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

Feed the Future Northern Kenya Resilience and Economic Growth in Arid Lands (REGAL)

Impact Evaluation Midline Report

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List of Acronyms

BFS	Bureau for Food Security
CAHW	Community Around Health Workers
CI	Confidence Interval
CPI	Consumer Price Index
DEFF	Design Effect
DHS	Demographic and Health Survey
EA	Enumeration Area
EMC	Environmental Management Committees
FANTA	Food and Nutrition Technical Assistance Project
FFA	Food for Assets
FGD	Focus Group Discussion
FTF FEEDBACK	Feed the Future FEEDBACK
FTFMS	Feed the Future Monitoring System
GDP	Gross Domestic Product
HA	Humanitarian Assistance
HHS	Household Hunger Scale
IE	Impact Evaluation
IFPRI	International Food Policy Research Institute
KII	Key Informant Interview
Kshs	Kenyan Shillings
LCU	Local Currency Unit
LMA	Livestock Marketing Associations
LSMS	Living Standards Measurement Survey
MDG	Millennium Development Goals
NGO	Non-Governmental Organization
NRM	Natural Resource Management
PBS	Population-Based Survey
PDI	Positive Deviance Inquiry
PPP	Purchasing Power Parity
REGAL-AG	Resilience and Economic Growth in Arid Lands-Accelerated Growth
REGAL-IR	Resilience and Economic Growth in Arid Lands-Improving Resilience
SHG	Self-Help Group
SD	Standard Deviation
USAID	United States Agency for International Development

USD	United States Dollar
USG	United States Government
WFP	World Food Programme
ZOI	Zone of Influence

Executive Summary

Background

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

USAID Kenya's Feed the Future goal for Kenya is to help over 500,000 vulnerable Kenyans to escape poverty and hunger. As part of this effort, USAID supports two 5-year projects, Resilience and Economic Growth in Arid Lands-Improving Resilience (REGAL-IR) and Resilience and Economic Growth in Arid Lands-Accelerated Growth (REGAL-AG) in northern Kenya. The REGAL-IR program seeks to combine a broad range of investments to increase resilience in the five counties (Garissa, Isiolo, Marsabit, Turkana, and Wajir) in Kenya's northern zone of influence (ZOI). REGAL-AG programs have a more focused accelerated growth investment in livestock value chains in two of the five REGAL-IR counties (Isiolo and Marsabit). Both REGAL programs are layered on top of humanitarian assistance (HA) programming, which is being implemented in a larger 9-county region. This was previously called the "9-5-2" strategy.

This report references the Low, Medium, and High intensity program areas as defined by USAID. "Low intensity" program areas refer to the four counties receiving HA, but no REGAL programming (Baringo, Mandera, Samburu, and Tana River). The USAID "Medium intensity" program areas refer to three counties receiving HA and REGAL-IR programming (Garissa, Turkana, and Wajir). Finally, USAID "High intensity" program areas refer to the two REGAL-AG counties (Isiolo and Marsabit) where all three projects are being administered.

Interim Assessment Resilience Measures

Five resilience measures are included in this assessment. (1) Household's perceived recovery from the last drought, (2) livelihoods, (3) social capital, (4) adaptive capacity, (5) asset sales and recovery.

Interim Assessment Data Sources

Quantitative data for the resilience measures presented in this assessment are drawn from the FTF FEEDBACK ZOI Interim Survey, Northern Kenya 2015 (data collection from May to June 2015). The northern Kenya ZOI Interim Survey was conducted by FTF FEEDBACK in conjunction with its data collection partner, Kimetrica. Supplementary quantitative data come from the FTF FEEDBACK ZOI Baseline Survey, Northern Kenya 2013 (data collection from January to February 2013). Qualitative data were collected by Nathe Enterprises with supervision from FTF FEEDBACK after the interim quantitative fieldwork.

Summary of Key Findings

The results contained throughout this report are based on the interim assessment of the Feed the Future population-based indicators for the ZOI in northern Kenya, administered as part of an impact evaluation (IE) of the REGAL project. The interim assessment population-based indicators for the ZOI are reported in the Feed the Future Northern Kenya 2015 Zone of Influence Interim Assessment Report (FTF FEEDBACK 2015). Information from this survey is designed for use as a monitoring tool, and as such, provides estimates of the indicators with an acceptable level of statistical precision. However, Feed the Future ZOI sample size calculations for the interim assessment were not designed to support conclusions of causality or program attribution, nor is the interim assessment designed to measure change from the baseline. Analysis following endline surveys will compare baseline to endline, and change across REGAL intensity areas. The analysis will use data from baseline, interim, and endline rounds of the population-based survey (PBS) and IE surveys and multivariate methods to examine relationships between shocks, capacities, coping, poverty, human and social capital, and well-being outcomes, and to address research questions related to resilience.

This report also presents results from qualitative research conducted in three counties where REGAL and World Food Programme (WFP) programs are operating. Qualitative findings provide context and help to explain quantitative findings.

The Feed the Future resilience measure estimates table shown below presents baseline and interim values for the northern Kenya ZOI. In the table of indicator estimates shown on pages xii and xiii, the first set of columns presents 2013 baseline estimates for the three counties of Isiolo, Marsabit, and Turkana. (The remaining two counties in the northern Kenya ZOI—Garissa and Wajir—were omitted during baseline data collection due to security issues in those areas). The middle set of columns shows indicators from the 2015 interim survey for a comparable subsample as the baseline indicators (the three counties of Isiolo, Marsabit, and Turkana). Finally, the table also shows interim indicator values for the entire northern Kenya ZOI, the five counties of Garissa, Isiolo, Marsabit, Turkana, and Wajir.[1]

Interim surveys were not designed to capture change over time. However, non-overlapping confidence intervals (CIs) indicate significant differences between the two estimates. Looking at the first measure, "Households affected by the most recent drought" for the three county region at baseline and interim and corresponding CIs shows that the CIs overlap. So for this measure, we cannot say that the share of households affected by the most recent drought (see Table 3.1 for most recent drought) has changed from baseline to interim. However,

[1] At baseline, data collection took place in six of the nine resilience counties in northern Kenya (Baringo, Isiolo, Marsabit, Samburu, Tana River, and Turkana). Three counties were excluded for security reasons (Garissa, Mandera, and Wajir). Of the six counties, three are in the ZOI (Isiolo, Marsabit, and Turkana). At interim, data collection occurred in all nine resilience counties (Baringo, Garissa, Isiolo, Mandera, Marsabit, Samburu, Tana River, Turkana, and Wajir).

comparisons of baseline and interim values for some livelihood activities indicate changes from baseline to interim. The table shows that compared to the baseline, at the interim, a larger share of households reported relying on relief (30.7 percent to 44.1 percent), borrowing (19.0 percent to 30.5 percent) and gifts (5.8 percent to 13.5 percent). Households reporting that they engage in wage employment dropped from 27.1 percent to 17.5. percent. The table also shows changes in adaptive capacity, fewer households (33.6 percent) report that they will be unable to cope with future droughts (compared to 46.7 percent at baseline). Household views on destiny also shifted. At baseline, 19.3 percent reported that they believed that each person is responsible for his or her own success. This increased to 41.6 percent at interim.

Feed the Future Resilience Indicator Estimates: Northern Kenya

Feed the Future Resilience Measures	Three county ZOI baseline (2013)[1,2]			Three county ZOI interim (2015)[1,2]			Five county ZOI interim (2015)[3]		
	Estimate	95% CI[4]	n	Estimate	95% CI[4]	n	Estimate	95% CI[4]	n
Households affected by most recent drought									
Percent of households affected	86.5	84.4 – 88.5	1,073	83.8	80 – 87.7	804	79.4	74.8 – 84.1	1,190
Did not recover	40.6	32.3 – 38.0	928	27.5	20.4 – 34.6	642	27.2	21.8 – 32.5	946
Recovered some, but worse off than before drought	26.4	20.3 – 25.3	928	27.5	21.4 – 33.5	642	19.7	15.7 – 23.8	946
Recovered to same level as before drought	21.6	16.3 – 21.0	928	34.4	26.2 – 42.6	642	33.3	27.5 – 39.0	946
Recovered and better off	11.5	8.1 – 11.7	928	10.6	7.3 – 13.8	642	19.8	16.4 – 23.3	946
Livelihood activities									
Mean number of livelihood activities[5]	1.9	1.8 – 1.9	1,038	2.5	2.2 – 2.8	778	2.4	2.2 – 2.6	1,159
Livestock production[5]	44.0	41.0 – 47.0	1,037	38.4	31.0 – 45.8	807	45.8	41.1 – 50.4	1,193
Sale of livestock and livestock products[5]	n/a	n/a	n/a	25.8	20.2 – 31.5	807	35.2	31.2 – 39.2	1,193
Relief	30.7	27.9 – 33.5	1,037	44.1	36.5 – 51.8	807	37.5	32.1 – 42.9	1,193
Wages	27.1	24.3 – 29.8	1,038	17.5	13.1 – 21.9	807	21.4	17.5 – 25.4	1,193
Borrowing	19.0	16.6 – 21.4	1,037	30.5	26.2 – 34.7	807	20.1	32.1 – 42.9	1,193
Self-employment	18.8	16.4 – 21.2	1,038	25.6	20.3 – 30.9	807	25.1	20.0 – 30.3	1,193
Crop sales[5]	n/a	n/a	n/a	2.6	1.1 – 4.2	807	3.2	1.6 – 4.8	1,193
Crop production[5]	16.7	14.4 – 18.9	1,038	9.3	4.8 – 13.8	807	8.5	4.5 – 12.5	1,193
Wild products trade[5]	15.8	13.6 – 18.1	1,038	7.1	2.2 – 11.9	807	4.8	2.2 – 7.4	1,193
Salaried work	11.8	9.8 – 13.7	1,037	9.7	5.9 – 13.4	807	10.0	6.9 – 13.1	1,193
Wild food consumption[5]	5.8	4.4 – 7.2	1,037	10.0	3.1 – 16.8	807	5.7	2.1 – 9.3	1,193
Gifts	5.8	4.3 – 7.2	1,037	13.5	8.7 – 18.3	807	13.1	9.8 – 16.4	1,193
Remittance	5.7	4.3 – 7.1	1,037	2.3	0.6 – 3.9	807	4.0	2.2 – 5.7	1,193
Fishing[5]	1.7	0.9 – 2.5	1,038	2.4	-1.0 – 5.8	807	1.3	0.0 – 3.1	1,193
Sale of wild caught fish[5]	n/a	n/a	n/a	0.3	-0.3 – 0.9	807	0.2	-0.1 – 1.4	1,193
Sale of bush meat[5]	n/a	n/a	n/a	0.3	1.1 – 4.2	807	0.2	-0.1 – 0.6	1,193
Hunting[5]	n/a	n/a	n/a	0.6	-0.2 – 1.4	807	0.6	0.0 – 1.4	1,193
Mining[5]	1.3	0.6 – 1.9	1,038	n/a	n/a	n/a	n/a	n/a	n/a
Barter trade[5]	1.2	0.5 – 1.8	1,037	n/a	n/a	n/a	n/a	n/a	n/a
Leasing out land	0.7	0.2 – 1.1	1,038	2.1	0.4 – 43.9	807	1.4	0.4 – 2.4	1,193
Inheritance[5]	n/a	n/a	n/a	1.3	0.7 – 2.6	807	1.6	0.7 – 2.6	1,193
Raiding[5]	0.3	0.0 – 0.7	1,037	n/a	n/a	n/a	n/a	n/a	n/a

Feed the Future Resilience Indicator Estimates: Northern Kenya (continued)

Feed the Future Resilience Measures	Three county ZOI baseline (2013)[1,2]			Three county ZOI interim (2015)[1,2]			Five county ZOI interim (2015)[3]		
	Estimate	95% CI[4]	n	Estimate	95% CI[4]	n	Estimate	95% CI[4]	n
Social capital									
Households able to rely on others during the last drought[6]	46.9	43.7 – 50.2	925	52.5	47.3 – 57.8	642	37.9	34.2 – 41.7	946
Adaptive capacity									
Households' ability to cope with and manage through future droughts or stresses	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Unable to cope	46.7	43.7 – 49.7	1,073	33.6	24.3 – 42.9	768	30.5	24.6 – 36.3	1,061
Able to cope but with less money or food	35.6	32.7 – 38.5	1,073	47.4	41.0 – 53.7	768	45.2	39.8 – 50.6	1,061
Able to cope without difficulty	17.7	15.4 – 20.0	1,073	18.8	13.2 – 24.3	768	24.1	19.4 – 28.9	1,061
Household views on destiny	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Each person responsible for their own success	19.3	17.0 – 21.7	1,073	41.6	33.4 – 49.8	744	53.3	46.8 – 59.9	1,082
Each person's future is a matter of destiny	80.7	78.3 – 83.1	1,073	58.4	50.2 – 66.6	744	46.7	40.1 – 53.2	1,082
Asset sales and recovery									
Household sold large productive assets due a shock	26.3	23.7 – 29.0	1,070	26.3	19.0 – 33.6	642	28.4	23.9 – 32.9	946
Household sold small productive assets due a shock	27.5	24.8 – 30.1	1,072	23.9	17.7 – 30.1	642	26.1	21.3 – 31.0	946

[1] Baseline and interim values cover the same geographic region.

[2] The three county ZOI includes Isiolo, Marsabit, and Turkana.

[3] The five county ZOI includes Garissa, Isiolo, Marsabit, Turkana, and Wajir.

[4] Confidence intervals (CIs) demonstrate the reliability of estimated values. While interim surveys were not designed to capture change over time, non-overlapping CIs do indicate significant differences between the two estimates. However, if CIs do overlap, the reader cannot conclude whether there is or is not a significant difference between baseline and interim estimates.

[5] Interim survey instruments asked for more detail about household livelihoods. For some livelihood activities, estimates are not comparable across survey rounds.

[6] Includes only households reporting that they were affected by last drought.

Sources: Baseline: FTF FEEDBACK ZOI Baseline Survey, Northern Kenya 2013; Interim: FTF FEEDBACK ZOI Interim Survey, Northern Kenya 2015.

This report includes findings and discussion of household resilience and responses to recent shocks. Survey questions reference the most recent drought, which varies by county (see Table 3.1). Results are organized into five sections: recovery from the latest drought, livelihoods and livelihood diversification, social capital, adaptive capacity, and sale of large and small assets. In each section, findings are presented for the 5-county ZOI of northern Kenya, by USAID program intensity area, income quartile (based on daily per capita expenditures as a proxy for income in U.S. Government-assisted areas), household hunger status and poverty status (percent of people living on less than $1.25/day). Except for findings presented at the ZOI level, all tables include households across the 9-county region. Also in this report, we discuss only differences across subgroups that are statistically significant at the 0.05 level in the narrative.

Less than one-quarter of households in the ZOI (21.6 percent) report that they did not recover from the latest drought. While roughly the same percent of households in the Low (21.3 percent) and Medium (23.6 percent) intensity areas also experienced a lack of recovery, that value was only 13.3 percent for households in the High intensity program area. Households reporting hunger or poverty did not recover at much higher rates than those without hunger or poverty. The endline analysis will examine household recovery in detail and account for differences in shock exposure and intensity.

Included in the findings, we present that within the ZOI, livestock-rearing is the main livelihood or income-generating activity (47.8 percent), followed by receiving relief (37.5 percent), sale of livestock (35.2 percent), self-employment (25.1 percent), wages (21.4 percent), and borrowing (20.1 percent). The mean number of livelihood activities decreases in stress times from 2.6 to 1.0. This decrease in livelihood activities during stress times is a common pattern across program intensity area, income quartile, household hunger status, and poverty status. Households in the low-intensity area are engaged in a significantly greater number of livelihood activities than those in the high-intensity area (3.2 and 2.3, respectively).

Nearly 40 percent (37.9) of households in the ZOI relied on others for financial or in-kind food support during the last drought. Results show those they relied upon most were relatives in their village (67.0 percent). In addition, household members lean on others through obligation, and also because there is a reciprocal relationship among households. Households with hunger received social support more than those without hunger.

One in four households (26.4 percent) in the ZOI report being unable to cope with future drought or stress. About one-third of households at or below the poverty line (35.9 percent), and almost half (46.3 percent) of households with hunger report the same inability to cope. Fewer households in the top expenditure quartile report being able to cope with future stress as compared to those in the lowest quartile (13.3 percent and 44.1 percent, respectively). Within the ZOI and across program intensity areas, expenditure quartiles, hunger and poverty

status, most households believe a person's future is within their own control rather than a matter of destiny.

Of the households that have made proactive adaptations to their livelihood sources (15.7 percent), changing and adding sources of income are the most common approaches. Similarly, of those households that have changed the sources of food they rely on to cope during periods of stress (19.3 percent) the primary method is to reduce household food consumption. These observed patterns hold at the ZOI level and across all comparison groups.

Within the ZOI, about one-third of households have sold large (28.4 percent) productive assets and one-quarter (26.1 percent) sold small productive assets to cope with the last drought. Of the households that sold assets, nearly three-quarters have been unable to repurchase or recover those assets (70.8 percent for large assets, 72.1 percent for small assets). Households in the lowest expenditure quartile are less able to recover large assets or only recover some large assets than those in the highest expenditure quartile. Likewise, those households with hunger are less able to recover large and small assets than those without hunger.

This report on the northern Kenya impact evaluation midline is a product of the FTF FEEDBACK project, which is responsible for specific elements of performance monitoring and IEs supporting the Feed the Future initiative. FTF FEEDBACK is implemented by Westat in partnership with TANGO International and the University of North Carolina's Carolina Population Center.

1. Background

This section provides background information on Feed the Future programming in northern Kenya, including a description of the Resilience and Economic Growth in Arid Lands (REGAL) programs and the areas of intensity, and information about population and livestock production for the nine counties in the study area.

1.1 Feed the Future and FTF FEEDBACK Overview

The REGAL impact evaluation (IE) is being undertaken as part of the Feed the Future FEEDBACK (FTF FEEDBACK) project. Feed the Future is a United States Government (USG) initiative that seeks to address global food insecurity in 19 focus countries by accelerating growth of the agricultural sector, addressing the root causes of undernutrition, and reducing gender inequality. 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."[2]

FTF FEEDBACK was contracted by USAID to provide monitoring and evaluation support to the Feed the Future initiative. It is implemented by Westat in partnership with TANGO International and the Carolina Population Center at the University of North Carolina at Chapel Hill.

The main objectives of FTF FEEDBACK 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.

According to USAID,[3] the 2011 drought affected an estimated 3.8 million Kenyans. At that time, high numbers and percentages of households were already in need of food assistance because the region was still recovering from the effects of the 2008 drought. The combined impact of back-to-back droughts led to severe losses of livestock, 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 zone of influence

[2] USAID. (2013).
[3] USAID. (2011).

(ZOI); others factors include population growth, natural resource degradation, land fragmentation, human and animal disease, and conflict.

Feed the Future programming in northern Kenya focuses on pastoralists. The goals, objectives, and strategies 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:

- Developing 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 remote and primary livestock markets and services;
- Strengthening and diversifying livelihoods both within pastoral livestock systems and for those leaving pastoralism; and increased focus on nutritional impacts of water, livestock, and livelihood programming;
- Developing 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
- Building institutional capacity and strengthening local institutions.[4]

1.2 Area Overview

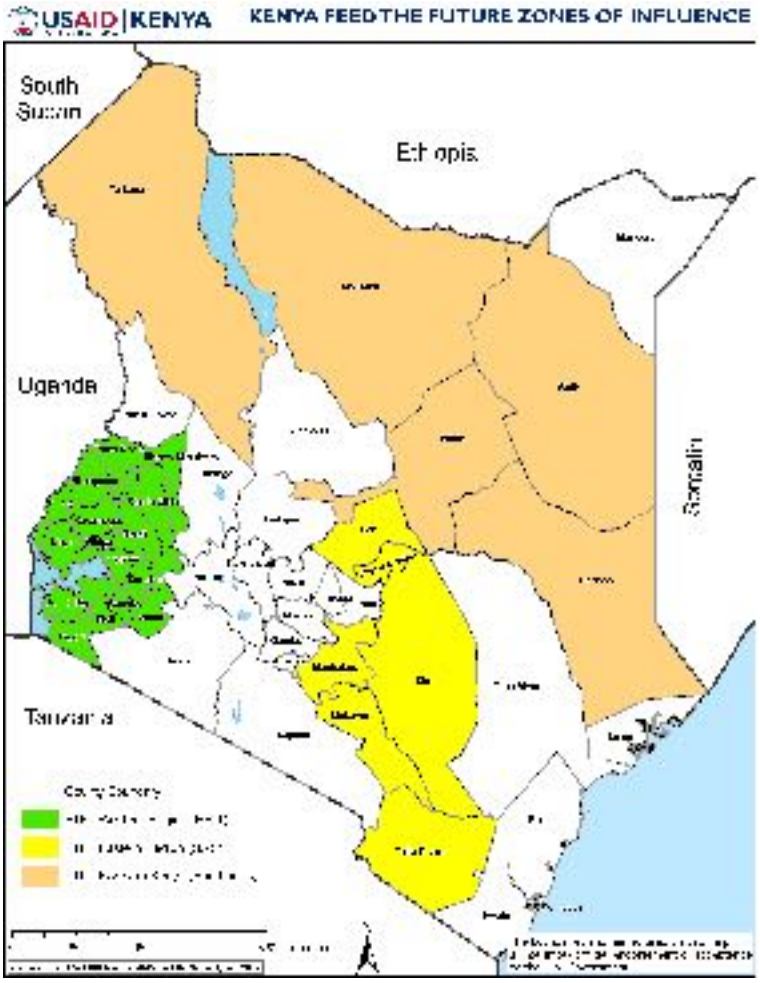
The northern Kenya arid lands ZOI is comprised of five counties: Garissa, Isiolo, Marsabit, Turkana, and Wajir, as shown in Figure 1.1.[5] The northern Kenya IE midline survey provides quantitative data to estimate the current status of household livelihood outcomes and resilience measures for the REGAL IE, and covers a broader region than the ZOI. Four additional counties, Baringo, Mandera, Samburu, and Tana River are included as a comparison group for the IE. REGAL-Improving Resilience (IR) covers all five counties of the ZOI. REGAL-Accelerated Growth (AG) covers Isiolo and Marsabit. Humanitarian assistance (HA) activities are operating in all nine counties. For the purposes of the IE, the nine counties are grouped based on intensity levels of REGAL and HA programming. REGAL-AG counties (Isiolo and Marsabit) are High intensity. REGAL-IR counties (Garissa, Turkana, and Wajir) are Medium

[4] USAID. (2011).

