 and 2.0 activities, respectively). This is likely attributable to the fact that fewer livelihood options are available in the area during drought periods or in times of conflict.[61]

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[61] Kurtz and Scarborough. 2012.

Table 42.   Mean and median number of livelihood activities during the last 12 months and in stress times

	Last 12 months	n[1]	Stress times	n[1]
Mean(std dev)	2.20[a] (1.23)	1,709	1.44[a] (0.92)	1,709
Median	2.00[b]	1,709	1.00[b]	1,709

[a,b] Subgroups with the same superscript are significantly different at the 0.05 level. Comparisons are across columns.

[1]   Subsample of households reporting at least one livelihood activity in the past 12 months.

Source: FTF FEEDBACK PBS. January 2013.

Figure 4 shows that in times of stress over half (54.6 percent) of all households report just one livelihood activity. In contrast, only one-third (33.5 percent) of households report only one livelihood activity during the last 12 months. Nearly one in five households (17.8 percent) reports the loss of all possible livelihood activities during times of stress.

Figure 4.   Count of livelihood activities in last 12 months and in stress times
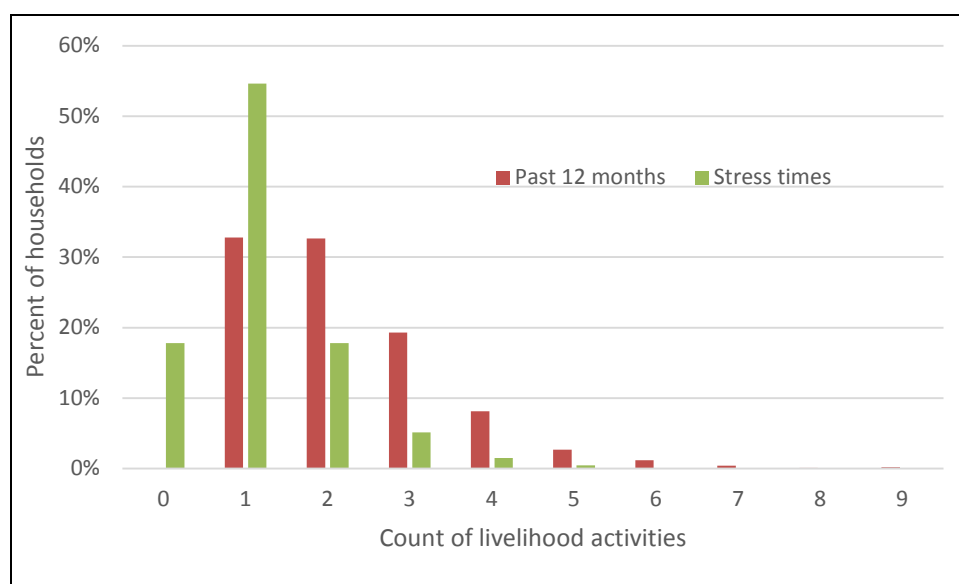
Source: FTF FEEDBACK PBS. January 2013.

NOTE: Tests of statistical significance were not conducted because observations are not independent.

In addition to reporting on livelihood activities, households also ranked their livelihood activities in terms of their importance to the production of income or food. Figure 5 shows household rankings of livelihood activities over the last 12 months by households engaged in those activities. Job earnings from salaried work (80.5 percent), self-employment (64.8 percent), and wages (57.7 percent) and livestock (59.3 percent) were ranked highest by households engaged in those activities. Generally, livelihood activities that may be considered coping strategies (e.g., collecting wild foods, receipt of gifts, barter trade, relief donations, and borrowing) are ranked less frequently as important livelihood activities. However, 4.3 percent to 16.7 percent of households engaging in these activities did rank them as their primary livelihood sources.

Figure 5. Rank of livelihood activities in last 12 months
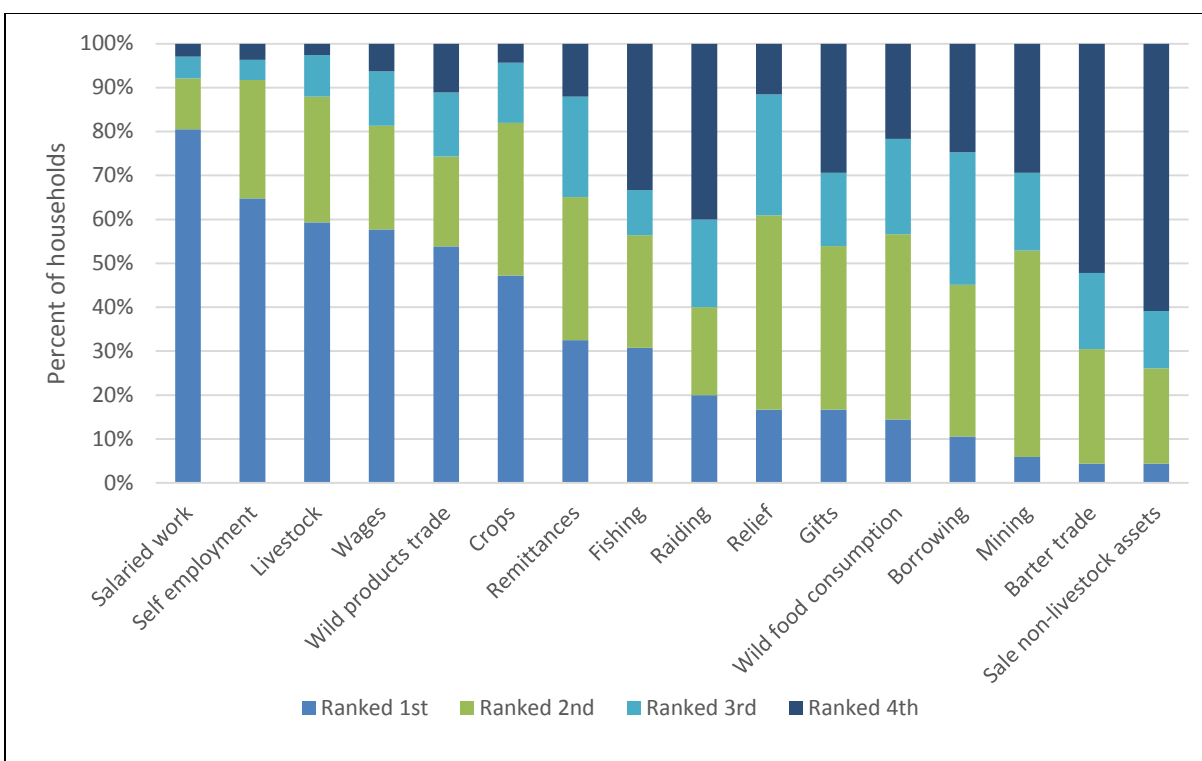
Source: FTF FEEDBACK PBS. January 2013.

NOTE: Tests of statistical significance were not conducted because observations are not independent.

Livelihood Diversification in USAID Intervention Areas

Table 43 presents the mean and median numbers of household livelihood activities in the last 12 months and during stress times across USAID intervention areas. The subsample includes all households reporting activities in the last 12 months for which there are data on intervention areas (n=1,709). The data show that HA only households report more livelihood activities (2.4) on average than either HA+REGAL IR (2.0) and HA+REGAL IR+REGAL AG (2.1). However, the medians are the same across intervention areas.

Table 43.   Mean and median number of livelihood activities in last 12 months and in stress times, by USAID intervention areas

	USAID intervention area					
	HA only		**HA+REGAL IR**		**HA+REGAL IR+REGAL AG**	
	Value (std dev)	**n**	**Value (std dev)**	**n**	**Value (std dev)**	**n**
Mean number of household livelihood activities (std dev) (max=12)	2.43[ab] (1.41)	577	2.00[a] (1.06)	547	2.14[b] (1.10)	585
Median number of household livelihood activities (max=12)	2.00	577	2.00	547	2.00	585
Mean number of livelihood activities in stress times (std dev) (max=12)	1.24 (0.98)	577	1.14 (0.87)	547	1.15 (0.85)	585
Median number of household livelihood activities in stress times (max=12)	1.00	577	1.00	547	1.00	585

[a,b] Subgroups with the same superscript are significantly different at the 0.05 level. Comparisons are across columns only.

Source: FTF FEEDBACK PBS. January 2013.

Figure 6 shows the livelihood activities reported by households compared by USAID intervention area. Overall, livestock rearing is the main livelihood activity in all areas. Half (50.5 percent) of the households in the HA only area engage in livestock activities, as compared to 39.8 percent in the HA+REGAL IR area. Households in HA only area are more likely to engage in crop agriculture (46.7 percent), as compared to 17.4 percent of households in the HA+REGAL IR and 14.6 percent in the HA+REGAL IR+REGAL AG areas. The HA only area also has the highest share of households in self-employment (24.9 percent) and salaried work (19.0 percent), as compared to the HA+REGAL IR (18.4 and 10.9 percent, respectively) and the HA+REGAL IR+REGAL AG areas (17.9 and 12.1 percent, respectively).

In contrast, more households in the HA+REGAL IR+REGAL AG area report relying on relief (44.1 percent) than the HA only (26.8 percent) and the HA+REGAL IR (19.7 percent) areas (Figure 6). The pattern was similar for borrowing, where 21.4 percent of households in the HA+REGAL IR+REGAL AG area report borrowing, as compared to 12.6 percent in the HA only and 15.2 percent in the HA+REGAL IR areas. The livelihood activity in which HA+REGAL IR households exceed those in other areas is wild products trade (22.4 percent in the HA+REGAL IR area) as compared to 10.9 percent in the HA only area and 5.9 percent in the HA+REGAL IR+REGAL AG area.

Figure 6.   Household livelihood activities, by USAID intervention areas
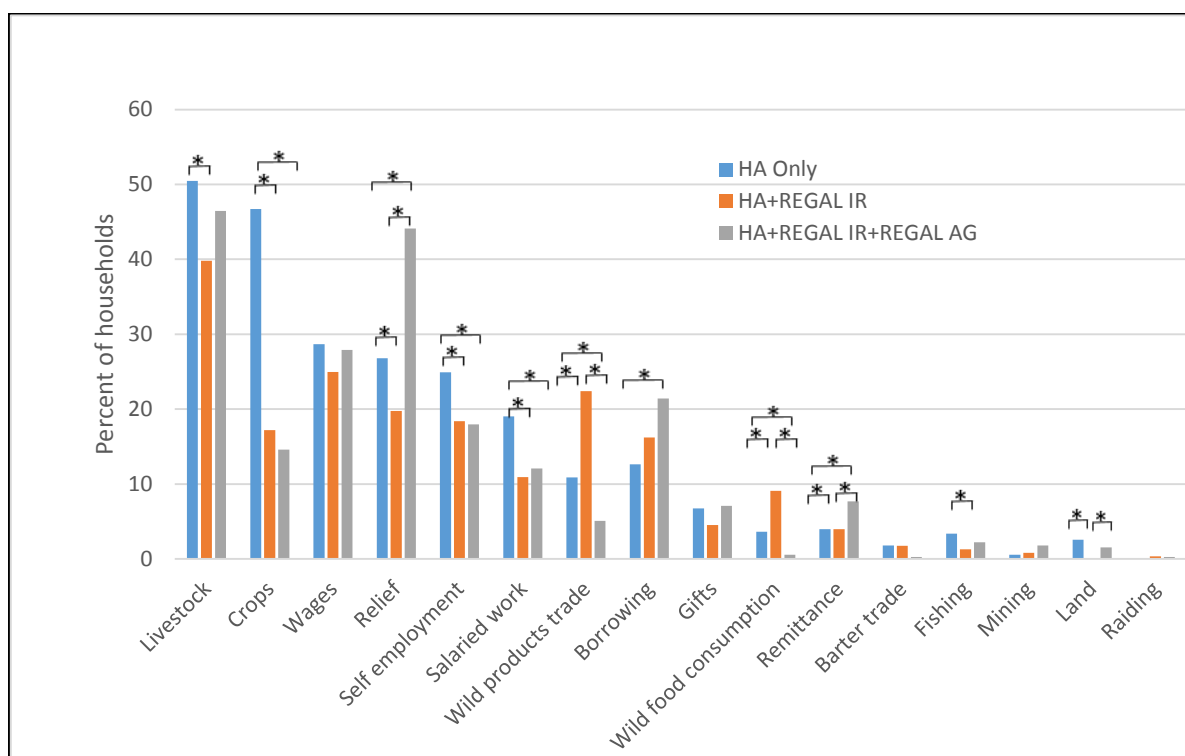
* Subgroups with asterisks are significantly different at the 0.05 level.

Source: FTF FEEDBACK. January 2013.

Livelihood Diversification and Household Expenditures

To provide further analysis of the livelihood diversification information, Table 44 reports mean and median numbers of livelihood activities during the last 12 months and in stress times by expenditure quartile. The subsample includes all households reporting activities in the last 12 months for which there are data on expenditures (n=1,681). The average number of household livelihood activities during the last 12 months is largest (2.4) for households in the second expenditure quartile compared to the other quartiles, and then the average number of activities decreases from the second to fourth (2.4, 2.3, 2.1, respectively) expenditure quartiles. There are no statistically significant differences among quartiles in the average (and median) number of livelihood activities in stress times.

Table 44.   Mean and median number of livelihood activities in last 12 months and in stress times, by expenditure quartiles

	Expenditure quartiles (USD)			
	1 (n=412)	2 (n=424)	3 (n=423)	4 (n=422)
Mean number of household livelihood activities (max=12)	2.13[a] (1.10)	2.35[ab] (1.25)	2.30[b] (1.26)	2.05[b] (1.25)
Median number of household livelihood activities (max=12)	2.00	2.00	2.00	2.00
Mean number of livelihood activities in stress times (max=12)	**1.19 (0.91)**	**1.26 (0.97)**	**1.14 (0.95)**	**1.11 (0.75)**
Median number of household livelihood activities in stress times (max=12)	**1.00**	**1.00**	**1.00**	**1.00**

[a-b] Subgroups with the same superscript are significantly different at the 0.05 level. Comparisons are across columns only.

Source: FTF FEEDBACK PBS. January 2013.

Further, Figure 7 compares the livelihood activities of households in the lowest and highest expenditure quartiles. The data show that although livestock is the primary livelihood activity for all households, a larger share of households in the lowest expenditure quartile (57.9 percent), as compared to the highest expenditure quartile (46.9 percent), report livestock as a primary activity. Generally, households in the lowest expenditure quartile tend to utilize relief (39.0 percent), engage in wild products trade (28.1 percent), and borrow (25.9 percent) for sources of income and food more so than households in the highest expenditure quartile. Households in the highest expenditure quartile are more likely to engage in crop production (34.6 percent), salaried employment (31.3 percent), and self-employment (28.4 percent). Not surprisingly, such activities tend to be more secure in generating income.

Figure 7. Household livelihood activities, by lowest and highest expenditure quartiles
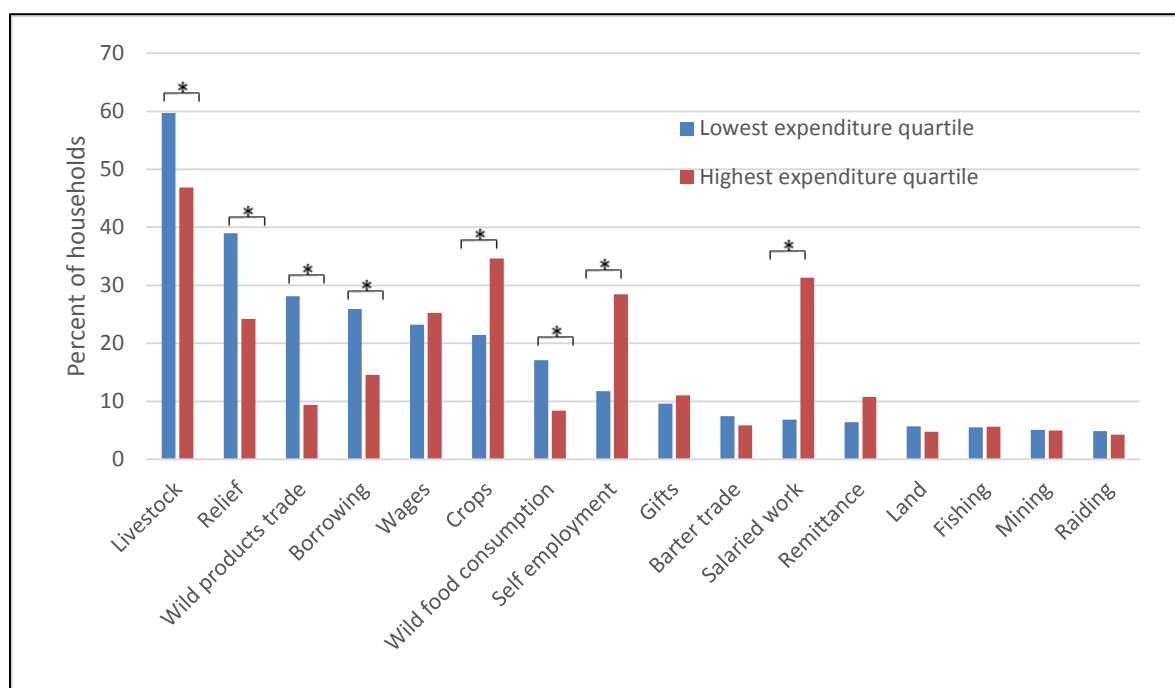
* Subgroups with asterisks are significantly different at the 0.05 level.

Source: FTF FEEDBACK. January 2013.

Livelihood Diversification and Household Hunger

Table 45 shows the mean and median numbers of household livelihood activities during the last 12 months and in stress times by household hunger status. The subsample includes all households reporting activities in the last 12 months for which there are data on household hunger (n=1,499). The data show that households not experiencing hunger report fewer livelihood activities on average during the last 12 months (2.8) and during stress times (1.4) than households with moderate to severe hunger (3.0 and 1.7, respectively). This may be explained by the previous finding that a larger share of households in the highest expenditure quartile are engaged in wage and salary earnings and self-employment activities (see Figure 7), indicating that such income-earning activities are more stable during normal and stress times.

Table 45. **Mean and median number of livelihood activities in last 12 months and in stress times, by household hunger status**

	Moderate or severe household hunger (n=802)	No household hunger (n=697)
	Mean/median	Mean/median
Mean number of household livelihood activities (std dev) (max=12)	3.02[a] (1.66)	2.82[a] (1.64)
Median number of household livelihood activities (std dev) (max=12)	3.00	3.00
Mean number of livelihood activities in stress times (std dev) (max=12)	**1.69[b] (1.24)**	**1.43[b] (1.11)**
Median number of household livelihood activities in stress times (std dev) (max=12)	**1.00**	**1.00**

[a,b] Subgroups with the same superscript are significantly different at the 0.05 level. Comparisons are across columns.

Source: FTF FEEDBACK PBS. January 2013.

Figure 8 compares the livelihood activities by household hunger status. Similar to the previous finding regarding the livelihood activities of households in the lowest and highest expenditure quartiles (see Figure 7), a larger proportion of households with no hunger engage in crop agriculture (39.3 percent), self-employment (27.7 percent), and salaried work (25.1 percent) than households with hunger. In contrast, a larger percentage of households experiencing moderate to severe hunger receive relief (41.1 percent), borrow (27.8 percent), engage in wild products trade (22.1 percent), and consume wild foods (13.6 percent).

Figure 8. **Household livelihood activities in last 12 months, by household hunger status**
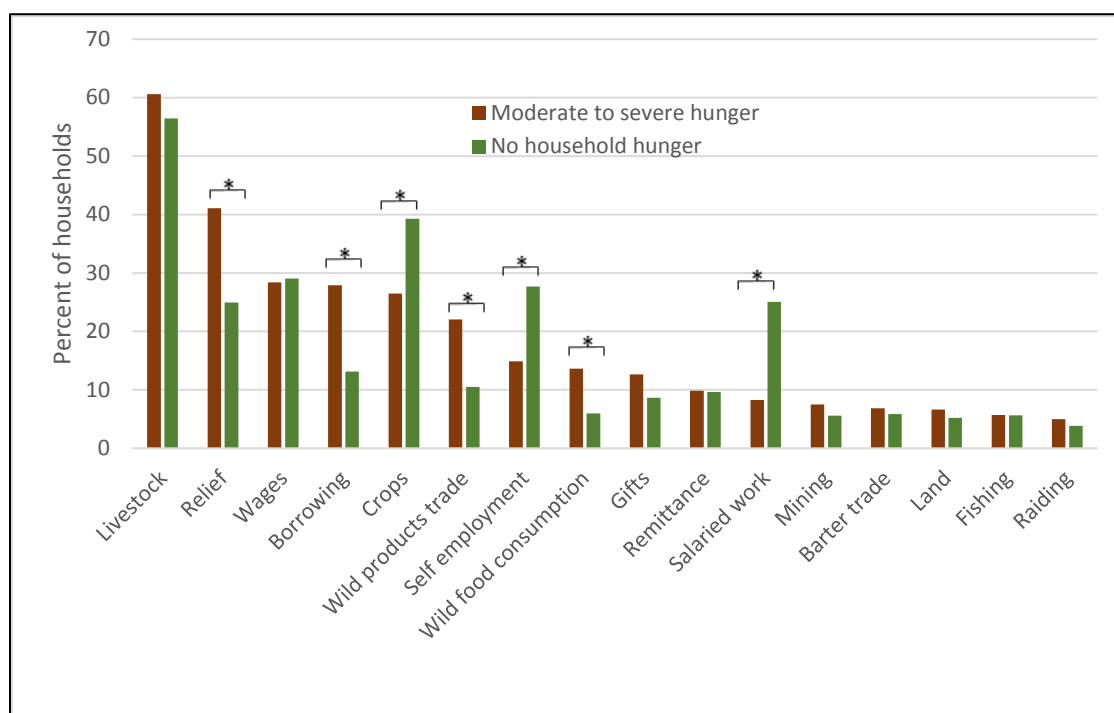
*   Subgroups with asterisks are significantly different at the 0.05 level.

Source: FTF FEEDBACK PBS. January 2013.

Livelihood Diversification and Household Poverty

Table 46 presents the mean and median numbers of household livelihood activities during the last 12 months and in stress times by households below and at or above the $1.25/day poverty line (2005 PPP). The subsample includes all households reporting activities in the last 12 months for which there are data on household poverty (n=1,716). The data show no significant differences in mean and median numbers of livelihood activities based on poverty status.

Table 46.   Mean and median number of livelihood activities in last 12 months and in stress times, by household poverty status

	Below poverty line (n=830)	At or above poverty line (n=886)
	Mean/median	Mean/median
Mean number of household livelihood activities (std dev) (max=12)	2.17 (0.87)	2.12 (1.28)
Median number of household livelihood activities (max=12)	2.00	2.00
Mean number of household livelihood activities in stress times (std dev) (max=12)	**1.19 (0.95)**	**1.11 (0.87)**
Median number of household livelihood activities during stress times (max=12)	**1.00**	**1.00**

No significant differences between subgroups at the 0.05 level. Comparisons are across columns.

Source: FTF FEEDBACK PBS. January 2013.

Finally, Figure 9 shows the distribution of household livelihood activities of households below and at or above the $1.25/day poverty line. The findings are consistent with the previous findings on activities of households by lowest/highest expenditure quartile (see Figure 7) and household hunger status (see Figure 8).

The data show that a larger proportion of poor households engage in livestock activities (63.1 percent) than households living at or above the poverty line (52.3 percent)(Figure 9). Also, households below the poverty line more often report relief (38.4 percent) and borrowing (24.9 percent) as livelihood activities in comparison to households at or above the poverty line (29.6 percent and 16.2 percent, respectively). Furthermore, more households at or above the poverty line report livelihoods from crop agriculture (36.4 percent) and jobs from salaried work (27.3 percent) and self-employment (25.9 percent), compared to households below the poverty line (28.2 percent, 8.6 percent, and 14.3 percent, respectively).