[5] The Feed the Future ZOI in Kenya includes three designated areas—one consisting of 16 counties in the western high rainfall part of the country, a second zone consisting of six counties in the semi-arid part of the country, and a third in northern Kenya. The first two areas were the initial focus for Feed the Future in 2010. At that time, the Feed the Future Strategy design team identified those areas as having the highest number of poor households and severely malnourished children. Following the severe drought of 2011, five counties in northern Kenya were added, creating a northern Kenya ZOI.

intensity, and the four additional counties (Baringo, Mandera, Samburu, and Tana River) are Low intensity.

Figure 1.1. ZOI areas in Kenya



Source: USAID. 2011.

1.2.1 Population

The estimated 2015 population of the nine-county USAID intervention area is 6,722,619 in 1,035,066 households (Table 1.1). Of the 6.7 million people, approximately 490,000 reside in the High intensity area, 3.24 million in the Medium intensity area, and 2.99 million in the Low intensity area. The 2015 population estimates are based on the population counts taken during the 2009 Kenya Population and Housing Census. The 2009 county populations were projected to 2015 by using the reported 1999-2009 intercensal provincial growth rates.[6]

[6] KNBS. (2010a, 2010b, and 2010c).

Table 1.1. 2015 population and household estimates for USAID program intensity areas and counties

Program intensity	Program	County	Estimated 2015 population	Estimated 2015 households
High intensity	WFP/FFA, REGAL-IR, REGAL-AG	Isiolo	161,564	35,320
High intensity	WFP/FFA, REGAL-IR, REGAL-AG	Marsabit	328,289	64,201
Medium intensity	WFP/FFA, REGAL-IR	Garissa	1,056,422	167,163
Medium intensity	WFP /FFA, REGAL-IR	Turkana	1,061,638	152,893
Medium intensity	WFP /FFA, REGAL-IR	Wajir	1,122,346	150,181
Low intensity	WFP /FFA	Baringo	689,508	137,327
Low intensity	WFP /FFA	Mandera	1,739,208	212,785
Low intensity	WFP /FFA	Samburu	277,941	58,771
Low intensity	WFP /FFA	Tana River	285,703	56,425

Source: Population figures and intercensal growth rates recorded during the 2009 Kenya Census (KNBS 2010a, 2010b, and 2010c) were used to project the population to 2015. The projected population was then disaggregated into the subgroups reported here using the population characteristics recorded in the FTF FEEDBACK ZOI Interim Survey, Northern Kenya 2015 and the 2008-2009 Kenya Demographic and Health Survey.

1.2.2 Livestock

Raising livestock is the main livelihood in the USAID intervention areas and is important for the overall economy of Kenya. It makes up an estimated 45 percent of gross domestic product (GDP) from agriculture, Kenya's largest economic sector.[7] The ZOI and surrounding counties provide approximately 80-90 percent of Kenya's red meat,[8] and much of Kenya's meat for export. Besides meat, Kenya exports live animals, milk, animal hides and skins. Kenya's most recent account of livestock populations was in 2009. Table 1.2 shows livestock production by program intensity level and within each county. Based on these data, the region (including all nine counties) contributes 66 percent of goat production, 60 percent of sheep production, 36 percent of cattle, and nearly all the camels (98.4 percent).

[7] IGAD. (2013).
[8] Farmer and Mbwika. (2012).

Table 1.2. Livestock production by program intensity level and county (2009)

Project intensity level	County	Cattle	Sheep	Goats	Camels	Donkeys
High intensity	Isiolo	198,424	361,836	398,903	39,084	22,189
	Marsabit	424,603	960,004	1,143,480	203,320	63,861
	Total	623,027	1,321,840	1,542,383	242,404	86,050
Percent of national production		**3.6**	**7.7**	**5.6**	**8.2**	**4.7**
Medium intensity	Garissa	903,678	1,224,448	2,090,613	236,423	75,178
	Turkana	1,534,612	3,517,151	5,994,861	832,462	558,187
	Wajir	794,552	1,406,883	1,866,226	533,651	115,503
	Total	3,232,842	6,148,482	9,951,700	1,602,536	748,868
Percent of national production		**18.5**	**35.9**	**35.9**	**53.9**	**40.9**
Low intensity	Baringo	893,947	482,831	1,771,833	67,077	55,109
	Mandera	1,076,978	1,632,824	3,929,747	930,819	191,664
	Samburu	184,666	387,698	550,750	32,824	26,822
	Tana River	269,894	272,852	484,220	49,082	17,590
	Total	2,425,485	2,776,205	6,736,550	1,079,802	291,185
Percent of national production		**13.9**	**16.2**	**24.3**	**36.3**	**15.9**
USAID Intervention Area	Total	6,281,354	10,246,527	18,230,633	2,924,742	1,126,103
Percent of national production		**36.0**	**59.8**	**65.7**	**98.4**	**61.5**
Kenya		17,467,774	17,129,606	27,740,153	2,971,111	1,832,519

Source: IGAD and ICPALD. (2013).

Livestock provides households in the ZOI with meat and dairy products, as well as cash to purchase other foods. Households have experienced a series of climate-related shocks and stresses, which have led to poor economic and health outcomes, including food insecurity and malnutrition. Populations in these counties continue to experience inter-tribal and inter-clan conflicts, which contribute to increases in food insecurity and poverty. These types of conflicts have resulted in the destruction of livestock and property, disruption of livelihoods, displacement of communities and destruction of communal watering points. Accordingly, REGAL interventions are focused on improving animal health, expanding markets for livestock and livestock products, as well as increasing market access and reducing constraints such as raiding and conflict over grazing land and water.

Table 1.3 and Table 1.4 show that cow's milk and cattle meat are the most important in terms of production and gross production value from 2004-2013. However, camel meat and milk production have both increased by more than 150 percent over the past 10 years.

Table 1.3. Kenya livestock production (1,000 metric tons)

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Meat, cattle	350	397	430	445	458	484	464	459	411	425
Meat, goat	40	39	43	44	45	46	47	46	41	42
Meat, sheep	36	37	38	40	39	41	42	41	40	42
Meat, camel	25	20	22	66	75	62	65	65	65	66
Milk, cow	3,392	3,752	3,700	3,202	3,209	3,567	3,639	3,711	3,733	3,750
Milk, goat	122	132	127	130	136	258	260	263	268	224
Milk, sheep	33	34	30	28	30	30	31	32	33	34
Milk, camel	368	289	328	619	854	877	892	913	934	937

Source: FAOSTAT. 2015 (accessed Oct. 22, 2015).

Table 1.4. Gross production value (constant 2004-2006, million USD), by year

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Meat, cattle	946	1,071	1,162	1,202	1,238	1,308	1,253	1,239	1,110	1,149
Meat, goat	96	93	102	106	107	111	112	109	97	101
Meat, sheep	97	100	102	110	107	111	113	113	110	114
Meat, camel	53	41	47	138	156	131	135	135	135	138
Milk, cow	1,059	1,171	1,155	999	1,001	1,113	1,135	1,158	1,165	1,170
Milk, goat	41	44	43	44	46	86	87	88	90	75
Milk, sheep	13	13	12	11	12	12	12	12	13	13
Milk, camel	26	99	112	211	291	299	304	311	318	319

Source: FAOSTAT. 2015 (accessed Oct. 22, 2015).

1.3 Description of the REGAL Projects

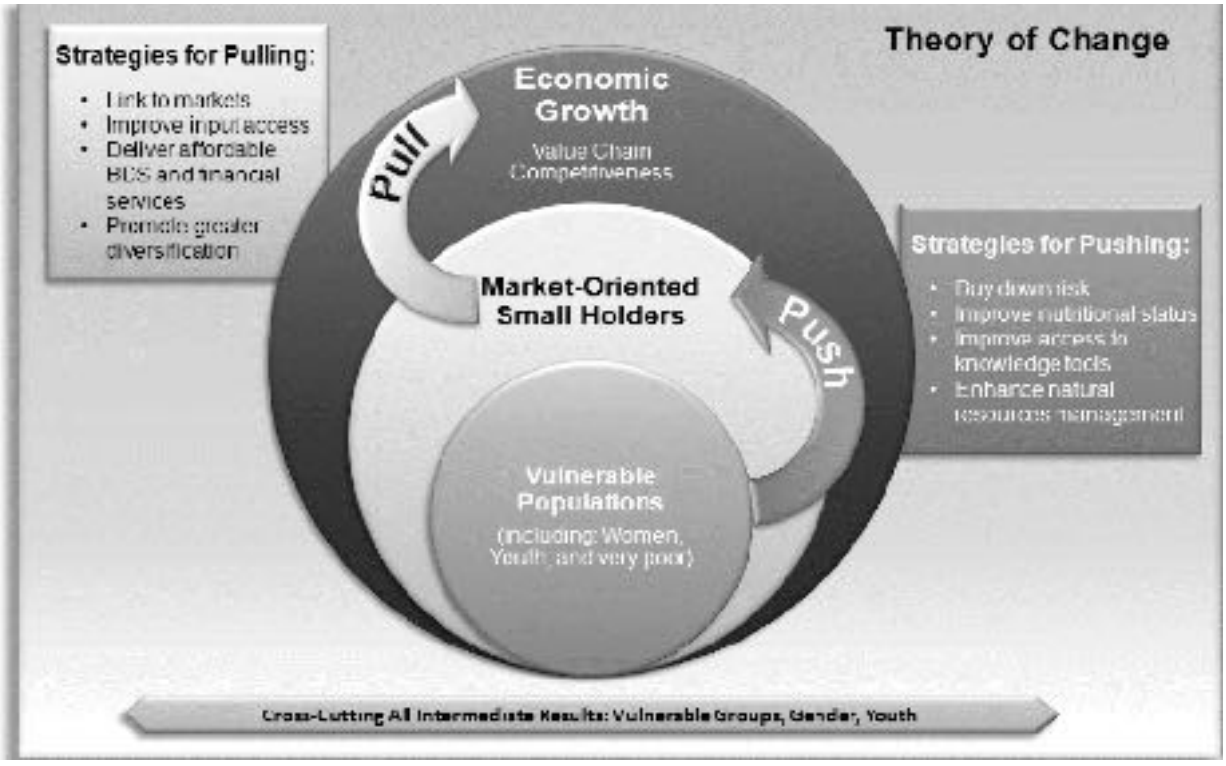
USAID Kenya's Feed the Future goal for northern Kenya is to help over 500,000 vulnerable Kenyans escape poverty and hunger. As part of this effort, USAID supports two 5-year projects, REGAL-IR and REGAL-AG. The REGAL-IR programs seek to combine a broad investment in improving resilience in Garissa, Isiolo, Marsabit, Turkana, and Wajir counties, with a more focused accelerated growth investment (REGAL-AG) in livestock value chains in two of the five REGAL-IR counties (Isiolo and Marsabit). Plans include construction of four large markets and eight small markets. Both programs are implemented in addition to HA programming, which is in place in a larger 9-county region. This was previously referred to as the "9-5-2" strategy. In this report, "Low intensity" refers to the four counties receiving HA but no REGAL programming, "Medium intensity" refers to the three counties receiving HA and REGAL-IR programming (Garissa, Turkana, and Wajir), while "High intensity" refers to the two REGAL-AG counties (Isiolo and Marsabit) where all three projects are being administered. REGAL-AG and REGAL-IR have different focus locations within their respective counties.

1.3.1 REGAL Theory of Change

To generate the economic growth needed to reduce poverty and hunger and achieve the Government of Kenya's vision of a commercial and modern agricultural sector, Feed the Future

in Kenya is investing in transforming livestock production through improved competitiveness of high-potential value chains and the promotion of diversification into higher-return activities. As documented by the International Food Policy Research Institute (IFPRI), the development of selected value chains will have multiplier effects that spawn employment opportunities.[9] Value chain investment in livestock markets with lower risk and lower entry barriers is one way of encouraging the participation of poorer rural households in expanding economic activities. While these investments in economic growth will be necessary to reduce poverty and hunger, by themselves, they will be insufficient. Beyond growth, poverty reduction will require targeted interventions that address the needs of agro-pastoralists (the rural poor) as well as more vulnerable populations, women and youth. By improving links to markets and input access, providing affordable business development and financial services, and promoting greater diversification—specifically tailored to the needs of agro-pastoralists, women, and youth—value chain programs will aim to "pull" rural households into income-raising activities. As reflected in Figure 1.2, to address the needs of the large number of vulnerable households and "push" them toward market-oriented activities, the REGAL interventions will take a two-pronged approach: one that improves nutritional status and another that improves access to the knowledge tools, buys down risk, and enhances natural resource management needed by vulnerable groups to transition into market-oriented activities.

Figure 1.2. Theory of change



[9] IFPRI. (2010). Maize Value Chain Potential in Ethiopia Constraints.

1.3.2 REGAL-AG

The REGAL-AG project goal is to increase economic growth and social stability in Marsabit and Isiolo counties by expanding and strengthening competitive livestock value chains. Project goals are to:

- Improve the enabling environment for livestock value chain development;
- Improve market linkages and livestock productivity;
- Expand existing and develop new livestock service and input markets; and
- Expand livestock-related economic opportunities that engage and benefit men and women.

The REGAL-AG project plans to build four large and eight small markets, and award 25 business development grants of $30,000–$150,000. Investments in upgrades will eliminate value chain constraints or mitigate risk. Grants will help identify and build the capacity of change agents within pastoral communities who can drive further investments, upgrades, and increased economic competitiveness.

1.3.3 REGAL-IR

The REGAL-IR project aims to reduce hunger and poverty by strengthening social, economic, and environmental resilience in pastoral and transitioning communities. REGAL-IR implements activities in all five counties of the ZOI (Isiolo, Garissa, Wajir, Marsabit, and Turkana). It seeks to strengthen social, economic, and environmental resilience for 558,000 people (93,000 households) through community engagement and strengthening of local institutions. The target counties have the highest caseloads of food insecure households across the country, thus offering greatest potential for reducing food assistance needs in the arid lands.

1.4 Objectives and Research Questions for the REGAL IE

1.4.1 Objectives

This IE midline report is a monitoring tool to provide the USG interagency partners, USAID Bureau for Food Security (BFS), USAID Missions, host country governments, and development partners with information about the current status of resilience measures in the Low, Medium, and High intensity REGAL implementation areas. The assessment provides point estimates of the indicators with an acceptable level of statistical precision. However, Feed the Future sample calculations are not designed to support conclusions of causality or program attribution, nor is the interim assessment of the IE designed to measure change from the baseline. Analysis following endline surveys will compare baseline to endline, and change across REGAL intensity

areas. The analysis will use data from baseline, interim, and endline rounds of the PBS and IEs and use multivariate methods to examine relationships between shocks, capacities/coping/capital, and well-being outcomes, and address research questions related to resilience.

1.4.2 Research Questions

Research questions for the REGAL IE are based on the following FTF Learning Agenda questions related to Improved Resilience of Vulnerable Populations. Data analysis and results informing these questions will take place following the final survey in 2017. The interim FTF FEEDBACK Kenya PBS questionnaire did not include questions about households' participation in REGAL programming activities. In addition, the survey sample, which was designed according to PBS protocol, included few areas with REGAL programming.

1. **What impact do resilience investments (via REGAL-IR) have on livelihood outcome indicators (Household Hunger Scale, as well as stunting, wasting, underweight, poverty prevalence, and income)? What impact do they have on adaptive capacity?**
2. **What impact do growth investments (via REGAL-AG) have on livelihood outcome indicators (Household Hunger Scale, as well as stunting, wasting, underweight, poverty prevalence, and income)? What impact do they have on adaptive capacity?**
3. **What is the additive/multiplicative value of layering resilience (via REGAL-IR) and economic growth (via REGAL-AG) investments in relation to the indicators noted above?**
4. **What is the separate and combined impact of REGAL-IR and REGAL-AG on depth of poverty (derived from expenditure data used to determine poverty prevalence) and other well-being outcomes?**
5. **What are the relationships between household and community resilience (derived from the qualitative data)?**
6. **Have interventions strengthened risk-reduction strategies pursued by men and women to cope with shocks (agro-climatic, health, economic, and socio-political)?**

Questions 1 and 2 address households' ability to withstand and recover from shocks and stresses. Qualitative fieldwork included questions on coping strategies, social capital, and perceived control to provide in-depth information about how households use community resources to manage shocks. The qualitative fieldwork also focused on providing context in terms of how households and communities perceive change, how they define resilience, and how they view the challenges to livelihoods posed by shocks and stresses.

Questions 3 and 4 were to complement quantitative household data by collecting information to assess the extent and nature of the involvement of poor households in markets. The stability of individual value chains—in terms of seasonal variation and gender equitable access—were a key consideration in answering questions 3 and 4 in REGAL-AG areas. Qualitative fieldwork included questions and interactive exercises designed to provide insight into the relationships between formal and informal institutions and how they shape household livelihood strategies.

Because REGAL programs are not implementing activities in the same communities, the combined and multiplicative effects of both programs will be lower than expected.

Questions 5 and 6 were included in an effort to answer the all-important questions of "resilience of whom?" and "at what level?" Question 5 explicitly addresses resilience at household and community levels. Previous studies have demonstrated that resilience at one level can in fact come at the expense of resilience at other levels. Household resilience is largely determined by ownership of productive assets, human capital, access to other capitals, and perceived control in the face of social, economic, and ecological shocks and stresses. Community resilience, on the other hand, is dependent on networks of relationships, reciprocity, and community norms. The qualitative fieldwork collected information related to local institutional environments and community capacity for collective action. Responses to Question 6 will give qualitative researchers important insight into the role gender plays in influencing the potential for resilience at multiple levels.

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

This section describes the methodology used to collect quantitative and qualitative data and methods to estimate indicator values for the impact evaluation (IE) interim assessment. It provides information on the data sources and describes measures and reporting conventions used throughout the report.

2.1 Quantitative Data

The data collection for the Resilience and Economic Growth in Arid Lands (REGAL IE) quantitative component is integrated with the three cross-sectional rounds of the FTF FEEDBACK population-based survey (PBS) household survey for northern Kenya—the baseline, interim, and endline rounds. The purpose of this strategy is to economize on primary field data collection and avoid overburdening the populations in the project areas with excessive surveys. This strategy is possible because the PBS survey collects information on the key outcome variables identified in the overall research questions: household hunger, women's and children's nutrition outcomes, as well as household expenditures as a proxy for income. An additional survey module captures information about household livelihoods, recovery from shocks, aspirations, and other elements of household resilience capacity. Apart from the resilience module, complete survey results for the zone of influence (ZOI) are reported in the Feed the Future Northern Kenya 2015 Zone of Influence Interim Assessment Report (FTF FEEDBACK 2015).

Data Sources

Quantitative data come from interviews of 1,837 households across the 9-county region. The survey effort was integrated with the FTF FEEDBACK interim assessment of population-based indicators in the northern Kenya ZOI (FTF FEEDBACK 2015). Table 2.1 presents data sources and data collection dates for the baseline and interim Feed the Future indicators.

Table 2.1. Data sources and dates of the baseline and interim Feed the Future surveys

Indicator	Baseline		Interim	
	Data source	Date collected	Data source	Date collected
Daily per capita expenditures (as a proxy for income) in USG-assisted areas	FTF FEEDBACK ZOI Survey	January 2013	FTF FEEDBACK ZOI Survey	May – June 2015
Prevalence of Poverty: Percent of people living on less than $1.25/day	FTF FEEDBACK ZOI Survey	January 2013	FTF FEEDBACK ZOI Survey	May – June 2015
Prevalence of households with moderate or severe hunger	FTF FEEDBACK ZOI Survey	January 2013	FTF FEEDBACK ZOI Survey	May – June 2015
Household resilience measures	FTF FEEDBACK ZOI Survey	January 2013	FTF FEEDBACK ZOI Survey	May – June 2015

Survey Sample Design

The sample was designed to measure differences among Low, Medium, and High intensity levels of REGAL and Humanitarian Assistance (HA) programming. Surveyed households were spread across 44 clusters in each of the three intensity areas. Each intensity area was split into urban and rural strata. The sample size is adequate to provide estimates of the population-based indicators with an acceptable level of statistical accuracy. Sample sizes were calculated to provide point estimates of indicator values rather than to detect change in indicator values over time. The endline sample size will be large enough to detect change from the baseline.

Sample Size Calculation

The interim survey sample size is based on reporting indicators for the interim population-based survey (PBS), as well as the impact evaluation. In sample size calculations, the margin of error determines the amount of precision the indicator estimates will have. For continuous variables such as expenditures, the margin of error was based on the mean indicator value times 0.10. The margin of error for proportions (poverty, household hunger) was also calculated using 0.10.