Figure 9.   Household livelihood activities, by household poverty status
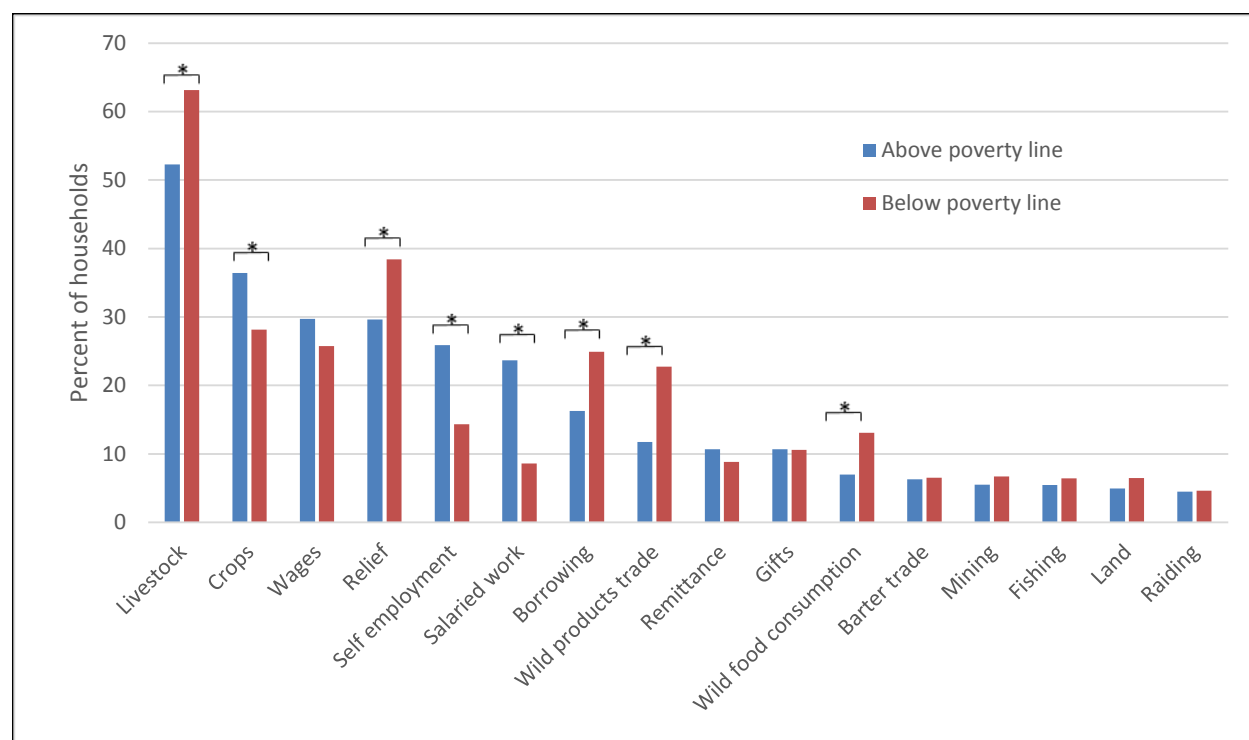
*   Subgroups with asterisks are significantly different at the 0.05 level.

Source: FTF FEEDBACK PBS. January 2013.

Summary of Key Findings on Livelihood Diversification

Overall, opportunities for livelihood diversification decrease for ZOI households during times of stress. During droughts, for instance, crop production decreases and during conflicts alternative livelihood activities are difficult to pursue. As a result, more than half of the households engage in only one activity during stress times. This is primarily livestock rearing or reliance on relief.

There are major differences in livelihood diversification across the three USAID intervention areas. Livestock rearing is an important livelihood activity for all areas, but self-employment and salaried work are more important in the HA only area. Reliance on relief is higher in the HA+REGAL IR and HA+REGAL IR+REGAL AG areas, which gives some indication that these areas are more vulnerable. This conclusion is reinforced by the fact that borrowing is also higher in these areas than in the HA only area. These regional differences are important to consider for the endline survey.

Households experiencing moderate to severe hunger engage in more alternative sources of income or food than households with no hunger. Yet this does not necessarily indicate that households experiencing hunger are resilient. The types of income or food sources on which households with hunger rely are less stable sources and only provide a small contribution to household needs in comparison to the more secure income sources available to households without hunger. Households with hunger tend to rely on relief, borrowing, wild products trade, and wild food consumption more

than households without hunger. Similarly, poorer households (i.e., households with the lowest expenditures and below the poverty line) rely on relief, wild production trade, and borrowing, while better-off households are more likely to engage in crop production, salaried employment, and self-employment.

4.2.2   Social Capital

The resilience questions on social capital measured household access to social networks and social support. Specifically, respondents were asked if their household was able to rely on others for food support (financial or in-kind) during the last drought (August 2011). Thus, it should be noted that the subsample excluded households reporting that they were not affected by the last drought (n=1,501). Response categories, which allowed for multiple responses, measured different types of social support and reasons for reliance on social networks, including support from:

- "Relatives in my village/community,"

- "Relatives outside my village/community,"

- "Non-relatives in my village/community,"

- "Non-relatives outside my village/community," and

- "Non-relatives outside my tribe/ethnic group."

The social capital results are presented for the overall ZOI and for the three USAID intervention areas (HA only, HA + REGAL IR, and HA+REGAL IR+REGAL AG), as well as additional analyses by quartiles of per capita daily expenditure,[62] household hunger status (households reporting moderate to severe hunger and households reporting no hunger), and household poverty status (below and at or above the $1.25/day poverty line).

Social Capital in the ZOI

Table 47 shows the percentage of households that report relying on others during the 2011 drought, and of those households (n=678), the types of social networks upon which the households have relied. The final row of the table provides the average number of support sources reported by households that have relied on others during the last drought (n=678). Nearly half (45.0 percent) of all households affected by the last drought report relying on others for financial or in-kind food support during the drought. Of these households, relatives within the same village are the most common source of support (74.1 percent), followed by relatives outside the village (37.6 percent), and non-relatives within the same village (27.7 percent). On average the households report 1.6 total social support sources.

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[62] For more information on the method of expenditure quartile categorization, refer to Table 39.

The finding that more than half of the households (55.0 percent) report that they did not rely on others during the 2011 drought may be explained by stresses on localized social capital prior to the drought. This interpretation is supported by the Government of Kenya's PDNA, which found that drought impacts in 2011 were actually the manifestation of a drought period spanning 2008-2011.[63] As such, the after-effects of the 2008 drought, conflict, and other shocks may have left households with little to share. Future work should delve into this possible explanation further.

Table 47.   Households relying on others during the 2011 drought

Reliance on social capital	Baseline value	n
Percent of households able to rely on others during the last drought	**45.01**	**1,501[2]**
Types of social networks (%)[1]		
Relatives in my village/community	74.14	678
Relatives outside my village/community	37.55	678
Non-relatives in my village/community	27.72	678
Non-relatives outside my village/community	10.75	678
Non-relatives outside of my tribe/ethnic group	7.14	678
Mean number of social support sources (std dev)	**1.57 (0.91)**	**678**

[1] Percentages sum to more than 100 because respondents could choose multiple responses.

[2] This is the subsample of households reporting that they were affected by the 2011 drought.

Source: FTF FEEDBACK PBS. January 2013.

Table 48 shows that among the households reporting reliance on others for financial and in-kind support during the last drought (n=678), 67.9 percent rely on other households because of reciprocal obligations and 30.7 percent because of religious or kin based obligations.

Table 48.   Reasons for households relying on others during the 2011 drought

Why do they allow your household to rely on them?[1]	%	n[2]
Their obligation – religious or kin based	30.68	678
They rely on me – reciprocal obligation	67.93	678
Other	7.97	678

[1] Percentages sum to more than 100 because respondents could choose multiple responses.

[2] This is the subsample of households that were affected by the last drought and report reliance on others.

Source: FTF FEEDBACK PBS. January 2013.

Social Capital in USAID Intervention Areas

Table 49 compares households relying on others during the 2011 drought and types of social networks across USAID intervention areas. The subsample includes all households that were affected by the last drought for which there are data on intervention areas (n=1,501). Overall, more households in the HA+REGAL IR area (57.2 percent) than the HA only area (41.3 percent) or the HA+REGAL IR+REGAL AG area (32.7 percent) report being able to rely on others during the last drought.

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[63] USAID. 2012b.

Table 49.   Households relying on others during the 2011 drought, by USAID intervention area

	HA only		HA + REGAL IR		HA + REGAL IR + REGAL AG	
	Baseline value	n	Baseline value	n	Baseline value	n
Reliance on social capital						
Percent of households able to rely on others during the last drought	41.29[a]	469	57.17[a]	487	32.69[a]	545
Types of social networks (%)[1]						
Relatives in my village/community	72.08	209	75.33	279	74.49	190
Relatives outside my village/community	30.49[a]	209	43.66[a]	279	33.60	190
Non-relatives in my village/community	13.49[b]	209	38.33[bc]	279	24.00[c]	190
Non-relatives outside my village/community	6.06[d]	209	15.87[de]	279	5.47[e]	190
Non-relatives outside of my tribe/ethnic group	5.13	209	7.96	279	8.33	190
Mean number of social support sources (std dev)	1.27[a] (0.62)	209	1.81[ab] (1.05)	279	1.46[b] (0.73)	190

[a-e] Subgroups with the same superscript are significantly different at the 0.05 level. Comparisons are across columns only.

[1] Percentages sum to more than 100 because respondents could choose multiple responses.

Source: FTF FEEDBACK PBS. January 2013.

Of the households that report reliance on others during the last drought (n=678), the HA+REGAL IR area households are most likely to rely on relatives outside the village (43.7 percent), non-relatives in the village (38.3 percent), and non-relatives outside the village (15.9 percent). In all intervention areas, relatives in the village are the most common source of support. The HA+REGAL IR area households also report a higher average number of support sources (1.8) compared to HA only (1.3) and HA+REGAL IR+REGAL AG (1.5) households.

Table 50 shows that the reasons for relying on others vary across USAID intervention areas. In the HA + REGAL IR area, fewer households (22.7 percent) report relying on others because of religious or kin based obligations than in the HA only (33.4 percent) and HA+REGAL IR +REGAL AG (45.7 percent) areas. Additionally, in the HA+REGAL IR area three-quarters (75.5 percent) of households report reciprocal obligations, as compared to the HA only (62.0 percent) and the HA+REGAL IR +REGAL AG (59.4 percent) areas.

Table 50. **Reasons for households relying on others during the 2011 drought, by USAID intervention areas**

Why do they allow your household to rely on them?[1]	HA only		HA + REGAL IR		HA + REGAL IR + REGAL AG	
	%	n[2]	%	n[2]	%	n[2]
Their obligation – religious or kin based	33.42[a]	201	22.66[ab]	279	45.73[b]	190
They rely on me – reciprocal obligation	62.01[c]	201	75.45[cd]	279	59.36[d]	190
Other	8.54	201	7.13	279	7.97	190

[a-d] Subgroups with the same superscript are significantly different at the 0.05 level. Comparisons are across columns only.

[1] Percentages sum to more than 100 because respondents could choose multiple responses.

[2] This is the subsample of households that were affected by the last drought and report reliance on others, and for which there are data on intervention areas and the module questions on reasons for reliance (8 missing cases).

Source: FTF FEEDBACK PBS. January 2013.

Social Capital and Household Expenditures

Table 51 shows households relying on others during the 2011 drought by expenditure quartiles. The subsample includes all households that were affected by the last drought for which there are data on expenditures (n=1,481). Over half (58.4 percent) of households in the lowest expenditure quartile report that they were able to rely on others during the last drought, which is significantly more than every other expenditure quartile (46.8 percent of the second quartile, 34.6 percent of the third quartile, and 37.5 percent of the fourth quartile).

Of all the households that report relying on others (n=659), households in the lowest expenditure quartile are also more likely to rely on non-relatives in the village (33.6 percent) than households in every other expenditure quartile (i.e., 24.2 percent in the second quartile, 18.5 percent in the third quartile, and 21.2 percent in the fourth quartile). For the average number of social support sources, households in the lowest quartile report more sources of support (1.8) on average compared to the other quartiles (1.5, 1.4, 1.5, respectively).

Table 51.   Households relying on others during the 2011 drought, by expenditure quartiles

Reliance on social capital	Expenditure quartiles (USD)							
	1		2		3		4	
	Baseline value	n	Baseline value	n	Baseline value	n	Baseline value	n
Percent of households able to rely on others during last drought	**58.38[abc]**	**415**	**46.81[a]**	**403**	**34.55[b]**	**365**	**37.50[c]**	**298**
Types of social networks (%)[1]								
Relatives in my village/community	74.45	235	73.63	182	77.78[a]	132	66.10[a]	110
Relatives outside my village/community	43.83	235	39.01	182	35.56	132	35.59	110
Non-relatives in my village/community	33.62[bcd]	235	24.18[b]	182	18.52[c]	132	21.19[d]	110
Non-relatives outside my village/community	14.04[e]	235	7.14	182	4.44[e]	132	8.47	110
Non-relatives outside of my tribe/ethnic group	6.09	235	6.04	182	3.70	132	8.47	110
Mean number of social support sources (std dev)	**1.80[abc] (1.08)**	**235**	**1.50[a] (0.71)**	**182**	**1.37[b] (0.67)**	**132**	**1.48[c] (0.85)**	**110**

[a-e] Subgroups with the same superscript are significantly different at the 0.05 level. Comparisons are across columns only.

[1] Percentages sum to more than 100 because respondents could choose multiple responses.

Source: FTF FEEDBACK PBS. January 2013.

NOTE: Analyses comparing bottom and top expenditure deciles showed fewer significant differences. Compared to households in the top decile, a larger share of households in the bottom decile relied on others during the last drought. There were no significant differences between deciles in types of social networks.

Table 52 shows the reasons for relying on others by expenditure quartiles. The data show no significant differences across expenditure quartiles.

Table 52.   Reasons for households relying on others during the 2011 drought, by expenditure quartile

	Expenditure quartiles (USD)							
	1		2		3		4	
Why do they allow your household to rely on them?[1]	**%**	**n**[2]	**%**	**n**[2]	**%**	**n**[2]	**%**	**n**[2]
Their obligation – religious or kin based	27.64	235	30.07	182	33.93	135	34.89	118
They rely on me – reciprocal obligation	68.42	235	71.82	182	61.48	135	66.14	118
Other	6.38	235	7.69	182	8.89	135	7.63	118

[1] Percentages sum to more than 100 because respondents could choose multiple responses.

[2] This is the subsample of households that were affected by the last drought and report reliance on others, and for which there are data on expenditures as well as the module questions on reasons for reliance.

Source: FTF FEEDBACK PBS. January 2013

NOTE: Analyses comparing bottom and top expenditure deciles also did not show significant differences.

Social Capital and Household Hunger

Table 53 shows household reliance on others during the 2011 drought by household hunger status. The subsample includes all households that were affected by the last drought for which there are data on household hunger (n=1,328). Households with moderate to severe hunger are more likely to report relying on others during the last drought (54.6 percent) than households with no hunger (32.6 percent).

Of all households relying on others during the last drought (n=604), households with moderate or severe hunger are more likely to rely on relatives and sources within the village, while households with no hunger are more likely to rely on sources outside the village. Households reporting moderate or severe hunger also rely on more support sources (1.6) on average than households reporting no hunger (1.5).

Table 53. Households relying on others during the 2011 drought, by household hunger status

Reliance on social capital	Moderate or severe household hunger		No household hunger	
	Baseline value	n	Baseline value	n
Percent of households able to rely on others during the last drought	54.58[a]	**795**	32.64[a]	**533**
Types of social networks (%)[1]				
Relatives in my village/community	75.32[a]	425	72.70[a]	179
Relatives outside my village/community	40.59[b]	425	34.00[b]	179
Non-relatives in my village/community	28.76[c]	425	21.48[c]	179
Non-relatives outside my village/community	10.73[d]	425	12.15[d]	179
Non-relatives outside of my tribe/ethnic group	6.75[e]	425	7.32[e]	179
Mean number of social support sources (std dev)	**1.62[a] (0.96)**	**425**	**1.48[a] (0.91)**	**179**

[a-e] Subgroups with the same superscript are significantly different at the 0.05 level. Comparisons are across columns.

[1] Percentages sum to more than 100 because respondents could choose multiple responses.

Source: FTF FEEDBACK PBS. January 2013.

Table 54 provides information related to the reasons why households rely on others by household hunger status. More households reporting no hunger (37.9 percent), compared to households reporting moderate to severe hunger (29.2 percent), indicate that they rely on others because of religious or kin-based obligations. Yet, households reporting moderate to severe hunger are more likely to receive support from others due to reciprocal obligations (70.4 percent), as compared to households reporting no hunger (60.7 percent).

Table 54. Reasons for households relying on others during the 2011 drought, by household hunger status

Why do they allow your household to rely on them?[1]	Moderate or severe household hunger		No household hunger	
	%	n[2]	%	n[2]
Their obligation – religious or kin based	29.23[a]	425	37.89[a]	179
They rely on me – reciprocal obligation	70.40[b]	425	60.74[b]	179
Other	7.51	425	7.03	179

[a,b] Subgroups with the same superscript are significantly different at the 0.05 level. Comparisons are across columns.

[1] Percentages sum to more than 100 because respondents could choose multiple responses.

[2] This is the subsample of households that were affected by the last drought and report reliance on others, and for which there are data on household hunger as well as the module questions on reasons for reliance.

Source: FTF FEEDBACK PBS. January 2013.

Social Capital and Household Poverty

Table 55 shows further analysis of household reliance on others during the last drought in relation to household poverty status (below and at or above the $1.25 per day poverty line [2005 PPP]). The subsample includes all households that were affected by the last drought for which there are data on household poverty (n=1,481). Just over half (52.7 percent) of households below the poverty line

report reliance on others during the last drought, compared to 36.7 percent of households at or above the poverty line.

As a general trend, households below the poverty line appear to be more likely to rely on every type of social network than households at or above the poverty line, with significant differences for the social networks involving non-relatives (n=670). Households below the poverty line also report more social support sources on average (1.7) than households at or above the poverty line (1.4).

Table 55. **Households relying on others during the 2011 drought, by household poverty status**

Reliance on social capital	Below poverty line		At or above poverty line	
	Baseline value	n	Baseline value	n
Percent of households able to rely on others during the last drought	52.73[a]	792	36.69[a]	689
Types of social networks (%)[1]				
Relatives in my village/community	74.88	403	72.46	267
Relatives outside my village/community	40.43	403	33.26	267
Non-relatives in my village/community	32.19[a]	403	20.72[a]	267
Non-relatives outside my village/community	12.92[b]	403	7.52[b]	267
Non-relatives outside of my tribe/ethnic group	7.97[c]	403	6.11[c]	267
Mean number of social support sources (std dev)	1.69[a] (0.75)	403	1.42[a] (0.98)	267

[a-c] Subgroups with the same superscript are significantly different at the 0.05 level. Comparisons are across columns.

[1] Percentages sum to more than 100 because respondents could choose multiple responses.

Source: FTF FEEDBACK PBS. January 2013.

Table 56 provides information related to the reasons why households rely on others by household poverty status (below and at or above the $1.25 per day poverty line). The data show no significant differences in perceived reasons for provision of social support by household poverty status.

Table 56. **Reasons for households relying on others during the 2011 drought, by household poverty status**

Why do they allow your household to rely on them?[1]	Below poverty line		At or above poverty line	
	%	n[2]	%	n[2]
Their obligation – religious or kin based	29.08	403	33.47	267
They rely on me – reciprocal obligation	69.46	403	64.62	267
Other	7.56	403	8.84	267

There are no significant differences across subgroups at the 0.05 level. Comparisons are across columns.

[1] Percentages sum to more than 100 because respondents could choose multiple responses.

[2] This is the subsample of households that were affected by the last drought and report reliance on others, and for which there are data on household poverty as well as the module questions on reasons for reliance.

Source: FTF FEEDBACK PBS. January 2013.

Summary of Key Findings on Social Capital

In sum, less than half of the ZOI households that were affected by the 2011 drought report relying on others for financial or in-kind support during the drought. Of those households that did rely on others, the main source of support is relatives in the same village. A smaller number of households also report relying on relatives outside the village and non-relatives in the village. This support is more attributable to perceived reciprocal obligations rather than to perceived religious or kin-based obligations. Significantly, more than half of the households affected by the drought did not rely on others. This finding may be explained by the fact that social support has been dramatically affected by continuous drought episodes in the region since 2008. These compounding shocks have likely eroded social capital in the USAID intervention areas.

With respect to differences between USAID intervention areas, more households in the HA+REGAL IR area are able to depend on others and have more support sources on average than the other two intervention areas. Reciprocal obligation is the dominant reason for support across areas, particularly for the HA+REGAL IR area. This difference across USAID intervention areas indicates that social capital may be stronger in the HA+REGAL IR area than in the other areas. This finding should be further investigated in follow-up work.

Poorer households (i.e., households with the lowest expenditures and those below the poverty line) are considerably more dependent on social support than wealthier households. Interestingly, the types of social networks upon which poorer household rely more often are non-relatives both within and outside the village. Similarly, households experiencing hunger (moderate to severe) are more likely to rely on social support than households with no hunger. Thus, these informal safety nets are very important for these poorer and hunger-prone households.

4.2.3 Adaptive Capacity

Adaptive capacity is "the ability to make proactive and informed choices about alternative livelihood strategies based on changing conditions."[64] Households with strong adaptive capacity often diversify their livelihoods and adapt their farming and pastoral systems to climate change.[65] This section of the resilience module in the baseline PBS provides information on the self-assessed adaptive and coping strategies of households, in particular, perceptions related to: recovery from the last drought, ability to cope with future drought or stress times, household strategies (adaptive and coping) employed to cope with future periods of stress, and destiny as a factor of personal success or failure. Destiny information is included here because perceiving that one has little control over one's future has been highly correlated with recurrent droughts in other studies in the Horn of Africa.[66]

The following findings are related to adaptive livelihood strategies, while the subsequent section provides more information on household asset holdings. The adaptive capacity results are presented for the overall ZOI and for the three USAID intervention areas (HA only, HA+REGAL IR, and HA+REGAL IR+REGAL AG), as well as additional analyses by quartiles of per capita daily expenditure,[67] household hunger status (households reporting moderate to severe hunger and households reporting no hunger), and household poverty status (below and above the $1.25 per day poverty line).

Adaptive Capacity in the ZOI

Table 57 reports household perceptions of recovery since the 2011 drought (n=1,738). Nearly one-third (31.3 percent) of households in the ZOI report that they have been unable to recover at all from the last drought, whereas about one in five households have recovered some (21.2 percent) or have recovered to the pre-drought level (20.5 percent). One in 10 households (9.8 percent) have recovered and are better off than before the drought, and 17.2 percent of households report they were not affected by the last drought.

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[64] Frankenberger, et al. 2012.
[65] Béné et al. 2010.
[66] Ibid.
[67] For more information on the method of expenditure quartile categorization, refer to Table 39.

Table 57.   Household recovery from 2011 drought

	%	n
Household ability to recover from last drought		
Did not recover	31.29[a]	1,738
Recovered some, but worse off than before drought	21.24[a]	1,738
Recovered to same level as before drought	20.48[a]	1,738
Recovered and better off	9.83[a]	1,738
Not affected by drought	17.16[a]	1,738

[a]   Subgroups with the same superscript are significantly different at the 0.05 level. Comparisons are across rows.

Source: FTF FEEDBACK PBS. January 2013.

Table 58 shows household adaptive capacity related to future drought or stress. First, households reported their perceived ability to cope with and manage future times of drought or stress. Four out of 10 households (40.8 percent) in the ZOI report that they will be unable to cope in a future drought, while 38.8 percent may be able to cope if changes are made to income and food sources, and 20.4 percent report being able to cope without difficulty.

Overall, a small share of households has made proactive livelihood adaptions to cope with future drought or stress (23.5 percent, n=1726). As shown in Table 58, of the households that have made changes (n=387), the most common adaption is to change food or income sources (62.3 percent) followed by adding income or food sources (22.5 percent).

The next dimension of adaptive capacity is household member beliefs around future success or failure based on destiny (i.e., the aspiration and fatalism category). In this survey, aspirations represent the attitudes of household members regarding how responsible they feel they are for their successes and failures, as well as how household members visualize the future and engage in forward-looking behaviors.[68, 69] As shown in Table 58, about two-thirds of households (68.4 percent) in the ZOI (n=1,738) believe that each person's future is a matter of destiny, compared with 31.5 percent of households that believe each person is responsible for their future success or failure.

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[68] Rao and Walton (editors). 2004.
[69] Appadurai. 2004.

Table 58. Household adaptive capacity

	%	n
Households' ability to cope with and manage through future droughts or stresses		
Unable to cope	40.83[a]	1,738
Able to cope, with changes in income and food sources	38.77[a]	1,738
Able to cope without difficulty	20.40[a]	1,738
Types of adaptations[1]		
Changed income or food sources	62.27	387
Added income or food sources	22.48	387
Increased use of existing income or food sources	14.99	387
Increased savings or other assets	10.59	387
Migration of one or more household member	12.66	387
Household views on destiny		
Each person is responsible for their own success or failure	31.45[a]	1,738
Each person's future is a matter of destiny	68.44[a]	1,738

[a] Subgroups with the same superscript are significantly different at the 0.05 level. Comparisons are across rows.

[1] Respondents could choose multiples responses. Tests of statistical significance were not conducted because observations are not independent.

Source: FTF FEEDBACK PBS. January 2013.