Five Feed the Future indicators (prevalence of poverty, daily per capita expenditures, stunting, underweight, and prevalence of exclusive breastfeeding) were used to calculate sample sizes. Estimates of values for the indicators came from United States Agency for International Development (USAID) Mission 2015 targets, which were reported in the Feed the Future Monitoring System (FTFMS). Where 2015 targets were not available, projected interim values were calculated as a 10 percent change from baseline. Estimated standard deviations and design effects are based on data from the baseline northern Kenya PBS conducted in 2012. Sample sizes were further adjusted for non-response using the non-response rate from the baseline survey, or a 10 percent non-response rate if either the former was not provided or was greater than 10 percent.

Table 2.2 shows the estimated sample sizes for the relevant population-based indicators. The minimum required sample size is 2,054 households, based on the required sample size for per-capita expenditures. Based on the nonresponse rate for per-capita expenditures from the baseline, the estimated target sample size for the interim survey is 2,100 households. The 2,100 households were evenly divided among the program intensity areas (strata).

Sample Weights

Data required for statistical weighting of survey data were collected throughout the sampling process. These data included, but were not limited to: (1) number of households from the sampling frame used for selection of EAs, (2) population of strata (i.e., region, urban/rural) from which, enumeration areas (EAs) are drawn, (3) number of households in selected EAs at the

time of listing, and (4) response rates at the household and individual (women, men, and children) levels.

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

	Baseline value	DEFF	SD	Target value	Sample size	Number of households needed
Prevalence of poverty	55.1	4.96	-	49.6	476	485
Prevalence of underweight children	19.7	1.83	-	17.7	102	199
Prevalence of stunted children	29.4	1.65	-	26.5	123	240
Per capita expenditures (as a proxy for incomes)	1.98	1.95	3.61	2.18	2,054	2,100
Prevalence of exclusive breastfeeding of children <6 months	51.6	1.72	-	56.8	70	772

Computations based on the survey sample were weighted so that the results accurately reflected the proportions of the sample elements within the overall sample frame of the population in the ZOI. Details of how weights were computed are provided in the Feed the Future Northern Kenya 2015 Zone of Influence Interim Assessment Report (FTF FEEDBACK 2015).

Questionnaire Design

The questionnaire used for the ZOI interim survey in northern Kenya was based on the population-based survey instrument for Feed the Future ZOI indicators for the interim assessment. Questions relating to targeted nutrient-rich value chain commodities (beef, camel meat, mutton, goat meat, cow milk, camel milk, sheep milk, and goat milk) were added to address Feed the Future programming in those commodities in northern Kenya.

FTF FEEDBACK provided training on customization, pretesting, and translation of the questionnaire to Kimetrica, the in-country data collection partner. FTF FEEDBACK modified the questionnaire based on customizations recommended by Kimetrica, and pretest findings with Bureau for Food Security (BFS) review and approval of the revisions.

The questionnaire was translated into three native languages spoken by 10 percent or more of the population in the ZOI. In northern Kenya, the questionnaire was translated into Kiswahili, Somali, and Turkana. The quality of the translation(s) was assured by using a team translation approach with back translation from the main translation. Translations were incorporated into the data entry program on the tablet computers that were used for data collection in the households. Questionnaires were further refined based on observations during training, the pilot, and initial days of fieldwork.

Fieldwork

Preparation for fieldwork began with thorough training of the Kimetrica specialists to conduct and supervise fieldwork. A senior FTF FEEDBACK trainer trained six Kimetrica trainers and support staff in April 2015.

The Kimetrica trainers then trained the field staff in May 2015. Training of field staff reflected the procedures detailed in the FTF FEEDBACK interviewing and field supervision manuals. An FTF FEEDBACK trainer supported the field training, including providing training on use of the tablets for data collection. Trainees' comprehension of the material imparted was assessed periodically throughout the training. Trainees also participated in role plays to practice important skills and responses to common fieldwork challenges.

At the conclusion of training, Kimetrica senior management and trainees, joined by the FTF FEEDBACK trainer, conducted a pilot test of all procedures. At the conclusion of the pilot test, FTF FEEDBACK and Kimetrica senior management considered findings from the pilot test and made final modifications to procedures, the questionnaires, and the data entry programs.

A final field team of 16 supervisors, 16 QC supervisors, and 93 enumerators conducted fieldwork from May to June 2015. The field teams visited each selected cluster and household. Up to three visits were made to each household so that all eligible members of the household could be interviewed. Senior quality assurance staff from Kimetrica visited each field team on a regular basis to assure that procedures were being followed and to provide any needed supplies.

Data for completed household interviews that had been reviewed and approved were uploaded to FTF FEEDBACK servers on a daily basis, where possible. When lack of Internet access precluded this, data were submitted prior to starting work in the next assigned cluster.

A data management team at FTF FEEDBACK worked with a data manager in Kimetrica headquarters to review data and case completion regularly. These reviews informed fieldwork where necessary to improve data quality.

Limitations of the Quantitative Survey

The heightened security situation in northern Kenya during fieldwork posed a number of challenges. The *al Shebab* attack on Garissa University took place during listing activities in that county. Listing activities were temporarily suspended. Ongoing *al Shebab* violence in Garissa initially kept survey teams out of some EAs, but they returned later and completed surveys. Teams worked in a high stress environment "under a cloud of fear" due to violence and rumors of attacks. Besides terrorism, deadly conflicts between Samburu and Turkana people in Samburu county slowed fieldwork there. Teams were working in areas where fighting broke out. Kimetrica halted data collection for a few days, but teams returned and completed surveys

on time. Given the rapidly changing and insecure situation, Kimetrica implemented a number of measures to safely conduct fieldwork in this environment. Kimetrica added a county-level security coordinator who worked with field supervisors to assure safety for the field teams. FTF FEEDBACK worked closely with Kimetrica, BFS/USAID, and USAID Mission to monitor and adjust survey activities as needed.

In addition to the county-level security coordinator, three key adjustments were implemented to ensure safety:

- The teams completed the work in each cluster in a shorter time period (i.e., conducting 16 interviews in 2 days, rather than the originally planned five interviews in 2 days) in order to minimize the length of time in the cluster. Staying longer than 2 days would have made the field team's presence more visible and put the field team at risk.

- Field teams were restructured to fit the team in one vehicle. The teams were composed of one field supervisor, one quality control (QC) interviewer, five interviewers, and a driver. This allowed survey teams to move efficiently among communities and attract as little attention as possible.

- Instead of conducting the household interview in pairs, the interviewers conducted the interview primarily alone, with an additional interviewer for the later part of the interview that required anthropometry.[10]

For REGAL IE Medium and Low intensity areas, the sampling frame was prepared for the 2009 Population and Housing Census of Kenya. It was prepared in 2007/2008, and may not be up to date. In many selected clusters, the number of households listed are very different from the number in the frame. This would cause increased variation in sampling weights and decreased precision in sample estimates. However, for the High intensity areas, EAs were selected from the Demographic and Health Survey (DHS) sample and the frame was updated less than a year ago.

Response Rates

Table 2.3 combines information from the sample design and completed surveys to compute the response rates. Values for the row labeled "Households selected" is number of households randomly selected from the listings. This number is equal to the targeted sample from the sample design. Because some housing is vacated between listing and survey fieldwork, households that are not occupied are removed from the final sample. Occupied households are the denominator for response rates. Response rates are presented by rural/urban residence as well as for the total sample. Higher non-response rates in High intensity program areas are due

[10] There were no discernable effects on survey data quality or response rates. Enumerators were carefully selected and nearly all had worked on the baseline Kenya PBS and/or DHS Kenya and were accustomed to the survey length, format, and contents.

to security issues. Three EAs in the High intensity program area were not surveyed due to security concerns. Response rates for the resilience module of the questionnaire are: Overall: 98.4, Low and Medium intensity areas: 98.8, and High intensity area: 97.4.

Table 2.3. Results of the household and individual interviews for the interim survey in northern Kenya 2015

Household response rates and components	Residence		Total
	Urban	Rural	
Low intensity			
Households selected	144	560	704
Households occupied	132	516	648
Households interviewed	131	513	644
Household response rate*	99.2	99.4	99.4
Medium intensity			
Households selected	176	528	704
Households occupied	142	460	602
Households interviewed	142	454	596
Household response rate*	100.0	98.7	99.0
High intensity			
Households selected	252	485	737
Households occupied	207	404	611
Households interviewed	200	397	597
Household response rate*	96.6	98.3	97.7
All intensity areas			
Households selected	572	1,573	2,145
Households occupied	481	1,380	1,861
Households interviewed	473	1,364	1,837
Household response rate*	98.3	98.8	98.7

* Household response rates are calculated based on the result codes of Module C, the household roster, and are defined as the number of households interviewed divided by the number of households occupied. Unoccupied households were excluded from the response rate calculations. The unoccupied households were those that were found to be vacant, not a dwelling unit, dwelling unit destroyed, or with an extended absence, or other result code.

Source: FTF FEEDBACK ZOI Interim Survey, Northern Kenya 2015.

2.2 Qualitative Data

Qualitative interviews for this IE took place following the interim quantitative fieldwork (July 2 to July 17, 2015) and will be conducted again at endline. The baseline did not have a qualitative component. Qualitative data provide explanations for quantitative results; in particular, how, and why REGAL programs are effective. Qualitative data also provide new insights from which we can generate and test hypotheses using quantitative data. Qualitative research took place in three counties, selected by USAID, USAID/Kenya, and FTF FEEDBACK to be representative of the three intensity areas. Marsabit county was chosen to represent High intensity programming areas. (World Food Programme Food for Assets [WFP FFA]), REGAL-IR and REGAL-AG are all operating there.) Turkana county represents Medium intensity programming with WFP FFA and REGAL-IR programming. Baringo County with WFP FFA but

no REGAL programming represents the Low intensity programming areas.[11] Nathe Enterprises, a Kenyan firm that has expertise in resilience and the arid land counties, conducted qualitative fieldwork with training, supervision, and guidance from TANGO International staff.

Sample Design

The sample design combines the PBS survey sample and REGAL programming information. Initially, the qualitative sample was to be a subsample of the PBS. However, the qualitative sample was selected from a list of areas where REGAL and WFP programming is in place. Because there is not perfect overlap of REGAL programming areas and EAs sampled for the PBS, some of the qualitative sites were not in the quantitative sample.

Qualitative research was carried out in 12 communities. The villages were selected according to three major criteria (the third was relaxed due to the lack of overlap): the 12 villages were evenly divided among program intensity levels, four in each representative county; REGAL and/or World Food Programme (WFP) programming is taking place in each village; and each village was among those included in the FTF FEEDBACK interim household survey.[12] Within counties, selected communities represent diversity in terms of poverty/wealth status, access to infrastructure and services, ecological conditions, and engagement with formal and informal institutions. For the High and Medium intensity areas, communities in each county were selected by aligning the list of the EAs from the interim household survey (provided by Westat/Kimetrica), and a list of communities where REGAL-IR and REGAL-AG are operating (provided by USAID), and identifying places where survey EAs and operational areas overlap. Communities in Low intensity area Baringo were selected from lists provided by WFP. Further criteria for selection of communities by the team included security and accessibility. The qualitative team could not use the PBS sample as the only basis for selecting qualitative sites. Very few of the EAs randomly selected for the PBS quantitative survey were REGAL-IR or REGAL-AG activity sites. Only in Marsabit county was there overlap between the PBS sample and REGAL programming. The list of communities visited in each county and whether they were in the PBS sample is presented in Table 2.4. REGAL project counties are shown in Figure 2.1.

[11] The USAID mission requested that one or both of the counties of Garissa and Wajir be added to future FTF FEEDBACK qualitative surveys. This will depend on BFS approval and available budget.

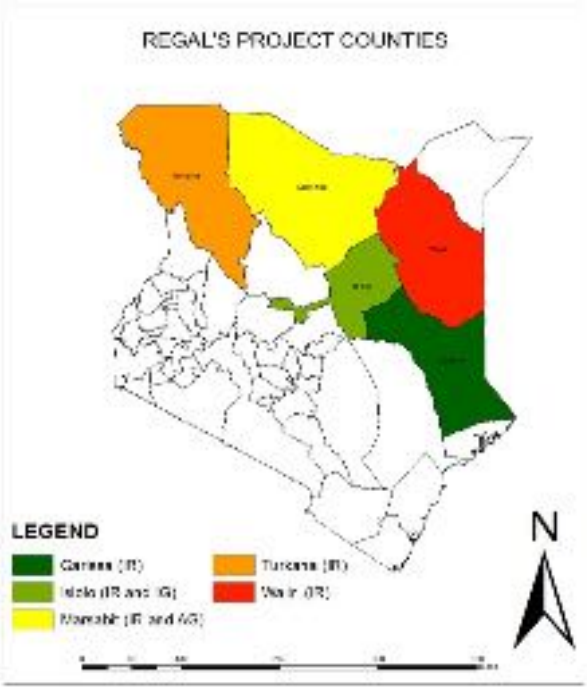
[12] The High intensity villages are in areas where not only REGAL IR + AG are being implemented, but where other programs are being implemented by USAID partners.

Table 2.4. Qualitative sites

County	Location	Sublocation	PBS	REGAL
Baringo	Kimalel	Kimorock	No	n/a[1]
Baringo	Kimalel	Ngolbolen	No	n/a[1]
Baringo	Salabani	Meisori	No	n/a[1]
Baringo	Illchamus	Eldume	No	n/a[1]
Marsabit	Merille	Irir	Yes	Yes
Marsabit	Korr	Korr	Yes	Yes
Marsabit	Turbi	Turbi	No	Yes
Marsabit	Sololo	Sololo Ramata	No	Yes
Turkana	Turkwel	Kaitese	No	Yes
Turkana	Kerio	Nadoto	No	Yes
Turkana	Letea	Letea	No	Yes
Turkana	Lake Zone	Katiko	No	Yes

[1] Low intensity area has WFP programming only.

Figure 2.1. REGAL project areas



Source: USAID. 2011.

Key informants and focus group participants were identified to represent the range of primary livelihood groups and wealth rankings as well as men, women, elders, and youth within each community. Youth were not included in the initial study design but during the training, researchers deemed that youth issues are unique and important to the future of the region. While the focus groups across communities were diverse, *within* each focus group the participants were relatively homogeneous. This homogeneity was by design, in order to encourage discussion. Without homogeneity within a group, higher status people may dominate the conversation.

Key informant interviews (KIIs) were conducted simultaneously or immediately following focus group discussions (FGDs). Key informants included: local level government officials responsible for agriculture, livestock, and food security programs; individuals involved in private agro-pastoral trade (agrovets/franschisee/positive deviant cases); members of livestock marketing associations; representatives of local committees (environmental management committees and community development committees); leaders of women groups; project implementation team members (REGAL projects and WFP/World Vision); heads of education institutions; and local administrators.

REGAL Interventions in Qualitative Sites

Table 2.5 describes REGAL interventions in qualitative sites.

Table 2.5. REGAL projects in Marsabit and Turkana

Program	Location	Project interventions
REGAL-IR	Marsabit and Turkana	Peace-building initiatives; e.g., forming and supporting peace clubs in schools.
		Capacity building on group dynamics and business skills.
		Providing grants and training to women's self-help groups (SHG), including training on nutrition, and provision of greenhouses (in Marsabit). Examples of loans to women groups: • Kshs. 150,000 (~1,500 USD) in Kiserian for shop businesses • Kshs. 100,000 (~1,000 USD) in Nashamgai for livestock businesses • Grants to self-help groups (SHGs) in Kataboi and Nadoto (Turkana) for a revolving fund
		Water storage tanks.
		Nutrition programs that include planting fruit trees.
		Promotion of commercial pastoralism and livestock keeping as part of mindset change/transformation for pastoralists in Marsabit.
		Training community animal health workers on vaccination, castration, and drug administration. Livestock traders in Sololo were trained on distribution and use of drugs.
	Turkana	Promoting businesses through funding of groups by awarding Kshs 200,000 to each group to help communities cope better with shocks and stresses.
		Promoting access to veterinary medicine and creating awareness of animal diseases.
		Training women in table banking (small group lending) and youth on drought management skills.
		Targeting drought ambassadors in schools who share information and knowledge with the community on ways to reduce the impact of drought in the area.
REGAL-AG	Marsabit	Training agro-vets to target customers, providing grants to agro-vets, and linking them to Sidai Ltd to access drugs at subsidized prices.
		Grants to market groups in the value chain who buy pasture and sell to other farmers.
		Capacity building by training members of Livestock Marketing Associations (LMA).
		Construction of a modern livestock market at Merille is ongoing while at Turbi there is already a plan to build one. The tendering process is ongoing.

Qualitative Methods

In addition to the interview guide, facilitators used Venn diagrams and social network analysis to identify the institutional relationships in a given community; a resilience ranking exercise to ascertain community understandings and definitions of resilience, including the individual components of (or factors contributing to resilience) at the household level; and Positive Deviance Inquiry (PDI) to explore existing capacities and resources in the community. Qualitative findings are included throughout the text of this report.

Fieldwork

Two TANGO International staff were responsible for training the Nathe Enterprises field lead, two survey supervisors, and the field team on the purpose and objectives of the survey, tools, and reporting requirements. TANGO staff conducted the training of the qualitative researchers, the pre-test of the survey tools with the teams, accompanied the teams during the first week, and monitored the progress of the survey.

Eight researchers and supervisors participated in a 3-day training conducted by TANGO in Baringo from June 29 to July 1, 2015. The research team was composed of men and women from different ethnic groups, religions, and areas of the country, and represented a cross-section of Kenya. The training covered the background of the REGAL projects, exploration of the resilience concept, data collection/research methods and tools, including role play, and the ethics of research. There was a 1-day pretest of the data collection tools to validate their effectiveness. Gaps arising from the pretest were addressed by TANGO with the input of the Nathe Enterprises evaluation team.

Limitations of the Qualitative Survey

The team of researchers was highly competent, with good knowledge of the communities visited and many years of experience working in the survey areas. This facilitated effective engagement of FGDs and KIIs. However, the team experienced several challenges, including:

- Inadequate time and budgeting were allocated for coordination. Communications and coordination among stakeholders within FTF FEEDBACK, USAID/BFS, USAID/Kenya, and REGAL program staff were not optimal.
- Security issues were also factors. East Pokot (Low intensity area) and Southern Turkana (Medium intensity area) were not accessible to field teams when qualitative data were collected.
- Layering of qualitative on quantitative survey samples was not a perfect fit. The current project implementation areas did not always overlap with the enumeration areas from the quantitative survey, especially in Turkana.

- The qualitative survey team and implementing partners were not introduced to each other prior to the survey, which caused some confusion that affected field operations in Marsabit and Turkana. REGAL program staff did not know that researchers were coming, nor did they were they aware of the program and its purpose until after the field teams arrived. When the field team was on-site it was not clear which implementing partner would facilitate introductions to the communities. This slowed the fieldwork, but had no effect on the analysis or results.

- The lengthy questionnaire and number of activities led to some respondent fatigue and reduced participation toward the end.

- The qualitative survey was during Ramadan, which affected the flow of the discussions. Some participants were anxious to leave in order to prepare for meals in the evening.

- Key informant interviews for government officers (in Marsabit and Turkana) were difficult to achieve within the limited time, as most offices are based in the towns while the survey sites for FGDs were in rural communities. More time should have been budgeted to allow for visits to government officers and travel to rural areas.

2.3 Measures and Reporting Conventions Used

2.3.1 Impact Evaluation Disaggregates

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

Household Hunger

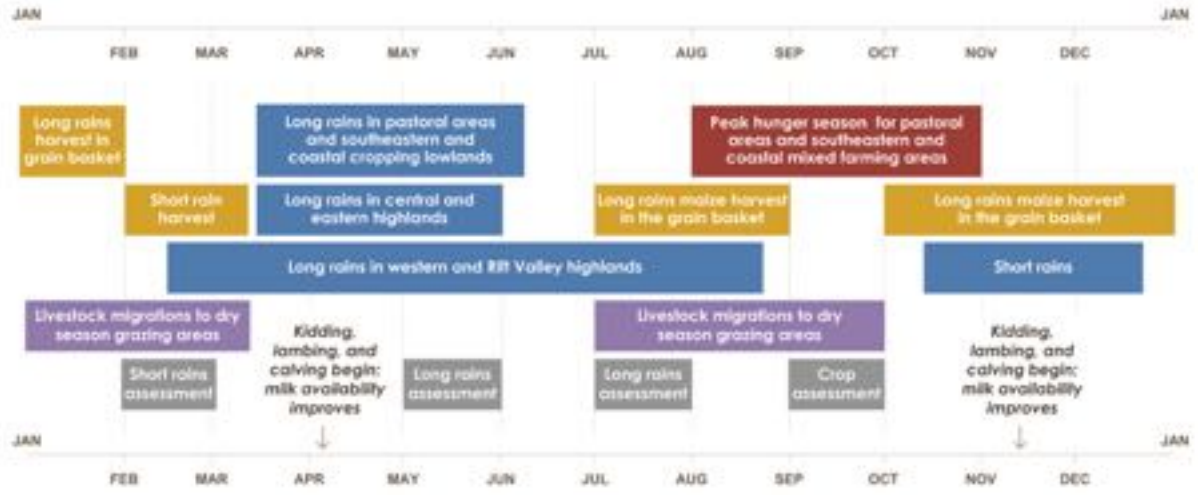
The Household Hunger Scale (HHS) is used to estimate the percentage of households affected by three different severities of household hunger: little to no household hunger (HHS score 0-1); moderate household hunger (HHS score 2-3); and severe household hunger (HHS score 4-6). For the purposes of serving as a disaggregate in selected tables, the HHS is converted to a dichotomous measure reflecting households that report little to no household hunger, and households that report moderate or severe household hunger. The HHS should be measured at the same time each year, and ideally at the most vulnerable time of year (right before the harvest, during the dry season, etc.).[13]

Figure 2.2 shows that the hunger season in northern Kenya occurs from August through November. Data for the HHS were collected during the wet season. Neither the baseline Kenya PBS nor the interim were conducted during the dry season. Baseline data were collected in January and February to coincide with data collection for other FTF FEEDBACK countries.

[13] Deitchler, Ballard, Swindale, and Coates. (2011).

Data collection for the interim survey was initially scheduled for February. However, several events such as delays in receiving ethics board approvals, increased security threats, and the need for planning and implementation of additional safety measures, as well as extra time needed for Open Data Kit (ODK) programming, delayed the start. The survey schedule was then set to complete quantitative fieldwork before the start of Ramadan.

Figure 2.2. Seasonal calendar



Source: Famine Early Warning System Network (FEWS NET). Food Security Brief. December 2013.

Daily Per Capita Expenditures

Daily per capita expenditures is the Feed the Future indicator that measures average daily expenditures per person in 2010 U.S. dollars (USD) after adjusting for 2005 purchasing power parity (PPP). Daily per capita expenditures serve as a proxy for income.

The $1.25 Poverty Threshold

The prevalence of poverty, sometimes called the poverty headcount ratio, is measured by determining the percent of individuals living below a poverty threshold.[14] Estimates of poverty prevalence are sensitive to the poverty thresholds used to identify the poor. A standardized poverty threshold of $1.25 per person per day in adjusted[15] 2005 USD is used to track global changes in poverty across countries and over time, including for the purpose of monitoring progress toward international goals such as the Millennium Development Goals (MDG) to

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

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

eradicate extreme poverty and hunger. The $1.25 threshold is in effect the extreme poverty threshold and represents the poverty line typical of the world's poorest countries.[16] Poverty estimates may also be presented for an individual country's own poverty and extreme poverty threshold.

2.3.2 Reporting Conventions

The Feed the Future REGAL IE midline findings in this report are primarily descriptive in nature. The outline is based on the baseline report. This section provides an overview of the conventions used in reporting these descriptive results.

- In the tables throughout this report, weighted point estimates and unweighted sample sizes (denoted by *n*) are presented.
- All estimates are shown to one decimal place. Unweighted sample sizes in all tables are shown as whole numbers.
- Values in the tables are suppressed when the unweighted sample size is insufficient to calculate a reliable point estimate (n<30); this is denoted by the use of the symbol ^ in the designated row and an explanatory footnote.
- Qualitative findings are included throughout the report.

Bivariate relationships are described using cross tabulation, and the strength and direction of the relationships are assessed through the use of statistical tests. Analyses are performed in Stata using *svy* commands to handle features of data collected through the use of complex survey designs, including sampling weights, cluster sampling, and stratification.

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

[16] World Bank. (2011). Poverty and Equality Data FAQs. Retrieved from http://go.worldbank.org/PYLADRLUN0. Accessed April 15, 2015.

3. Household Recovery from Drought

This section reports household's perceptions of recovery from the last drought. It provides context for the sections that follow which describe household responses to drought and measures to prepare for future droughts. Survey questions in the resilience modules were asked with reference to the last drought. However, focus group discussion (FGD) participants in all areas mentioned additional shocks and stresses, nearly all are directly or indirectly related to drought. These include crop failure and lack of water, which in turn cause hunger, malnutrition, famine, and human disease. Loss of pasture, lack of water for livestock, and livestock disease were also noted as additional drought-related shocks. Drought causes livestock owners to move their animals in search of pasture and water, which weakens animals, exposes herds to predators and theft, and causes conflicts with neighboring villages. FGDs in the low intensity of Baringo noted that they often lack access to veterinary services. The Resilience and Economic Growth in Arid Lands- (REGAL-) is providing these services in Medium and High intensity areas.

Table 3.1 shows dates of the most recent drought in each county.

Table 3.1. Dates of most recent droughts

Intensity area	County	Year	Months
High	Isiolo	2010/2011	Almost all months
	Marsabit	2013	January – September
Medium	Garissa	2011/2012	January – July
	Turkana	2014	Almost all months
	Wajir	2012	January – March
Low	Baringo	2009	January – March
	Mandera	2013	January – July
	Tana River	2013	January, July – September
	Saburu	2013 and 2014	June – October

Source: Kimetrica field team members, personal correspondence.

Table 3.2 reports household perceptions of recovery since the latest drought. Nearly four out of five households in the zone of influence (ZOI) (79.4 percent) were affected by the last drought (Table 1.1 and Table 3.1). Roughly one in four households recovered to the same condition as before the drought (26.4 percent) and 15.7 percent recovered and are better off than before the drought. Another 15.7 percent of households have recovered, but were worse off. Finally, 21.6 percent in the ZOI report they did not recover at all from the latest drought.

Qualitative data highlight the importance of communities for household recovery from shocks. FGD participants reported that households in communities with diversified livelihoods and better management skills, are better able to recover from drought. In one area, female focus groups said that a successful community is organized around a common interest like the sale of livestock; and in another area, the women stated that a successful community is organized and people work in cohesive groups but where there is no organization the community suffers more. Unity and harmony in resource-sharing were also noted as key resilience factors.

FGDs and key informant interview (KII) participants recognized the attributes of a resilient household as being personal motivation and good leadership at household level. They also noted that resilient households have diversified livelihoods, better access to resources (productive assets), and possess better skills, knowledge, and education.

Table 3.2. Household recovery from most recent drought in the ZOI

	Percent	n
Household ability to recover from last drought		
Did not recover	21.6[a]	1,190
Recovered, but is worse off	15.7[b]	1,190
Recovered to the same condition	26.4[b,c]	1,190
Recovered and is better off	15.7[a,c]	1,190
Not affected by drought	20.6	1,190

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

Source: FTF FEEDBACK ZOI Interim Survey, Northern Kenya 2015.

3.1 Household Recovery by USAID Intervention Area

Table 3.3 presents household recovery from the latest drought by the United States Agency for International Development (USAID) intervention area. The subsample includes all households for which there are data on intervention areas. Around 20 percent of households in each intervention area indicate they were not affected by the last drought (18.1 percent in the Low intensity area, 20.4 percent in the Medium intensity area, and 21.4 percent in the High intensity area). Of those that were affected by the last drought, significantly more households in the Low intensity (21.3 percent) and Medium intensity (23.6 percent) areas did not recover from the last drought as compared to only 13.3 percent in the High intensity area. In addition, the percent of households in the High intensity area that recovered, but are worse off than before, is higher in the High intensity area (23.0 percent) than the Medium intensity area (13.9 percent). Differences may be due in part to dates of the most recent drought. The most recent drought in Isiolo, in the High intensity area, was in 2010-2011. In Turkana, the most recent drought was in 2014.

Table 3.3. Household recovery from last drought, by USAID intervention area

	USAID intensity areas					
	Low		Medium		High	
	Percent	n	Percent	n	Percent	n
Households' ability to recover from last drought						
Did not recover	21.3[a]	640	23.6[b]	595	13.3[a,b]	595
Recovered some, but worse off than before drought	17.8	640	13.9[a]	595	23.0[a]	595
Recovered to same level as before drought	27.9	640	25.6	595	29.8	595
Recovered and better off	15.0	640	16.5	595	12.5	595
Not affected by drought	18.1	640	20.4	595	21.4	595

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

Source: FTF FEEDBACK ZOI Interim Survey, Northern Kenya 2015.

In the Medium intensity area of Turkana (where recovery rates are lowest), the men, women, and youth interviewed during the qualitative survey agree that some households successfully recover, though the women emphasized that these are very few. Male FGDs in Turkana said that factors that make a difference in recovery include individual management, luck, hard work, external support, vaccination and treatment of livestock, hay and crop residue storage, and diversified livelihoods. In the High intensity area of Marsabit, FGD participants attributed recovery to effective resource management, livelihood diversification, community leadership, strong social ties, clan membership, education, and wage employment. Similarly, in the Low intensity area of Baringo, FGD participants noted that households are more likely to recover if they have more assets, more skills, education, diverse livelihoods, and are hardworking.

FGD participants in Baringo and Marsabit noted that elderly people, women, and children are most affected by droughts. During a drought, women travel farther to get water, leaving less time for other responsibilities. Children, especially young children, are most affected by food shortages and diseases.

3.2 Household Recovery by Expenditure Quartile

Table 3.4 shows household recovery from the latest drought by expenditure quartile. The subsample includes all households for which there are data on expenditures. The table shows that the likelihood of households recovering from the latest drought decreases from the lowest to the highest expenditure quartiles. Those in the lowest expenditure quartile are most likely to not have recovered from the latest drought (34.2 percent) compared to those in the second (25.6 percent), third (18.7 percent), and fourth (8.6 percent) quartiles. A reverse pattern is seen when queried about being affected by the last drought; those in higher expenditure quartiles indicate not being affected (35.6 percent in the fourth quartiles and 22.9 percent in the third quartile) compared to 13.7 percent in the second quartile and only 4.6 percent in the first quartile were unaffected by the last drought. Nearly one in four households in the lowest expenditure quartile (23.0 percent) were able to recover, but consider themselves worse off, compared to 11.6 percent of households in the third quartile.

Table 3.4 Household recovery from most recent drought, by expenditure quartiles

	Expenditure quartiles[l] (USD daily per capita)							
	1		2		3		4	
	Percent	n	Percent	n	Percent	n	Percent	n
Households' ability to recover from the last drought								
Did not recover	34.2[a]	436	25.6[a]	449	18.7[a]	452	8.6[a]	456
Recovered, but is worse off	23.0[a]	436	16.6	449	11.6[a]	452	14.0	456
Recovered to the same condition	25.7	436	29.4	449	26.6	452	27.3	456
Recovered and is better off	12.5	436	14.7	449	20.2	452	14.7	456
Not affected by drought	4.6[a]	436	13.7[a]	449	22.9[a]	452	35.6[a]	456

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

[l] Expenditure quartiles:

1= $0.60-$0.96

2= $0.97-$1.61

3= $1.62-2.83

4= $2.84-$72.08

Source: FTF FEEDBACK ZOI Interim Survey, Northern Kenya 2015.

3.3 Household Recovery by Household Hunger Status

Table 3.5 reports household recovery from the latest drought by household hunger status. The subsample includes all households for which there are data on household hunger. Overall, households with moderate to severe hunger report lower levels of recovery than households with no hunger. Specifically, households with hunger are more likely to report that they did not recover (38.6 percent) or that they recovered some but are worse off than before the drought (23.5 percent), as compared to households with no hunger (9.9 and 11.9 percent, respectively). In terms of recovery, households reporting no hunger are more likely to report that they recovered and are better off (20.2 percent) or at least recovered to the same level as before the drought (28.6 percent), as compared to households with hunger (8.1 and 24.7 percent, respectively). Households with no hunger are also more likely to report that they were not affected by the drought (29.4 percent); this value is just 5.2 percent among households with hunger. FGD participants described the relationship between drought and hunger. They note that hunger is both a direct result of drought (due to crop and animal loss) and a result of downstream shocks. As an example, they said that young men are exposed to hunger and insecurity as they have to move with livestock to faraway places to search for pasture. According to FGDs to cope with hunger, households share food from farm and relief, and purchase food on credit or with loans from self-help groups (SHGs) and women's groups.

Table 3.5. Household recovery from most recent drought, by household hunger status

	Moderate or severe household hunger		No household hunger	
	Percent	n	Percent	n
Households' ability to recover from the last drought				
Did not recover	38.6[a]	710	9.9[a]	1,103
Recovered, but is worse off	23.5[a]	710	11.9[a]	1,103
Recovered to the same condition	24.7	710	28.6	1,103
Recovered and is better off	8.1[a]	710	20.2[a]	1,103
Not affected by drought	5.2[a]	710	29.4[a]	1,103

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

Source: FTF FEEDBACK ZOI Interim Survey, Northern Kenya 2015.

3.4 Household Recovery by Poverty Status

Table 3.6 shows household recovery from the latest 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. Significantly more households above the poverty line (27.6 percent) report not being affected by the last drought as compared to those below the poverty line (8.1 percent). Of those that were affected, a significantly greater number of households below the poverty line were not able to recover compared to their non-poor counterparts (29.7 percent and 15.7 percent, respectively). Similarly, one in five households

below the poverty line (20.8 percent) recovered, but consider themselves worse off than before the last drought, whereas 13.0 percent of non-poor households indicated the same. FGDs describe the relationship between drought and poverty. They note that drought aggravates poverty due to livestock loss and low livestock prices. Low prices are caused by the oversupply of livestock in the market and poor condition of livestock. In addition, FGD participants note that inter-tribal and inter-clan conflicts have contributed to poverty, by killing livestock and destroying watering points.

Table 3.6. Household recovery from most recent drought, by household poverty status

	Below poverty line		At or above poverty line	
	Percent	n	Percent	n
Households' ability to recover from the last drought				
Did not recover	29.7[a]	747	15.7[a]	1,046
Recovered, but is worse off	20.8[a]	747	13.0[a]	1,046
Recovered to the same condition	27.9	747	26.8	1,046
Recovered and is better off	13.5	747	17.0	1,046
Not affected by drought	8.1[a]	747	27.6[a]	1,046

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

Source: FTF FEEDBACK ZOI Interim Survey, Northern Kenya 2015.

4. 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 times.[17] 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 zone of influence (ZOI) and the three United States Agency for International Development (USAID) intervention areas (Low, Medium, and High intensity), 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 at or above the $1.25/day poverty line).

4.1 Livelihood Diversification in the ZOI

Table 4.1 lists the main livelihood activities in the last 12 months reported by all households in the ZOI. Among those households that 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 (47.8 percent) of the households. Of the households engaged in livestock rearing, the majority are engaged with the activity year-round (72.7 percent). Over half of the households rely on selling livestock during stress times only (55.9 percent).

Relief is the second most common source of household income or food for households in the ZOI (37.5 percent). For those households that received relief in the last 12 months, over three-quarters (78.2 percent) rely on relief during stress times, and more households receive relief in the dry season (70.3 percent) than year-round (28.3 percent). One in four households (25.1 percent) are engaged in some sort of self-employment. Of those households, 90.9 percent are engaged throughout the year. Crop agriculture is a livelihood activity for 8.5 percent of households in the ZOI. In those households, this occurs most commonly during the wet season (57.4 percent). Only 13.5 percent of households rely on the activity in stress times.

[17] A limitation of this data is the possible variation around the meaning of "stress" among households.

Table 4.1. Livelihood activities in the last 12 months, in stress times and by season

Activity	HH activity in last 12 months[1]		HH engaged in times of stress[1]		By season			
					Dry (only)	Wet (only)	Year-round	
	Percent	n	Percent	n[2]	Percent	Percent	Percent	n[2]
Livestock	45.8	1,193	17.1	614	10.2[a]	17.1[a]	72.7[a]	614
Relief	37.5	1,193	78.2	429	70.3[a]	1.3[a]	28.3[a]	429
Sale of livestock	35.2	1,193	55.9	459	35.8[a]	10.4[a]	53.7[a]	459
Self-employment	25.1	1,193	5.9	261	4.4[a]	4.8[b]	90.9[a,b]	261
Wages	21.4	1,193	8.1	237	5.6[a]	8.0[b]	86.4[a,b]	237
Borrowing	20.1	1,193	66.0	208	28.4[a]	3.5[a]	68.1[a]	208
Gifts	13.1	1,193	67.9	121	49.4[a]	4.0[a,b]	46.6[b]	121
Salaried work	10.0	1,193	1.9	129	0.0[a]	0.0[b]	100.0[a,b]	129
Crops	8.5	1,193	13.5	122	6.8[a,b]	57.4[a]	35.8[b]	122
Wild food consumption	5.7	1,193	36.3	50	10.0[a,b]	38.6[a]	51.4[b]	50
Sale of other wild products	4.8	1,193	50.8	38	33.2[a]	31.7[b]	35.2[a,b]	38
Remittances	4.0	1,193	40.5	33	29.6[a]	0.0[a,b]	70.5[b]	33
Sale of crops	3.2	1,193	25.5	43	11.9[a]	39.0[a]	49.2[a]	43
Inheritance	1.7	1,193	^	12	^	^	^	12
Selling or leasing land or other assets	1.4	1,193	^	16	^	^	^	16
Fishing	1.3	1,193	^	10	^	^	^	10
Hunting	0.7	1,193	^	3	^	^	^	3
Sale of wild-caught fish	0.2	1,193	^	3	^	^	^	3
Sale of wild meat	0.3	1,193	^	2	^	^	^	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.

[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 ZOI Interim Survey, Northern Kenya 2015.

Table 4.2 presents the mean and median number of livelihood activities during the last 12 months and in stress time. This table shows that the mean number of livelihood activities is significantly lower in times of stress compared to the last 12 months (2.6 and 1.0 activities, respectively).

The analysis following the endline survey will examine combinations of livelihoods within households and the relationship between types of livelihoods and outcomes identified in the research questions (household hunger, stunting, wasting, underweight, poverty, and income).

Table 4.2. 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)	2.6[a] (1.6)	1,129	1.0[a] (1.2)	1,129
Median	2.0	1,129	1.0	1,129

[a] 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 ZOI Interim Survey, Northern Kenya 2015.

Table 4.3 presents livelihood activities grouped by climate and economic risk categories, then by whether or not households also receive assistance. Livelihoods at risk for climate shocks are crop production and sales, livestock production and sales, and consumption and/or sale of wild food products. Livelihoods at risk for economic shocks are wage, salary, and self-employment. Assistance includes one or more of relief, borrowing, gifts, and remittances. The table shows that more than one-third of households report that they are engaged solely in livelihoods exposed to climate shocks either with or without assistance (20.5 percent and 17.0 percent).

Table 4.3. Livelihood activities grouped by risk exposure

Livelihood risk category	Percent	n
Climate alone without assistance	17.0[b]	1,193
Economic alone without assistance	15.7[c]	1,193
Climate and economic w/out assistance	8.9[a]	1,193
Climate alone with assistance	20.5[a]	1,193
Economic alone with assistance	13.9[a]	1,193
Climate and economic with assistance	17.6[a]	1,193
Assistance only	6.5[a,b,c]	1,193

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

Source: FTF FEEDBACK ZOI Interim Survey, Northern Kenya 2015.

4.2 Livelihood Diversification in USAID Intervention Areas

Table 4.4 shows the distribution of household livelihood activities across the three intensity areas. Livestock production is the most common source of food and income in each of the intensity areas. Of the three areas, the High intensity area has the largest share of households engaged in livestock production (57.5 percent). The Medium and High intensity area also have lower rates of wage labor 22.1 percent and 18.8 percent (compared to the Low intensity area, 43.7 percent); and smaller shares of households engaged in crop production (7.2 percent and 13.7 percent) and sale of crops (3.1 percent and 3.8 percent) than the Low intensity area.

Table 4.4. Livelihood activities in the past 12 months, by USAID intervention area

Activity	USAID intervention area		
	Low percent	Medium percent	High percent
Livestock	44.6[a]	42.8[b]	57.5[a,b]
Wage labor	43.7[a,b]	22.1[a]	18.8[b]
Sale of livestock	37.2	33.4	42.2
Borrowing	36.0[a,b]	20.6[a]	18.1[b]
Crops	32.4[a,b]	7.2[a]	13.7[b]
Relief	27.0[a]	38.6[a]	32.7
Self-employment	24.7	26.8[a]	18.3[a]
Gifts	17.7[a]	14.9[b]	6.0[a,b]
Sale of crops	16.8[a,b]	3.1[b]	3.8[b]
Salaried work	15.7[a]	9.1[a]	13.5
Remittances	5.2[a]	4.6[b]	1.4[a,b]
Gathering of wild fruits, vegetables	3.2	7.0	0.4
Sale of other wild products	1.9[a]	6.0[a]	0.0
Inheritance	1.4	1.8	1.0
Selling or leasing land or other assets	1.3	1.3	2.1
Hunting	0.7	0.8	0.0
Sale of wild meat	0.6	0.3	0.0
Sale of wild-caught fish	0.2	0.2	0.0
Fishing	0.0	1.5	0.2
N	**644**	**596**	**597**

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

Source: FTF FEEDBACK ZOI Interim Survey, Northern Kenya 2015.

Table 4.5 shows how households shift their sources of food and money during stress times. Households in the Low intensity area rely primarily on borrowing (87.7 percent). Relief is the main source of food and money in Medium and High intensity areas (76.6 percent and 85.6 percent). Over half of the households in all three areas engage in sale of livestock.

Table 4.5. Livelihood activities during stress times, by USAID intervention area

Activity	USAID intervention area					
	Low		Medium		High	
	Percent	n	Percent	n	Percent	n
Borrowing	87.7[a]	*222*	61.9[a,b]	*108*	84.6[b]	*100*
Relief	80.8	*205*	76.6[a]	*235*	85.6[a]	*194*
Sale of livestock	63.0	*238*	56.1	*236*	55.5	*223*
Gifts	56.6	*114*	71.0[a]	*80*	36.5[a]	*41*
Sale of crops	52.9	*100*	^	*20*	22.7	*23*
Remittances	47.2	*33*	43.0	*25*	^	*8*
Wage labor	17.8[a,b]	*270*	8.0[a]	*123*	8.7[b]	*114*
Crops	12.5	*177*	10.9	*44*	19.1	*78*
Livestock	8.1[a]	*287*	20.7[a,b]	*297*	6.4[b]	*317*
Self-employment	6.1	*158*	6.1	*144*	4.4	*117*
Salaried work	0.0	*94*	2.7	*52*	^	*77*
Fishing	^	*9*	^	*1*	^	*0*
Hunting	^	*4*	^	*3*	^	*0*
Sale of wild caught fish	^	*1*	^	*3*	^	*0*
Sale of wild meat	^	*3*	^	*2*	^	*0*
Selling or leasing land or other assets	^	*10*	^	*7*	^	*9*
Inheritance	^	*10*	^	*7*	^	*5*
Sale of other wild products	^	*13*	50.8	*38*	^	*0*
Gathering of wild fruits, vegetables	^	*15*	36.7	*48*	^	*2*

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

Source: FTF FEEDBACK ZOI Interim Survey, Northern Kenya 2015.