Adaptive Capacity in USAID Intervention Areas

Table 59 shows household recovery from the 2011 drought by USAID intervention areas. The subsample includes all households for which there are data on intervention areas (n=1,738). The HA only area has the smallest percentage of households reporting that they did not recover from the 2011 drought (24.8 percent), as compared to 37.4 percent of households in the HA+REGAL IR and 31.8 percent in the HA+REGAL IR+REGAL AG areas. The HA only area was also most likely to report not being affected by the last drought (23.4 percent), as compared to 14.9 percent of households in the HA+REGAL IR and 11.6 percent in the HA+REGAL IR+REGAL AG areas. Among the REGAL intervention areas, more HA+REGAL IR+REGAL AG households reported being able to recover to a level that is better off (12.8 percent) in comparison to HA+REGAL IR households (7.9 percent).

Table 59.   Household recovery from 2011 drought, by USAID intervention areas

	HA only		HA+REGAL IR		HA+REGAL IR+REGAL AG	
	%	n	%	n	%	n
Households' ability to recover from last drought						
Did not recover	24.75[ab]	579	37.40[a]	565	31.82[b]	594
Recovered some, but worse off than before drought	18.60	579	21.44	565	24.73	594
Recovered to same level as before drought	23.56	579	18.41	565	19.05	594
Recovered and better off	9.72	579	7.89[c]	565	12.81[c]	594
Not affected by drought	23.37[de]	579	14.87[d]	565	11.59[e]	594

[a-e] Subgroups with the same superscript are significantly different at the 0.05 level.

Source: FTF FEEDBACK PBS. January 2013.

As shown in Table 60, when asked about households' ability to cope with future drought or stress, the HA only area has the smallest proportion of households reporting an inability to cope (30.8 percent) and the largest proportion reporting the ability to cope without difficulty (25.1 percent), as compared to the HA+REGAL IR (45.5 percent and 18.1 percent, respectively) and the HA+REGAL IR+REGAL AG (48.4 percent and 17.1 percent, respectively) areas.

The data in Table 60 also show that more households in the HA only area (29.3 percent) than the HA+REGAL+IR and HA+REGAL IR+REGAL AG areas (20.3 percent and 19.7 percent, respectively) have made pro-active changes to their livelihood sources to cope with future drought or stress. Some livelihoods adaptations that have been made by households vary across interventions areas (n=387). For instance, of households that report making any changes, 31.6 percent of households in the HA only area have added income or food sources, which is a strategy employed by only 20.9 percent of household in the HA+REGAL+IR and 8.9 percent in the HA+REGAL IR+REGAL AG areas.

Table 60 also shows that households in the HA only area are more likely to believe their future is their responsibility and less a part of destiny than households in the other two areas. Specifically, more than half (52.7 percent) of households in the HA only area believe their future success or failure is their responsibility compared to just 20.4 percent in the HA+REGAL IR and 17.7 percent in the HA+REGAL IR+REGAL AG areas.

Table 60.   Household adaptive capacity, by USAID intervention areas

	HA only		HA+REGAL IR		HA+REGAL IR+REGAL AG	
	%	n	%	n	%	n
Households' ability to cope with and manage through future droughts or stresses						
Unable to cope	30.77[ab]	579	45.54[a]	565	48.42[b]	594
Able to cope, with changes in income and food sources	44.19[cd]	579	36.38[c]	565	34.48[d]	594
Able to cope without difficulty	25.05[ef]	579	18.08[e]	565	17.10[f]	594
Households who have made proactive adaptions to livelihood sources						
Households who have made pro-active adaptions to livelihood sources	29.29[ab]	575	20.28[a]	559	19.74[b]	592
Types of adaptations[1]						
Changed income or food sources	57.89	171	66.09	115	11.91	101
Added income or food sources	31.58[a]	171	20.87[b]	115	8.91[ab]	101
Increased use of existing income or food sources	12.28	171	20.87	115	12.87	101
Increased savings or other assets	5.26[cd]	171	14.78[c]	115	14.85[d]	101
Migration of one or more household members	9.36	171	19.13	115	10.89	101
Household views on destiny						
Each person is responsible for their own success or failure	52.74[ab]	579	20.42[a]	565	17.72[b]	594
Each person's future is a matter of destiny	47.26[cd]	579	79.58[c]	565	82.28[d]	594

[a-f] Subgroups with the same superscript are significantly different at the 0.05 level.

[1] Percentages sum to more than 100 because respondents could choose multiple responses.

Source: FTF FEEDBACK PBS. January 2013.

Adaptive Capacity and Household Expenditures

For the tables that follow, Table 61 shows household recovery from the 2011 drought by expenditure quartiles, and Table 62 shows household adaptive capacity by expenditure quartiles. The subsample includes all households for which there are data on expenditures (n=1,715).

Households in the lowest expenditure quartile are more likely to have not recovered from the 2011 drought (49.4 percent), as well as least likely to have recovered to the same level (14.4 percent) or a level that is better off (3.6 percent) than before the drought, as compared to the other expenditure quartiles (Table 61). Not surprisingly, households in the highest expenditure quartile are more likely to report not having been affected by the last drought (36.4 percent); yet, only 3.5 percent of households in the lowest expenditure quartile report that they were not affected.

Similarly, significantly more households in the lowest expenditure quartile do not perceive their households as able to cope with a future drought or stress (64.1 percent) compared to the other quartiles (Table 62). Not surprisingly, households in the highest expenditure quartile are more likely than those in the other expenditure quartiles to be able to cope with future drought or stress without significant cost (34.1 percent).

Table 61.   Household recovery from 2011 drought, by expenditure quartiles

	Expenditure quartiles (USD)							
	1		2		3		4	
	%	n	%	n	%	n	%	n
Households' ability to recover from the last drought								
Did not recover	49.44[a]	426	36.29[a]	430	26.78[a]	428	15.26[a]	431
Recovered some, but worse off than before drought	29.05[d]	426	26.13[c]	430	18.90[b]	428	12.74[bcd]	431
Recovered to same level as before drought	14.44[efg]	426	22.06[e]	430	24.15[f]	428	21.88[g]	431
Recovered and better off	3.60[hij]	426	8.37[h]	430	13.17[hij]	428	13.71[hi]	431
Not affected by drought	3.47[k]	426	7.14[i]	430	17.00[kl]	428	36.41[kl]	431

[a-l] Subgroups with the same superscript are significantly different at the 0.05 level. Comparisons are across columns only.

Source: FTF FEEDBACK PBS. January 2013.

NOTE: Analyses comparing bottom and top expenditure deciles shows the same pattern as expenditure quartiles. A larger share of households in the bottom decile report being unable to recover or able to recover somewhat; and a smaller share report being able to recover to the same level, recover and better off, or were not affected.

Table 62.   Household adaptive capacity, by expenditure quartiles

	Expenditure quartiles (USD)							
	1		2		3		4	
	%	n	%	n	%	n	%	n
Households' ability to cope with future droughts or stresses								
Unable to cope	64.07ᵃ	426	46.77ᵃ	430	37.32ᵃ	428	19.45ᵃ	431
Able to cope at significant cost to well-being	26.03ᵇᶜᵈ	426	40.04ᵇ	430	40.65ᶜ	428	46.48ᵈ	431
Able to cope without significant cost	9.89ᵉ	426	13.19ᶠ	430	22.03ᵉᶠ	428	34.08ᵉᶠ	431
Households who have made proactive adaptions to livelihood sources								
Household changed livelihoods to cope with future	14.89ᵃᵇᶜ	426	23.86ᵃ	430	26.09ᵇ	428	28.36ᶜ	431
Types of adaptations[1]								
Changed income or food sources	63.48	62	70.78	92	60.87	106	55.92	122
Added income or food sources	15.91	62	20.53	92	25.44	106	21.61	122
Increased use of existing income or food sources	7.02	62	14.80	92	17.78	106	15.57	122
Increased savings or other assets	0.00ᵃᵇᶜ	62	8.76ᵃ	92	10.44ᵇ	106	20.07ᶜ	122
Migration of one or more household members	41.76ᵈᵉ	62	7.32ᵈ	92	3.68ᵉ	106	10.21	122
Households' views on destiny								
Each person responsible for his or her own success	17.84ᵃ	426	25.20ᵇ	430	36.09ᵃᵇ	428	44.80ᵃᵇ	431
Each person's future is destiny	82.16ᶜ	426	74.80ᶜ	430	63.91ᶜ	428	55.20ᶜ	431

ᵃ⁻ᶠ Subgroups with the same superscript are significantly different at the 0.05 level. Comparisons are across columns only.

[1] Percentages do not sum to 100 because respondents could choose multiple responses.

Source: FTF FEEDBACK PBS. January 2013.

NOTE: Analyses comparing bottom and top expenditure deciles showed similar patterns as the quartile analysis. Household views on their ability to cope, whether or not they made adaptions, and destiny differed significantly between bottom and top deciles. Of the types of adaptations, only increased savings or other assets and migration of one or more family members differed significantly.

The poorest households (i.e., those in the first expenditure quartile) are also least likely to have made changes to cope with future drought or stress (14.9 percent), which increases to 28.4 percent of households in the highest quartile (Table 62). Of the households that have changed livelihoods to cope with future drought or stress (n=382), 41.8 percent in the first expenditure quartile have made the adaptation of sending household members elsewhere to work or live, which compares to 7.3 percent in the second quartile and just 3.7 percent in the third quartile. As compared to households in the lowest expenditure quartile (0.0 percent), households in the highest expenditure quartile are most likely to cope with future stress by increasing savings or assets (20.1 percent).

Also shown in Table 62 is the trend that poorer households believe their future is guided by destiny. Households in the lowest expenditure quartile (82.2 percent) are most likely to believe that each person's future is determined by destiny, which decreases across higher expenditure quartiles to 55.2 percent in the highest expenditure quartile.

Adaptive Capacity and Household Hunger

Table 63 compares household recovery from the 2011 drought with household hunger status. The subsample includes all households for which there are data on household hunger (n=1,532). Overall, households with moderate to severe hunger have made less recovery progress since the 2011 drought than households with no hunger. Specifically, households with hunger are more likely to report that they did not recover (44.5 percent) or that they recovered some but are worse off than before the drought (25.1 percent), as compared to households with no hunger (16.8 and 17.1 percent, respectively). The pattern is reversed in households reporting no hunger, which are more likely to report that they recovered and are better off (13.0 percent) or at least recovered to the same level as before the drought (23.0 percent), as compared to households with hunger (7.0 and 18.8 percent, respectively). Households with no hunger are also more likely to report that they were not affected by the drought (30.1 percent); this value is just 4.7 percent among households with hunger.

Table 63.   Household recovery from 2011 drought, by household hunger status

	Moderate or severe household hunger		No household hunger	
	%	n	%	n
Households' ability to recover from the last drought				
Did not recover	44.48[a]	823	16.84[a]	709
Recovered some, but worse off than before drought	25.06[b]	823	17.13[b]	709
Recovered to same level as before drought	18.76[c]	823	22.99[c]	709
Recovered and better off	7.03[d]	823	12.95[d]	709
Not affected by drought	4.68[e]	823	30.09[e]	709

[a-e] Subgroups with the same superscript are significantly different at the 0.05 level. Comparisons are across columns.

Source: FTF FEEDBACK PBS. January 2013.

Table 64 provides information about households' adaptive capacity by household hunger status. One in 10 households (10.4 percent) experiencing moderate to severe hunger is able to cope with future stress without significant cost to their well-being, as compared to 30.1 percent of households with no hunger. In fact, over half (56.2 percent) of households with moderate to severe hunger report that they would be unable to cope at all, which compares to a quarter (25.1 percent) of households with no hunger.

In terms of proactive livelihood changes to cope with future drought or stress, households with no hunger are more likely to have made changes (26.6 percent) than households with moderate to severe hunger (19.3 percent)(Table 64). Of the households that report making changes (n=332), modifying income/food sources is the most common change across both household hunger categories. Households with no hunger are more likely to add income/food sources (24.9 percent) and increase savings or other assets (14.9 percent) compared to households with moderate to severe hunger (15.6 and 4.6 percent, respectively). Yet, households with moderate to severe hunger are more likely to have family members migrate (19.9 percent) than households with no hunger (6.6 percent).

Household beliefs on destiny also vary between households with no hunger and households with moderate to severe hunger (Table 64). Just over three-quarters (76.1 percent) of households with hunger report that the future is a matter of destiny, which compares to 59.6 percent of households with no hunger.

Table 64. Household adaptive capacity, by household hunger status

	Moderate or severe household hunger		No household hunger	
	%	n	%	n
Households' ability to cope with future drought or stresses				
Unable to cope	56.16[a]	823	25.13[a]	709
Able to cope at significant cost to well-being	33.43[b]	823	44.80[b]	709
Able to cope without significant cost to well-being	10.42[c]	823	30.07[c]	709
Households who have made proactive adaptions to livelihood sources				
Household changed livelihoods to cope with future	19.31[a]	819	26.61[a]	703
Types of adaptations[1]				
Changed income or food sources	70.86	151	55.80	181
Added income or food sources	15.56[a]	151	24.86[a]	181
Increased use of existing income or food sources	9.27	151	17.13	181
Increased savings or other assets	4.64[b]	151	14.92[b]	181
Migration of one or more household members	19.87[c]	151	6.63[c]	181
Households' views on destiny				
Each person responsible for own success	23.92[a]	823	40.41[a]	709
Each person's future is destiny	76.08[b]	823	59.59[b]	709

[a-c] Subgroups with the same superscript are significantly different at the 0.05 level. Comparisons are across columns.

[1] Percentages do not sum to 100 because respondents could choose multiple responses.

Source: FTF FEEDBACK PBS. January 2013.

Adaptive Capacity and Household Poverty

Table 65 shows household recovery from the 2011 drought by households below and at or above the $1.25 per day poverty line. The subsample includes all households for which there are data on household poverty (n=1,715). A similar pattern is seen as reported previously for household hunger (see Table 63). Households below the poverty line are more likely to report that they did not recover (42.7 percent) compared to households above the poverty line (21.4 percent). Not surprisingly, households above the poverty line are more likely to report that they were not affected by the drought (27.0 percent) in comparison to poor households (5.2 percent).

Table 65.   Household recovery from 2011 drought, by household poverty status

	Below poverty line		At or above poverty line	
	%	n	%	n
Households' ability to recover from the last drought				
Did not recover	42.66[a]	829	21.43[a]	886
Recovered some, but worse off than before drought	27.80[b]	829	15.73[b]	886
Recovered to same level as before drought	18.33[c]	829	22.65[c]	886
Recovered and better off	5.97[d]	829	13.23[d]	886
Not affected by drought	5.24[e]	829	26.96[e]	886

[a-e] Subgroups with the same superscript are significantly different at the 0.05 level. Comparisons are across columns.

Source: FTF FEEDBACK PBS. January 2013.

Table 66 shows that over half (55.9 percent) of households below the poverty line report that they are unable to cope with a future drought or stress. This is almost twice the share of households at or above the poverty line reporting that they are unable to cope (28.1 percent). Accordingly, households below the poverty line are less likely (19.3 percent) than households at or above the poverty line (28.8 percent) to have made pro-active changes to livelihood activities in order to cope with future periods of stress. Of the households that report making changes (n=382), the most common adaptation for all households is changing food or income sources. There are some variations in the types of household adaptations by household poverty status. More households at or above the poverty line have added income or food sources (23.1 percent), increased use of existing income or food sources (16.2 percent), and increased use of savings or other assets (15.6 percent), as compared to poor households (18.8, 12.1, 5.5 percent, respectively). However, migration of household members is a coping strategy used more often by poor households (20.1 percent) than households at or above the poverty line (8.2 percent).

Regarding views on destiny (Table 66), more households below the poverty line (78.6 percent) hold the belief that their future is a matter of destiny than do households above the poverty line (59.6 percent).

Table 66.   Household adaptive capacity, by household poverty status

	Below poverty line		At or above poverty line	
	%	**n**	**%**	**n**
Households' ability to cope with future drought or stresses				
Unable to cope	55.91[a]	829	28.13[a]	886
Able to cope at significant cost to well-being	32.75[b]	829	43.63[b]	886
Able to cope without significant cost	11.35[c]	829	28.25[c]	886
Households who have made proactive adaptions to livelihood sources				
Household changed livelihoods to cope with future stress	19.30[a]	823	28.76[a]	880
Types of adaptations[1]				
Changed income or food sources	68.40	148	57.93	234
Added income or food sources	18.82[a]	148	23.09[a]	234
Increased use of existing income or food sources	12.11[b]	148	16.19[b]	234
Increased savings or other assets	5.47[c]	148	15.62[c]	234
Migration of one or more household members	20.06[d]	148	8.21[d]	234
Household views on destiny				
Each person is responsible for his/her own success	21.37[a]	829	40.36[a]	886
A person's future is destiny	78.63[b]	829	59.61[b]	886

[a-d] Subgroups with the same superscript are significantly different at the 0.05 level. Comparisons are across columns.

[1]   Percentages do not sum to 100 because respondents could choose multiple responses.

Source: FTF FEEDBACK PBS. January 2013.

Summary of Key Findings on Adaptive Capacity

Nearly one third of the ZOI households that were affected by the 2011 drought have been unable to recover from the drought. Of the affected households, about four in 10 households report that they would be unable to cope with a future drought or stress time. However, nearly 40 percent of affected households report that they would be able to cope with future drought if changes are made to their sources of income or food. Only 20 percent of the affected households report that they would be able to cope with the next shock without difficulty. These perceptions of vulnerability are important to consider in assessing the potential impact of interventions on resilience.

The HA only area has the smallest share of households reporting that they did not recover from the last drought, as well as more households reporting that they were not affected by the drought, as compared to the other USAID intervention areas. Similar trends are found for the ability to cope with future droughts. Again, this finding indicates that the HA only are may be less vulnerable than the other two USAID intervention areas.

Additionally, more than two-thirds of ZOI households believe that each person's future is a matter of destiny. Only one-third of the ZOI households believe that each person is responsible for their future success. In terms of USAID intervention areas, the HA only area has the largest proportion of households that believe their future is their responsibility, more than double the other intervention areas. This difference could have important implications for programming, such as those that may affect the rate of adoption of interventions promoted in the HA+REGAL IR and HA+ REGAL IR+REGAL AG areas.

Poorer households (i.e., households with the lowest expenditures and below the poverty line) are less likely to report that they have recovered from the last drought than wealthier households. Similarly, households with moderate to severe hunger are also more likely to report that they did not recover from the last drought, as compared to households with no hunger. In addition, most of the poorest households believe that their future is guided by destiny, and high proportions of households with hunger also report this belief. More than half of the better-off households and households with no hunger also believe that their future is guided by destiny. Again, these perceptions of responsibility for one's future may have an effect on intervention adoption rates and should be considered.

4.2.4　　Asset Sales and Recovery

The second part of the adaptive capacity questions cover household asset sales in the 12 months prior to the survey to meet household food and non-food needs and the ability of households to recover or repurchase the assets. Whereas adaptive strategies covering livelihood changes were previously discussed, the following findings involve changes over time in household asset holdings (large and small). Large assets include livestock, land or other major productive assets, and the change over time excludes routine livestock sales. Small assets include possessions like a phone or a bicycle.

The asset sales/recovery results are presented for the overall ZOI and for the three USAID intervention areas (HA only, HA + REGAL IR, and HA+REGAL IR+REGAL AG), as well as additional analyses by quartiles of per capita daily expenditure,[70] household hunger status (households reporting moderate to severe hunger and households reporting no hunger), and household poverty status (below and at or above the $1.25 per day poverty line).

Asset Sales/Recovery in the ZOI

Table 67 and Table 68 report the share of households in the ZOI that sold large and small assets as a result of the last drought to cope with the stress or shock and their ability to recover those assets. It should be noted that the subsample begins with those households reporting they were affected by the last drought (n=1,503 for large assets and n=1,502 for small assets).

One-third (33.0 percent) of ZOI households exposed to the drought report selling large assets to meet household food and non-food needs (Table 67). Of the households that report selling livestock or other large assets during the last drought (n=593), most (72.8 percent) have been unable to repurchase those assets, and only about one percent of households have been able to recover all of their assets.

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[70] For more information on the method of quartile categorization, refer to Table 39.

Table 67.   Large asset sales of households exposed to shock and ability to recover those assets

	%	n
Large productive asset sales		
Household sold livestock, land, or other large productive assets due to a shock	32.96	1,503
Large productive asset recovery		
Unable to recover/re-purchase large assets	72.81[a]	593
Able to recover/re-purchase some of large assets	26.08[a]	593
Able to recover/re-purchase all or more than all of large assets	1.11[a]	593

[a]   Subgroups with the same superscript are significantly different at the 0.05 level. Comparisons are across rows.

Source: FTF FEEDBACK PBS. January 2013.

Similarly, one-third (33.2 percent) of all ZOI households exposed to shock also report selling small assets to cope during the last drought. Of the households that report selling small assets during the last drought (n=594), about three out of four households (74.9 percent) are unable to recover any of the assets they sold.

Table 68.   Small asset sales of households exposed to shock and ability to recover those assets

	%	n
Small productive asset sales		
Household sold small productive assets due to a shock	33.23	1,502
Small productive asset recovery		
Unable to recover/re-purchase small assets	74.91[a]	594
Able to recover/re-purchase some of small assets	23.36[a]	594
Able to recover/re-purchase all or more than all of small assets	1.72[a]	594

[a]   Subgroups with the same superscript are significantly different at the 0.05 level. Comparisons are across rows.

Source: FTF FEEDBACK PBS. January 2013.

Asset Sales/Recovery in USAID Intervention Areas

Table 69 and Table 70 show that asset sales and recovery vary across USAID intervention areas. The subsample includes all households that were affected by the last drought for which there are data on intervention areas (n=1,503 for large assets and n=1,502 for small assets).

As shown in Table 69, more households exposed to shock in the HA only area report selling large assets (40.8 percent) compared to 27.9 percent of households in the HA+REGAL IR area and 30.3 percent of households in the HA+REGAL IR+REGAL AG. Of the households exposed to shock that report selling large assets (n=593), there are no statistically significant differences across intervention areas with respect to asset recovery. Most households (over 70 percent) across all three intervention areas report that they are unable to recover their large assets.

Table 69.   Large asset sales and recovery, by USAID intervention areas

| | HA only | | USAID intervention areas | | | |
| | | | HA+ REGAL IR | | HA+REGAL IR+ REGAL AG | |
Large productive asset sales	%	n	%	n	%	n
Household sold livestock, land, or other large productive assets due to a shock	40.79[ab]	469	27.93[a]	487	30.27[b]	547
Large productive asset recovery						
Unable to recover/re-purchase large assets	70.90	224	74.81	176	73.44	193
Able to recover/re-purchase some of large assets	27.18	224	24.64	176	26.12	193
Able to recover/re-purchase all or more than all of large assets	1.92	224	0.55	176	0.44	193

[a,b] Subgroups with the same superscript are significantly different at the 0.05 level. Comparisons are across columns.

Source: FTF FEEDBACK PBS. January 2013.

For small productive assets, more households in the HA only area report selling the assets (37.9 percent) than HA+REGAL IR+REGAL AG households (29.4 percent)(Table 70). Of the households exposed to shock that report selling small assets (n=594), only 3.1 percent of households in the HA only area are able to repurchase all small assets compared to no households (0.0 percent) in the HA+REGAL IR area.

Table 70.   Small asset sales and recovery, by USAID intervention areas

| | HA only | | USAID intervention areas | | | |
| | | | HA+ REGAL IR | | HA+REGAL IR+ REGAL AG | |
Small productive asset sales	%	n	%	n	%	n
Household sold small productive assets due to a shock	37.88[a]	468	31.83	487	29.44[a]	547
Small productive asset recovery						
Unable to recover/re-purchase small assets	72.90	211	80.56	190	69.63	193
Able to recover/re-purchase some of small assets	24.03	211	19.44	190	28.22	193
Able to recover/re-purchase all or more than all of small assets	3.07[a]	211	0.00[a]	190	2.14	193

[a] Subgroups with the same superscript are significantly different at the 0.05 level. Comparisons are across columns.

Source: FTF FEEDBACK PBS. January 2013.

Asset Sales/Recovery and Household Expenditures

Table 71 and Table 72 show household asset sales and recovery of households exposed to the last drought by expenditure quartiles. The subsample includes all households that were affected by the last drought for which there are data on expenditures (n=1,483 for large assets and n=1,482 for small assets).