Table 4.6 presents the mean and median numbers of household livelihood activities in the last 12 months and during stress times across the three USAID intervention areas. The subsample includes all households reporting activities in the last 12 months for which there are data on intervention areas. The data show that households in the Low intensity area report more livelihood activities (3.2) on average than either the Medium (2.7) or High (2.3) intensity areas. During stress times, households in the Low intensity area were engaged in more activities (1.2) than those in the High intensity area (0.8).

The qualitative survey found that different households exhibit different capacities that allow them to adaptively respond to shocks and stresses. This is determined, in part, by the types of livelihood activities in which they are engaged. Focus group discussion (FGD) respondents in the three counties, for instance, noted that households with diversified livelihoods that encompass livestock, business, and crop production are better able to manage shocks and stresses.

Table 4.6. Mean and median number of livelihood activities in the last 12 months and in stress times, by USAID intervention areas

	USAID intervention area					
	Low		Medium		High	
	Value	n	Value	n	Value	n
Mean number of household livelihood activities (std dev) (max=12)	3.2[a,b] (1.34)	630	2.7[a] (1.3)	548	2.3[b] (2.2)	581
Median number of household livelihood activities (max=12)	3.0	630	2.0	548	2.0	581
Mean number of household livelihood activities in stress times (std dev) (max=12)	**1.2[a] (0.93)**	**630**	**1.0 (1.0)**	**548**	**0.8[a] (1.6)**	**581**
Median number of household livelihood activities in stress times (max=12)	**1.0**	**630**	**1.0**	**548**	**1.0**	**581**

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

Source: FTF FEEDBACK ZOI Interim Survey, Northern Kenya 2015.

In the qualitative survey, FGD participants observed that, based on lessons learned in dealing with previous shocks, households and communities have adopted new ways of responding to shocks. In High intensity area Marsabit, instead of entirely depending on livestock, people now keep money in the bank, grow pasture and preserve crop residues for fodder, sell more livestock, invest in education, embrace new enterprises like poultry and rabbit, conserve water during the dry season in underground tanks, and engage in irrigated farming. To instill order in the market, they impose fines on traders who sell their products outside the market.

Pastoralists in Marsabit now keep smaller herds than they did in the past. Having to find fodder and water for fewer animals, and regular sale of livestock, reduces losses during droughts. Communities have adopted better water management practices using elders and local committees to reduce conflicts, and youth groups to monitor for misuse. People have diversified livelihoods to include business, especially women and youth.

FGD participants in Marsabit also stated that communities that successfully recover from shocks manage water and pasture resources better, have diversified livelihoods, stronger bonds among community members, and good leaders. FGD participants noted that people have greater access to resources if they come from a large clan, are better educated, have members in formal employment, and have learned from past experience how to mitigate negative effects of shocks. FGD participants in one area further stated that communities with diversified livelihoods spread their risk and therefore respond to shock more successfully.

> *"Before we depended entirely on livestock, with every drought (which has persisted over the years) we lost our livestock. In life we were moving in a forward then backward then forward cycle because of drought. We have since realized that we need to engage in other means of livelihoods especially business." Female FGD participant.*

In the Medium intensity area of Turkana, qualitative interviews confirm that more people are seeking employment. Also there are few local job opportunities. Among women, group

formation is now common. FGDs noted that women who belong to a group seem to be more successful getting jobs, than those who do not. Women are forming investment groups to save money and access loans to start up group income-generating activities such as selling livestock. Other adaptations include sending more children to school to reduce illiteracy. Residents have irrigated agriculture (beans, maize, and vegetables) in addition to the traditional millet to mitigate the impacts of drought. The communities interviewed state that they prefer these actions over food relief, which is not sustainable, but that in some areas people are still dependent on relief and have not done anything significantly different.

Livelihood adaptations in the Low intensity area of Baringo County include increased crop production due to the non-sustainability of livestock, kitchen gardens, production of pasture, fodder, and seeds to sell and environmental conservation (e.g., soil erosion control, water conservation, tree nurseries). FGDs in Baringo related how during the 2009 drought, the Ngolbelon community members depended entirely on relief food. By the 2014 drought, the community had diversified their livelihoods to include beekeeping and poultry and reduced their dependence on relief. When asked about what the community is doing differently to cope with shocks and stresses, FGD participants noted that another community moved from depending solely on goats and cattle to include beekeeping and dairy goats.

As part of their effort to diversify their livelihoods to reduce the impact of shocks, focus group participants in Baringo stated that more households are sending their children to school to secure future employment, and communities are engaging more with the county government to pursue their development interests.

The FGD and key informant interview (KII) participants interviewed in the Low intensity area of Baringo County also noted that communities and households are responding to shocks by adopting new behaviors. There is accelerated investment in education and increased crop production by the community in order to enhance their resilience. FGDs pointed out that those with diversified livelihoods tend to survive better than those with only one livelihood, especially by mixing small-scale businesses with livestock production. They also stated that a community that invests in education, especially at tertiary levels, enhances its capacity to accumulate wealth and encourages others to pursue further education.

FGDs in Baringo County identified some of the combinations of livelihoods that provide some protection from shocks and stresses: goat rearing and crop production, goat rearing and honey production, agricultural production and kiosks and shops, agricultural production and charcoal production, and goat rearing plus tree seedling production. Focus groups in Baringo County also said that farmers who keep poultry and plant drought-tolerant varieties cope better.

Quantitative data do not directly support information collected from focus groups. This section shows household livelihood diversification over risk categories, comparing Low, Medium, and High intensity areas (Table 4.7). A larger share of households in the High intensity area report

engaging in livelihoods exposed to climate shocks, without assistance (22.5 percent), compared to 5.3 percent in the Low intensity area and 15.5 percent in the Medium intensity area. Even though they are less diversified, a larger share of households in the High intensity area report that they were able to recover at least partially (Table 3.3). Although, this may be due to time that has elapsed since the most recent drought. Diversification across economic and climate shocks (climate and economic livelihoods without assistance) is highest in the Low intensity area (17.8 percent), which reported lower levels of recovery (Table 3.3).

Table 4.7. Livelihood activities grouped by risk exposure, by USAID intervention areas

Livelihood risk category[1]	USAID intervention area					
	Low percent	n	Medium percent	n	High percent	n
Climate alone without assistance	5.3[a,b]	664	15.5[a]	596	22.5[b]	597
Economic alone without assistance	13.5	664	14.4	596	20.2	597
Climate and economic without assistance	17.8[a]	664	8.2[a]	596	11.3	597
Climate with assistance	16.5	664	19.1	596	26.0	597
Economic with assistance	14.3[a]	664	16.1[b]	596	5.9[a,b]	597
Climate and economic with assistance	29.5[a]	664	19.6[a]	596	9.9[a]	597
Assistance only	3.1	664	7.0	596	4.3	597

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

[1] Livelihoods at risk for climate shocks are crop production and sales, livestock production and sales, and consumption and/or sale of wild food products. Livelihoods at risk for economic shocks are wage, salary, and self-employment. Assistance includes one or more of relief, borrowing, gifts, and remittances.

Source: FTF FEEDBACK ZOI Interim Survey, Northern Kenya 2015..

Across the three counties, some youth are involved in the motorcycle transport business, which the youth view as providing a service that the community relies on to access supplies, markets, and hospitals.

> *"With the money from REGAL, I bought two goats, I have already sold two and I currently have four goats. Some of the money that I got from selling the goats have set up a shop." Female FGD participant.*

The qualitative survey team observed that women are now playing a greater role in market activities and business, including trade in livestock as observed in the High intensity area of Marsabit county. Youth are also increasingly engaging in business activities. In the Medium intensity area of Turkana County, market activities have had mixed results by area. In the Low intensity area of Baringo County, the re-opening of a major market has encouraged greater livestock production.

> *"I was doing business before REGAL came in to support us. I had no idea of how to manage my shop. There are times when I would close up the business because I had no money to stock the shop and reopen later after selling goats. The training I attended by REGAL has really helped me. We were taught that we should not spend all the sales money, some has to be ploughed back to the business and some saved for future. My life has really changed since then, I am able to repay my loans and business runs all through with the shop having stock throughout the year." Female FGD participant.*

FGD participants attribute some increases in market participation in Marsabit County to USAID project activities, which have provided training on marketing skills and provided groups with business grants. In the Medium intensity area of

Turkana county, USAID projects have provided grants to women's groups for business activities. In the Low intensity area of Baringo County, non-governmental organizations (NGOs) and government have supported women and youth groups with training and credit.

According to FGDs, where market activities have also increased, changes are also due to improved infrastructure. The Isiolo-Moyale road was cited as an example. They expect activities to increase further when larger livestock markets are completed (Resilience and Economic Growth in Arid Lands-Accelerated Growth [REGAL-AG] is building a livestock market in Merille).

4.3 Livelihood Diversification and Household Expenditures

To provide further analysis of the livelihood diversification information, Table 4.8 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. The average number of household livelihood activities during the last 12 months is very similar for each expenditure quartile, ranging between 2.7 and 3.0. Likewise, the mean number of activities households are engaged in during stress times does not vary across expenditure quartiles. Households in the second and fourth expenditure quartiles differ significantly in the median number of livelihood activities during the last 12 months (3.0 and 2.0, respectively), as well as during stress times. Median livelihood activities during stress times differ significantly between the first and fourth expenditure quartile.

Table 4.8. Mean and median number of livelihood activities in last 12 months and in stress times, by expenditure quartiles

	Expenditure quartiles[1] (USD daily per capita)							
	1		2		3		4	
	Value	n	Value	n	Value	n	Value	n
Mean number of household livelihood activities (std dev) (max=12)	3.0 (1.4)	413	3.0 (1.4)	429	2.9 (1.6)	442	2.7 (1.6)	441
Median number of household livelihood activities (max=12)	3.0	413	3.0	429	3.0	442	2.0	441
Mean number of household livelihood activities in stress times (std dev) (max=12)	**1.3 (1.1)**	**413**	**1.2 (1.0)**	**429**	**1.0 (1.1)**	**442**	**1.0 (1.1)**	**441**
Median number of household livelihood activities in stress times (max=12)	**1.0**	**413**	**1.0**	**429**	**1.0**	**442**	**1.0**	**441**

[1] Expenditure quartiles:
1= $0.60-$0.96
2= $0.97-$1.61
3= $1.62-2.83
4= $2.84-$72.08

Source: FTF FEEDBACK ZOI Interim Survey, Northern Kenya 2015.

Table 4.9 shows livelihood diversification over risk of climate and economic shocks by income quartile. The data show that, compared to better-off households, larger shares of households in the two lowest quartiles report that they engage in livelihoods exposed to climate shocks and receive assistance (26.4 percent and 23.9 percent compared to 14.4 percent and 9.8 percent of households in quartiles 3 and 4, respectively). A larger share of households in the highest income quartile (26.6 percent) report engaging in livelihoods exposed to economic risk without receiving assistance, compared to 8.1 percent and 7.7 percent of households in the lowest quartiles and 15.0 percent of households in the third quartile.

Table 4.9. Livelihood activities grouped by risk exposure, by income quartile

Livelihood risk category[1]	Expenditure quartiles[2] (USD daily per capita)							
	1		2		3		4	
	percent	n	Value	n	Value	n	Value	n
Climate alone without assistance	13.3[a]	458	9.8	459	13.2[b]	458	7.9[a,b]	459
Economic alone without assistance	8.1[a]	458	7.7[b]	459	15.0[a,b]	458	26.6[a,b]	459
Climate and economic without assistance	10.6	458	14.6	459	13.5	458	15.0	459
Climate with assistance	26.4[a,b]	458	23.9[c]	459	14.4[a,c]	458	9.8[b,c]	459
Economic with assistance	8.5[a,b,c]	458	15.6[a]	459	18.0[b]	458	14.4[c]	459
Climate and economic with assistance	26.5	458	24.1	459	23.0	458	21.3	459
Assistance only	6.6	458	4.4	459	3.0	458	5.1	459

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

[1] Livelihoods at risk for climate shocks are crop production and sales, livestock production and sales, and consumption and/or sale of wild food products. Livelihoods at risk for economic shocks are wage, salary, and self-employment. Assistance includes one or more of relief, borrowing, gifts, and remittances.

[2] Expenditure quartiles:

1= $0.60-$0.96

2= $0.97-$1.61

3= $1.62-2.83

4= $2.84-$72.08

Source: FTF FEEDBACK ZOI Interim Survey, Northern Kenya 2015.

4.4 Livelihood Diversification and Household Hunger

Table 4.10 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. The median number of livelihood activities households engaged in during the last 12 months differs significantly between those with (3.0) and those without hunger (2.0). The data show that during stress times, households with hunger engaged in significantly more livelihood activities than households without hunger (mean: 1.3 and 1.0, respectively).

In the qualitative study, focus group respondents indicate that dependence on relief aid and FFA programs to cope with shocks and stresses is still high, especially in the Low intensity area of Baringo County and the Medium intensity area of Turkana County.

Table 4.10. Mean and median number of livelihood activities in last 12 months and in stress times, by household hunger status

	Moderate or severe household hunger		No household hunger	
	Value	n	Value	n
Mean number of household livelihood activities (std dev) (max=12)	3.0 (1.4)	682	2.8 (1.6)	1,065
Median number of household livelihood activities (max=12)	3.0	682	2.0	1,065
Mean number of household livelihood activities in stress times (std dev) (max=12)	**1.3[a] (1.2)**	**682**	**1.0[a] (1.0)**	**1,065**
Median number of household livelihood activities in stress times (max=12)	**1.0**	**682**	**1.0**	**1,065**

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

Source: FTF FEEDBACK ZOI Interim Survey, Northern Kenya 2015.

Table 4.11 shows livelihood activities grouped by risk exposure and assistance by household hunger categories. Of households experiencing moderate to severe hunger, the largest share (27.6 percent) is engaged in livelihoods exposed to climate risk and are receiving assistance. Of households not experiencing hunger, the largest share (20.0 percent) is engaged in livelihoods exposed to economic risk without assistance.

Table 4.11. Livelihood activities grouped by risk exposure, by household hunger status

Livelihood risk category[1]	Moderate or severe household hunger		No household hunger	
	Percent	n	Percent	n
Climate alone without assistance	11.9	1,103	10.4	710
Economic alone without assistance	6.3[a]	1,103	20.0[a]	710
Climate and economic without assistance	7.7[a]	1,103	17.3[a]	710
Climate alone with assistance	27.6[a]	1,103	12.4[a]	710
Economic alone with assistance	16.5	1,103	12.8	710
Climate and economic assistance	24.0	1,103	23.3	710
Remittances or relief only	6.1	1,103	3.9	710

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

[1] Livelihoods at risk for climate shocks are crop production and sales, livestock production and sales, and consumption and/or sale of wild food products. Livelihoods at risk for economic shocks are wage, salary, and self-employment. Assistance includes one or more of relief, borrowing, gifts, and remittances.

Source: FTF FEEDBACK ZOI Interim Survey, Northern Kenya 2015.

4.5 Livelihood Diversification and Household Poverty

Table 4.12 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 purchasing power parity [PPP]). The subsample includes all households reporting activities in the last 12 months for which there are data on household poverty. The data show a higher mean number of livelihood activities during stress times in households below the poverty line (1.3) than above the poverty line (1.1).

Table 4.12. Mean and median number of livelihood activities in last 12 months and in stress times, by household poverty status

	Below poverty line		At or above poverty line	
	Value	n	Value	n
Mean number of household livelihood activities (std dev) (max=12)	3.0 (1.4)	712	2.8 (1.6)	1,013
Median number of household livelihood activities (max=12)	3.0	712	2.0	1,013
Mean number of household livelihood activities in stress times (std dev) (max=12)	**1.3[a] (1.1)**	**712**	**1.1[a] (1.1)**	**1,013**
Median number of household livelihood activities during stress times (max=12)	**1.0**	**712**	**1.0**	**1,013**

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

Source: FTF FEEDBACK ZOI Interim Survey, Northern Kenya 2015.

Table 4.13 shows that about one-quarter (24.8 percent) of households below the poverty line engage solely in livelihoods exposed to climate risk and receive assistance. Compared to the percentage of households above the poverty line who engage in livelihoods exposed to economic risk and do not receive assistance (19.4 percent), a smaller share below the poverty line (7.7 percent) engage in these livelihoods and do not receive assistance.

Table 4.13. Livelihood activities grouped by risk exposure by household poverty status

Livelihood risk category[1]	Below poverty line		At or above poverty line	
	Percent	n	Percent	n
Climate alone without assistance	11.8	778	10.5	1,059
Economic alone without assistance	7.7[a]	778	19.4[a]	1,059
Climate and economic w/out remittances of relief	12.6	778	14.1	1,059
Climate alone with assistance	24.8[a]	778	13.9[a]	1,059
Economic alone with assistance	11.0[a]	778	16.4[a]	1,059
Climate and economic with assistance	26.2	778	21.9	1,059
Assistance only	6.0	778	3.9	1,059

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

[1] Livelihoods at risk for climate shocks are crop production and sales, livestock production and sales, and consumption and/or sale of wild food products. Livelihoods at risk for economic shocks are wage, salary, and self-employment. Assistance includes one or more of relief, borrowing, gifts, and remittances.

Source: FTF FEEDBACK ZOI Interim Survey, Northern Kenya 2015.

4.6 Summary of Key Findings on Livelihood Diversification

Opportunities for livelihood diversification decrease for households in the ZOI during times of stress. Crop production decreases during droughts, and as a result, nearly half of the households engage in only one activity during stress times, either borrowing, relying on relief, or selling livestock.

Similarly, households in all three intensity areas have access to fewer livelihood sources during times of stress. In non-stress times, households in the Low intensity area report more livelihood diversification compared to those in both the Medium and High intensity areas.

This pattern is also seen in households defined by hunger, poverty, and expenditure quartile. Regardless of which category they fall in, households engage in roughly the same number of livelihoods, and have access to fewer during times of stress.

In the qualitative survey, communities and households across the three counties report that they have diversified livelihoods by irrigating agricultural land, business, and employment to cope with shocks and stresses. Communities no longer consider livestock production sufficient to deal with shocks and stresses because animals are very prone to common shocks, such as droughts, resource-based conflicts, and theft. Women across the counties have formed strong, cohesive savings and credit groups to help them cope and from which they obtain funds for business, domestic needs, and education. Quantitative data do not directly support diversification as a way out of hunger or poverty, but suggest the importance of wage, salary, and self-employment to recover from droughts.

Various communities and focus groups throughout the study area state that they prioritize education, and emphasize its importance in achieving greater stability and higher income. However, youth FGDs in Marsabit noted that children from nearly every household are kept at home to herd the family livestock. Households see this as a way to sustain their livelihood. See Table 4.14 for the percent of children 5 to 14 years old in school by intensity area.

Table 4.14. Education of children 5 to 14 years old currently in school, by USAID intervention areas

Activity	USAID intervention area		
	Low percent	Medium percent	High percent
Children ages 5 to 14 currently in school	68.0	61.1	71.3

Source: FTF FEEDBACK PBS. June 2015.

Participants in the youth FGDs in Turkana County summarized the qualitative findings well when they stated that successful communities have diversified livelihoods that spread risk. The youth said that such communities also have more community participation through youth and women's groups that mobilize savings and invest in various enterprises. They pointed out that communities with better access to markets and information that facilitate an exchange of goods and services with the rest of the world tend to respond better to shocks and stresses; and communities that respond to shocks emphasize individual effort to succeed and this contributes.

5. 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.

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 zone of influence (ZOI) and the three United States Agency for International Development (USAID) intervention areas (Low, Medium, and High intensity), 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 at or above the $1.25/day poverty line).

5.1 Social Capital in the ZOI

Table 5.1 shows the percent of households affected by the latest drought in the ZOI and their reliance on others, and of those households, 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. Nearly 40 percent (37.9 percent) of all households in the ZOI affected by the last drought relied on others for financial or in-kind food support. Of these households, relatives within the same village are the most common source of support (67.0 percent), followed by relatives outside the village (31.4 percent), and non-relatives within the same village (14.1 percent). On average, the households report 1.3 sources of social support.

Table 5.1. Households in the ZOI relying on others during the most recent drought

Reliance on social capital	Percent	n[2]
Percent of households able to rely on others during the last drought	37.9	946
Types of social networks (%)[1]		
Relatives in my village/community	67.0	405
Relatives outside my village/community	31.4	405
Non-relatives in my village/community	14.1	405
Non-relatives outside my village/community	6.3	405
Non-relatives outside of my tribe/ethnic group	6.8	405
Mean number of social support sources (std dev)	**1.3 (0.8)**	**405**

[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 most recent drought.

Source: FTF FEEDBACK ZOI Interim Survey, Northern Kenya 2015.

Table 5.2 shows that among the households reporting, relying on others for financial and in-kind support during the latest drought, half (50.9 percent) rely on other households because of reciprocal obligations and 37.6 percent because of religious or kin-based obligations.

Table 5.2. Reasons for households in the ZOI relying on others during the most recent drought

Why do they allow your household to rely on them?[1]	Percent	n[2]
Their obligation – religious or kin based	37.6	405
They rely on me – reciprocal obligation	50.9	405
Other	14.6	405

[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 ZOI Interim Survey, Northern Kenya 2015.