Table 71.   Large asset sales and recovery, by expenditure quartiles

	Expenditure quartiles (USD)							
	1		2		3		4	
	%	n	%	n	%	n	%	n
Large productive asset sales								
Household sold livestock, land, or other large productive assets due to a shock	**28.71**	**414**	**35.39**	**403**	**37.88**	**366**	**28.82**	**300**
Large productive asset recovery								
Unable to repurchase or recover large assets	82.47[a]	152	71.43	158	71.73	163	62.48[a]	109
Able to repurchase or recover some large assets	15.69[b]	152	28.16	158	27.62	163	35.57[b]	109
Able to repurchase or recover all large assets	1.84	152	0.40	158	0.65	163	1.95	109

[a,b] Subgroups with the same superscript are significantly different at the 0.05 level. Comparisons are across columns only.

Source: FTF FEEDBACK PBS. January 2013.

NOTE: Analyses comparing bottom and top expenditure deciles showed no significant differences in whether a household sold assets (large or small), nor in households' ability to recover assets.

Table 72.   Small asset sales and recovery, by expenditure quartiles

	Expenditure quartiles (USD)							
Small productive asset sales	1		2		3		4	
	%	n	%	n	%	n	%	n
Household sold small productive assets due to a shock	**31.90**	**414**	**39.24**[a]	**402**	**32.66**	**366**	**27.96**[a]	**300**
Small productive asset recovery								
Unable to repurchase or recover small assets	81.05[a]	131	78.03	138	73.43	105	62.10[a]	71
Able to repurchase or recover some small assets	17.29[b]	131	21.51	138	24.96	105	33.85[b]	71
Able to repurchase or recover all small assets	1.66	131	0.46	138	1.61	105	4.04	71

[a,b] Subgroups with the same superscript are significantly different at the 0.05 level. Comparisons are across columns only.

Source: FTF FEEDBACK PBS. January 2013.

NOTE: Analyses comparing bottom and top expenditure deciles showed no significant differences in whether a household sold assets (large or small), nor in households' ability to recover assets

The data in Table 71 show that there are no significant differences between expenditure quartiles in the sale of large assets. Of the households exposed to shock that report selling large assets (n=582), a larger share of households in the lowest quartile (82.5 percent), as compared to the highest quartile (62.5 percent), has been unable to repurchase or recover their large assets. Accordingly, households in the highest expenditure quartile are more likely to have been able to recover some large assets (35.6 percent) as compared to15.7 percent of households in the lowest expenditure quartile.

Regarding small assets (Table 72), the second expenditure quartile households are more likely to sell small assets than the fourth expenditure quartile households (39.2 and 28.0 percent, respectively). Information related to the ability to recover small assets shows similar patterns to the recovery of large assets. Of the households exposed to shock that report selling small assets (n=445), households in the lowest expenditure quartile are less likely to recover some small assets (17.3 percent) and more likely to be unable to recover any small assets (81.1 percent), as compared to the highest expenditure quartile households (33.9 and 62.1 percent, respectively).

Asset Sales/Recovery and Household Hunger

Table 73 and Table 74 compare asset sales and recovery of households with no hunger to households with moderate to severe hunger. The subsample includes all households that report being affected by the last drought for which there are data on household hunger (n=1,327 for large assets and n=1,326 for small assets).

Table 73 shows that large asset sales by households affected by the last drought do not differ by household hunger status; yet of the households affected by the drought that report selling large assets to cope (n=538), more than three-quarters (77.7 percent) of households with moderate to severe hunger are unable to recover any large assets and just one in five households (21.5 percent) report recovering some large assets, as compared to households with no hunger (66.0 and 32.3 percent, respectively).

Table 73. Large asset sales and recovery, by household hunger status

	Moderate or severe household hunger		No household hunger	
	%	n	%	n
Large productive asset sales				
Household sold livestock, land, or other large productive assets due to a shock	34.49	794	34.45	533
Large productive asset recovery				
Unable to repurchase or recover large assets	77.66[a]	319	65.97[a]	219
Able to repurchase or recover some large assets	21.54[b]	319	32.33[b]	219
Able to repurchase or recover all large assets	0.81	319	1.71	219

[a,b] Subgroups with the same superscript are significantly different at the 0.05 level. Comparisons are across columns.

Source: FTF FEEDBACK PBS. January 2013.

For small assets, there are no statistically significant differences in asset sales or recovery by household hunger status (Table 74).

Table 74.   Small asset sales and recovery, by household hunger status

	Moderate or severe household hunger		No household hunger	
	%	n	%	n
Small productive asset sales				
Household sold small productive assets due a shock	35.06	793	31.90	533
Small productive asset recovery				
Unable to repurchase or recover small assets	83.55	326	78.48	201
Able to repurchase or recover some small assets	50.24	326	54.58	201
Able to repurchase or recover all small assets	35.37	326	35.87	201

Source: FTF FEEDBACK PBS. January 2013.

Asset Sales/Recovery and Household Poverty

Table 75 and Table 76 compare asset sales and recovery of households below the poverty line to households at or above the $1.25 per day poverty line (2005 PPP). The subsample includes all households that report being affected by the last drought for which there are data on household poverty (n=1,483 for large assets and n=1,482 for small assets).

According to the data in Table 75, there are no differences by poverty status with respect to large asset sales to cope with exposure to shock. About one third of households (both below and above the poverty line) report selling large assets. Yet, among the households that report selling large assets (n=582), a larger share of households below the poverty line (77.1 percent) than at or above the poverty line (67.6 percent) reports being unable to recover those large assets. This trend is the same for recovery of some of the large assets, in which 31.3 percent of households at or above the poverty line are able to recover some of their large assets compared to 21.8 percent of households below the poverty line.

Table 75. Large asset sales and recovery, by household poverty status

	Below poverty line		At or above poverty line	
	%	n	%	n
Large productive asset sales				
Household sold livestock, land, or other large productive assets due to a shock	31.67	791	33.76	692
Large productive asset recovery				
Unable to repurchase/recover large assets	77.07[a]	302	67.56[a]	280
Able to repurchase/recover some large assets	21.83[b]	302	31.28[b]	280
Able to repurchase/recover all large assets	1.10	302	1.16	280

[a,b] Subgroups with the same superscript are significantly different at the 0.05 level. Comparisons are across columns.

Source: FTF FEEDBACK PBS. January 2013.

Table 76. Small asset sales and recovery, by household poverty status

	Below poverty line		At or above poverty line	
	%	n	%	n
Small productive asset sales				
Household sold small productive assets due to a shock	35.45[a]	790	30.54[a]	692
Small productive asset recovery				
Unable to repurchase/recover small assets	79.01[a]	330	69.23[a]	254
Able to repurchase/recover some small assets	19.95[b]	330	28.16[b]	254
Able to repurchase/recover all small assets	1.04	330	2.61	254

[a,b] Subgroups with the same superscript are significantly different at the 0.05 level. Comparisons are across columns.

Source: FTF FEEDBACK PBS. January 2013.

For small productive assets (Table 76), households below the poverty line (35.5 percent) are more likely than households at or above the poverty line (30.5 percent) to report the sale of small assets to cope with recent shock. Overall, households below the poverty line are less able to recover any or some small assets than households at or above the poverty line, which is similar to the finding with large assets. Specifically, of households that have sold small assets (n=584), 79.0 percent of households below the poverty line could not recover any of their small assets and one in five (20.0 percent) report recovering some. This compares to 69.2 percent of households at or above the poverty line that are unable to repurchase or recover any of those assets and 28.2 percent that recover some small assets.

Summary of Key Findings on Asset Sales/Recovery

To summarize, one-third of the ZOI households that were affected by the last drought report that they sold large and small productive assets to cope with the shock. Most of these households also report that they have not been able to recover or repurchase these assets. Regarding differences across USAID intervention areas, affected households in the HA only area have sold more large and small assets to cope with the drought than households in the other two areas. This difference may be due to the fact that households in the HA only area had more assets to sell than in the other two areas.

Analyses of large asset sales show no differences across household expenditure quartiles or by poverty status. However, poorer households (i.e., households with the lowest expenditures and those below the poverty line) that sold large assets to cope with the drought are less able to recover any or some of those assets compared to wealthier households, which is a pattern repeated among households with moderate to severe hunger compared to households with no hunger. In addition, poorer households that sold assets tend to sell small assets rather than large assets. Similar to large assets, poorer households that sold small assets are more likely to be unable to recover any or some of those assets since the drought.

5.   Summary and Conclusion

This document reports the findings of the northern Kenya Feed the Future PBS baseline survey. The PBS included 1,760 households across 140 SEAs in the ZOI. FTF FEEDBACK collected primary data for 11 of 13 Feed the Future indicators. The northern Kenya PBS also included questions on resilience and household coping strategies. Responses to these questions provide a deeper understanding of living conditions in the northern Kenya ZOI.

Feed the Future Indicators from the FTF FEEDBACK PBS

The FTF FEEDBACK PBS in northern Kenya took place during the post-harvest season when conditions, compared to the lean season, were not at their worst. Nonetheless, the population of the Kenya ZOI faces high levels of poverty and hunger. The prevalence of poverty in the ZOI is 55.1 percent, based on the poverty line of $1.25 per person per day (2005 PPP), and the poverty gap is 25.3 percent below the poverty line. Daily per capita expenditures are low, with an average of $1.98 (2010 USD). The prevalence of hunger in the ZOI is high, with about half of sampled households reporting moderate or severe hunger (50.9 percent). It is worth noting that female adult only households report significantly more hunger (57.4 percent) compared to other household types.

Half of all households (50.0 percent) have access to clean water, yet only 11.0 percent of households report access to an improved sanitation facility, excluding pit latrines (33.1 percent of households). Lack of access to clean water and sanitation increases water borne illnesses among children and may affect the prevalence of malnutrition among children under 5.

The conditions of poverty, hunger, and lack of adequate sanitation have affected the health and nutrition of children, boys in particular. Close to one in three (29.4 percent) children under 5 years is affected by stunting. The prevalence of stunting is significantly higher for boys (32.5 percent) than for girls (26.3 percent). The prevalence of wasting, a measure of acute undernutrition, among children under 5 years of age is 13.2 percent. In the ZOI, 51.6 percent of infants under 6 months are exclusively breastfed. Among children 6-23 months, only one third (33.6 percent) receive the minimum feeding frequency. Nonbreastfed children 6-23 months receive significantly higher feeding frequency than breastfed children of the same age (68.0 percent versus 26.5 percent, respectively). Only 5.1 percent of children 6-23 months receive a MAD.

Among women of reproductive age (15-49), dietary diversity is low in the ZOI; on average, women consume only 2.6 out of nine food groups. While 56.3 percent of women in the ZOI are considered normal weight, 31.2 percent of them are underweight and 12.5 percent are overweight or obese. The prevalence of underweight women in the ZOI is higher than reported in the 2008-2009 Kenya DHS. The great majority of women eat grains, roots, and tubers (82.9 percent), while only 38.3 percent eat vitamin A-rich dark leafy vegetables. Most women have a diet rich in carbohydrates and starches but lower in protein and in micronutrients such as vitamin A. When the dietary diversity sample was divided into expenditure quartiles, women in the top quartile reported eating on average 4.8 of the nine food groups, which is almost nine times higher than women in the lowest quartile (0.6 food groups).

The northern Kenya data on women's empowerment in agriculture show a WEAI score of 0.72 and that the just 31.7 percent of primary decision-making women in the ZOI are empowered, defined as a 5DE score of 80 percent or more. The 5DE score among women in the ZOI is 0.71 and the GPI subindex, a measure of women's empowerment relative to men, is 0.81. Women in female adult only households have significantly higher 5DE scores (0.80) compared to women in male and female adult households (0.69). Analysis of men and women's censored headcounts, or the percentages not yet empowered and inadequate on the 10 indicators of 5DE, reveals that significantly more women than men are not yet empowered and inadequate on eight of the 10 indicators of 5DE. It should be noted, however, that these results do not represent the levels of empowerment of all adult women in the population. Rather, these results represent the status of primary decision-makers within the household.

The report also presents additional analysis requested by USAID/Kenya including the relationship between women's empowerment or decision-making capacity and selected Feed the Future indicators. Analyses of selected indicators and household expenditures and poverty were also done. Analysis of women's empowerment with selected Feed the Future indicators shows that higher levels of women's empowerment are associated with lower levels of poverty and lower prevalence of moderate or severe household hunger. Also, dietary diversity among women of reproductive age is significantly higher in households where women are empowered (3.3 food groups) than in households where women are not yet empowered (2.6 food groups). It is notable that there are no statistically significant differences found for the Feed the Future indicators on children's nutrition and prevalence of underweight women in households based on women's empowerment. Analyses of expenditures and poverty and selected Feed the Future indicators reveal that indicator values generally improve from the lowest to the highest expenditure quartiles.

Resilience

The module on household resilience, a module unique to the northern Kenya FTF FEEDBACK baseline PBS, shows that nearly one-third of ZOI households (31.3 percent) have not recovered from the 2011 drought, the effects of which on livelihoods, adaptation strategies, and social capital have been exacerbated by multiple shocks since the 2008 drought. The data also show that one-third of ZOI households affected by the last drought sold large (33.0 percent) and small (33.2 percent)

assets to cope with the shock. Overall, livelihood opportunities decrease during times of stress (from 2.2 to 1.4 activities). More than half (54.6 percent) of the ZOI households report just one livelihood activity in stress times, which is primarily livestock rearing or reliance on relief. Significantly, less than half (45.0) of ZOI households affected by the last drought were able to rely on others for financial or in-kind support during the shock. The reasons for the support are attributed to reciprocal obligations (67.9 percent) rather than religious or kin-based obligations (30.7 percent). In addition, four in 10 (40.8 percent) ZOI households do not perceive their household as able to cope with future drought, and over two-thirds (68.4 percent) of households believe their future is a matter of destiny.

Reporting resilience findings across USAID intervention areas shows key pre-existing differences among areas prior to REGAL implementation. Overall, households in the REGAL areas did not recover as well from the last drought as households in the HA only area. Similarly, larger shares of households in the REGAL areas report that they would be unable to cope with future drought or stress (45.5 percent in HA+REGAL IR and 48.4 percent in HA+REGAL IR+REGAL AG), as compared to 30.8 percent in the HA only area. Accordingly, the REGAL areas tend to rely on less secure livelihood activities, such as relief or borrowing, than the HA only area households. Yet, in terms of social capital, the HA+REGAL IR households report more social support sources and greater ability to rely on others in stress times compared to the other areas. These differences have important implications for program implementation in the USAID intervention areas and should be considered when estimating program effects.

There are also notable findings related to resilience by household expenditures, poverty, and hunger status. In sum, households experiencing hunger and poverty (including those with lower expenditures), engage in livelihood activities that tend to be less stable sources of income or food, such as relief, borrowing, and wild products trade; whereas households with no hunger, less poverty, and higher expenditures tend to engage in crop production, salaried work, and self-employment. Households with hunger (44.5 percent) and poverty (42.7 percent) are less likely to report that they have recovered from the last drought, and they are less likely to recover their assets sold to meet household needs during the last drought, as compared to better-off households. These households are also more dependent on social support during a shock. Notably, most (78.6 percent) of the poorest households believe that their future is guided by destiny, and a high proportion (76.1 percent) of households with hunger also report this belief.

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

Appendix A.   References

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Annex A. Survey Protocol – Kenya

Protocol for Indicator Calculation in Kenya Baseline Survey Data Collection for the Feed the Future FEEDBACK Project

A.1   Overview

Part of the monitoring and evaluation system for United States Government-supported food security activities is reporting on population-based indicators. These indicators are based on analysis of survey data. Ideally, FTF FEEDBACK would use existing data for some of the indicators, saving time and reducing the cost of generating estimates. Secondary data are available for anemia of women and children from the Kenya Malaria Indicator Survey (KMIS) of 2010. Data from this survey will be used to extract the anemia indicators for children 6-59 months of age for the northern Kenya zone of influence (ZOI). Secondary data sources are not available for the remaining Feed the Future indicators, as none of the data met criteria to provide valid baseline estimates. The data sources were not within recent time windows (all were 2009 or earlier). Nor did they have a sample size large enough to estimate indicator values with sufficient precision and power to measure change over time in the ZOI. As such, the United States Agency for International Development (USAID) Mission in Kenya will report on 12 indicators in the Feed the Future ZOI, located in northern Kenya (see Table A-1).

Table A-1.   Feed the Future Indicators (by type of data analysis)

Indicator	FTF ZOI secondary analysis	FTF ZOI baseline survey
Prevalence of underweight children	No	Yes
Prevalence of poverty	No	Yes
Prevalence of stunted children	No	Yes
Prevalence of wasted children	No	Yes
Prevalence of underweight women	No	Yes
Per capita expenditures (as a proxy for incomes)	No	Yes
Women's Empowerment in Agriculture Index	No	Yes
Prevalence of households with moderate or severe hunger	No	Yes
Prevalence of children 6-23 months receiving a minimum acceptable diet	No	Yes
Women's Dietary Diversity Score	No	Yes
Prevalence of exclusive breastfeeding	No	Yes
Prevalence of anemia among children 6-59 months	Yes	No
Prevalence of anemia among women of reproductive age	No	No
Resilience	No	Yes

The ZOI is located in northern Kenya and is comprises of nine counties, with a total population of 4.6 million.[71] The population table on the following page should be reconsidered. The nine counties are: Baringo, Samburu, Tana River, Turkana, Isiolo, Marsabit, Wajir, Mandera, and Garissa.

These nine counties of the ZOI are grouped into three strata for implementing the USAID programs. The three strata correspond to different combinations of interventions. Humanitarian Assistance (HA) is being provided in all nine counties. There are two Feed the Future intervention mechanisms that are also implemented within the ZOI. First, the Resilience and Economic Growth in the Arid Lands – Improving Resilience (REGAL-IR) will be implemented in five of the nine ZOI counties. Second, the Resilience and Economic Growth in the Arid Lands – Accelerated Growth (REGAL-AG) will be implemented in two of the five counties where REGAL IR will be implemented. The breakdown of the counties by these combinations of interventions is given in Table A-2.

Table A-2. Zone of influence areas

Program	County	Total population	Households
HA, IR, AG	Marsabit	291,166	56,941
HA, IR, AG	Garissa[*]	623,060	98,590
HA, IR	Isiolo	143,294	31,326
HA, IR	Wajir[*]	661,941	88,574
HA, IR	Turkana	855,399	123,191
HA	Tana River	240,075	47,414
HA	Mandera[*]	1,025,756	125,497
HA	Samburu	223,947	47,354
HA	Baringo	555,561	110,649

Source: KNBS Census of Population and Housing, 2009.

[*] Denotes counties with present severe security concerns that will be excluded from the PBS data collection.

For security reasons, primarily resulting from the presence of known terrorist group Al-Shabab, Garissa, Wajir, and Mandera counties are currently considered no-go areas by the Kenya National Bureau of Statistics (KNBS), and must be removed from the sample frame until the security in the three counties improves, as determined by the United States Embassy. Thus, the sample frame is shown in Table A-3.

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[71] Wajir, Garissa, and Mandera are highly insecure counties: KNBS has not developed county-level clusters in these counties and are not willing to, given the current insecurity situation. They have written the Office of the President about security issues; however, they have not received any formal communication about being protected in these areas. Therefore these counties remain no-go zones for KNBS staff. Accordingly, the PBS will exclude these areas from the sampling frame.

Table A-3. Sample size per stratum

Stratum	Counties	Sampled HH per stratum
HA	Tana River	714
	Samburu	
	Baringo	
HA, IR	Isiolo	714
	Turkana	
HA, IR, AG	Marsabit	712
Total		**2,140**

A.2   Sample Size Estimate for the Feed the Future Baseline Survey

The sample needs to be large enough to detect change in as many of the required indicators as possible, but practical so that the survey can be completed at a reasonable cost and by early February 2013. The minimum sample size to detect a reduction in global acute malnutrition (GAM) from 20 percent to 13 percent with 95 percent confidence and 80 percent power, assuming a design effect of 2.0 is 688, increased to 710 to allow for a nonresponse rate of 3 percent. (KNBS 2008-09 DHS response rates was 97.7 percent, KNBS; 2005-2006 KIHBS response rate was 98 percent). This sample size is large enough to detect a change of 20 percent in households in household hunger scale (HHS), assuming that the initial value for comparison of 50 percent. Demonstrating changes in poverty depth would require a sample that would not be feasible to collect by the end of January. The total sample will have 3 strata with a minimum of 710 households in each stratum. For logistics purposes, the number of households per stratum was increased slightly as shown in Table A-3, to give a total sample size of 2,140 households.

Data from the KNBS (2010) DHS 2008-09 indicate that rates for stunting, underweight children in the northern regions of Kenya are higher than cited in Feed the Future M&E Guidance Series, Volume 9.

A.3   Survey Design

The design of the Feed the Future ZOI consists of two basic components: questionnaire design and sample design. TANGO and Westat will provide technical assistance on questionnaire design and provide technical assistance for sample design. These two components are described below.

There are no current or recent secondary data with adequate sample size and geographic coverage to use in place of the PBS. The questionnaire includes all modules, except anemia (which will be obtained from the KMIS, 2010), as well as a short module measuring resilience. The baseline survey will use the Feed the Future M&E Guidance Volume 8, which ensures that the surveys are designed

to conform to existing questionnaires such as the DHS, EICV (LSMS), and WEAI. The survey will provide information to calculate the following indicators:

Table A-4. Indicators to be collected during PBS activity

Indicator	PBS module
1. Prevalence of Poverty: Percent of people living on less than $1.25/day	Module C: Household Roster and Demographics, Module E: Household Consumption Expenditure
2. Per capita expenditures of USG-targeted beneficiaries	Module C: Household Roster and Demographics, Module E: Household Consumption Expenditure
3. Prevalence of underweight children under 5 years of age	Module I: Child Anthropometry and Anemia and Infant and Young Child Feeding
4. Prevalence of stunted children under 5 years of age	Module I: Child Anthropometry and Anemia and Infant and Young Child Feeding
5. Prevalence of wasted children under 5 years of age	Module I: Child Anthropometry and Anemia and Infant and Young Child Feeding
6. Prevalence of underweight women	Module H: Women's Anthropometry and Anemia and Dietary diversity
7. Women's Empowerment in Agriculture Index	Module G: WEAI Individual Application
8. Prevalence of households with moderate or severe hunger	Module F: Household Hunger Scale
9. Prevalence of children 6-23 months receiving a minimum acceptable diet	Module I: Child Anthropometry and Anemia and Infant and Young Child Feeding
10. Women's Dietary Diversity Score: Mean number of food groups consumed by women of reproductive age	Module H: Women's Anthropometry and Anemia and Dietary diversity
11. Prevalence of exclusive breastfeeding of children under 6 months of age	Module I: Child Anthropometry and Anemia and Infant and Young Child Feeding
12. Resilience	Module F: Resilience Module

Tegemeo is conducting the PBS in central Kenya. FTF FEEDBACK is using their version of the questionnaire, which has been aligned by Westat to match the current Feed the Future M&E Guidance Volume 8 and will be adapted to be relevant for the northern Kenyan context during the training of interviewers.

The questionnaire is in English, both the paper version and the digital version to be displayed on the tablet devices. Enumerators will be provided a local language translation (on paper). All questions will be asked in the local language and responses will be entered in English on the tablet device. Training to interviewers will be in English and local languages (distinct local languages in each county). English will be used because many food names are known in English and local languages, but not Kiswahili, the other lingua franca in Kenya.

The sample size for the Feed the Future baseline was described in Section 2. A total of 2,140 households across six counties were included. (See Table A-5.) This sample size is sufficient to cover the sample size requirements described in Section A-2. In order to maximize the number of clusters, while at the same time conforming to the logistics requirement of having a minimum number of interviews in each cluster to fully occupy the time of the field teams when they are within a single cluster, 15 or 16 households per cluster will be surveyed to provide a total sample of 2,140 households.

The first stage of the sample selection, random selection of 140 clusters, will be conducted using probability proportional to size (PPS) sampling, and will be completed by the KNBS. The second stage, household selection, will be completed in the field by enumeration teams using a household listing process identified in the FTF FEEDBACK supervisors manual, where each enumeration team will select 16 households from the household listing to be interviewed.

Table A-5.   Sample Size (disaggregated)

S/NO	County	Households			Clusters		
		Rural	Urban	Total	Rural	Urban	Total
1	Baringo	256	44	306	17	3	20
2	Samburu	162	38	204	10	3	13
3	Tana River	167	33	204	11	2	13
4	Turkana	383	77	469	26	5	31
5	Isiolo	128	112	245	9	7	16
6	Marsabit	553	147	712	37	10	47
Total		**1,649**	**451**	**2,140**	**110**	**30**	**140**

A.4   Fieldwork and Training

Fieldwork

The Ronto Research Company (Ronto) is a Kenyan firm specializing in conducting qualitative and quantitative research and training, including data collection, data entry and database management, and data analysis. Ronto recently completed the FTF FEEDBACK PBS activity in Zambia (November, 2012).

Ronto will conduct the training of trainers (TOT), enumerator training, and survey fieldwork. TANGO will provide technical assistance (TA), during the training of trainers and enumerator training, and remote technical assistance during the fieldwork. Ronto will arrange for transportation of survey teams and equipment, including procurement of 36 vehicles with drivers from local vendors, and will be responsible for purchasing necessary fuel in the field. KNBS has agreed to provide two staff master trainers, who will participate in the training of trainers, enumerator training and field data collection activities. The Division of Nutrition, under the Ministry of Public Health and Sanitation will provide a nutritionist to be part of the master trainers and monitor the activities during fieldwork.

Overall, enumerators, supervisors, and master trainers/field monitors will receive training. A six-day TOT from KNBS will begin in late December. A 12-day enumerator training will commence on the 6th of January once the TOT is completed. TANGO consultant, Stephanie Martin, will oversee the training of trainers in conjunction with Rutere Kagendo of the Ronto Research Company. Training methods in northern Kenya will be in alignment with those developed for other FTF FEEDBACK countries where a PBS data collection activity has taken place. These methods are documented in manuals, reports, and PowerPoint presentations. Training covers careful review of the quantitative questionnaire, use of electronic tablets, weighing and measuring equipment, detailed instruction on

interview methods, and human subjects protection. The training manuals include description of protocols for taking height and weight measurements of women and children. Interviewers will be required to review and sign confidentiality forms. During training, enumerators, supervisors and master trainers will provide oral translations of the questionnaire into their specific local languages. Supervisors and enumerators are being recruited from the data collection sites. FTF FEEDBACK, KNBS, Ronto, and survey team members will work together during enumerator training to develop uniform translations. Survey supervisors will be given additional training on conducting the household listing, random selection of households from the listed households, making and tracking interview assignments, checking the quality of the interview process, checking the quality of the data entered for each interview, uploading data, and troubleshooting electronic tablets.

During the fieldwork, the survey team leaders will handle the day-to-day management of the field teams. Supervisors will oversee the fieldwork in different regions of the country. These supervisors will travel with teams and oversee interviews to ensure the quality of interviews and recording of responses on questionnaires, and to troubleshoot any problems encountered during the fieldwork. These supervisors will report to their team monitors who will report to the survey coordinator, who will manage the overall survey process.

Enumerators will work in male/female pairs with the male interviewing the primary male in the household and the female interviewing the primary female, according to FTF FEEDBACK standards for each module. Field teams will be responsible to conduct the following activities:

- Field team supervisors and enumerators will complete a household mapping exercise.

- Enumerators will conduct individual household interviews consistent with sampling requirements and procedures presented in FTF FEEDBACK guidance documents, the training workshop, and enumerator and supervisor field manuals.

- Field team supervisors and the monitors will provide field-based quality control measures, in accordance with agreed specifications (see Section A-5).

- Field team supervisors provide electronic data transfer daily to FTF FEEDBACK servers, depending on Internet access.

Each field team (27 in total) will be constructed of six enumerators, one supervisor and one (female) spare enumerator (three enumerator pairs). One field team will complete interviews in one enumeration area. Given Ronto and TANGO experience implementing the PBS activity in other FTF FEEDBACK countries, it is reasonable to expect enumerator pairs to complete no more than two complete interviews per day. Therefore, field teams can expect to spend three days in an enumeration area, with a half day for the mapping activity and 2.5 days for data collection activities.

A total of 36 vehicles are being procured for the data collection activity. One vehicle per team of eight people (27 vehicles), one for each team of monitors (monitors will be paired in twos) and they will oversee 3-4 teams in their counties and the survey coordinator will have one vehicle to coordinate activities in all the six counties.

Category	Number of vehicles
Enumerator and supervisor teams	27
Field monitors	8
Field coordinator	1
Total	**36**

Training

TANGO and Ronto will conduct a training workshop for survey enumerators and field supervisors. The purpose of the training sessions is to ensure that all members of the survey team understand the objectives of the study, proper use of the survey tools, as well as the roles and responsibilities of each team member in data collection.

Training will involve a 18-day process, including six days of training of master trainers and preparation for the larger enumerator training, which would take place over 12 days.

Week 1:

- TANGO staff will review with the trainers and supervisors the modules' structure and purpose, technical requirements, and content of the survey manuals.

- TANGO staff, trainers, and supervisors will review, field test, and revise module translations.

- TANGO staff, trainers, and supervisors will finalize training materials for the following week's enumerator training.

Week 2:

Ronto staff will lead the Week 2 training for enumerators, editors, and supervisors that will take place daily over a 12-day period (including Saturday and Sunday). The training will allocate time to each individual module, the cluster sample listing procedure, human subject protection, and the use of tablet computers. Individual training sessions will include a combination of presentations by the trainers, mock interviews, quizzes and recaps from previous days' activities. After completion of classroom training, the trainees will participate in a field test to practice what was learned in the training with actual respondents and field conditions. TANGO staff will serve as technical resources during the second week as needed.

During the fieldwork, survey supervisors will handle the day-to-day management of the field teams. A total of 27 survey teams will be deployed in a manner to cover the entire sample within the given timeframe. The field team supervisors will observe one interview per day for each subteam, and will

do spot checks of households that were supposed to be interviewed to ensure that the interview took place. This will ensure the quality of interviews and recording of responses on questionnaires, and will enable field team supervisors to troubleshoot any problems encountered during the fieldwork. Field monitors will provide another layer of quality control. Field monitors will oversee the fieldwork of the field team supervisors, and will do spot checks on quality. The field monitors will report to the survey coordinator, who will manage the overall survey process.

The field team for the Feed the Future ZOI baseline survey will be structured as follows: 162 enumerators in 27 teams of six enumerators each. Each team of six enumerators will be subdivided into two-person teams consisting of one female and one male interviewer. The female/male enumerator teams are needed to conduct the WEAI requires that both the primary female and male members of the household be interviewed. The enumerator female/male teams will interview respondents in the same household, with the female enumerator interviewing the primary female member of the household and the male enumerator interviewing the primary male member of the household.

Category	Number
Coordinator	1
Master trainers/field monitors	16
Supervisors	27
Enumerators	162
Spare enumerators	27
Total	**233**

The survey will have the following positions, as shown above.

- **162 Enumerators (81 female, 81 male) –** Will assist the community mapping exercise and will conduct the household interviews.

- **27 Field team supervisors (one for each field team) –** Will oversee the community mapping exercise; will observe at least one interview per subteam daily and perform followup to ensure that selected households were visited; will spot check data quality; will review completed questionnaires daily and ensure that all surveys are completed, archived, and backed up on the tablet, and transmitted to the FTF FEEDBACK server either daily or when he or she has Internet access.

- **16 Field monitors –** Each field monitors is responsible for the oversight, support, and coordination of three to four field teams, including ensuring that quality controls measures are being carried out.

- **1 Survey coordinator –** Will be responsible for the overall quality and timeliness of the training and survey procedures and personnel and the delivery of the data according to the agreed upon timeline.

Each supervisor and field team will be assigned separate lists of clusters, or standard enumeration areas (SEAs), to visit. One field team will visit each selected SEA.

After each interview, the enumeration teams will record the following information into daily control sheets: (1) ID information for each household interviewed; (2) all the modules that were completed for that household; and (3) whether a revisit was required.

At the end of each field day, supervisors will verify and record into daily control sheets: the ID information of households interviewed by the enumerator teams under the control of the field team supervisor; whether the information in the tablets has been reviewed, corrected and accepted by the field team supervisor, and the total number of complete and incomplete interviews for the day.

Data collection will take place every day, including Saturday and Sunday. With regard to data collected for the WEAI, the survey will sample a large number of households so the sample would represent the distribution of work days and rest days in the population. Accordingly, when we compute the WEAI indices, the distribution of work days and rest days will reflect that of the population.

A.5   Data Management

Data collected in interviews will be recorded directly into tablet computers provided by Westat. In the event that complications using the tablets arise during implementation, Ronto will provide a back-up plan for paper data entry and reconciliation and data cleaning.

At the end of each day in the field, each enumerator will make backups of their data onto the tablet of the field team supervisors. Whenever the field teams have access to Internet (expected to be every two to three days), all completed data files (supervisors mark files as completed only after they have reviewed and accepted the data in each individual interview file) will be uploaded to a FTF FEEDBACK server address created for the country by Westat.

The field team supervisors will be responsible for uploading the data to the FTF FEEDBACK server whenever they have access to Internet. Each field team will have a Wi-Fi hotspot that can be used to connect the tablets to the Internet via mobile phone connections. These Wi-Fi hotspots are battery operated and rechargeable, and can provide connectivity to up to five devices simultaneously. Each day when the teams have network access, the field team supervisors will upload the data from the tablets of all the (6) field team members onto the FTF FEEDBACK server, where the data from all the field teams will be aggregated and updated over the course of the fieldwork.

Each field team will be provided with multi-socket splitters to fit into vehicle cigarette lighters, along with USB adapters. This equipment will be used to charge the tablets and the Wi-Fi hotspots from the team vehicles, as the teams travel or in the evenings. Each vehicle will have a total of six tablets. The teams will be able to charge the equipment in the evening when they are staying in locations where electricity is available (probably infrequently, only one to two days per week).

During the fieldwork, data quality will be maintained in several ways. During the training, the enumerators are trained in the importance of ensuring good data quality, and in the field, the field team supervisors will continue this emphasis on quality in their daily interaction with the

enumerators. Also while in the field, the field team supervisors will observe interviews, spot check interviews and selected interviewees, and review each completed questionnaire closely for completeness and consistency across responses. The monitors and data editors will make spot checks of questionnaires for completeness, consistency, range checks, and skip patterns. The field team supervisor will also check a subset of questionnaires in the same manner. Because data are entered in the field, these data can be uploaded to FTF FEEDBACK servers which will allow FTF FEEDBACK partners (TANGO and Westat) to run data quality checks and review results of these checks shortly after data entry in the field. The faster time for FTF FEEDBACK review will help in the overall monitoring of the survey process and allow for quick corrections of problems found, which will improve the survey process and data quality.

Managing the data in the field involves four separate but related activities at the end of each day or when an enumerator team has completed all assigned households for an SEA:

1. Check the data for completeness and consistency.

2. Archive the data (make a copy of the data files) on the same tablet computer using the ODK Archive tool.

3. Backup the data on another tablet computer using NFC Tapping.

4. Transmit the finalized data to FTF FEEDBACK when Internet access is available.

The majority of this process is performed on the enumerators' tablets. The supervisor and editor will edit all surveys completed by the team at one time. The supervisor would then continue the process by archiving and backing up all of the data that have been edited. Once all the team's surveys have been edited, finalized, archived, and backed up, the supervisor would transmit the finalized forms to the FTF FEEDBACK server.

After forms are transmitted to the FTF FEEDBACK server, Westat will convert data on these forms into a format for a secure database for this survey. On a daily basis, Westat will run data quality checks on these data. TANGO will review the results of these checks and communicate with the NSO on data quality issues that need to be addressed by field teams. The NSO will communicate to field teams on these data quality issues and how to best resolve them.

Where possible, supervisors will stay in hotels that have stable electricity and good Internet connections, identified through previous surveys. On a daily basis, supervisors and editors will recharge the tablet computers. Car chargers will be provided for situations where electricity is not readily available. Backup procedures have been designed for daily backups, as good practice, and to account for situations where there may be multiple days between when supervisors can send forms to FTF FEEDBACK servers.

A.6 Analysis and Reporting

The analysis and reporting process for each survey will be completed one month after the completion of data entry and cleaning for that survey. Reporting will cover 12 indicators (11 Feed the Future indicators, 1 resilience indicator). Reports will provide overall totals for the ZOI as well as for each of the three strata.

A.7 Institutional Review Board Approval

KNBS does not require government permits to conduct survey because they are the statistics authority in Kenya. For the anthropometric section that involves measuring and weighing children and women, FTF FEEDBACK has a requested letter of support from the Ministry of Public Health and Sanitation. The resilience questions are not included in the blanket approval from Westat, and will need to be submitted to the Westat IRB for review.

TANGO will provide a signed data confidentiality agreement and certification that data collector human subjects protection training has been provided to all enumerators.

A.8   Survey Work Plan

	Draft detailed timeline															
	Nov 4-10	Nov 11-17	Nov 18-24	Nov 25-Dec 1	Dec 2-8	Dec 9-15	Dec 16-22	Dec 23-29	Dec 30-Jan 5	Jan 6-12	Jan 13-19	Jan 20-26	Jan 27-Feb 2	Feb 3-9	Feb 10-16	Feb 17-25
Weeks	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Initiate contract with Ronto research		✓														
Draft survey instrument (Tegemeo version and resilience module)		✓														
Westat IRB approval						✓	✓									
Final version of questionnaire to Ronto						✓										
Finalize contract							✓									
Get sample frame					✓											
Review and adapt training materials							✓	✓								
Survey logistics (arrange transport, lodging)								✓	✓							
Ship tablets							✓	✓								
Training of trainers									✓							
Hire enumerators								✓								
Conduct training of the surveyors										✓	✓					
Pilot test survey											✓					
Revisions to Westat for tablet											✓					
Training on listing and HH selection											✓					
Fieldwork												✓	✓	✓		
Data transfer												✓	✓	✓		
Final implementation report														✓	✓	✓

A.9   Survey Questionnaire

The survey questionnaires have been developed from the Feed the Future baseline survey guidelines provided in Volume 8 of the Feed the Future M&E Guidance series. In addition, the surveys are designed to conform to existing questionnaires such as the DHS, LSMS, and WEAI. Each of these questionnaires will include the informed consent statement, the household roster, dwelling characteristics module, and modules for indicators that cannot be calculated with existing data sources. Tegemeo is conducting the FTF FEEDBACK survey in Central Kenya. We have coordinated with Tegemeo to develop a final version for use in Northern Kenya. Resilience questions are included in Annex D.

Kenya FTF FEEDBACK PBS

Kenya Feed the Future (FTF) Population-based Baseline Survey, 2012

Date of first visit: (dd/mm/yyyy) **SURDATE1**_____ Date of second visit: (dd/mm/yyyy) **SURDATE2**_____

Reason for second visit **REASEC** _____ (**REASEC**: *1=Primary respondent missed 2=Secondary respondent missed*
3=Primary & secondary respondents missed 4=partially completed interview 5=Other_____)

Household name **HHNAME** _____

Type of Household **HHTYPE** _____

Type of Household
1= Male and female adult – household contains at least one male and one female adult ≥ 18 years old **2=Female adult only** – household contains at least one female adult and no male adults ≥ 18 years old **3=Male adult only** – household contains at least one male adult and no female adults ≥ 18 years old **4=Child only** – household contains no adults ≥ 18 years old

Primary respondent **PRESPO**_____ **ID1**_____

Secondary respondent **SRESPO**_____ **ID2**_____

(**Enumerator Instruction**: Record the member number of the Respondent(s) on ID1 and ID2 from the Demography table on pages 4 after the survey is completed.)

Identifying Variables:

Supervisor:_____ **SNUM** _____

Enumerator:_____ **ENUM** _____

County: _____ **COUNTY** _____

District: _____ **DIST** _____

Division: _____ **DIV** _____

Location: _____ **LOC** _____

Sublocation: _____ **SUBLOC** _____

Village:_____ **VIL** _____

Enumeration area: _____ **CLUSTER** _____

GPS coordinates: *(NS: 1=North, 2=South)* **NS**_____ (**HH1**____._____ **HH2**_____._____ **MASL**_____)

Household phone number: **PHONE**_____

Final outcome of the interview **INTVIEW**_____

(1=Complete 2=Incomplete 3=Absent 4=Refused 5=Could not be located)

MODULE B.   Informed consent signature page

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

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

Module B.

Name	Consent to participate in survey (Check one box)		Signature or mark
	YES	NO	

Duplicate to leave with the household

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

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

Module B.

Name	Consent to participate in survey (Check one box)		Signature or mark
	YES	NO	

MODULE C. Household roster and demographics

ID	Name of household member? *[Start with Primary respondent, continue with the Secondary respondent, if applicable, and other members]*	What is [NAME's] **sex**? **1** = Male **2** = Female	What is [NAME's] **relationship** to the primary respondent?	What is [NAME's] **age**? (in years)* *If age<3, skip C05-08*	Can [NAME] **read** and **write**?	Is [NAME] **currently attending** school? **1** = Yes *(go to C08)* **2** = No	Has [NAME] **ever attended** school? 1= Yes 2= No	What is the **highest grade** of education **completed** by [NAME]?
	C01	**C02**	**C03**	**C04**	**C05**	**C06**	**C07**	**C08**

C03: Relationship to primary respondent			C05: Literacy	C08: Education level	
1=Primary respondent 2=Spouse/partner 3=Son/daughter 4=Son/daughter-in-law 5=Grandson/granddaughter 6=Mother/Father	7=Brother/sister 8=Nephew/niece 9=Nephew/niece of spouse 10=Cousin of primary respondent 11=Brother/sister-in-law 12=Mother/father-in-law	13=Cousin of primary respondent's spouse 14=Other relative 15=Servant/Maid 16=Laborer 17=Other relationship	1=Cannot read and write 2=Can sign (write) only 3=Can read only 4=Can read and write	1=Less than Primary level (or no school) 2=Primary level 1-3 3=Primary level 4-8 4=Secondary 1-4 5=Tertiary after O-level 6=Secondary 5-6	7=University or above 8=Technical or vocational 9=Adult literacy only (no formal education) 10=Koranic/religious only (no formal education) 98=Don't know (DK)/Non response (NR)/Not applicable (NA)

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

MODULE D.   Dwelling characteristics

ENUMERATOR: OBSERVE/ASK ABOUT THE MAIN HOUSE.

D01: Roof top material (outer covering):
1=Tile 2= Wood 3= Corrugated metal 4= Plastic sheeting 5=Thatched/vegetable matter/sticks
6=Mud/cow dung 7= other (specify)…………………………….

D02: Floor material:
1=Earth/mud/Cow dung 2=Concrete/cement 3=Tile/bricks 4=wood 5=other (specify)………………………………………

D03: Exterior **Walls** material:
1=Earth/mud/Cow dung 2=Concrete/cement 3=Tile/bricks 4=wood 5=iron sheet 6=other (specify)

D04: How many rooms are there in this dwelling? (Do not count bathrooms, hallways, garage, toilet, cellar, and kitchen)

D05. What is the **main type** of toilet that your household **uses**?
1=Flush, shared 2=Flush, private 3=Ventilated improved pit latrine (VIP) 4=Pit latrine 5=Community toilet
6=Pan/bucket 7=Bush/field 8=other (specify)

D06: What is the **main source** of drinking water for your household?
1=Piped into dwelling 2=Piped into plot/yard 3=Public tap/someone else's private tap 4=Tube well/borehole
5=Protected dug well 6=Protected spring 7=Rain water collection 8=Unprotected dug well/springs
9=River/ponds/streams 10=Tankers-truck/vendor 11=Bottled water 12=other (specify)

D07: Does this household have **electricity**? *1=Yes = 2=No*

D08: What is the **main source** of cooking fuel for your household?

D01_____

D02_____

D03_____

D04_____

D05_____

D06_____

D07_____

D08_____
1=Electricity
2=Piped or liquid propane gas (gas)
3=Kerosene 4=Charcoal 5=Firewood
6=Animal dung
7=Agricultural crop residue
8=grass. 9=Biogas 10=other (specify)

MODULE E.   Household consumption expenditure

Enumerator: Ask these questions about all household members. *Ask whoever is most knowledgeable about the foods the household members ate in the past week, as well as any non-food items that household members bought. The same respondent should be asked questions in* <u>E1-E7</u>.

MODULE E1.   Food consumption over past 7 days

Module E1.sav

E103b/04b/06b/07b – UNIT CODES
1=90kg bag 2=kg 3=Litre 4=Crate 5=Numbers 6=Bunch 7=25kg bag 8=10kg bag 9=Gorogoro 10=50kg bag 11=Debe 12=Gram 13=Bale 14=tray 15=millilitre
NOTE: Any unit listed __must__ be able to be converted to a standardized unit. This conversion will happen during data analysis; it should not be done in the field by the enumerator.

Over the **past one week** (7 days), did you or others in your household eat any [. . .]? _INCLUDE FOOD BOTH EATEN COMMUNALLY IN THE HOUSEHOLD AND SEPARATELY BY INDIVIDUAL HOUSEHOLD MEMBERS, BOTH INSIDE AND OUTSIDE THE HOME_	Item Code	Yes=1, No=2 _>>Next item_	How much **in total** did your household **eat** in the past week?		How much came from **purchases**?		How much (in **KSH)** did you spend on what was eaten last week? *(if family ate part but not all of something they purchased, estimate only cost of what was consumed)*	How much came from **own-production**?		How much came from **gifts and other sources**?		
										E107c: 1=Relief 2=Relatives/Neighbors 3=Food subsidy 4=other…………		
			Quantity	Unit	Quantity	Unit		Quantity	Unit	Quantity	Unit	**Main source of gifts/others**
	E101	E102	E103A	E103B	E104A	E104B	E105	E106A	E106B	E107A	E107B	E107C
Cereals, Grains and Cereal Products	1-17											
Maize *straight run* (normal flour)	1											
Sifted maize (fine flour)	2											
Maize *rice* (bran flour/*Chenga*)	3											
Maize grain	4											
Green maize	5											
Rice	6											
Finger millet (*Wimbi*)	7											
Bulrush Millet	8											

MODULE E1.   Food consumption over past 7 days (continued)

E103b/04b/06b/07b – UNIT CODES												
1=90kg bag 2=kg 3=Litre 4=Crate 5=Numbers 6=Bunch 7=25kg bag 8=10kg bag 9=Gorogoro 10=50kg bag 11=Debe 12=Gram 13=Bale 14=tray 15=millilitre												

NOTE: Any unit listed <u>must</u> be able to be converted to a standardized unit. This conversion will happen during data analysis; it should not be done in the field by the enumerator.

Over the **past one week** (7 days), did you or others in your household eat any [. . .]? *INCLUDE FOOD BOTH EATEN COMMUNALLY IN THE HOUSEHOLD AND SEPARATELY BY INDIVIDUAL HOUSEHOLD MEMBERS, BOTH INSIDE AND OUTSIDE THE HOME*	Item Code	Yes=1, No=2 >>*Next item*	How much **in total** did your household **eat** in the past week?		How much came from **purchases**?		How much (in **KSH)** did you spend on what was eaten last week? *(if family ate part but not all of something they purchased, estimate only cost of what was consumed)*	How much came from **own-production**?		How much came from **gifts and other sources**? E107c: 1=Relief 2=Relatives/Neighbors 3=Food subsidy 4=other…………		Main source of gifts/others
			Quantity	Unit	Quantity	Unit		Quantity	Unit	Quantity	Unit	
	E101	**E102**	**E103A**	**E103B**	**E104A**	**E104B**	**E105**	**E106A**	**E106B**	**E107A**	**E107B**	**E107C**
Sorghum (*mtama*)	9											
Wheat flour	10											
Bread	11											
Buns, scones	12											
Biscuits	13											
Spaghetti, macaroni, pasta	14											
Breakfast cereal	15											
Infant feeding cereals	16											
Other (specify)…	17											
Roots, Tubers, and Plantains	**18-27**											
Cassava tubers	28											
Cassava flour	19											
Sweet potato (White flesh)	20											
Sweet potato (Orange flesh)	21											
Irish potato	22											

MODULE E1. Food consumption over past 7 days (continued)

E103b/04b/06b/07b – UNIT CODES
1=90kg bag 2=kg 3=Litre 4=Crate 5=Numbers 6=Bunch 7=25kg bag 8=10kg bag 9=Gorogoro 10=50kg bag 11=Debe 12=Gram 13=Bale 14=tray 15=millilitre

NOTE: Any unit listed <u>must</u> be able to be converted to a standardized unit. This conversion will happen during data analysis; it should not be done in the field by the enumerator.

Over the **past one week** (7 days), did you or others in your household eat any [. . .]? *INCLUDE FOOD BOTH EATEN COMMUNALLY IN THE HOUSEHOLD AND SEPARATELY BY INDIVIDUAL HOUSEHOLD MEMBERS, BOTH INSIDE AND OUTSIDE THE HOME*	Item Code	Yes=1, No=2 >>*Next item*	How much **in total** did your household **eat** in the past week?		How much came from **purchases**?		How much (in **KSH)** did you spend on what was eaten last week? *(if family ate part but not all of something they purchased, estimate only cost of what was consumed)*	How much came from **own-production**?		How much came from **gifts and other sources**? E107c: 1=Relief 2=Relatives/Neighbors 3=Food subsidy 4=other………		Main source of gifts/others
			Quantity	Unit	Quantity	Unit		Quantity	Unit	Quantity	Unit	
	E101	**E102**	**E103A**	**E103B**	**E104A**	**E104B**	**E105**	**E106A**	**E106B**	**E107A**	**E107B**	**E107C**
Potato crisps	23											
Plantain, cooking banana	24											
Yam	25											
Arrow roots	26											
Other (specify)…	27											
Nuts and Pulses	**28-38**											
Common Bean	28											
Dolichos Lablab (*njahi*)	29											
Pigeon peas	30											
Green grams	31											
Groundnut	32											
Groundnut flour	33											
Soyabean flour	34											
Ground bean (Bean flour)	35											

MODULE E1. Food consumption over past 7 days (continued)

E103b/04b/06b/07b – UNIT CODES											
1=90kg bag 2=kg 3=Litre 4=Crate 5=Numbers 6=Bunch 7=25kg bag 8=10kg bag 9=Gorogoro 10=50kg bag 11=Debe 12=Gram 13=Bale 14=tray 15=millilitre											
NOTE: Any unit listed <u>must</u> be able to be converted to a standardized unit. This conversion will happen during data analysis; it should not be done in the field by the enumerator.											