5.2 Social Capital in USAID Intervention Areas

Table 5.3 compares households relying on others during the last drought and types of social networks across the USAID intervention areas. The subsample includes all households that were affected by the last drought for which there are data on intervention areas. Overall, more households in the High intensity area (52.5 percent) and the Low intensity area (49.2 percent) relied on others compared to those in the Medium intensity area (34.4 percent).

In general, qualitative interviewees in all three counties report a mix of changes in social support over the past several years. Respondents note that support among households has increased because of more shocks and stresses, but youth focus group discussion (FGD) respondents note that families experience domestic violence, alcoholism, and break-ups as a result of shocks and stresses. Family difficulties limit their ability to help others. Respondents also report that community-level social support has decreased. However, support from government and non-governmental organizations (NGOs) has risen. It was reported that people are working together to cope with shocks through individual and collective action.

Focus group participants identified a mix of traditional support mechanisms and new social organizations such as women's savings and loan groups that have formed as a result of development interventions. The most common forms of support are neighbors sharing resources such as food, livestock, and money with those affected; fundraising by clans to support the needy and cover medical and education costs; and group activities, especially among women, that provide loans for business and domestic needs. FGD participants in the High intensity area, Marsabit, noted that they have a clan-based safety net system, and that households that belong to large clans fare better following shocks. This could explain the finding reported in Table 5.3 that a larger share of households in the High intensity area rely on relatives in the community.

Table 5.3. Households relying on others during the last drought, by USAID intervention area

	USAID intervention areas					
	Low		Medium		High	
	Percent	n[2]	Percent	n[2]	Percent	n[2]
Reliance on social capital						
Percent of households able to rely on others during the last drought	49.2[a]	517	34.4[a,b]	491	52.5[b]	455
Types of social networks (%)[1]						
Relatives in my village/community	53.1[a]	240	66.4	166	68.4[a]	239
Relatives outside my village/community	39.8	240	30.0	166	35.1	239
Non-relatives in my village/community	14.0	240	15.6	166	9.9	239
Non-relatives outside my village/community	10.2	240	7.2	166	3.9	239
Non-relatives outside of my tribe/ethnic group	7.8	240	8.5	166	2.2	239
Mean number of social support sources (std dev)	**1.3 (0.6)**	**240**	**1.3 (0.6)**	**166**	**1.2 (1.5)**	**239**

[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 reporting that they were affected by the most recent drought.

Source: FTF FEEDBACK ZOI Interim Survey, Northern Kenya 2015.

Across all counties, the qualitative survey team found that there appears to be an increase in social support as a result of participation in government and development partner interventions. People identify important community contributions as the protection of critical natural resources such as grazing resources and water through environmental committees. In Turkana (the Medium intensity area), focus groups cited the construction of infrastructure such as water canals, schools, and rural access roads, which is normally done through food for assets programs, as ways in which people in the community support each other.

Of the households that report reliance on others during the last drought, those in the High intensity area are more likely to rely on relatives inside the village (68.4 percent) than those in the Low intensity area (53.1 percent). Qualitative data confirm this finding but do not provide additional explanation. FGD participants report that in the High intensity area people are most likely to share with family and clan members. In the Low intensity area, people share primarily with neighbors. Statistically significant differences in reliance on others between intensity areas were not found for other types of social networks.

Qualitative interviews confirm that social support (cash and in-kind) from relatives and neighbors is critical during shocks and is fully exploited. Focus group participants cited several sources of support inside the extended family, outside the family, and in some cases outside the community. The qualitative survey found that communities in different locations provide some support to one another to cope with shocks. In High intensity area Marsabit and Medium intensity area Turkana, FGD participants report that neighboring communities from different tribes allow them to use their pasture and water during the dry season when they seek permission through their chiefs. However, the majority of the respondents in Turkana reported that in general, other communities do not support them during shocks and stresses. This observation was also made in some locations in Low intensity area Baringo. The exception in the Low intensity area is where two communities assist each other during fundraising and in fighting together against a third community, whose members steal their cattle.

In the High intensity area of Marsabit, qualitative FGDs report that communities loan livestock to poorer members after major losses from drought and cattle rustling. Relatives help out by contributing livestock, giving priority to poorer members to access safety nets, sharing labor, and fundraising to assist needy families. Poor members of the community are discouraged from selling their property. Women's groups are very active; women form savings groups and loan money to each other to start businesses like livestock selling and retail shops, and conduct group sales of milk and livestock. Women's groups solicit funds from NGOs and government institutions.

The qualitative survey also found that in places where people continue to support each other (through recent droughts), some of the ways in which they do so have undergone changes. In the High intensity area, Marsabit, focus groups reported that social support has changed from livestock to money. Unlike previously when only clan members contributed, today everyone helps. Female focus group participants report that people now prefer to help their group members, providing start-up capital and information, and that help is less available to a person who does not belong to a group or participate in other people's fundraising events. Youth FGDs noted that community social support has improved because clan members cooperate to raise funds for education, and because the community successfully lobbied to secure an influential position in county government. One youth FGD noted that in their community, support focuses more on family so that recovery for those with few family members is more

difficult. In another community, youth said that community cohesion has improved, for example, fundraising for educational or medical bills is done for needy children and involves all community members.

In Turkana, the FGD participants reported that actions taken to support one another to be productive again include livestock loans, group loans; fundraising to assist needy family members, loaning of fishing nets; provision of short-term credit to group members, and labor sharing. Communities share information on best farming practices, health and security, participate in joint businesses, and share savings among group members. In Medium intensity area Turkana, the youth FGDs stated that there was more emphasis on individual effort and progression in order to survive the difficult living conditions in the area. This has changed over the last two years, due to interventions by NGOs that support the community in livelihood diversification projects. However, male focus group participants said that social support has decreased due to depressed relationships between community members, and one community feels that social relationships are strained due to development interventions being limited in the area, leaving the community in abject poverty.

FGD participants in Baringo reported that the Kalenjin community has stronger social support systems than other communities due to historical marginalization. This community focuses more efforts on the education of the youth through community fundraising, hosts internally displaced persons from the Kalenjin community, and has a good working relationship with the local chief to access development assistance. Baringo FGD participants also reported that communities loan money to individuals in need and share land with displaced persons. Women and youth form groups to acquire entrepreneurship skills. Baringo has been subject to recent conflict over land and resources, and the youth focus group participants noted that there is a *nyumba kumi* initiative (i.e., a form of community policing) to solve insecurity issues.

In Baringo, FGD participants related that the World Food Programme Food for Assets (WFP FFA) program has increased community cohesion compared to the previous blanket distribution of food without community participation. It was reported that the formation of groups has made livestock management practices more efficient, and households are now more food secure as a result of development activities, especially around irrigation projects.

Focus groups reported that external support from government and development partners has a positive impact on community sharing of information through established and new networks. In High intensity area Marsabit, respondents indicate that some contributions from external support, especially from USAID's Resilience and Economic Growth in Arid Lands-Improving Resilience (REGAL-IR) project, has led to better environmental management and improved communities' ability to cope with drought, improved livestock management and productivity, and improved social cohesion to support needy people. In one area, participants in the KIIs said that construction of an orphanage has reduced the burden on the community of caring for vulnerable children.

Table 5.4 shows that the reasons for relying on others vary across USAID intervention areas. In the High intensity area, more households (59.5 percent) rely on others because they feel it is their obligation based on religious and/or familial duty than the Medium (28.6 percent) and Low (34.6 percent) intensity areas. Roughly half of the households in all of the intensity areas rely on others based on reciprocal obligation.

Table 5.4. Reasons for households relying on others during the last drought, by USAID intervention areas

	USAID intervention areas					
	Low		Medium		High	
	Percent	n[2]	Percent	n[2]	Percent	n[2]
Why do they allow your household to rely on them?[1]						
Their obligation – religious or kin based	34.6[a]	240	28.6[b]	166	59.5[a,b]	239
They rely on me – reciprocal obligation	48.0	240	54.6	166	45.7	239
Other	20.6	240	16.8	166	8.9	239

[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.

Source: FTF FEEDBACK ZOI Interim Survey, Northern Kenya 2015..

5.3 Social Capital and Household Expenditures

Table 5.5 shows households relying on others during the latest drought by expenditure quartiles. The subsample includes all households that were affected by the latest drought for which there are data on expenditures. Similar shares (ranging from 40 to 49 percent) in each expenditure quartile, report that they were able to rely on others during the last drought.

Information from the qualitative FGDs supports the lack of variation in household's ability to rely on each other by income. In one community in Turkana, the female focus group participants felt that no single household has recovered because during hardship, households expend all their resources to ensure their relatives and neighbors survive. In times of hardship, the women said that all households will turn to the more capable household for support, who will then use up all of its surplus and become like the other households.

Among households that report relying on others, only households reporting relying on relatives in the village produced a statistically significant difference between quartiles. More households in the second quartile (61.6 percent) relied on relatives in the village than households in the first quartile (57.1 percent). There was no significant difference in the average number of social support sources across the quartiles.

Table 5.5. Households relying on others during the most recent drought, by expenditure quartiles

Reliance on social capital	Expenditure quartiles[1] (USD)							
	1		2		3		4	
	Percent	n	Percent	n	Percent	n	Percent	n
Percent of households able to rely on others during last drought	49.3	415	40.0	376	40.1	351	44.1	288
Types of social networks (%)[2]								
Relatives in my village/community	57.1	206	61.6	152	64.0	145	52.1	132
Relatives outside my village/community	35.8	206	35.9	152	36.2	145	38.5	132
Non-relatives in my village/community	15.2	206	16.6	152	10.1	145	14.0	132
Non-relatives outside my village/community	7.7	206	8.9	152	6.5	145	12.3	132
Non-relatives outside of my tribe/ethnic group	9.6	206	5.9	152	7.4	145	6.3	132
Mean number of social support sources (std dev)	**1.3 (0.8)**	**206**	**1.3 (0.7)**	**152**	**1.2 (0.7)**	**145**	**1.2 (0.8)**	**132**

[1] Expenditure quartiles:

1= $0.60-$0.96

2= $0.97-$1.61

3= $1.62-$2.83

4= $2.84-$72.08

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

Source: FTF FEEDBACK PBS. June 2015.

Table 5.6 shows the reasons for relying on others by expenditure quartiles. The data show no significant differences across expenditure quartiles.

Table 5.6. Reasons for households relying on others during the most recent drought, by expenditure quartile

	Expenditure quartiles[1] (USD)							
	1		2		3		4	
	Percent	n[3]	Percent	n[3]	Percent	n[3]	Percent	n[3]
Why do they allow your household to rely on them?[2]								
Their obligation – religious or kin based	31.3	206	47.0	152	42.1	145	29.1	132
They rely on me – reciprocal obligation	52.0	206	44.8	152	49.9	145	56.1	132
Other	19.0	206	13.6	152	11.2	145	16.3	132

[1] Expenditure quartiles:

1= $0.60-$0.96

2= $0.97-$1.61

3= $1.62-$2.83

4= $2.84-$72.08

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

[3] 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.

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

Source: FTF FEEDBACK ZOI Interim Survey, Northern Kenya 2015.

5.4 Social Capital and Household Hunger

Table 5.7 shows household reliance on others during the last 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. Households with moderate to severe hunger are significantly more likely to report relying on others during the last drought (51.0 percent) than households with no hunger (37.4 percent).

Table 5.7. Households relying on others during the most recent drought, by household hunger status

Reliance on social capital	Moderate or severe household hunger		No household hunger	
	Percent	n	Percent	n
Percent of households able to rely on others during the last drought	50.7[a]	666	37.4[a]	780
Types of social networks (%)[1]				
Relatives in my village/community	59.7	350	59.3	289
Relatives outside my village/community	36.3	350	35.9	289
Non-relatives in my village/community	18.7[a]	350	7.8[a]	289
Non-relatives outside my village/community	8.3	350	8.8	289
Non-relatives outside of my tribe/ethnic group	8.0	350	6.9	289
Mean number of social support sources (std dev)	**1.3 (0.8)**	**350**	**1.2 (0.7)**	**289**

[a] 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 ZOI Interim Survey, Northern Kenya 2015.

Of all households relying on others during the last drought, households with moderate or severe hunger are significantly more likely to rely on non-relatives outside the village (18.7 percent) than those with no hunger (7.8 percent).

Table 5.8 provides information related to the reasons households rely on others by household hunger status. Significantly more households reporting no hunger (59.0 percent), compared to households reporting moderate to severe hunger (43.3 percent), indicate that they rely on others due to reciprocal obligations. Households did not differ in their views on religious or kin-based obligation.

Table 5.8. Reasons for households relying on others during the most recent drought, by household hunger status

	Moderate or severe household hunger		No household hunger	
	Percent	n[2]	Percent	n[2]
Why do they allow your household to rely on them?[1]				
Their obligation – religious or kin based	40.1	350	32.9	289
They rely on me – reciprocal obligation	43.3[a]	350	59.0[a]	289
Other	18.9	350	12.2	289

[a] 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 ZOI Interim Survey, Northern Kenya 2015.

5.5 Social Capital and Household Poverty

Table 5.9 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 purchasing power parity [PPP]). The subsample includes all households that were affected by the last drought for which there are data on household poverty. Similar shares of households below the poverty line (41.5 percent) and above the poverty line (45.7 percent) relied on others during the last drought.

In general, households above *or* below the poverty line rely on every type of social network at similar rates. The greatest source of support for both groups comes from relatives in and outside the village.

Table 5.9. Households relying on others during the most recent drought, by household poverty status

Reliance on social capital	Below poverty line		At or above poverty line	
	Percent	n	Percent	n
Percent of households able to rely on others during the last drought	45.7	680	41.5	750
Types of social networks (%)[1]				
Relatives in my village/community	59.2	315	58.0	320
Relatives outside my village/community	37.0	315	36.0	320
Non-relatives in my village/community	15.5	315	12.9	320
Non-relatives outside my village/community	8.0	315	9.3	320
Non-relatives outside of my tribe/ethnic group	9.1	315	5.9	320
Mean number of social support sources (std dev)	**1.3 (0.8)**	**315**	**1.2 (0.7)**	**320**

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

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

Source: FTF FEEDBACK ZOI Interim Survey, Northern Kenya 2015.

Table 5.10 provides information related to the reasons 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 reasons for social support by household poverty status.

Table 5.10. Reasons for households relying on others during the most recent drought, by household poverty status

	Below poverty line		At or above poverty line	
	Percent	n[2]	Percent	n[2]
Why do they allow your household to rely on them?[1]				
Their obligation – religious or kin based	34.33	315	39.42	320
They rely on me – reciprocal obligation	50.80	315	48.02	320
Other	19.37	315	15.06	320

[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.

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

Source: FTF FEEDBACK ZOI Interim Survey, Northern Kenya 2015.

5.6 Summary of Key Findings on Social Capital

Roughly 40 percent of the ZOI households that were affected by the last drought report relying on others for financial or in-kind support. Of those households that relied on others, the main source of support is relatives in the same village, followed by relatives outside the village. This support is more attributable to reciprocal obligations rather than religious or kin-based obligations.

With regard to differences between areas of intensity, more households in both the Low and High intensity areas are able to depend on others and have more support services on average than those in the Medium intensity area. Religious or kin-based obligation is the dominant reason for support more so for households in the High intensity area than those in the other two areas.

Regardless of wealth (e.g., above or below the poverty line and expenditure quartile), households rely on others at the same level. However, households with hunger (moderate to severe) that rely on others are considerably more dependent on others for social support than those without hunger. Households with hunger rely on non-relatives in the village more than households without hunger. Thus, informal safety nets are very important for these hunger-prone households.

The qualitative survey found that many self-help groups have been formed and supported through REGAL-IR efforts, thus strengthening social capital upon which adaptive measures are being implemented. FGDs indicate that those who are members of groups are doing better than those who are not, as members tend to assist those within their group. At the time of the qualitative survey, social capital seems strongest in Low intensity area Baringo, possibly due to the success of the WFP FFA program that supports the construction of community infrastructure.

6. Adaptive Capacity

Adaptive capacity is "the ability to make proactive and informed choices about alternative livelihood strategies based on changing conditions."[18] Households with strong adaptive capacity often diversify their livelihoods and adapt their farming and pastoral systems to climate change.[19] This section of the resilience module in the interim population-based survey (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 negative outcomes in the face of recurrent droughts in other studies in the Horn of Africa.[20]

The following findings are related to adaptive livelihood strategies, while the subsequent section provides more information on household asset holdings. It should be noted that the questions utilized for this section are forced choice questions (although for some questions, respondents can choose multiple responses), which promote self-categorization by respondents. The adaptive capacity results are presented for the overall zone of influence (ZOI) and the Low, Medium, and High intensity United States Agency for International Development (USAID) intervention areas, 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 $1.25 per day poverty line).

6.1 Adaptive Capacity in the ZOI

Table 6.1 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. One third of the households (26.4 percent) in the ZOI report that they will be unable to cope in a future drought, while nearly 40 percent (39.3 percent) may be able to cope with less money or food, and 21.0 percent report being able to cope without difficulty.

Considering that nearly 80 percent of households were affected by the last drought, a small share has made proactive livelihood adaptions to cope with future drought or stress (19.7 percent). As shown in Table 5.2, of the households that have made changes, the most common adaptions are to change the type of work done to earn income (37.5 percent) and taking on additional sources of income (38.4 percent). Focus group discussions (FGDs) in all

[18] Frankenberger, Langworthy, Spagler, and Nelson. (2012).
[19] Béné, Wood, Newsham, and Davies. (2012).
[20] Ibid.

areas report that lack of employment opportunities in local areas is an ongoing stress. This is also an impediment to preparing for future shocks.

Table 6.1. Household adaptive capacity in the ZOI

	Percent	n
Households' ability to cope with and manage through future droughts or stresses		
Unable to cope	30.5[a]	1,061
Able to cope but with less money or food	45.2[a,b]	1,061
Able to cope without difficulty	24.1[a]	1,061
Households that have made proactive adaptions to livelihood sources		
Household changed livelihoods to cope with future	19.7	1,190
Types of livelihood adaptations[1]		
Changed type of work done to earn money	37.5	234
Took on an additional type of work to earn money	38.4	234
Increased the amount of money earned from existing type of work	4.4	234
Increased savings	7.0	234
Migration of household members for job opportunities elsewhere	6.1	234
Households that have made proactive adaptions to food sources		
Household changed food sources to cope with future	15.7	1,190
Types of food source adaptations[1]		
Changed food sources	19.3	198
Added food sources	16.0	198
Increased food consumed from existing sources	5.9	198
Reduced food consumption	58.2	198
Household views on destiny		
Each person is responsible for their own success or failure	53.3	1,082
Each person's future is a matter of destiny	46.7	1,082

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

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

Source: FTF FEEDBACK ZOI Interim Survey, Northern Kenya 2015.

An even smaller percentage of households in the ZOI report making proactive adaptations to their food sources (15.7 percent). Adaptations to food sources include adding new sources (such as wild fruits, honey, mangoes, papayas, vegetables, and poultry from household production), increasing food from existing sources either through increased production during non-drought, food preservation, or both. Among the households that indicate making changes, reducing food consumption is by far the most common approach (58.9 percent), while another 19.3 percent changed their food sources and added food sources (16.0 percent).

The next dimension of adaptive capacity explored is household member beliefs around future success or failure based on destiny (i.e., the aspiration and fatalism category). In this survey, aspiration represents the attitudes of household members regarding how responsible they are for their successes and failures, as well as how household members visualize the future and

engage in forward-looking behaviors.[21, 22] As found in Table 5.2, about one-half of households (53.3 percent) in the ZOI believe each person is responsible for their future success or failure, compared to 46.7 percent of households that believe that each person's future is a matter of destiny.

Qualitative research provides interesting perspectives about how respondents interpreted the question. FGD participants emphasized that efforts to succeed go beyond the household and require community resources. They said that the success or failure of the community will trickle down to individual households. Respondents also emphasized the importance of access to information and resources for success.

FGD participants in the three counties said that each household is responsible for its own success or failure. According to the FGDs, household survival depends on hard work, and those who engage in diversified livelihoods (crop production, livestock, and business) have better chances of recovery. However, they emphasized that this responsibility extends beyond the households: Households alone cannot succeed. The responsibility for success needs to be shared among community members: people need to help each other and collectively manage resources. FGD participants mentioned several types of collective action: management of pasture and water; maintaining schools, dispensaries, and boreholes; and providing labor for road construction. Success or failure of the community will trickle down to individual households. They also believe that in order to recover, households need greater exposure to information, education and management skills, more livelihood assets, and employment opportunities.

6.2 Adaptive Capacity in USAID Intervention Areas

Continuous shocks and stresses from drought and conflicts have resulted in changes in behavior as confirmed by female, youth, and male FGDs in the qualitative study. FGD participants see a shift in people's views on the importance of education. Investment in the education of youth is now seen as the surest pathway out of food insecurity and poverty. People are adopting new or additional livelihood activities, such as business, that seem less susceptible to the impact of shocks and stresses. Many of those interviewed are more willing than they were in the past to reduce livestock numbers as a strategy to minimize drought risk and livestock losses due to theft.

Households do not significantly differ in their ability to cope with future drought or stress (Table 6.2) by intervention area. Results in this table also show that roughly 20 percent of all households in each of the three intervention areas made pro-active changes to their livelihood sources to cope with future drought or stress. Of those that made changes to their livelihoods,

[21] Rao and Walton. (2004).
[22] Appadurai. (2001).

the most common type of livelihood adaptations within each intervention area include changing the type of livelihood and adding other sources of income.