Over the **past one week** (7 days), did you or others in your household eat any [. . .]? *INCLUDE FOOD BOTH EATEN COMMUNALLY IN THE HOUSEHOLD AND SEPARATELY BY INDIVIDUAL HOUSEHOLD MEMBERS, BOTH INSIDE AND OUTSIDE THE HOME*	Item Code	Yes=1, No=2 >>Next item	How much **in total** did your household **eat** in the past week?		How much came from **purchases**?		How much (in **KSH)** did you spend on what was eaten last week? *(if family ate part but not all of something they purchased, estimate only cost of what was consumed)*	How much came from **own-production**?		How much came from **gifts and other sources**? E107c: 1=Relief 2=Relatives/Neighbors 3=Food subsidy 4=other…………		Main source of gifts/others
			Quantity	Unit	Quantity	Unit		Quantity	Unit	Quantity	Unit	
	E101	**E102**	**E103A**	**E103B**	**E104A**	**E104B**	**E105**	**E106A**	**E106B**	**E107A**	**E107B**	**E107C**
Cowpea	36											
Macadamia nuts	37											
Other (specify)…	38											
Vegetables	**39-56**											
Kales/*Sukuma wiki*	39											
Onion	40											
Cabbage	41											
Tomato	42											
Green beans	43											
Bean leaves	44											
Amaranths	45											
Cowpea leaves	46											
Other indigenous vegetables	47											
Egg plant	48											
Cucumber	49											

MODULE E1.   Food consumption over past 7 days (continued)

E103b/04b/06b/07b – UNIT CODES												
1=90kg bag 2=kg 3=Litre 4=Crate 5=Numbers 6=Bunch 7=25kg bag 8=10kg bag 9=Gorogoro 10=50kg bag 11=Debe 12=Gram 13=Bale 14=tray 15=millilitre												

NOTE: Any unit listed <u>must</u> be able to be converted to a standardized unit. This conversion will happen during data analysis; it should not be done in the field by the enumerator.

Over the **past one week** (7 days), did you or others in your household eat any [. . .]? *INCLUDE FOOD BOTH EATEN COMMUNALLY IN THE HOUSEHOLD AND SEPARATELY BY INDIVIDUAL HOUSEHOLD MEMBERS, BOTH INSIDE AND OUTSIDE THE HOME*	Item Code	Yes=1, No=2 >>*Next item*	How much **in total** did your household **eat** in the past week?		How much came from **purchases**?		How much (in **KSH)** did you spend on what was eaten last week? *(if family ate part but not all of something they purchased, estimate only cost of what was consumed)*	How much came from **own-production**?		How much came from **gifts and other sources**? E107c: 1=Relief 2=Relatives/Neighbors 3=Food subsidy 4=other……….		Main source of gifts/others
			Quantity	Unit	Quantity	Unit		Quantity	Unit	Quantity	Unit	
	E101	E102	E103A	E103B	E104A	E104B	E105	E106A	E106B	E107A	E107B	E107C
Pumpkin/Butternut	50											
Pumpkin leaves	51											
Spinach	52											
Carrots	53											
Okra/Lady's finger	54											
Mushroom	55											
Other vegetables (specify)…	56											
Meat, Fish and Animal products	57-71											
Eggs	57											
Dried fish	58											
Fresh fish	59											
Beef	60											
Goat meat	61											
Pork	62											
Mutton (Sheep meat)	63											

MODULE E1.   Food consumption over past 7 days (continued)

E103b/04b/06b/07b – UNIT CODES
1=90kg bag 2=kg 3=Litre 4=Crate 5=Numbers 6=Bunch 7=25kg bag 8=10kg bag 9=Gorogoro 10=50kg bag 11=Debe 12=Gram 13=Bale 14=tray 15=millilitre

NOTE: Any unit listed <u>must</u> be able to be converted to a standardized unit. This conversion will happen during data analysis; it should not be done in the field by the enumerator.

Over the **past one week** (7 days), did you or others in your household eat any [. . .]? *INCLUDE FOOD BOTH EATEN COMMUNALLY IN THE HOUSEHOLD AND SEPARATELY BY INDIVIDUAL HOUSEHOLD MEMBERS, BOTH INSIDE AND OUTSIDE THE HOME*	Item Code	Yes=1, No=2 >>Next item	How much **in total** did your household **eat** in the past week?		How much came from **purchases**?		How much (in **KSH)** did you spend on what was eaten last week? *(if family ate part but not all of something they purchased, estimate only cost of what was consumed)*	How much came from **own-production**?		How much came from **gifts and other sources**? E107c: 1=Relief 2=Relatives/Neighbors 3=Food subsidy 4=other…………		Main source of gifts/others
			Quantity	Unit	Quantity	Unit		Quantity	Unit	Quantity	Unit	
	E101	E102	E103A	E103B	E104A	E104B	E105	E106A	E106B	E107A	E107B	E107C
Chicken	64											
Other poultry – guinea fowl, doves, etc.	65											
Small animal – rabbit, mice, etc.	66											
Termites, other insects (e.g., caterpillar)	67											
Tinned meat or fish	68											
Smoked fish	69											
Omena (*Dagaa*)	70											
Other (specify)…	71											
Fruits	**72-83**											
Mango	72											
Banana	73											
Citrus – Lemon, orange, Tangerines	74											
Plums	75											
Water melon	76											

MODULE E1. Food consumption over past 7 days (continued)

E103b/04b/06b/07b – UNIT CODES
1=90kg bag 2=kg 3=Litre 4=Crate 5=Numbers 6=Bunch 7=25kg bag 8=10kg bag 9=Gorogoro 10=50kg bag 11=Debe 12=Gram 13=Bale 14=tray 15=millilitre

NOTE: Any unit listed **must** be able to be converted to a standardized unit. This conversion will happen during data analysis; it should not be done in the field by the enumerator.

Over the **past one week** (7 days), did you or others in your household eat any [. . .]? *INCLUDE FOOD BOTH EATEN COMMUNALLY IN THE HOUSEHOLD AND SEPARATELY BY INDIVIDUAL HOUSEHOLD MEMBERS, BOTH INSIDE AND OUTSIDE THE HOME*	Item Code	Yes=1, No=2 >>Next item	How much **in total** did your household **eat** in the past week?		How much came from **purchases**?		How much (in **KSH)** did you spend on what was eaten last week? *(if family ate part but not all of something they purchased, estimate only cost of what was consumed)*	How much came from **own-production**?		How much came from **gifts and other sources**? E107c: 1=Relief 2=Relatives/Neighbors 3=Food subsidy 4=other…………		Main source of gifts/others
			Quantity	Unit	Quantity	Unit		Quantity	Unit	Quantity	Unit	
	E101	E102	E103A	E103B	E104A	E104B	E105	E106A	E106B	E107A	E107B	E107C
Pineapple	77											
Pawpaw	78											
Guava	79											
Avocado	80											
Wild fruit (Wild berries, Mulberry *Zambarau,* etc.)	81											
Apple	82											
Other fruits (specify)…	83											
Milk and Milk Products	84-92											
Fresh milk	84											
Soured milk (*lala/Mala*)	85											
Powdered milk	86											
Ghee	87											
Butter	88											
Cheese	89											
Yoghurt	90											

MODULE E1.   Food consumption over past 7 days (continued)

E103b/04b/06b/07b – UNIT CODES *1=90kg bag 2=kg 3=Litre 4=Crate 5=Numbers 6=Bunch 7=25kg bag 8=10kg bag 9=Gorogoro 10=50kg bag 11=Debe 12=Gram 13=Bale 14=tray 15=millilitre* *NOTE: Any unit listed __must__ be able to be converted to a standardized unit. This conversion will happen during data analysis; it should not be done in the field by the enumerator.*

Over the **past one week** (7 days), did you or others in your household eat any [. . .]? *INCLUDE FOOD BOTH EATEN COMMUNALLY IN THE HOUSEHOLD AND SEPARATELY BY INDIVIDUAL HOUSEHOLD MEMBERS, BOTH INSIDE AND OUTSIDE THE HOME*	Item Code	Yes=1, No=2 >>Next item	How much **in total** did your household **eat** in the past week?		How much came from **purchases**?		How much (in **KSH)** did you spend on what was eaten last week? *(if family ate part but not all of something they purchased, estimate only cost of what was consumed)*	How much came from **own-production**?		How much came from **gifts and other sources**?		
											E107c: 1=Relief 2=Relatives/Neighbors 3=Food subsidy 4=other……….
			Quantity	Unit	Quantity	Unit		Quantity	Unit	Quantity	Unit	**Main source of gifts/others**
	E101	E102	E103A	E103B	E104A	E104B	E105	E106A	E106B	E107A	E107B	E107C
Infant feeding formula (for bottle)	91											
Other (specify)…	92											
Sugar, Fats, and Oil	93-97											
Sugar	93											
Sugar Cane (Chewing)	94											
Margarine	95											
Cooking Fat/Oil	96											
Other (specify)…	97											
Beverages	98-110											
Tea	98											
Coffee	99											
Cocoa, milo, drinking chocolate	100											
Squash (Concentrated juice e.g., Quencher)	101											
Fruit juice (e.g., Delmonte juice)	102											
Freezes (Flavoured ice)	103											

MODULE E1. Food consumption over past 7 days (continued)

E103b/04b/06b/07b – UNIT CODES

1=90kg bag 2=kg 3=Litre 4=Crate 5=Numbers 6=Bunch 7=25kg bag 8=10kg bag 9=Gorogoro 10=50kg bag 11=Debe 12=Gram 13=Bale 14=tray 15=millilitre

NOTE: Any unit listed <u>must</u> be able to be converted to a standardized unit. This conversion will happen during data analysis; it should not be done in the field by the enumerator.

Over the **past one week** (7 days), did you or others in your household eat any [. . .]? *INCLUDE FOOD BOTH EATEN COMMUNALLY IN THE HOUSEHOLD AND SEPARATELY BY INDIVIDUAL HOUSEHOLD MEMBERS, BOTH INSIDE AND OUTSIDE THE HOME*	Item Code	Yes=1, No=2 >>Next item	How much **in total** did your household **eat** in the past week?		How much came from **purchases**?		How much (in **KSH)** did you spend on what was eaten last week? *(if family ate part but not all of something they purchased, estimate only cost of what was consumed)*	How much came from **own-production**?		How much came from **gifts and other sources**? E107c: 1=Relief 2=Relatives/Neighbors 3=Food subsidy 4=other………..		Main source of gifts/others
			Quantity	Unit	Quantity	Unit		Quantity	Unit	Quantity	Unit	
	E101	**E102**	**E103A**	**E103B**	**E104A**	**E104B**	**E105**	**E106A**	**E106B**	**E107A**	**E107B**	**E107C**
Soft drinks (e.g., Coca-cola, Fanta, Sprite, etc.)	**104**											
Bottled water	**105**											
Bottled/canned beer (Tusker, etc.)	**106**											
Traditional beer (e.g., *Busaa, Muratina*)	**107**											
Wine and spirits	**108**											
Locally brewed liquor (e.g., *Changaa*)	**109**											
Other (specify)…	**110**											
Spices & Miscellaneous	**111-120**											
Salt	**111**											
Spices	**112**											
Yeast, baking powder	**113**											
Tomato sauce (bottle)	**114**											
Hot sauce (Chili, etc.)	**115**											
Jam, jelly	**116**											
Sweets, candy, chocolates	**117**											

MODULE E1. Food consumption over past 7 days (continued)

E103b/04b/06b/07b – UNIT CODES
1=90kg bag 2=kg 3=Litre 4=Crate 5=Numbers 6=Bunch 7=25kg bag 8=10kg bag 9=Gorogoro 10=50kg bag 11=Debe 12=Gram 13=Bale 14=tray 15=millilitre

NOTE: Any unit listed <u>must</u> be able to be converted to a standardized unit. This conversion will happen during data analysis; it should not be done in the field by the enumerator.

Over the **past one week** (7 days), did you or others in your household eat any [. . .]? *INCLUDE FOOD BOTH EATEN COMMUNALLY IN THE HOUSEHOLD AND SEPARATELY BY INDIVIDUAL HOUSEHOLD MEMBERS, BOTH INSIDE AND OUTSIDE THE HOME*	Item Code	Yes=1, No=2 >>Next item	How much **in total** did your household **eat** in the past week?		How much came from **purchases**?		How much (in **KSH)** did you spend on what was eaten last week? *(if family ate part but not all of something they purchased, estimate only cost of what was consumed)*	How much came from **own-production**?		How much came from **gifts and other sources**? E107c: 1=Relief 2=Relatives/Neighbors 3=Food subsidy 4=other…………		Main source of gifts/others
			Quantity	Unit	Quantity	Unit		Quantity	Unit	Quantity	Unit	
	E101	**E102**	**E103A**	**E103B**	**E104A**	**E104B**	**E105**	**E106A**	**E106B**	**E107A**	**E107B**	**E107C**
Peanut butter	**118**											
Honey	**119**											
Other (specify)…	**120**											
Cooked Foods from Vendors	**121-132**											
Maize – boiled or roasted (vendor)	**121**											
Chips (vendor)	**122**											
Cassava – boiled (vendor)	**123**											
Eggs – boiled (vendor)	**124**											
Chicken (vendor)	**125**											
Meat (vendor)	**126**											
Fish (vendor)	**127**											
Sausage/Smokies (vendor)	**128**											
Mandazi, doughnut (vendor)	**129**											
Samosa (vendor)	**130**											

MODULE E1.   Food consumption over past 7 days (continued)

E103b/04b/06b/07b – UNIT CODES
1=90kg bag 2=kg 3=Litre 4=Crate 5=Numbers 6=Bunch 7=25kg bag 8=10kg bag 9=Gorogoro 10=50kg bag 11=Debe 12=Gram 13=Bale 14=tray 15=millilitre
NOTE: Any unit listed __must__ be able to be converted to a standardized unit. This conversion will happen during data analysis; it should not be done in the field by the enumerator.

Over the **past one week** (7 days), did you or others in your household eat any [. . .]? *INCLUDE FOOD BOTH EATEN COMMUNALLY IN THE HOUSEHOLD AND SEPARATELY BY INDIVIDUAL HOUSEHOLD MEMBERS, BOTH INSIDE AND OUTSIDE THE HOME*	Item Code	Yes=1, No=2 *>>Next item*	How much **in total** did your household **eat** in the past week?		How much came from **purchases**?		How much (in **KSH)** did you spend on what was eaten last week? *(if family ate part but not all of something they purchased, estimate only cost of what was consumed)*	How much came from **own-production**?		How much came from **gifts and other sources**? **E107c:** 1=Relief 2=Relatives/Neighbors 3=Food subsidy 4=other…………		
			Quantity	Unit	Quantity	Unit		Quantity	Unit	Quantity	Unit	**Main source of gifts/others**
	E101	E102	E103A	E103B	E104A	E104B	E105	E106A	E106B	E107A	E107B	E107C
Meal eaten at restaurant	131											
Other (specify)…	132											

MODULE E2.   Non-food expenditures over past 7 days

Module E2.sav

ONE WEEK RECALL	Item code	Yes=1 No=2 *>>Next Item*	How much did you pay (how much did they cost) in total? (KSH)
Over the past <u>one week (7 days)</u>, did your household use or buy any […]?	**E201**	**E202**	**E203**
	133-143		
Firewood	133		
Charcoal	134		
Paraffin or kerosene	135		
Matches	136		
Candles	137		
Cigarettes or other tobacco	138		
Newspapers or magazines	139		
Public transport – Bicycle Taxi (include any used for school under education costs in Module E5)	140		
Public transport – Bus/Minibus	141		
Public transport – Other (Truck, Oxcart, etc.)	142		
Others…	143		

MODULE E3.   Non-food expenditures over past one month

Module E3.sav

ONE MONTH RECALL	Item code	Yes=1 No=2 >>*Next Item*	How much did you pay (how much did they cost) in **total**?
Over the past <u>one month</u>, did your household use or buy any [...]?	**144-169** **E301**	**E302**	**E303**
Milling fees for grains (**Excluding** cost of grain itself)	**144**		
Bar soap (body soap or clothes soap)	**145**		
Clothes soap (powder, paste)	**146**		
Toothpaste, toothbrush	**147**		
Toilet paper	**148**		
Glycerine, Vaseline, skin creams	**149**		
Other personal products (shampoo, razor blades, cosmetics, hair products, shaving, salon etc.)	**150**		
Light bulbs	**151**		
Donation – to church, charity, beggar, etc.	**152**		
Petrol or diesel	**153**		
Motor vehicle service, repair, or parts	**154**		
Bicycle/Motor cycle service, repair, or parts	**155**		
Wages paid to servants	**156**		
Loan repayments – monthly installment	**157**		
Mortgage – regular payment to purchase house	**158**		
Repairs & maintenance to dwelling	**159**		
Repairs to household and personal items (radios, watches, etc., **excluding** battery purchases)	**160**		
Airtime and other telephone bill costs	**161**		
Postage stamps	**162**		
Cooking Gas	**163**		
Expenditures on pets	**164**		
Dry cells	**165**		
Recharging batteries, cell phones	**166**		

MODULE E3.   Non-food expenditures over past one month (continued)

ONE MONTH RECALL	Item code	Yes=1 No=2 (*Next Item*)	How much did you pay (how much did they cost) in **total**?
HEALTH EXPENDITURES (Include Estimated Value of any In-Kind Payments, or borrowed amounts)			
Anything related to illnesses and injuries, including for medicine, tests, consultation	**167**		
Medical care not related to an illness – preventative health care, pre-natal visits, check-ups, etc.	**168**		
Non-prescription medicines – over the counter self-decided medicines	**169**		
Others…	**170**		

MODULE E4. Non-food expenditures over past three months (for all clothing, exclude uniforms/school clothing)

Module E4.sav

THREE MONTH RECALL	Item code 171-190	Yes=1 No=2 (*go to Next Item*)	How much did you pay (how much did they cost) in **total**? KSH
Over the past three months, did your household buy any [...]?	E401	E402	E403
Infant clothing	171		
Baby nappies/diapers	172		
Boy's clothing and shoes	173		
Men's clothing and shoes	174		
Girl's clothing and shoes	175		
Lady's clothing and shoes	176		
Cloth, thread, other sewing material	177		
Laundry, dry cleaning, tailoring fees	178		
Bowls, glassware, plates, silverware, etc.	179		
Cooking utensils (cook-pots, stirring spoons and whisks, etc.)	180		
Cleaning utensils (brooms, brushes, etc.)	181		
Torch/flashlight	182		
Umbrella	183		
Paraffin lamp (hurricane or pressure)	184		
Stationery items (**Excluding** school related)	185		
Books (**Excluding** school related)	186		
Music or video cassette or CD/DVD	187		

MODULE E4. Non-food expenditures over past three months (for all clothing, exclude uniforms/school clothing) (continued)

THREE MONTH RECALL	Item code 171-190	Yes=1 No=2 *(go to Next Item)*	How much did you pay (how much did they cost) in **total**? **(KSH)**
Tickets for sports/entertainment events	**188**		
House decorations	**189**		
Night's lodging in rest house or hotel (**Excluding** school or health related)	**190**		
Other…	**191**		

MODULE E5A. Non-food expenditures over past 12 months

Module E5a.sav

ONE YEAR (12 MONTH) RECALL	Item code 192-216	Yes=1 No=2 >>*Next Item*	How much did you pay (how much did they cost) in **total**? (KSH)
Over the past one year (twelve months), did your household use or buy any [...]?	**E501**	**E502**	**E503**
Carpet, rugs, drapes, curtains	192		
Linen – towels, sheets, blankets	193		
Mat – sleeping or for drying grains	194		
Mosquito net	195		
Mattress	196		
Sports and hobby equipment, musical instruments, toys	197		
Film, film processing, camera	198		
Cement	199		
Bricks/blocks/stones	200		
Construction timber	201		
Council rates	202		
Insurance – health (MASM, etc.), auto, home, life	203		
Fines or legal fees	204		
Bride price	205		
Marriage ceremony costs, Graduation, Rite of passage	206		
Funeral costs, household members	207		
Funeral costs, non-household members (relatives, neighbours, friends)	208		
HEALTH EXPENDITURES (Include Estimated Value of any In-Kind Payments, or Borrowed Amounts) over last 12 months			
Hospitalizations or **overnight stay in any hospital** – total cost for treatment	209		
Over-night(s) stay at a traditional healer's or faith healer's dwelling – total costs for treatment	210		
Medical related travel costs (Healer and Hospitals)	211		

MODULE E5A. Non-food expenditures over past 12 months (continued)

ONE YEAR (12 MONTH) RECALL	Item code 192-216	Yes=1 No=2 *>>Next Item*	How much did you pay (how much did they cost) in **total**? (KSH)
EDUCATION EXPENDITURES (Include Estimated Value of any In-Kind Payments or borrowed amounts) over last 12 months			
School fees (Tuition, including extra tuition fees, contribution to PTA, School building and maintenance)	212		
Expenditures on after school programs and tutoring	213		
School books and stationery	214		
School uniform	215		
Transport to and from school	216		
Other (e.g., Sanitary towels, school trips)	217		

MODULE E5B. Non-food items that may or may not have been purchased

Module E5b.sav

Over the past one year (12 months) did your household gather, use or buy any…? (note that the value of these items should be entered <u>only</u> if they were purchased or used by the household, **not for investment purposes**) [*USE UNITS CODES FROM E1*]	Item Code 218-219	Yes=1 No=2**>>** *Next Item*	What was the estimated total quantity of [ITEM] used?		What was the total estimated value of [ITEM] that you used (*for items that were gathered*)?	How much did you spend **total** on [ITEM] (*for items that were bought*)
			Quantity	Unit	KSH	KSH
Item	**E504**	**E505**	**E506A**	**E506B**	**E507**	**E508**
Wood poles, bamboo	218					
Grass for thatching roof or other use	219					
Other…	220					

MODULE E6.   Housing expenditures

Module E6.sav

Do you **own** or are **purchasing** this house, is it provided to you by an employer, do you use it for **free**, or do you **rent** this house? <u>E601</u> 1=Own 2=Being Purchased 3=Employer Provides **(Skip to E604)** 4=Free, Authorized **(Skip to E604)** 5=Free, Not Authorized **(Skip to E604)** 6=Rented **(Skip to E605)**	If you **sold** this dwelling today, how much would you receive for it? **(KSH)**	How **many years ago** was this house built? *How old is it?* *(Years)*	If you **rented** this dwelling today, how much **rent** would you **receive**? **(KSH per Month)**	How much do you **pay** to **rent** this dwelling? **(KSH per Month)**
E601	E602	E603	E604	E605
<u>E602/603</u> 98=Don't know/nonresponse/NA			<u>E604/05</u> 98=Don't know/nonresponse/NA	

MODULE E7. Durable goods expenditures

Module E7.sav

Does your household own a [ITEM]?	ITEM CODE 221-258	YES=1 NO=2 *(go to next Item)*	How **many** [ITEM]s do you **own**? (Numbers)	What is the **age** of these [ITEM]s? *If more than one item, average age.* (Year)	If you wanted to **sell** one of these [ITEM]s today, how much would you **receive**? *If more than one, average value* (KSH)	Did you **purchase** or pay for any of these [ITEM]s in the **last 12** months? Yes=1 No=2 *(go to next item)*	How much did you **pay** for all these [ITEM]s all together (**total**) in the **last 12** months? (KSH)
	E701	E702	E703	E704	E705	E706	E707
Bed	221						
Table	222						
Chair	223						
Upholstered chair, sofa set	224						
Coffee table (for sitting room)	225						
Cupboard, drawers, bureau	226						
Fan	227						
Air conditioner	228						
Radio	229						
Tape or CD/DVD player/VCR	230						
Television	231						
Sewing machine	232						
Kerosene/paraffin stove	233						
Electric stove; hot plate	234						
Charcoal stove (*Jiko*)	235						
Gas stove	236						
Pressure lamps	237						
Refrigerator	238						
Washing machine	239						

MODULE E7. Durable goods expenditures (continued)

Does your household own a [ITEM]?	ITEM CODE 221-258	YES=1 NO=2 (go to next Item)	How **many** [ITEM]s do you **own**? (Numbers)	What is the **age** of these [ITEM]s? If more than one item, average age. (Year)	If you wanted to **sell** one of these [ITEM]s today, how much would you **receive**? If more than one, average value (KSH)	Did you **purchase** or pay for any of these [ITEM]s in the **last 12** months? Yes=1 No=2 (go to next item)	How much did you **pay** for all these [ITEM]s all together (**total**) in the **last 12** months? (KSH)
	E701	E702	E703	E704	E705	E706	E707
Bicycle	240						
Boat	241						
Motorcycle/scooter	242						
Car	243						
Mini-bus	244						
Lorry	245						
Beer-brewing drum	246						
Lantern (paraffin)	274						
Desk	248						
Clock	249						
Iron box (for pressing clothes)	250						
Computer equipment & accessories	251						
Satellite dish	252						
Solar panel	253						
Generator	254						
Battery	255						
Mobile Phones	256						
Water storage tanks	257						
Other…	258						

MODULE F. Household hunger scale

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

F01. In the past [4 weeks/30 days] were there instances when the household went a **whole day** and **night completely** without food **due** to **lack of resources** to get food?

1=Yes **2** *= No* **(go to F03)**   **F01**_____

F02. How **often** did this happen in the past [4 weeks/30 days]?   **F02**_____

1 = Rarely (1-2 times) **2** *= Sometimes (3-10 times)* **3** *=Often (more than 10 times)*

F03. In the past [4 weeks/30 days] did **you** or **any household member** go to sleep at **night** hungry because there was **not** enough food?   **F03**_____

1=Yes **2** *= No* **>>F05**

F04. How **often** did this happen in the past [4 weeks/30 days]?   **F04**_____

1 = Rarely (1-2 times) **2**= *Sometimes (3-10 times)* **3** *= Often (more than10 times)*

F05. In the past [4 weeks/30 days] did **you** or **any household member** go a **whole day** and **night** without eating anything at all because there was **not** enough food?

1=Yes **2** *= No* **>>end of module**   **F05**_____

F06. How **often** did this happen in the past [4 weeks/30 days]?

1 = Rarely (1-2 times) **2**= *Sometimes (3-10 times)* **3**= *Often (more than 10 times)*   **F06**_____

MODULE G. Women's Empowerment in Agriculture Index

> ***Enumerator****: This questionnaire should be administered separately to the primary and secondary respondents identified in the household roster (Section C) of the household level questionnaire. You should complete this coversheet for each individual identified in the "informed consent section" even if the individual is not available to be interviewed for reporting purposes.*
>
> Please double check to ensure:
>
> - You have completed the roster section of the household questionnaire to identify the correct primary and/or secondary respondent(s);
> - You have noted the household ID and individual ID correctly for the person you are about to interview;
> - You have gained informed consent for the individual in the household questionnaire;
> - You have sought to interview the individual in private or where other members of the household cannot overhear or contribute answers; and
> - **Do not attempt to make responses between the primary and secondary respondent the same—it is ok for them to be different.**

MODULE G1.   Individual identification

G101. Name of respondent currently being interviewed

G101_____

G102. ID of respondent currently being interviewed (ID Code from roster in Section C Household Roster):

G102_____

G103. Sex of respondent (*1=Male 2=Female*)

G103_____

G104. Type of household (*1=Male and female adult 2= Female adult only*)

G104_____

G105. Outcome of interview

G105_____

1=Completed 2=Incomplete 3=Absent 4=Refused 5=Could not locate

G106. Ability to be interviewed alone:

G106_____

1=Alone 2=With adult females present 3=With adult males present 4=With adults mixed sex present
5=With children present 6=With adults mixed sex and children present

ID of respondent currently being interviewed (ID Code from roster in Section C Household Roster):

RESPID_____

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

Module G2.sav

Activity description	Activity code	Did **you** (*singular*) participate in [ACTIVITY] in the **past 12 months** (that is during the last **[one/two] cropping seasons**)? 1=Yes 2=No (*go to next activity*)	How much **input** did you have in **making decisions** about [ACTIVITY]?	How much **input** did you have in decisions on the **use of income** generated from [ACTIVITY]
Activity description	**G200**	**G201**	**G202**	**G203**
Food crop farming: Crops that are grown primarily for household food consumption	1			
Cash crop farming: Crops that are grown primary for sale in the market	2			
Livestock production	3			
Non-farm economic activities: Small business, self-employment, buy-and-sell	4			
Wage and salary employment: In-kind or monetary work both agriculture and other wage work	5			
Fishing or fishpond culture	6			

G202/G203: Input into decision-making

1=No input	3=Input into some decisions	5=Input into all decisions
2=Input into very few decisions	4=Input into most decisions	6=No decision made

MODULE G3A. Access to productive capital

RESPID_____

Module G3a.sav

Productive capital		Does anyone in your household **currently** have any [ITEM]s? Yes = 1 No = **2** (*next item*)	How **many** of [ITEM] does your household **currently** have?	Who would you say **owns most** of the [ITEM]s?	Who would you say can **decide** whether to **sell** [ITEM] most of the time?	Who would you say can decide whether to **give away** [ITEM]s most of the time?	Who would you say can **decide** to **mortgage** or **rent** out [ITEM]s most of the time?	Who **contributes** most to decisions regarding a **new purchase** of [ITEM]s?
		G301	G301A	G301B	G302	G303	G304	G305	G306
Agricultural land (pieces/plots)	1							
Large livestock (oxen, cattle)	2							
Small livestock (goats, pigs, sheep, Rabbits)	3							
Chickens, Ducks, Turkeys, Pigeons	4							
Fish pond or fishing equipment	5							
Farm equipment (non-mechanized)	6							
Farm equipment (mechanized)	7							
Other land not used for agricultural purposes (pieces, residential or commercial land)	8							
Nonfarm business equipment	9							
House (and other structures)	10							
Large consumer durables (fridge, TV, sofa)	11							
Small consumer durables (radio, cookware)	12							
Cell phone	13							
Means of transportation (bicycle, motorcycle, car)	14							

G3.02-G3.06: Decision-making and control over productive capital

1=Self	6=Partner/Spouse and other household member(s)
2=Partner/Spouse	7=Someone (or group of people) outside the household
3=Self and partner/spouse jointly	8=Self and other outside people
4=Other household member	9=Partner/Spouse and other outside people
5=Self and other household member(s)	10=Self, partner/spouse and other outside people

MODULE G3B. Access to credit

Module G3b.sav

Lending sources		Has anyone in your household **taken any loans** or **borrowed** cash/in-kind from [SOURCE] in the past 12 months? **G307 Taken loans** 1=Yes, cash 2=Yes, in-kind 3=Yes, cash and in-kind 4=No (*go to next source*) 5=Don't know (*go to next source*)	**Who** made the decision to **borrow** from [SOURCE]?	**Who** makes the decision about **what to do with** the money/item borrowed from [SOURCE]?
Source name	**G307**	**G308**	**G309**	**G310**
Non-governmental organization (NGO)	1			
Informal lender	2			
Formal lender (bank/financial institution)	3			
Friends or relatives	4			
Group based micro-finance or lending including VSLAs/SACCOs/merry-go-rounds	5			

G308/G309:
1=Self
2=Partner/Spouse
3=Self and partner/spouse jointly
4=Other household member
5=Self and other household member(s)

6=Partner/Spouse and other household member(s)
7=Someone (or group of people) outside the household
9=Partner/Spouse and other outside people
10=Self, partner/spouse and other outside people

MODULE G4A. Leadership and influence in the community

G4.01 Do you feel comfortable speaking up in public to help decide on **infrastructure** (like small wells, roads, water supplies) to be built in your community?

G401 _____

G4.02 Do you feel comfortable speaking up in public to ensure **proper payment of wages** for public works or other
similar programs?

G402 _____

G4.03 Do you feel comfortable speaking up in public to **protest the misbehaviour** of authorities or elected officials?

G403 _____

(**G401 – G403:** *1=No, not at all comfortable 2=Yes, but with a great deal of difficulty 3=Yes, but with a little difficulty
4=Yes, fairly comfortable 5=Yes, very comfortable*)

MODULE G4B. Group membership and influence in the group

Module G4b.sav

Group membership		Is there a [GROUP] in your community? 1=Yes..1 2=No *(go to next group)*	Are you an **active** member of this [GROUP]? 1=Yes..1 2=No
Group categories	**G400b**	**G404**	**G405**
Agricultural/livestock/fisheries producer's group (including marketing groups)	**1**		
Water users' group	**2**		
Forest users' group	**3**		
Credit or microfinance group (including SACCOs/merry-go-rounds/VSLAs)	**4**		
Mutual help or insurance group (including burial societies)	**5**		
Trade and business association	**6**		
Civic groups (improving community) or charitable group (helping others)	**7**		
Local government- county councils	**8**		
Religious group	**9**		
Other women's group (only if it does not fit into one of the other categories)	**10**		
Other (specify)…	**11**		

MODULE G5.   Decision-making and motivation for decision-making

Module G5.sav   RESPID_____

		When decisions are being made regarding the following aspects of household life, **who** is it that normally makes them?	To what extent do you feel you can make your own personal decisions regarding these aspects of household life if you want(ed) to? *Ask only if G502 is 1 and respondent is female, G502 is 2 and respondent is male, or G502 is 3-7.* 1=Not at all 2=Small extent 3=Medium extent 4=To a high extent	**ENUMERATOR: This set of questions is very important. I am going to give you some reasons why you act as you do in the aspects of household life I just mentioned. You might have several reasons for doing what you do and there is no right or wrong answer. Please tell me how true it would be to say:** *[If household does not engage in that particular activity, enter 98 and proceed to next activity.]*			
ENUMERATOR: Ask G502 for all categories of activities before asking G503. Do not ask G503 if G502 response is 1 and respondent is male OR G502 response is 2 and respondent is female. *If household does not engage in that particular activity, enter 98 and proceed to next activity.*				My actions in [ASPECT] are determined by the situation. I don't really have an option. [READ OPTIONS]	My actions in [ASPECT] are partly because I will get in **trouble** with someone if I act differently. [READ OPTIONS]	Regarding [ASPECT] I do what I do **so others don't think poorly of me.** [READ OPTIONS]	Regarding [ASPECT] I do what I do because I personally think **it is the right thing to do**. [READ OPTIONS]
	G501	**G502**	**G503**	**G504**	**G505**	**G506**	**G507**
Agricultural production? (**Overall)**	1						
What inputs to buy for agricultural Production?	2						
What types of crops to grow for agricultural production?	3						
When or who would take crops to the market?	4						
Livestock production?	5						
Non-farm business activity?	6						
Your own (singular) wage or salary employment?	7						
Major household expenditures? (e.g., large appliance like refrigerator)	8						
Minor household expenditures? (daily food consumption or other household needs)	9						

MODULE G5. Decision-making and motivation for decision-making (continued)

Module G5.sav   RESPID_____

ENUMERATOR: Ask G502 for all categories of activities before asking G503. Do *not* ask G503 if G502 response is 1 and respondent is male OR G502 response is 2 and respondent is female. *If household does not engage in that particular activity, enter 98 and proceed to next activity.*		When decisions are being made regarding the following aspects of household life, **who** is it that normally makes them?	To what extent do you feel you can make your own personal decisions regarding these aspects of household life if you want(ed) to? *Ask only if G502 is 1 and respondent is female, G502 is 2 and respondent is male, or G502 is 3-7.* 1=Not at all 2=Small extent 3=Medium extent 4=To a high extent	ENUMERATOR: This set of questions is very important. I am going to give you some reasons why you act as you do in the aspects of household life I just mentioned. You might have several reasons for doing what you do and there is no right or wrong answer. Please tell me how true it would be to say: *[If household does not engage in that particular activity, enter 98 and proceed to next activity.]*			
				My actions in [ASPECT] are determined by the situation. I don't really have an option. [READ OPTIONS]	My actions in [ASPECT] are partly because I will get in **trouble** with someone if I act differently. [READ OPTIONS]	Regarding [ASPECT] I do what I do **so others don't think poorly of me.** [READ OPTIONS]	Regarding [ASPECT] I do what I do because I personally think **it is the right thing to do**. [READ OPTIONS]
	G501	G502	G503	G504	G505	G506	G507

G502: Who makes decision		**G504/G505/G506/G507: Motivation for activity**	
1=Main male or husband 2=Main female or wife 3=Husband and wife jointly 4=Someone else in the household	5=Jointly with someone else inside the household 6=Jointly with someone else outside the household 7=Someone outside the household/other 98=Household does not engage in activity/Decision not made	1=Never true 2=Not very true 3=Somewhat true	4=Always true 98=Household does not engage in activity Decision not made

MODULE G6.   Time allocation

*Enumerator: G601: Please record a log of the activities for the individual in the last complete 24 hours (starting yesterday morning at 4 am, finishing 3:59 am of the current day). The time intervals are marked in 15 min intervals and <u>one to two activities can be marked for each time period</u> by drawing a line through that activity. If two activities are marked, they should be distinguished with a P for the Primary activity and S for the Secondary activity written next to the lines. Later, sum the hours for primary activities and record in (PRIHRS) and also the hours for secondary activities and record in (**SECHRS**).*

MODULE G6.   Time allocation (continued)

RESPID_____

Module G6.sav

Activity	G601	Night		Morning		Day							
		4	5	6	7	8	9	10	11	12	13	14	15
Sleeping and resting	1												
Eating and drinking	2												
Personal care	3												
School (also homework)	4												
Work as employed	5												
Own business work	6												
Farming/livestock/fishing	7												
Shopping/getting service (incl health services)	8												
Weaving, sewing, textile care	9												
Cooking	10												
Domestic work (incl fetching wood and water)	11												
Care for children/adults/elderly	12												
Travelling and communiting	13												
Watching TV/listening to radio/reading	14												
Exercising	15												
Social activities and hobbies	16												
Religious activities	17												
Other, specify…	18												

MODULE G6.   Time allocation (continued)

Module G6.sav (continued)

Activity	G601			Evening		Night								PRIHRS	SECHRS
		16	17	18	19	20	21	22	23	24	1	2	3		
Sleeping and resting	1														
Eating and drinking	2														
Personal care	3														
School (also homework)	4														
Work as employed	5														
Own business work	6														
Farming/livestock/fishing	7														
Shopping/getting service (incl health services)	8														
Weaving, sewing, textile care	9														
Cooking	10														
Domestic work (incl fetching wood and water)	11														
Care for children/adults/elderly	12														
Travelling and commuting	13														
Watching TV/listening to radio/reading	14														
Exercising	15														
Social activities and hobbies	16														
Religious activities	17														
Other, specify	18														

MODULE G6.   Satisfaction with time allocation

READ: Please give your opinion on a scale of 1 to 10.
*(**1** means you are **not satisfied** and **10** means you are **very satisfied**. If you are neither satisfied **nor** dissatisfied this would be in the middle or **5** on the scale)*

G602 How satisfied are you with your available time for **leisure** activities like visiting neighbours, watching TV, listening to the radio, seeing movies or doing sports?

G602_____

MODULE H. Women's Dietary Diversity

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

Module W1.sav

Woman *(1, 2, 3….)*	Woman's **ID code** from the household roster	if month is not known, enter '98' e.g.,: 1, 2, 3... 12. In what **month** were you born?	if year is not known, enter '98' e.g.,: 1900…………..2012 In what **year** were you born?	if don't know user '98' and go to HW5 (COMPLETED YEARS) Please tell me how old you are. What was your **age** at your **last birthday**?
HW0	HW1	HW2	HW3	HW4

MODULE H. Women's Dietary Diversity (continued)

Module W2.sav

WOMEN'S DIETARY DIVERSITY											
Please describe everything that you ate yesterday during the day or night, whether at home or outside the home.											
Use 1 = Yes 2 = No 98 = Don't Know											
Woman *(1, 2, 3, …)*	Food made from **grains**, such as bread, rice, noodles, porridge, ugali etc.	Pumpkin, carrots, squash, or sweet potatoes (that are **yellow or orange** inside)	White potatoes, white yams, cassava or foods made from roots	**Any dark green leafy vegetables** such as sukuma wiki, spinach, managu, etc.	**Vitamin A rich fruits** like Ripe mangoes, ripe papayas etc.	Any **other fruits or vegetables**	Liver, kidney, heart, or other **organ meats**	Any **meat**, such as beef, pork, lamb, goat, chicken, or duck	Eggs	Fresh or dried **fish**, shellfish, or seafood	Any foods made from beans, peas, lentils, nuts, or seeds
HW0	HW5	HW6	HW7	HW8	HW9	HW10	HW11	HW12	HW13	HW14	HW15

MODULE H. Women's Dietary Diversity (continued)

Please describe everything that you ate yesterday during the day or night, whether at home or outside the home.						
Use 1 = Yes 2 = No 98 = Don't Know						
Woman *(1, 2, 3, …)*	Cheese, yoghurt, or other **milk products**	Any **oil, fats, or butter**, or foods made with any of these	Any **sugary foods** such as chocolates, sweets, candies, pastries, cakes, or biscuits	**Condiments for flavour,** such as chilies, spices, herbs, or fish powder	Grubs, snails, or insects	Foods made with red palm oil, red palm nut, or red palm nut pulp sauce
HW0	**HW16**	**HW17**	**HW18**	**HW19**	**HW20**	**HW21**

MODULE I.   Infant and young child feeding

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

Module I1.sav

Child *(1, 2, 3, …)*	Child's **id code** from the household roster	Caregiver's **id code** from the household roster	What is [child's name]'s **sex**? 1 = Male 2 = Female	What is the [child's name] **date of birth**? (DD/MM/YYYY)	How old was [child's name] at [his/her] last birthday? **RECORD AGE IN COMPLETED YEARS**	How many months old is [child's name]? **RECORD AGE IN COMPLETED MONTHS**	*Check IC06.* Is the child **under 60** months? 1 = Yes 2 = No (End module)	Does child have **oedema**? (Tambazi) 1 = Yes 2 = No 98 = Don't know
IC0	**IC1**	**IC2**	**IC3**	**IC4**	**IC5**	**IC6**	**IC7**	**IC8**

MODULE I.   Infant and young child feeding (continued)

Module I2.sav

	EXCLUSIVE BREASTFEEDING AND MINIMUM ACCEPTABLE DIET					
Child *(1, 2, 3, …)*	*Check question I05.* Is the child **under 2 years** of age? 1 = Yes 2 = No (End module)	Has [child's name] **ever** been breastfed? 1 = Yes 2 = No (skip to IC13) 98 = Don't Know (skip to IC13)	Was [child's name] **breastfed** yesterday during the **day** or at **night**? 1 =Yes (skip to next case) 2 = No 98 = Don't Know	Did [child's name] consume **breast milk** using spoon, cup, or bottle yesterday during the **day** or at **night**? ** 1 = Yes 2 = No 98 = Don't Know	Was [child's name] given any **vitamin drops** or other medicines as drops yesterday during the **day** or at **night**? 1 = Yes 2 = No 98 = Don't Know	Was [child's name] given **oral rehydration solution (ORS)** yesterday during the **day** or at **night**? 1 = Yes 2 = No 98 = Don't Know
IC0	**IC9**	**IC10**	**IC11**	**IC12**	**IC13**	**IC14**

MODULE I. Infant and young child feeding (continued)

Module I3.sav

Read the questions below. Read the list of liquids one by one and mark yes or no, ACCORDINGLY
Did [child's name] have any [item from list]?
Read the list of liquids starting with 'plain water'.

Child (1, 2, 3, …)	1 = Yes 2 = No 98= Don't Know		Use 1, 2, 3… 98 = Don't know	1 = Yes 2 = No 98= Don't Know	Use 1, 2, 3… 98 = Don't know	Use 1, 2, 3… 98 = Don't know	1 = Yes 2 = No 98= Don't Know		Use 1, 2, 3… 98 = Don't know	1 = Yes 2 = No 98= Don't Know		
	Plain water?	Infant formula? **(if No or Don't know (skip to IC18))**	How **many times** yesterday during the **day** or at **night** did [child's name] consume any formula?	Did [child's name] have any milk such as tinned, powdered, or fresh animal milk? **(if No or Don't know (skip to IC20))**	How many times yesterday during the **day** or at **night** did [child's name] consume any milk?	Did [child's name] have any juice or juice drinks?	Clear broth?	Yogurt? **(if No or Don't know (skip to IC24))**	How many times yesterday during the day or at night did [child's name] consume any yogurt?	Did [child's name] have any thin porridge?	Any other water based liquid?	Any other liquids?
IC0	**IC15**	**IC16**	**IC17**	**IC18**	**IC19**	**IC20**	**IC21**	**IC22**	**IC23**	**IC24**	**IC25**	**IC26**

MODULE I.   Infant and young child feeding (continued)

Module I4.sav

Yesterday, during the **day** or **night**, did [child's name] **drink/eat** any [food group items]?												
Use (1=Yes, 2=No, 98= Don't Know)												
Child (1, 2, 3, …)	Food made from **grains**, such as bread, rice, noodles, porridge	Pumpkin, carrots, squash, or sweet potatoes (that are **yellow or orange** inside)	White potatoes, white yams, manioc, cassava or any other foods made from **roots**	**Any dark green leafy vegetables** such as [sukuma wiki and spinach]	**Vitamin A rich fruits** like Ripe mangoes, ripe papayas etc.	Any other **fruits** or **vegetables**	Liver, kidney, heart, or other **organ meats**	Any **meat**, such as beef, pork, lamb, goat, chicken, or duck	Eggs	Fresh or dried **fish**, shellfish, or seafood	Any foods made from beans, peas, lentils, nuts, or seeds such as [**cowpeas seeds**]	Cheese, yogurt, or other milk products
IC0	IC27	IC28	IC29	IC30	IC31	IC32	IC33	IC34	IC35	IC36	IC37	IC38

MODULE I. Infant and young child feeding (continued)

Module I4.sav

	Yesterday, during the **day** or **night**, did [child's name] **drink/eat** any [food group items]?				
	1 = Yes 2 = No 98 = Don't Know				
Child *(1, 2, 3, …)*	Any **oil, fats, or butter**, or foods made with any of these	Any **sugary foods** such as chocolates, sweets, candies, pastries, cakes, or biscuits	Condiments for **flavour**, such as chilies, spices, herbs, or fish powder	Grubs, snails or insects	Foods made with red palm oil, red palm nut, or red palm nut pulp sauce
IC0	**IC39**	**IC40**	**IC41**	**IC42**	**IC43**

IC44 Did [child's name] eat any solid, semi-solid, or soft foods yesterday during the **day** or at **night** *IF 'YES' PROBE: What kind of solid, semi-solid, or soft foods did [child's name] eat?*

IC44_____

(1 = *Yes >> go to IC27–IC43 and record foods eaten first then IC45.*   2 = No *>> end module*   98 = Don't Know *>> end module*)

IC45 How **many times** did [child's name] eat solid, semi-solid, or soft foods other than liquids yesterday during the **day** or at **night**?

(98 = Don't Know)   IC45_____

THANK YOU

(After the interview thank the respondent for giving you his/her time and for the co-operation in providing the information. Inform them that you may possibly be returning to collect more information or seek any necessary clarification on the information provided at later date. At this point invite the respondent to ask you any questions that he/she might have. Answer where you can. If you do not know the answer(s), tell the respondent that his/her questions will be forwarded to a relevant person who can respond).

Annex B. Weight Calculation

The northern Kenya survey sample was drawn with two-stage, stratified cluster sampling using the National Sample Survey and Evaluation Programme (NASSEP V) sampling frame. Design weights were calculated based on the separate sampling probabilities for each sampling stage and for each cluster. We have:

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

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

The probability of selecting cluster i in the sample is:

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

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

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

where:

m_h = number of sample clusters selected in stratum (county-urban/rural) h.

N_{hi} = total number of households in the frame for the i-th sample cluster in stratum h.

N_h = total number of households in the frame in stratum h.

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

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

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

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

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

Annex C. Indicator Descriptions and Calculations

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

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

DEFINITION:

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

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

RATIONALE:

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

UNIT: Percent	*DISAGGREGATE BY:*
1. Percentage of people from sample living on <$1.25/day	Gendered Household Type: Adult Female No Adult Male (FNM), Adult Male No Adult Female Adult (MNF), Male and Female Adults (M&F), Child No Adults (CNA)
2. Total population of people in zone of influence	
TYPE:	*DIRECTION OF CHANGE:*
Impact	Lower is better

DATA SOURCE:

MDG database for national level; Population-based surveys conducted by the M&E contractor in the Feed the Future zone of influence.