Across the three counties in the qualitative survey, the actions considered most effective in reducing the negative effects of shocks and stresses on well-being are diversification of livelihoods, formal employment, diversifying farming into drought-resistant food crops and vegetables, growing and preserving pasture, irrigation, and proper management of natural resources (primarily water and pasture). Starting or expanding a small business is considered the most effective way to diversify livelihoods, and families are emphasizing education for their children so that they can eventually gain formal employment.

Table 6.2. Household adaptive capacity, by USAID intervention areas

	USAID intervention areas					
	Low		Medium		High	
	Percent	n	Percent	n	Percent	n
Households' ability to cope with and manage through future droughts or stresses						
Unable to cope	29.0	599	32.2	500	24.2	558
Able to cope, with changes in income and food sources	44.4	599	43.8	500	50.8	558
Able to cope without difficulty	26.4	599	24.0	500	25.0	558
Households that have made proactive adaptions to livelihood sources						
Households that have made proactive adaptions to livelihood sources	18.9	640	19.2	595	21.8	595
Types of livelihood adaptations[l]						
Changed type of work done to earn money	40.7	123	34.6	106	47.8	126
Took on an additional type of work to earn money	31.1	123	42.9	106	22.5	126
Increased the amount of money earned from existing type of work	6.5	123	4.8	106	3.0	126
Increased savings	8.9	123	5.9	106	10.8	126
Migration of household members for job opportunities elsewhere	4.6	123	3.8	106	14.5	126
Households that have made proactive adaptions to food sources						
Household changed food sources to cope with future	16.4	640	15.6	595	16.3	595
Types of food source adaptations[l]						
Changed food sources	38.6[a]	117	16.0[a]	97	32.0	101
Added food sources	16.2	117	15.1	97	19.6	101
Increased food consumed from existing sources	4.1[a]	117	7.0[a]	97	1.5	101
Reduced food consumption	41.1	117	61.1	97	47.0	101
Household views on destiny						
Each person is responsible for their own success or failure	58.4[a]	602	54.0	542	51.3[a]	537
Each person's future is a matter of destiny	41.6[a]	602	46.0	542	48.7[a]	537

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

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

Source: FTF FEEDBACK ZOI Interim Survey, Northern Kenya 2015.

Participants in the qualitative survey in all three intensity areas stated that they have made pro-active changes to their livelihood sources to cope with future shocks and stresses. Some indicators of adaptive capacity in communities and households found by the qualitative survey team include increased engagement of women and youth in business activities and women in leadership positions; adoption of non-livestock-based livelihoods; and adoption of non-conventional livestock like poultry. Women and the youth are increasingly engaging in market activities, and women have overtaken men in many market activities and in small business entrepreneurship.

The youth FGDs in High intensity area Marsabit stated that they have learned the importance of education from community members who are well educated and more economically empowered than those without education. This has caused the community to embrace education to the extent of fundraising at a clan level to ensure better educational opportunities and subsequent jobs for their children.

> "Knowledge is permanent. It cannot be affected by conflict or drought." Female FGD participant.

In addition to livelihood adaptations, Table 6.2 also shows that a similar number of households in each intervention area made changes to food sources to cope with future drought or stress (16.4 percent in Low intensity, 15.6 percent in Medium intensity, and 16.3 percent in High intensity). Reducing food consumption was the most common adaptation and was reported most often by households in the Medium intensity area (61.1 percent). Changing food sources was twice as likely to be reported by households in the Low intensity area (38.6 percent) compared to those in the Medium intensity area (16.0 percent). However, significantly more households in the Medium intensity area (7.0 percent) increased their food consumption from existing sources compared to their counterparts in the Low intensity area (4.1 percent).

According to FGDs in Baringo, the most common food-related strategies to cope with shocks and stresses include reducing consumption levels of food and water for personal and household use, including reducing the number of meals per day, increasing preserving foods, and eating wild fruits as food. In the High intensity area of Marsabit, qualitative interviewees report that they mitigate food shortages by seeking relief food from government (though none has been received since early 2015), and preparing and eating food communally to maximize resources and ensure that neighbors have food.

Table 6.2 also shows differences between Low and High intensity intervention areas in the beliefs that a person's future depends on one's success or failure or is a matter of destiny. The Low intensity area has the largest share of households reporting that each person is responsible for their own success or failure (58.4 percent), compared to 51.3 percent in the High intensity area. Youth FGD participants in all three intensity areas noted that people who believe that success is a matter of destiny are concentrated in the lower end of the economic scale: casual jobs, small-scale charcoal production, hawking, and handicrafts. People engaged in formal employment, large-scale production, and business believe that "hard work pays and they have

responsibility to shape their future." Men in FGDs in the High intensity area expressed similar views. They noted that people in charge of their own success were engaged in diversified livelihoods—formal employment, crop production, livestock, and business. Based on this information, differences between intensity areas may be tied to differences in economic development and opportunities.

6.3 Adaptive Capacity and Household Expenditures

Table 6.3 shows households' inability to cope with a future drought or stress declines with expenditure quartiles (44.1 percent in the first quartile, 29.2 percent in the second quartile, 19.3 percent in the third quartile, and 13.3 percent in the fourth quartile). Correspondingly, households in the lower quartiles are able to cope without difficulty at significantly lower rates (9.0 percent in the first quartile and 15.0 percent in the second quartile) compared to those in the third (30.7 percent) and fourth (35.9 percent) expenditure quartiles.

Households in the lowest expenditure quartile are significantly more likely to have made proactive adaptations to sources of livelihood than those in the top quartile (23.1 percent and 15.3 percent, respectively) (Table 6.3). Across all expenditure quartiles that made such adaptations, the majority involved changing or adding livelihood sources. Significant differences were found for increasing the amount of money earned from the existing type of work and migration of household members for job opportunities elsewhere. The greatest difference for increasing the amount of money earned from the existing type of work is between households in the second (0.3 percent) and third quartiles (10.6 percent). In terms of migration for job opportunities, those in the first quartile (10.6 percent) migrated more than those in the third quartile (1.5 percent).

The poorest households (i.e., those in the first expenditure quartile) are more likely to have made changes in their food sources to cope with future drought or stress (21.9 percent) than any of the other expenditure quartile. Of the households that adjusted their food sources, the only significant difference in strategies is seen between the lowest and highest quartiles for increasing food consumed from existing sources (0.9 percent in the lowest and 7.7 percent in the highest quartiles).

Table 6.3 also shows whether households believe their futures are guided by their own success or failure, or that their future is due to destiny; there are no statistically significant differences between expenditure quartiles for these findings.

Table 6.3. Household adaptive capacity, by expenditure quartiles

	Expenditure quartiles[1] (USD daily per capita)							
	1		2		3		4	
	Percent	n	Percent	n	Percent	n	Percent	n
Households' ability to cope with future droughts or stresses								
Unable to cope	44.1	436	29.2[a]	449	19.3[a]	452	13.3[a]	456
Able to cope but with less money or food	37.9	436	45.7[a]	449	41.2	452	37.1[a]	456
Able to cope without difficulty	9.0[a,b]	436	15.0[a,b]	449	30.7[a]	452	35.9[b]	456
Households that have made proactive adaptions to livelihood sources								
Household changed livelihoods to cope with future	23.1[a]	436	19.4	449	18.7	452	15.3[a]	456
Types of livelihood adaptations[2]								
Changed type of work done to earn money	37.5	107	41.2	86	37.1	84	40.9	80
Took on an additional type of work to earn money	31.1	107	32.8	86	32.4	84	43.7	80
Increased the amount of money earned from existing type of work	5.1	107	0.3	86	10.2	84	6.5	80
Increased savings	7.2	107	4.2	86	12.1	84	8.3	80
Migration of household members for job opportunities elsewhere	10.6[a]	107	7.3	86	1.5[a]	84	0.0	80
Households that have made proactive adaptions to food sources								
Household changed food sources to cope with future	21.9[a,b,c]	436	14.7[a]	449	14.5[b]	452	13.0[c]	456
Types of food source adaptations[1]								
Changed food sources	26.1	113	28.6	66	25.8	70	40.8	60
Added food sources	9.9	113	16.5	66	17.4	70	25.8	60
Increased food consumed from existing sources	0.9[a]	113	7.5	66	6.4	70	7.7[a]	60
Reduced food consumption	62.2	113	47.5	66	50.4	70	25.6	60
Households' views on destiny								
Each person is responsible for their own success or failure	53.9	458	53.8	459	51.7	458	49.8	459
Each person's future is a matter of destiny	39.7	458	36.4	459	42.1	458	45.2	459

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

[1] Expenditure quartiles:

1= $0.60-$0.96

2= $0.97-$1.61

3= $1.62-$2.83

4= $2.84-$72.08

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

Source: FTF FEEDBACK ZOI Interim Survey, Northern Kenya 2015.

6.4 Adaptive Capacity and Household Hunger

Table 6.4 provides information about households' adaptive capacity by household hunger status. Only about one in 10 households (8.4 percent) experiencing hunger anticipates being able to cope with future stress without difficulty, as compared to 37.9 of households with no hunger. In fact, nearly half (48.8 percent) of households with hunger report that they would be unable to cope at all, compared to only 15.2 percent of households with no hunger.

Table 6.4. Household adaptive capacity, by household hunger status

	Moderate or severe household hunger		No household hunger	
	Percent	n	Percent	n
Households' ability to cope with future drought or stresses				
Unable to cope	48.8[a]	651	15.2[a]	959
Able to cope but with less money or food	42.8	651	46.8	959
Able to cope without difficulty	8.4[a]	651	37.9[a]	959
Households who have made proactive adaptions to livelihood sources				
Household changed livelihoods to cope with future	27.7[a]	710	13.8[a]	1,103
Types of livelihood adaptations[1]				
Changed type of work done to earn money	37.9	196	41.0	159
Took on an additional type of work to earn money	34.8	196	35.3	159
Increased the amount of money earned from existing type of work	5.1	196	5.9	159
Increased savings	4.3	196	12.9	159
Migration of household members for job opportunities elsewhere	7.9[a]	196	0.9[a]	159
Households who have made proactive adaptions to food sources				
Household changed food sources to cope with future	23.2[a]	710	11.2[a]	1,103
Types of food source adaptations[1]				
Changed food sources	17.3[a]	182	46.3[a]	128
Added food sources	13.7	182	19.8	128
Increased food consumed from existing sources	4.7	182	4.0	128
Reduced food consumption	63.7[a]	182	29.9[a]	128
Households' views on destiny				
Each person is responsible for their own success or failure	61.0[a]	710	52.4[a]	1,103
Each person's future is a matter of destiny	39.0[a]	710	47.6[a]	1,103

[a] 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 ZOI Interim Survey, Northern Kenya 2015.

In terms of proactive livelihood changes to cope with future drought or stress, households with hunger are more likely to have made changes (26.7 percent) than households with no hunger (13.8 percent). Of the households that report making changes, changing income sources and taking on additional work are the most common changes across both household hunger categories. The only significant difference between households with and without hunger is that households with hunger are more likely to have a member who migrates to find work than those without hunger (7.9 percent and 0.9 percent, respectively).

Nearly one-quarter of households with hunger (23.2 percent) report having made changes to their sources of food to cope with the future, significantly more than the 11.2 percent of households without hunger. About two-thirds of households with hunger (63.7 percent) reduced their food consumption whereas only one in three households without hunger did the same (29.9 percent). Conversely, more than twice as many households without hunger were able to change their sources of food (46.3 percent) than those with moderate to severe hunger (17.2 percent).

Households with moderate to severe hunger are significantly more likely to indicate that each person is responsible for their own successes or failures (61.0 percent) compared to those without hunger (52.4 percent). More households without hunger (47.6 percent) believe that the future is a matter of destiny compared to 39.0 percent of households with hunger.

6.5 Adaptive Capacity and Household Poverty

Table 6.5 shows that 41.2 percent of households below the poverty line report that they will be unable to cope with a future drought or stress. This is about twice the share of households at or above the poverty line reporting that they are unable to cope (20.7 percent). Only about one in ten poor households (12.1 percent) believe they will be able to cope without difficulty in the future compared to non-poor households (35.2 percent).

Households below the poverty line are just as likely (20.4 percent) as households at or above the poverty line (17.9 percent) to have made proactive changes to livelihood activities to cope with future periods of stress. Of the households that report making changes, the most common adaptations for both poor and non-poor households are changing and adding sources of income. However, migration of household members is a coping strategy used more often by poor households (8.4 percent) than households at or above the poverty line (1.9 percent).

Less than 20 percent of households in both categories (17.9 percent in poor households and 12.8 percent in non-poor households) report having made changes in their source of food to cope with stressful periods. Reducing consumption is the most common strategy across both poor (54.9 percent) and non-poor (41.3 percent) households, followed by changing food sources (28.2 percent of poor households and 29.4 percent of non-poor households). There are no statistically significant differences in adding food sources between non-poor households (24.1 percent) and those households that are below the poverty line (13.6 percent).

Education for youth is an adaptive strategy that was not included in the baseline or interim quantitative surveys but was part of qualitative findings.

Table 6.5. Household adaptive capacity, by household poverty status

	Below poverty line		At or above poverty line	
	Percent	n	Percent	n
Households' ability to cope with future drought or stresses				
Unable to cope	41.2[a]	676	20.7[a]	945
Able to cope but with less money or food	46.6	676	44.2	945
Able to cope without difficulty	12.1[a]	676	35.2[a]	945
Households that have made proactive adaptions to livelihood sources				
Household changed livelihoods to cope with future stress	20.4	747	17.6	1,046
Types of livelihood adaptations[1]				
Changed type of work done to earn money	45.9	154	37.9	189
Took on an additional type of work to earn money	27.7	154	36.5	189
Increased the amount of money earned from existing type of work	4.6	154	6.5	189
Increased savings	6.4	154	10.8	189
Migration of household members for job opportunities elsewhere	8.4[a]	154	1.9[a]	189
Households that have made proactive adaptions to food sources				
Household changed food sources to cope with future stress	17.9	747	12.8	1,046
Types of food source adaptations[1]				
Changed food sources	28.2	159	29.4	150
Added food sources	13.6	159	24.1	150
Increased food consumed from existing sources	2.6	159	5.2	150
Reduced food consumption	54.9	159	41.3	150
Household views on destiny				
Each person is responsible for their own success or failure	59.0	695	53.7	986
Each person's future is a matter of destiny	41.0	695	43.6	986

[a] 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 ZOI Interim Survey, Northern Kenya 2015.

Regarding household views on destiny (Table 6.5), over half of both poor (59.0 percent) and non-poor (53.7 percent) hold the belief that their future is a matter of their own success or failure. Additionally, households above and below the poverty line believe that a person's future is a matter of destiny at about the same rate (41.0 percent of poor households and 43.6 percent of non-poor households).

6.6 Summary of Key Findings on Adaptive Capacity

Of the ZOI households, one in five has been unable to recover from the drought. About one in four 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 by changing their sources of income or food, such as changing the type of work, taking on additional work, changing food sources, or adding food sources. Only

20 percent of the affected households report that they would be able to cope with the next shock without difficulty.

The High intensity 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 have recovered, but are worse off than before the drought.

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. Poorer households are also more likely to report that they foresee being unable to cope with future droughts. This pattern is also seen in households with moderate to severe hunger. It is more common for households to believe that individuals are responsible for his or her future rather than to believe the future is a matter of destiny.

According to the qualitative survey findings, communities and households across the three intensity areas have adopted a variety of actions to cope with shocks and stresses, including collective action and diversified livelihoods through irrigated agricultural activities, business activities (especially by women and youth), and formal employment. Communities no longer consider livestock production sufficient to deal with shocks and stresses because livestock is very prone to common shocks, such as droughts, resource-based conflicts, and theft.

7. 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 and food 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. Sale of large assets discussed in this section are distressed sales and exclude routine livestock sales. Small assets include a phone, bicycle, or other small productive asset. It should be noted that this is a self-assessment and the questions utilized for this section are forced-choice questions, which promote self-categorization by respondents.

The asset sales/recovery results are presented for the overall zone of influence (ZOI) and the three United States Agency for International Development (USAID) intervention areas 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 at or above the $1.25 per day poverty line).

7.1 Asset Sales/Recovery in the ZOI

Table 7.1 and Table 7.2 report the share of households in the ZOI that sold large and small assets as a result of the last drought as a means of coping with the shock. The results also show respondents' abilities to recover those assets. It should be noted that the subsample for both large and small assets begins with those households reporting they were affected by the last drought.

Table 7.1. Large asset sales of households in the ZOI exposed to shock and ability to recover those assets

	Percent	n
Large productive asset sales		
Household sold livestock, land, or other large productive assets due to a shock	28.4	946
Large productive asset recovery		
Unable to recover/repurchase large assets	70.8	313
Able to recover/repurchase some of large assets	29.2	313
Able to recover/repurchase all or more than all of large assets	0.0	313

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

Source: FTF FEEDBACK PBS. June 2015.

Nearly one-third (28.4 percent) of ZOI households exposed to the drought report selling large assets to meet household food and non-food needs (Table 7.1). FGD participants note that destocking livestock in advance of a drought is an adaptive strategy. Of the households that report selling livestock or other large assets during the last drought, most (70.8 percent) have

been unable to repurchase those assets, and no households have been able to recover all of their assets.

Table 7.2. Small asset sales of households in the ZOI exposed to shock and ability to recover those assets

	Percent	n
Small productive asset sales		
Household sold small productive assets due to a shock	26.1	946
Small productive asset recovery		
Unable to recover/repurchase small assets	72.1	260
Able to recover/repurchase some of small assets	24.7	260
Able to recover/repurchase all or more than all of small assets	3.3	260

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

Source: FTF FEEDBACK PBS. June 2015.

About one-quarter (26.1) of all ZOI households exposed to the drought also report selling small assets to cope during the last drought (Table 6.2). Of the households that report selling small assets during the last drought, about three out of four households (72.1 percent) are unable to recover any of the assets they sold.

7.2 Asset Sales/Recovery in USAID Intervention Areas

Table 7.3 and Table 7.4 show that asset sales and recovery do not vary across USAID intervention areas, as none of the results in these tables are statistically significant. The subsample includes all households that were affected by the last drought for which there are data on intervention areas. Over repeated shocks, households that sell livestock and other large assets and are not able to recover or repurchase them could become increasingly vulnerable.

Table 7.3. Large asset sales and recovery, by USAID intervention areas

	USAID intervention areas					
	Low		Medium		High	
	Percent	n	Percent	n	Percent	n
Large productive asset sales						
Household sold livestock, land, or other large productive assets due to a shock	29.9	517	26.4	491	36.9	455
Large productive asset recovery						
Unable to recover/repurchase large assets	76.3	154	71.7	146	68.4	167
Able to recover/repurchase some of large assets	20.4	154	28.3	146	31.6	167
Able to recover/repurchase all or more than all of large assets	3.4	154	0.0	146	0.0	167

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

Source: FTF FEEDBACK ZOI Interim Survey, Northern Kenya 2015.

Table 7.4. Small asset sales and recovery, by USAID intervention areas

	USAID intervention areas					
	Low		Medium		High	
	Percent	n	Percent	n	Percent	n
Small productive asset sales						
Household sold small productive assets due to a shock	28.1	517	25.3	491	29.7	455
Small productive asset recovery						
Unable to recover/repurchase small assets	71.5	143	70.5	138	77.4	122
Able to recover/repurchase some of small assets	26.1	143	25.5	138	21.6	122
Able to recover/repurchase all or more than all of small assets	2.4	143	4.0	138	0.9	122

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

Source: FTF FEEDBACK ZOI Interim Survey, Northern Kenya 2015.

During the qualitative survey, focus groups talked about how drought aggravates poverty through livestock losses and low market prices for animals in poor condition. Without money, the community cannot buy veterinary drugs and consequently lose stock to otherwise curable or preventable diseases.

In the High intensity area of Marsabit County, female focus group participants said that women know that they should sell their livestock during the rainy season instead of keeping a large herd, some of which perish in the drought. However, livestock belong to men, and women's efforts to convince the men to adopt this practice have been futile. Communities may assist households that have lost all of their livestock by loaning a camel or goat to the affected households. In Medium intensity area Turkana, livestock losses have been high. As a result, many households have diversified their livestock-based livelihoods and are adopting strategies to better manage water and pasture resources.

Livestock is the main economic activity in all three intensity areas visited during the qualitative survey. During the qualitative survey, key informants discussed activities by the government and development partners to strengthen livestock production and sales in all three areas. These activities include the construction of dams, boreholes, and water catchments to ensure water for livestock, educating the community on fodder production and preservation, increasing participation in livestock markets by providing capital and business education, and construction of market sheds.

7.3 Asset Sales/Recovery and Household Expenditures

Table 7.5 and Table 7.6 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 for large and small assets.

Table 7.5. Large asset sales and recovery, by expenditure quartiles

	Expenditure quartiles[1] (USD daily per capita)							
	1		2		3		4	
	Percent	n	Percent	n	Percent	n	Percent	n
Large productive asset sales								
Household sold livestock, land, or other large productive assets due to a shock	34.9	415	30.5	376	27.9	351	22.8	288
Large productive asset recovery								
Unable to recover/repurchase large assets	80.8[a]	157	77.1	120	72.3	112	55.1[a]	74
Able to recover/repurchase some of large assets	18.2[a]	157	21.5	120	25.9	112	42.4[a]	74
Able to recover/repurchase all or more than all of large assets	0.8	157	1.4	120	1.8	112	2.6	74

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

[1] Expenditure quartiles:

1= $0.60-$0.96

2= $0.97-$1.61

3= $1.62-$2.83

4= $2.84-$72.0

Source: FTF FEEDBACK ZOI Interim Survey, Northern Kenya 2015.