INDICATOR TITLE: Per capita expenditures (as a proxy for income) of USG-targeted beneficiaries (R)

DEFINITION:

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

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

RATIONALE:

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

UNIT: United States Dollar	*DISAGGREGATE BY:*
Please enter these two data points:	Gendered Household type: Adult Female no Adult Male (FNM), Adult Male no Adult Female (MNF), Male and Female Adults (M&F), Child No Adults (CNA)
1. Average per capita expenditures (in USD) of sample	
2. Total population in zone of influence	
TYPE:	*DIRECTION OF CHANGE:*
Outcome	Higher is better

DATA SOURCE:

Population-based surveys conducted by M&E contractor in the Feed the Future zone of influence or UN for national level.

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

DEFINITION:

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

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

RATIONALE:

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

UNIT: Percent	*DISAGGREGATE BY:*
1. Percent of children 0-59 months of age in the sample that is underweight	Sex: Male, Female
2. Total population of children 0-59 months of age in zone of influence	
TYPE:	*DIRECTION OF CHANGE:*
Impact	Lower is better
DATA SOURCE:	
Population-based survey and official DHS data.	

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

DEFINITION:

Stunting is a height-for-age measurement that is a reflection of chronic undernutrition. This indicator measures the percent of children 0-59 months who are stunted, as defined by a height for age Z score below -2SD. Although different levels of severity of stunting can be measured, this indicator measures the prevalence of all stunting, i.e., both moderate and severe stunting combined While stunting is difficult to measure in children 0-6 months and most stunting occurs in the -9-23 month range (1,000 days), this indicator data will still be reported for all children under 5 to capture the impact of interventions over time and to align with DHS data.

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

RATIONALE:

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

UNIT: Percent	*DISAGGREGATE BY:*
1. Percent of children 0-59 month of age in the sample that is stunted	Sex: Male, Female
2. Total population of children 0-59 month of age in zone of influence	
TYPE:	*DIRECTION OF CHANGE:*
Impact	Lower is better
DATA SOURCE:	
Population-based survey and official DHS data.	

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

DEFINITION:

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

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

RATIONALE:

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

UNIT: Percent	*DISAGGREGATE BY:*
1. Percent of children 0-59 months of age in the sample that is wasted	Sex: Male, Female
2. Total population of children 0-59 months of age in zone of influence	
TYPE:	*DIRECTION OF CHANGE:*
Impact	Lower is better

DATA SOURCE:

Population-based survey and official DHS data.

INDICATOR TITLE: Prevalence of underweight women (R)

DEFINITION:

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

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

RATIONALE:

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

UNIT: Percent	*DISAGGREGATE BY:*
1. Percent of women of reproductive age in the sample that is underweight	None
2. Total population of women of reproductive age in zone of influence	
TYPE:	*DIRECTION OF CHANGE:*
Impact	Lower is better
DATA SOURCE:	
Population-based survey and official DHS data.	

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

DEFINITION:

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

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

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

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

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

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

The 5DE score ranges from zero to one, where higher values indicate greater empowerment. It is constructed using a robust multidimensional methodology known as the Alkire Foster Method (see http://www.ophi.org.uk/research/multidimensional-poverty/alkire-foster-method/. The score has two components. First, it reflects the percentage of women who are empowered (He). Second, it reflects the percentage of domains in which those women who are not yet empowered (Hn) still have adequate achievements (Aa).The 5DE formula is: 5DE = {He + (Hn x Aa)), where He + Hn=100% and 0 <Aa< 100%.

The GPI also ranges from zero to one, with higher values indicating greater gender parity, and is constructed with two factors. First, it shows the percentage of women whose empowerment scores are lower than the men's in the household (HwgP). Second, the GPI shows the percentage shortfall in empowerment scores (IGPI) for those women who do not have gender parity. The overall formula is the product of these two numbers, following the Foster Greer
Thorbecke—poverty gap measure: GPI = {1 − (Hwgp x IGPI)}.

The WEAI score is computed as a weighted sum of the Zone of Influence-level 5DE and the GPI. Thus, improvements in either the 5DE or GPI will increase the WEAI. The total WEAI score = 0.9{ He+ (Hn x Aa)} + 0.1{1 − (HGPI x IGPI)}.

RATIONALE:

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

UNIT:	DISAGGREGATE BY:
1. Score for 5DE subindex	None
2. Score for GPI subindex	
3. Total population in Zone of Influence	

TYPE:	DIRECTION OF CHANGE:
Impact	Higher is better

DATA SOURCE:

Population-based surveys conducted by an M&E contractor in the Feed the Future Zone of Influence.

INDICATOR TITLE: 3.1.9.1-3 and 4.7-4 Prevalence of households with moderate or severe hunger (RiA)

DEFINITION:

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

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

RATIONALE:

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

UNIT: Percent	*DISAGGREGATE BY:*
1. Percent of households in sample with moderate to severe hunger	Gendered Household type: Adult Female no Adult Male (FNM), Adult Male no Adult Female (MNF), Male and Female Adults (M&F), Child No Adults (CNA)
2. Total population of households in zone of influence	
TYPE:	*DIRECTION OF CHANGE:*
Impact	Lower is better

DATA SOURCE:

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

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

DEFINITION:

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

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

(1) Breastfed children 6-23 months of age in the sample who had at least the minimum dietary diversity and the minimum meal frequency during the previous day/Breastfed children 6-23 months of age in the sample with MAD component data, and (2) Nonbreastfed children 6-23 months of age who received at least two milk feedings and had at least the minimum dietary diversity not including milk feeds and the minimum meal frequency during the previous day/Nonbreastfed children 6-23 months of age in the sample with MAD component data.

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

1. Grains, roots, and tubers

2. Legumes and nuts

3. Dairy products (milk, yogurt, cheese)

4. Flesh foods (meat, fish, poultry and liver/organ meats)

5. Eggs

6. Vitamin A-rich fruits and vegetables

7. Other fruits and vegetables

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

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

1. Grains, roots, and tubers

2. Legumes and nuts

3. Flesh foods (meat, fish, poultry and liver/organ meats)

4. Eggs

5. Vitamin A-rich fruits and vegetables

6. Other fruits and vegetables

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

RATIONALE:

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

UNIT: Percent	*DISAGGREGATE BY:*
1. Percent of children 6-23 months in sample receiving a minimum acceptable diet	Sex: Male, Female
2. Total population of children 6-23 months in ZOI	

INDICATOR TITLE: 3.1.9.1-2 Women's Dietary Diversity Score: Mean number of food groups consumed by women of reproductive age (S)

DEFINITION:

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

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

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

RATIONALE:

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

UNIT: Number	*DISAGGREGATE BY:*
1. Mean number of food groups consumed by women 15-49 years in the sample	Location: Urban, Rural
2. Total population of women of reproductive age (15-49 years) in zone of influence	
TYPE:	*DIRECTION OF CHANGE:*
Outcome	Higher is better
DATA SOURCE:	
Population-based survey and official DHS data.	

INDICATOR TITLE: 3.1.9-4 and 3.1.9.1-4 Prevalence of exclusive breastfeeding of children under 6 months of age (RiA)

DEFINITION:

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

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

RATIONALE:

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

UNIT: Percent	*DISAGGREGATE BY:*
Please enter these two data points:	Sex: Male, Female
1. Percent of children 0-5 months of age in sample who are exclusively breastfed	
2. Total population of children 0-5 months of age in zone of influence	
TYPE: OUTPUT/OUTCOME	*DIRECTION OF CHANGE:*
Outcome	Higher is better
DATA SOURCE:	
Population-based survey and official DHS data.	

Annex D. Resilience Module of Baseline Survey Livelihood Diversification

Q1. What were the sources of your household's food/income over the last 12 months? (Indicate with ✓ in column a.)

Q1a. Rank these sources based on the proportion of food/income they provide for the household. (In column b, indicate 1 for the source that provided the most food/income in the last 12 months, 2 for the source that provides the second most food/income…and so on until the number of sources identified in Q1 is reached.)

Q1b. Which of these food/income sources are seasonal and which season? (Indicate with **D** for dry season and **W** for wet season in column c. Leave blank if year round source.)

Q1c. Which are sources that you only rely on during times of stress? (Indicate with ✓ in column d.)

	a. Source (✓)	b. Rank (#)	c. Seasonality (W or D)	d. Stress (✓)
A. Farming/Crop production and sales				
B. Livestock production and sales				
C. Wage labor (local)				
D. Salaried work				
E. Sale of wild/bush products (incl charcoal)				
F. Other self-employment/own business				
G. Sale of land/other non-livestock assets				
H. Remittances				
I. Gifts/inheritance				
J. Other specify_____				
K. Other specify_____				
L. Other specify_____				

Social Capital: Social Networks and Support

Q1. **During the last drought (August 2011), did you rely/lean on other households for financial or in-kind food support? (retrospective with reference to most recent shock/stress period)**

    a.   Yes
    b.   No
    c.   Dk

Q1a. **If yes, which of the following types of households did you rely/lean on for financial or in-kind food support? (Read aloud and mark all that apply.)**

    a.   Relatives in my village/community (localized, kin-based social capital)
    b.   Relatives outside my village/community (non-localized, kin-based social capital)
    c.   Non-relative in my village/community (localized, non-kin social capital)
    d.   Non-relatives outside my village/community (bridging social capital)
    e.   Non-relatives outside of my tribe/ethnic group (bridging social capital)

Q1b. **If yes, why do these households allow you to rely/lean on them for financial or in-kind food support? (Do not read aloud and mark all that apply.)**

    a.   It is their obligation (religious or kin-based obligation)
    b.   They lean/rely on my household when they need support (reciprocal obligation)
    c.   Other (specify)

Q2. **Will you be able to rely/lean on these same or other households for financial or in-kind food support during the next drought or during other times of need/stress in the future? (prospective)**

    a.   Yes
    b.   No

Adaptive Capacity: Coping and Adaptive Strategies (Self-Assessed)

[**NOTE:** Forced choice questions used to allow respondents to self-categorize.]

Q1. **Which of the following statements best describes the extent to which you and your household have been able to recover from the last drought (retrospective with reference to August 2011)?**

    a.   Have not been able to recover
    b.   Recovered, but worse off and more vulnerable than before
    c.   Recovered to pre-drought level well-being and vulnerability (bounce back)
    d.   Recovered and better off and less vulnerable than before (bounce back better)
    e.   We were not affected by the last drought

Q2. **Which of the following statements best describes you and your household's ability/capacity to cope with and manage through future droughts or future periods of need/stress? (prospective)**

    a.   Unable to cope and manage
    b.   Able to cope and manage, but at significant cost to future well-being and vulnerability (i.e., divest of asset, exhaust social capital, etc.)
    c.   Able to cope and manage without significant costs to future well-being

Q3. **Which of the following statements do you most agree with?**

    a.   Each person is primarily responsible for his/her success or failure in life
    b.   One's success or failure in life is a matter of his/her destiny

Q4. **Over the past 12 months, has your household changed income or food sources to cope with future periods of stress?**

    a.   Yes
    b.   No

Q4a. **If yes, what changes have you made? (Do not read. Tick all that apply.)**

    a.   Changed livelihood (income/food sources)
    b.   Diversified and/or increased number of livelihood (income/food) sources
    c.   Intensified and increased income/food from existing livelihood sources
    d.   Increased asset holdings and/or savings
    e.   Migration of one or more household members for labor/employment opportunities elsewhere
    f.   Other (specify) _____
    g.   Other (specify) _____
    h.   Other (specify) _____

Asset Holdings: Change Over Time
(Assessed at 1 point in time)

Q1. **In the last 12 months, has your household sold livestock, land or other large productive assets to meet household food/non-food needs due a shock (drought/flood) or other household stress? (Do not include routine livestock sales.)**

    a. Yes
    b. No

Q1a. **If yes, which of the following statements best describes the extent to which your household been able to recover/re-purchase those assets?**

    a. Unable to recover/re-purchase
    b. Able to recover/re-purchase some of the productive assets sold
    c. Able to recover/re-purchase all or more than all of the productive assets sold

Q2. **In the last 12 months, has your household sold small livestock, a phone, bicycle, or other small productive assets to meet household food/non-food needs due a shock (drought/flood) or other household stress? (Do not include routine livestock sales.)**

    a. Yes
    b. No

Q2a. **If yes, which of the following statements best describes the extent to which your household been able to recover/re-purchase those assets?**

    a. Unable to recover/re-purchase
    b. Able to recover/re-purchase some of the productive assets sold
    c. Able to recover/re-purchase all or more than all of the productive assets sold

Addendum (October 2016)

Feed the Future Northern Kenya Zone of Influence Baseline Report (March 2014)

This addendum explains the different geographic areas covered by the Feed the Future Northern Kenya Zone of Influence Baseline Report and Feed the Future Northern Kenya 2015 Zone of Influence Interim Assessment Report, and provides baseline results for the current Zone of Influence (ZOI). The need for this addendum relates to the evolution in the humanitarian and development assistance programming in northern Kenya. As the programming areas changed over time, the focus of the data collection and related analysis changed accordingly. USAID is implementing two related programs in northern Kenya: Resilience and Economic Growth in Arid Lands-Improving Resilience (REGAL-IR) and Resilience and Economic Growth in Arid Lands - Accelerated Growth (REGAL-AG).

At the time of baseline data collection in 2013, USAID and other donors, such as the World Food Programme (WFP), focused their resilience programming in northern Kenya on the nine counties of Baringo, Garissa, Isiolo, Mandera, Marsabit, Samburu, Tana River, Turkana, and Wajir. These counties were grouped into three levels of programming, called "9-5-2" referring layers of programming: Humanitarian assistance (HA) provided by WFP was implemented in all nine counties. In addition to HA programming, REGAL-IR was planned for the five counties of the ZOI (Isiolo, Garissa, Marsabit, Turkana, and Wajir); and in addition to HA and REGAL-IR programming, REGAL-AG was planned for two of the five counties (Garissa and Marsabit). Counties with HA programming only are 'low intensity' programming areas. Counties with HA and REGAL-IR programming are 'medium intensity' programming areas. Counties with HA, REGAL-IR, and REGAL-AGE are 'high intensity'.

The Northern Kenya PBS survey collected data from households in all nine counties. Data from the five counties of the ZOI were used to update Feed the Future PBS indicators and to prepare the *Feed the Future northern Kenya 2015. Zone of Influence Interim Assessment Report*. Data from all nine counties were used for the impact evaluation (IE) of REGAL programming and preparation of the *Feed the Future Northern Kenya Resilience and Economic Growth in Arid Lands Impact Evaluation – Mid-line Assessment*. The IE is designed to compare across 'low', 'medium', and 'high intensity' programming areas. Due to security concerns, three of the nine counties (Garissa, Mandera, and Wajir), were excluded from the baseline data collection. Baseline data were collected and analyzed in the remaining six counties (Baringo, Isiolo, Marsabit, Samburu, Tana River, and Turkana). Of the remaining counties, three are in the ZOI and now have REGAL programming in place.

Between the baseline data collection in 2013 and the interim data collection in 2015, resilience programming in northern Kenya continued to evolve. REGAL-AG programming shifted, and now covers Isiolo and Marsabit. Additionally, all nine counties in the baseline report are now part of Partnership for Resilience and Economic Growth (PREG), which is an alliance of humanitarian and

development organizations that promote resilience and economic growth in these counties. Various other humanitarian and development activities (both USAID and non-USAID) are also active in these counties.

Of the five counties covered in the 2015 Interim Assessment, three had data collected at baseline (Isiolo, Marsabit, and Turkana). In order to compare baseline and interim indicator values, analyses were done for these three counties at baseline and interim. Those analyses appear in the interim assessment report. The baseline analyses for Isiolo, Marsabit, and Turkana also appear in the indicator table included in this addendum.

Feed the Future Northern Kenya Zone of Influence Baseline Indicator Estimates

Estimates for Isiolo, Marsabit, and Turkana.

Feed the Future indicator	Estimate						
	Indicator	SD	95% CI		DEFF	Non-response rate[1]	n
Daily per capita expenditures (as a proxy for income) in USG-assisted areas (2010 USD)							
All households	1.73	2.74	1.47	1.99	2.6	6.5	1,133
Male and female adults	1.58	1.97	1.34	1.82	3.0	6.7	820
Female adult(s) only	1.69	3.41	1.26	2.12	0.9	5.8	232
Male adult(s) only	6.21	12.50	4.31	8.10	0.4	7.2	73
Child(ren) only (no adults)	^	^	^	^	^	^	8
Prevalence of Poverty: Percent of people living on less than $1.25/day (2005 PPP)							
All households	61.9	-	55.7	68.1	4.6	6.5	1,133
Male and female adults	62.5	-	55.9	69.1	4.2	6.7	820
Female adult(s) only	65.2	-	55.8	74.7	1.8	5.8	232
Male adult(s) only	30.1	-	14.8	45.3	0.9	7.2	73
Child(ren) only (no adults)	^	-	^	^	^	^	8
Depth of Poverty: Mean percent shortfall relative to the $1.25/day (2005 PPP) poverty line							
All households	30.5	31.8	25.3	35.7	7.8	6.5	1,133
Male and female adults	31.1	30.3	25.5	36.6	7.0	6.7	820
Female adult(s) only	31.3	34.7	24.0	38.5	2.6	5.8	232
Male adult(s) only	9.4	30.0	2.5	16.4	1.0	7.2	73
Child(ren) only (no adults)	^	^	^	^	^	^	8
Prevalence of underweight children under 5 years of age							
All children	19.1	-	15.4	22.8	1.8	20.4	792
Male children	21.0	-	15.8	26.2	1.6	20.4	386
Female children	17.4	-	12.8	21.9	1.5	20.4	406
Prevalence of stunted children under 5 years of age							
All children	27.6	-	23.6	31.6	1.6	20.4	792
Male children	30.2	-	24.5	35.9	1.5	20.4	386
Female children	25.1	-	19.8	30.5	1.5	20.4	406
Prevalence of wasted children under 5 years of age							
All children	12.8	-	10.0	15.5	1.3	20.4	792
Male children	13.8	-	10.0	17.6	1.2	20.4	386
Female children	11.8	-	8.2	15.4	1.3	20.4	406
Prevalence of underweight women							
All non-pregnant women age 15-49	35.5	-	30.8	40.2	1.9	32.3	759

Feed the Future indicator	Estimate						
	Indicator	SD	95% CI		DEFF	Non-response rate[1]	n
Women's Empowerment in Agriculture Index	**0.68**						**394**
5DE	0.67	-	0.63	0.71	1.3	63.3	394
GPI	0.77	-	0.71	0.83	1.0	86.4	114
Percent of women achieving adequacy on Women's Empowerment in Agriculture Index Indicators							
Input in productive decisions	56.3	-	49.8	62.5	1.6	39.8	646
Autonomy in production	83.8	-	79.8	87.1	1.0	39.8	646
Ownership of assets	67.7	-	61.6	73.3	1.5	39.8	646
Purchase, sale or transfer of assets	56.6	-	51.6	61.5	1.0	39.8	646
Access to and decisions on credit	14.1	-	10.5	18.6	1.3	39.8	646
Control over use of income	74.0	-	69.2	78.2	1.0	39.8	646
Group member	40.5	-	34.5	46.8	1.5	39.8	646
Speaking in public	50.1	-	44.9	55.3	1.0	39.8	646
Workload	52.0	-	46.4	57.7	1.2	39.8	646
Leisure	80.2	-	74.6	84.7	1.5	39.8	646
Prevalence of households with moderate or severe hunger							
All households	60.3	-	52.8	67.8	5.6	16.4	1,013
Male and female adults	60.1	-	53.0	67.1	3.5	16.0	738
Female adult(s) only	68.2	-	57.5	78.9	2.7	16.8	205
Male adult(s) only	39.9	-	21.3	58.5	2.6	19.9	63
Child(ren) only (no adults)	^	-	^	^	^	^	7
Prevalence of children 6-23 months receiving a minimum acceptable diet							
All children	2.5	-	0.0	5.5	1.9	16.9	214
Male children	0.5	-	0.0	1.6	0.5	13.7	100
Female children	4.2	-	0.0	9.5	2.0	19.5	114
Women's Dietary Diversity: Mean number of food groups consumed by women of reproductive age							
All women age 15-49	2.30	1.76	2.08	2.51	3.34	31.4	845
Urban	2.73	1.44	2.38	3.08	3.78	31.9	250
Rural	1.82	1.73	1.64	2.00	1.64	31.2	595
Prevalence of exclusive breastfeeding among children under 6 months of age							
All children	57.3	-	41.4	73.2	1.5	10.5	64
Male children	61.8	-	41.7	81.9	1.4	9.6	33
Female children	51.7	-	29.3	74.1	1.3	11.4	31

| Feed the Future indicator | Estimate | | | | | |
	Indicator	SD	95% CI		DEFF	Non-response rate[1]	n
Households with an improved source of drinking water							
All households	52.9	-	43.4	62.3	9.7	5.6	1,144
Male and female adults	51.0	-	41.6	60.3	6.6	5.9	827
Female adult(s) only	54.9	-	42.5	67.2	3.5	5.0	234
Male adult(s) only	61.5	-	45.3	77.8	2.5	4.6	75
Child(ren) only (no adults)	^	-	^	^	^	^	8

^ Results not statistically reliable, n<30.

[1] Non-response rates for each indicator are derived by the difference between the number of eligible cases and the number of observations available for analysis divided by the number of eligible cases.

Source: Baseline: FTF FEEDBACK ZOI Baseline Survey, Northern Kenya 2013.

Addendum (June 2017)

Feed the Future Northern Kenya Zone of Influence Baseline Report (March 2014)

This addendum provides a revision to the population numbers in Table 1 of the Feed the Future Northern Kenya Zone of Influence Baseline Report. The original population values were based on population projections using intercensal growth rates which were unrealistically high. These high growth rates are an artifact of the large amount of change in the census population of certain counties between the 1999 and 2009. The Kenya National Bureau of Statistics (KNBS) is aware of the anomalous growth rates and has provided population projections based on more realistic assumptions. These revised population values are based on these more realistic population projections. The revised values appear in the two tables included in this addendum.

Feed the Future Northern Kenya 2012 Population of Individuals, by Category in the ZOI

Category of individuals	3 county population	5 county population
Total population	1,411,360	2,247,027
Total population, by sub-population		
Women of reproductive age (15-49 years)	319,884	518,966
Children 0-59 months	197,937	313,163
Children 0-5 months	20,144	31,871
Children 6-23 months	59,598	94,293
Children 6-59 months	177,793	281,292
Youth 15-29 years	428,277	673,231
Total population, by area type		
Urban	245,371	395,919
Rural	1,165,989	1,851,108
Total population, by gendered household type		
Male and female adult(s)	1,018,547	1,780,995
Female adult(s) only	349,977	376,407
Male adult(s) only	41,404	87,347
Child(ren) only (no adults)	1,432	2,278
Women of reproductive age, by pregnancy status		
Pregnant	28,278	45,877
Non-pregnant	291,606	473,089
Children 0-59 months, by child sex		
Male	101,664	160,947
Female	96,273	152,216
Children 0-5 months, by child sex		
Male	10,385	16,441
Female	9,759	15,430
Children 6-23 months, by child sex		
Male	30,648	48,520
Female	28,950	45,773
Children 6-59 months, by child sex		
Male	91,279	144,506
Female	86,514	136,786
Youth 15-29 years, by sex		
Male	229,671	360,446
Female	198,606	312,785

Source: Population by five-year age group in each county was projected to the end of 2012 by KNBS based on the 2009 Kenya census. These age groups were aggregated into the three- and five-county groups. Theses population values were then disaggregated into the subgroups reported here using the population characteristics recorded in the FTF FEEDBACK ZOI Baseline Survey, northern Kenya 2013 (for three-county estimates), FTF FEEDBACK ZOI Interim Survey, northern Kenya 2015 (for five-county estimates), and the 2008-2009 Kenya Demographic and Health Survey.

Feed the Future Northern Kenya 2012 Number of Households, by Category in the ZOI

Category of households	3 county population	5 county population
Total number of households in ZOI	230,318	352,058
Number of households, by gendered household type		
Male and female adult(s)	145,501	239,772
Female adult(s) only	65,867	77,562
Male adult(s) only	18,343	33,799
Child(ren) only, (no adults)	607	926

Source: Population by five-year age group in each county was projected to end of 2012 by KNBS based on the 2009 Kenya census. These age groups were aggregated into the three- and five-county groups. Theses population values were then disaggregated into the subgroups reported here using the population characteristics recorded in the FTF FEEDBACK ZOI Baseline Survey, northern Kenya 2013 (for three-county estimates), FTF FEEDBACK ZOI Interim Survey, northern Kenya 2015 (for five-county estimates), and the 2008-2009 Kenya Demographic and Health Survey.