Table 7.6. Small asset sales and recovery, by expenditure quartiles

	Expenditure quartiles[1] (USD daily per capita)							
	1		2		3		4	
	Percent	n	Percent	n	Percent	n	Percent	n
Small productive asset sales								
Household sold small productive assets due to a shock	31.3	415	32.5	376	29.7	351	22.7	288
Small productive asset recovery								
Unable to recover/repurchase small assets	77.7	127	81.9	111	58.9	105	68.4	60
Able to recover/repurchase some of small assets	21.3	127	16.9	111	33.6	105	25.4	60
Able to recover/repurchase all or more than all of small assets	1.1	127	1.2	111	7.5	105	6.2	60

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

[1] Expenditure quartiles:

1= $0.60-$0.96

2= $0.97-$1.61

3= $1.62-$2.83

4= $2.84-$72.0

Source: FTF FEEDBACK ZOI Interim Survey, Northern Kenya 2015.

The data in Table 7.5 show that there are no significant differences between expenditure quartiles in the sale of large assets. However, significant differences were found for ability to repurchase or recover those assets. Of the households exposed to shock that report selling large assets, a larger share of households in the lowest quartile (80.8 percent), as compared to the highest quartile (55.1 percent), has been unable to repurchase or recover their large assets. Correspondingly, roughly twice as many households in the highest expenditure quartile (42.4 percent) were able to recover some of their large assets compared to 18.2 percent of households in the lowest quartile. However, there were no statistically significant differences between expenditure quartiles in the ability to recover all large assets.

A similar pattern is seen regarding small assets (Table 7.6) however, none of the differences are statistically significant.

7.4 Asset Sales/Recovery and Household Hunger

Table 7.7 and Table 7.8 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.

Table 7.7 shows that there were no statistically significant differences in large asset sales by households affected by the last drought among households with moderate to severe hunger (33.6 percent) in comparison to those without hunger (24.4 percent), yet there were statistically significant differences in recovery. Specifically, of the households affected by the drought that report selling large assets to manage the shock, more than three-quarters (81.7 percent) of households with hunger are unable to recover any large assets and 17.3 percent report recovering some large assets, as compared to households with no hunger (64.1 and 33.1 percent, respectively).

Table 7.7. Large asset sales and recovery, by household hunger status

	Moderate or severe household hunger		No household hunger	
	Percent	n	Percent	n
Large productive asset sales				
Household sold livestock, land, or other large productive assets due to a shock	33.6	666	24.4	780
Large productive asset recovery				
Unable to recover/repurchase large assets	81.7[a]	250	64.1[a]	210
Able to recover/repurchase some of large assets	17.3[a]	250	33.1[a]	210
Able to recover/repurchase all or more than all of large assets	1.0	250	2.8	210

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

Source: FTF FEEDBACK ZOI Interim Survey, Northern Kenya 2015.

Table 7.8. Small asset sales and recovery, by household hunger status

	Moderate or severe household hunger		No household hunger	
	Percent	n	Percent	n
Small productive asset sales				
Household sold small productive assets due a shock	32.3	666	22.1	780
Small productive asset recovery				
Unable to recover/repurchase small assets	82.1[a]	227	58.9[a]	172
Able to recover/repurchase some of small assets	16.9[a]	227	35.7[a]	172
Able to recover/repurchase all or more than all of small assets	1.0[a]	227	5.4[a]	172

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

Source: FTF FEEDBACK ZOI Interim Survey, Northern Kenya 2015.

For small assets, there are no statistically significant differences in small asset sales for households with or without hunger (Table 7.8). However, significantly more households with moderate or severe hunger were unable to recover any small assets (82.1 percent) compared to those with no hunger (58.9 percent). Nearly twice as many households without hunger (35.7 percent) were able to recover some small assets compared to households with hunger (16.9 percent). Additionally, 1.0 percent of households with hunger were able to recover all or more of their small assets compared to 5.4 percent of households without hunger.

7.5 Asset Sales/Recovery and Household Poverty

Table 7.9 and Table 7.10 compare asset sales and recovery of households below the poverty line to households at or above the $1.25 per day poverty line (2005 purchasing power parity [PPP]). The subsample includes all households that report being affected by the last drought for which there are data on household poverty.

Table 7.9. Large asset sales and recovery, by household poverty status

	Below poverty line		At or above poverty line	
	Percent	n	Percent	n
Large productive asset sales				
Household sold livestock, land, or other large productive assets due to a shock	34.7	680	24.8	750
Large productive asset recovery				
Unable to recover/repurchase large assets	78.5	244	67.6	219
Able to recover/repurchase some of large assets	20.3	244	30.6	219
Able to recover/repurchase all or more than all of large assets	1.2	244	1.8	219

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

Source: FTF FEEDBACK ZOI Interim Survey, Northern Kenya 2015.

Table 7.10. Small asset sales and recovery, by household poverty status

	Below poverty line		At or above poverty line	
	Percent	n	Percent	n
Small productive asset sales				
Household sold small productive assets due to a shock	30.9	680	24.8	750
Small productive asset recovery				
Unable to recover/repurchase small assets	78.6[a]	202	64.0[a]	201
Able to recover/repurchase some of small assets	20.9	202	30.5	201
Able to recover/repurchase all or more than all of small assets	0.5[a]	202	5.5[a]	201

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

Source: FTF FEEDBACK ZOI Interim Survey, Northern Kenya 2015.

According to the data shown in Table 7.9, there are no differences by poverty status with respect to large asset sales to cope with exposure to shock. There are also no statistically significant differences in recovery of large assets by poverty status.

For small productive assets (Table 7.10), households below the poverty line (30.9 percent) are more likely than households at or above the poverty line (24.8 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, 78.6 percent of households below the poverty line could not recover any of their small assets and one in five (20.9 percent) report recovering some. This compares to 64.0 percent of households at or above the poverty line that are unable to repurchase or recover any of those assets, and 30.5 percent that recover some small assets. Significantly more non-poor households (5.5 percent) were able to recover all of their small assets compared to only 0.5 percent of poor households.

7.6 Summary of Key Findings on Asset Sales/Recovery

Overall, between one-quarter and one-third of households in the ZOI that were affected by the last drought report that they sold large and small productive assets to cope with the shock. The majority of households also report that they have not been able to recover or repurchase these assets. Poorer and hunger-prone households are less able to recover or repurchase their lost assets.

During the qualitative survey, FGD participants talked about how drought aggravates poverty and depletes their assets, which are mainly livestock. Women recognize the need to manage herd losses by selling livestock before they are lost to drought, but women do not control decisionmaking over livestock sales. When households lose all of their livestock assets, the community may help the household by providing livestock on loan until the household recovers. Where the loss of livestock assets is high, many households are adapting by diversifying their livelihoods and adopting strategies to better manage water and pasture resources.

8. Conclusions

This report presents findings from the northern Kenya zone of influence (ZOI) interim population-based survey (PBS) and midline qualitative research for this impact evaluation. Because the northern Kenya ZOI interim survey was not designed to measure change from baseline indicator values, nor was it designed to draw conclusions about attribution or causality, tables present point estimates at the time of survey. This report uses data on household resilience from a more in-depth survey. The purpose is to provide interim estimates of household resilience measures and use qualitative data for context and explanation for the findings.

8.1 Key Findings Related to Resilience Measures

The endline analysis will address research questions in Section 1.4. The endline survey will take place after Resilience and Economic Growth in Arid Lands- (REGAL-) programs are fully implemented and will include detailed questions about household involvement in REGAL program activities.

Livestock is the most common livelihood across the ZOI and the large United States Agency for International Development (USAID) program intensity areas. Notably, relief is the second most common livelihood. During stress times, relief is the most common livelihood. Comparison of baseline and interim estimates for the three-county region (Isiolo, Marsabit, and Turkana) shows increased reliance on relief, gifts, and borrowing, and less reliance on wage employment.

Qualitative interviews showed that households are trying to diversify their livelihoods to become more resilient. They see livestock as prone to a wide range of increasingly frequent shocks such as droughts, resource-based conflicts, and theft. The qualitative survey team observed that in the High intensity area, Marsabit, women and youth are playing a greater role in household livelihood diversification by participating in market activities and business, including trade in livestock. These changes have been partly attributed to USAID project activities, which has provided training on marketing skills and business grants for groups. Qualitative research also shows that in addition to diversifying their livelihoods, more households are sending children to school to improve future employment opportunities and increase economic security.

Overall, households in the High intensity area (52.5 percent) reported the highest level of social capital (ability to rely on others during the last drought). According to qualitative interviews, the most common forms of support are neighbors sharing resources such as food, livestock, and money; fundraising by clans to support the needy and cover medical and education costs; and group activities, especially among women, that provide loans for business and domestic needs.

Within the ZOI, among households that were affected by the last drought, one in five households has been unable to recover from it. One in four households report being unable to cope with a future drought or stressor. Poorer households were the least likely to recover and least likely to be able to cope with a future drought or stress. Across USAID intervention areas, the High intensity area had the smallest share of households reporting that they were unable to recover.

About one third of households reported selling large assets to cope with stresses and half sold small assets. Shares reporting asset sales did not vary across program area, income group, poverty status, or hunger. However, households experiencing hunger and households in the lowest income quartiles were much less likely than other households to be able to repurchase those assets. Qualitative interviews revealed that poor members of the community are discouraged from selling their property, and communities loan livestock to poorer members to help them recover after major losses from drought and cattle theft. Relatives help out by contributing livestock, sharing labor, and fundraising to assist needy families. Women's groups are also active; forming savings groups to loan money to each other to start businesses like livestock selling and retail shops, and conduct group sales of milk and livestock. Women's groups solicit funds from non-governmental organizations (NGOs) and government institutions.

8.2 Key Findings Related to USAID Activities

Activities to provide women with training and grant funding appear to be working well in terms of increasing market participation, generating income, and diversifying livelihoods. Most REGAL large-scale activities (livestock markets) are in the early stages of operations, so it is too early to estimate their effects. However, REGAL-Improving Resilience (IR) and REGAL-Accelerated Growth (AG) are targeting many different communities. It will be difficult to estimate cumulative effects.

However, focus group discussion (FGD) participants also report that as development activities have led to positive outcomes, like increased market participation in some areas and among some segments of the population, many communities and groups feel left out. Nomadic families are not targeted for training and feel like they are trapped in a risky livelihood. Similarly, some communities feel like they have been overlooked. Within communities, some groups feel excluded and conflicts may undermine gains. Youth FGDs in all areas noted lack of employment opportunities as a stress.

8.3 Program Implications

Even though certain REGAL activities (such as large-scale activities) are in the early stages of operation, it is possible to make some suggestions for programming.

- **Training in Marketing.** The activities to train business owners in marketing appear to be successful for improving profits and creating stable sources of income. Efforts need to be made to track the outcomes of those trained by the program, both to show that the programs have succeeded and to provide information for improving those programs.

- **Provision of Grants to Women's Groups.** Evidence from FGDs indicates that grants to women's groups have increased access of women to markets. Like with training in marketing, increases in this program should be accompanied with an effort to monitor the activities of the groups receiving the grants and the effects of those activities on participants in those groups.

- **Provision of Veterinary Services.** FGDs in Baringo (a Low intensity area) expressed a need for veterinary services. These services are being provided by REGAL in some areas. The lack of these services in the Low-intensity area suggests that programs may need to provide these services for some time, because without program support there may be inadequate levels of these services. The need for veterinary services is heightened by the finding in the qualitative data that livestock is the largest livelihood across the intensity areas.

- **Provision of Drugs and Vaccinations for Livestock.** Complementary to the need for veterinary services, FGDs identified drugs and vaccinations for livestock as important for recovery from shocks. The REGAL program provides some support for the distribution of drugs and the vaccination of livestock. However, like veterinary services, this support may not be sufficient and should be provided over time.

- **Livelihoods Beyond Livestock.** As mentioned previously, livestock is the principle livelihood in the three intensity areas. The dependence on livestock leads to a high level of vulnerability when shocks occur that affect livestock. FGD participants suggest that households are following additional strategies, such as keeping money in banks, conserving water, and expanding into other enterprises. Programs should strengthen training programs in these other strategies to diversify livelihoods and encourage other strategies for coping with shocks.

- **Focus on Vulnerable Groups.** The elderly, women, and children are identified by FGDs to be most vulnerable to shocks. In addition, quantitative results show that households with greater hunger and lower economic status (below the poverty line) are less able to recover from shocks than households with less hunger or better economic status. Programs should devise strategies to identify these groups in the population and focus programs to build resilience of the groups. While general improvements in the resilience of households and communities should help the vulnerable groups, it is important to place a specific focus on vulnerable groups to ensure they are not left out of the progress made by other groups.

- **Encourage Investment in Education.** Investment in education at the community and household level is a recurrent theme that occurs in FGDs across intensity levels. Households with more educated individuals are more resilient and recover better from shocks. While the REGAL programs may not directly invest in education, they could include activities that encourage communities and households to invest in education as a long-term strategy to increase resilience.

- **Explore Social Support Outside of Relatives.** Quantitative results show that relatives within the community provided the greatest amount of social support during the last drought. However, FGDs indicate that this form of support is fully utilized. Other forms of support are needed to be able to increase social support during times of need. In some cases communities have worked together to create reciprocal support relationships. Programs can experiment with activities that encourage support across communities. FGD participants also reported that those who are part self-help groups fare better than those who are not. The REGAL program should expand support to these self-help groups to increase social support.

8.4 Endline Sample Design

At endline, the sample size estimates and sampling strategy should be reviewed to ensure these are adequate for computing endline values for the Feed the Future indicators and the IE. This may mean oversampling in sub-counties where REGAL is operating.

8.5 Survey Instruments

To answer the impact evaluation (IE) research questions, endline quantitative survey instruments will need to include questions about household participation in REGAL programs. Coping strategies and adaptive capacity questions will include information collected by qualitative researchers (such as educating children as an adaptive strategy). Questions about resilience need to be revised and updated based on information from other surveys. Notably missing from the baseline and midline surveys is a section about livestock assets, losses, and sales. A community survey at endline would improve the analysis of household resilience. FTF FEEDBACK will review qualitative topic outlines and streamline instruments and tools to minimize respondent fatigue.

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Annex 1. Focus Group Topical Outline

Kenya Qualitative Survey – Focus Group Interview (Men and Women Separately)

(After introductions, ask participants to develop a map of the community with geographical boundaries and key features of the village. The map will be the focal point for the interview.)

1. Shocks

A. Characteristics

1. What types of shocks are experienced? How long do they last (e.g., days, months)? How many people are affected? (*Draw a timeline with participants of shocks and duration.)*

2. How is it affecting the community (whole community/women/men)? *(Show on map how shocks affected community.)*

2. Household and Community Responses (attitudes) to Shocks

A. How do households and the community respond to the shock?

1. Do households and the community know about the shock in advance?

   a. If yes, what actions did the households and community leaders and members take together to reduce the impact of the shock on the community?

   b. What actions were most effective in reducing the shock? *(Rank effectiveness if multiple actions taken.)*

   c. If no actions were taken, why not?

2. Are people in the community supporting each other to recover? How? If not, why not?

3. Are there project interventions (i.e., REGAL) that enable households and communities to *cope* better with shocks? How?

4. Are there project interventions (i.e., REGAL) that enable households and communities to *recover* better from shocks? How?

5. Have the levels of trust within the community changed (i.e., do people within the community trust each other more or less)? How?

6. Do people feel that crime has increased or decreased? Describe any changes in how people feel about their physical safety in the community.

3. Behavior

A. What actions are households and the community taking to respond to the shock? *(Show actions on map where appropriate.)*

1. What actions are people taking to cope?
2. Are people working together as a community to cope with each shock? How?
3. What has the community learned from previous experience about how to respond to shocks?
4. What did people do differently this time in responding to a shock?
5. Are people within the community sharing resources?
    a. Which resources are they sharing (e.g., money, food, labor, information, other)?
    b. Who do they share with (e.g., family, neighbors, most vulnerable, etc.)?
    c. Who gets priority when sharing resources? *(Ask participants to do a simple ranking of resources that are shared, and who gets priority.)*
    d. What are people doing to help each other be productive again (e.g., labor exchange, loaning inputs such as animal labor, passing on information)?
    e. What are negative ways in which people are coping (e.g., theft, begging, etc.)?
6. How are shocks affecting relationships within the community? (e.g., between individuals, between individuals and local government, etc.)
7. Has social support eroded through time due to continuous drought episodes over the past several years? Please explain.
8. Are there differences in social support across villages? Please explain.
9. Are people breaking up into subgroups to manage shocks?
    a. If yes, why? What are the groups?
    b. How does this affect the community's ability to cope?

10. Is there new or renewed conflict due to shocks?
    a. In the community? (Describe using maps.)
    b. With other communities? (Describe using maps.)
    c. If yes, how do households and the community deal with this conflict?
    d. What kinds of conflict resolution mechanisms are used, and who uses them?
11. Are communities or individuals in other locations assisting you to cope with shocks? Explain.
12. Do people in the community use their connections to people in authority to access support (formal safety nets, services)? How?

4. Participation

(Ask participants to draw a Venn diagram showing relative contribution of different community members. Draw lines to show who is giving help to which person/group, who is receiving help, and who is not receiving help.)

A. Are community leaders effective at organizing support for all members of the community? Why or why not?
    1. Who else in the community is helping community members deal with shocks?
    2. Is the community engaged in collective action to deal with shocks?
        a. What kinds of collective action?
        b. Is there collective action on: *(Describe each, use maps to illustrate.)*
            i. Maintaining or repairing important community infrastructure (e.g., roads, markets, schools, water, health care facilities, etc.)?
            ii. Managing common or critical natural resources?
            iii. Deciding on community priorities through meetings open to all?
            iv. Cooperative actions with other communities to reduce/respond to shocks that affect multiple communities?
            v. Other activities?

3. How is this collective action organized (e.g., through religious organizations, informal groups, NGOs, REGAL project, government, other)?

    a. How are each of these groups helping?

4. Is participation in collective action influenced by gender? How?

5. Which households are not participating in collective action? Why?

6. Do you think your community is successfully recovering from the shocks it is exposed to? Why or why not?

7. What do you think are the main differences between a community that successfully responds to a shock and one that does not?

5. Participation in Markets

A. To what extent do households and the community participate in marketing activities?

1. Who participates in market activities?

2. Do both men and women participate? Please explain.

3. What types of market activities?

4. Are these market activities seasonal?

5. Has market participation increased as a result of the REGAL projects? Please explain.

6. Livelihood Diversification

A. What kinds of livelihood activities are households engaged in?

1. Are these activities affected differently by different types of shocks? Please explain.

2. Are some livelihood activities less susceptible to droughts than others? Please explain.

3. Are some households better able to manage shocks and stresses than others? What is different about these households?

7. Adaptive Capacity

A. Are there differences in the way that households recover from shocks?

1. Why are some households more successful in recovering from a shock than others? Please explain.

2. Are there proactive livelihood adaptations that the more successful households are making to recover from the shocks? What are they?

3. Are there households that feel that each person's future is a matter of destiny? What types of livelihood activities are they engaged in?

4. Are there households that believe that each person is responsible for their future success or failure? What types of livelihood activities are they engaged in?

5. Are there differences between these types of households regarding their ability to cope with shocks? Please explain.

Annex 2. Key Informant Interview Topical Outline

Kenya Qualitative Survey – Key Informant Interview

1. Participation in Government or NGO Programs

- What government or NGO programs are active here?
  - Describe activities
  - Do government and NGO or other programs coordinate activities?
  - Who benefits and how? (men, women)
  - Who does not participate/benefit? Why?
- How have these programs affected the community?
  - Positive changes
  - Negative changes
- Effects of external support on community sharing.
- Which programs are managed well? Which are not managed well? Why?
- Recommended changes to these programs? What is missing?
- Has the community used its links to:
  - Obtain government services? Which ones? For whom?
  - Advocate for change? On what issues? What was the result?
  - Gain access to formal safety nets?

2. Shocks, Risks, and Coping Strategies

- Types of coping strategies when income or agricultural/livestock production is not enough.
- Reliance on other households during income and food shortages?
  - What kind of support?
  - Any changes in this practice? How? Why?
- Household and community adaptations to reduce long-term shocks.
- Role of the community in reducing the impact of shocks. Any changes in the last 5 years? What changes?
- Role of organizations in managing shocks.
  - Government
  - NGO, community organizations
  - Any changes in the past 5 years? What changes?

Addendum (June 2017)

Feed the Future Northern Kenya Resilience and Economic Growth in Arid Lands (REGAL) Impact Evaluation Midline Report (December 2015)

This addendum provides a revision to the population numbers in Table 1.1 of the Feed the Future Northern Kenya REGAL Impact Evaluation Midline Report. The original values for population and number of households 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 and number of household values are based on these more realistic population projections. The revised values appear in the table included in this addendum.

Feed the Future Northern Kenya 2015 Population and Number of Households for USAID Program Intensity Areas and Counties

Program intensity	Program	County	Estimated 2015 population	Estimated 2015 households
High intensity	WFP/FFA, REGAL-IR, REGAL-AG	Isiolo	153,875	33,671
High intensity	WFP/FFA, REGAL-IR, REGAL-AG	Marsabit	312,698	61,193
Medium intensity	WFP/FFA, REGAL-IR	Garissa	423,931	67,078
Medium intensity	WFP /FFA, REGAL-IR	Turkana	1,045,579	150,660
Medium intensity	WFP /FFA, REGAL-IR	Wajir	450,385	60,293
Low intensity	WFP /FFA	Baringo	679,256	135,310
Low intensity	WFP /FFA	Mandera	697,922	85,425
Low intensity	WFP /FFA	Samburu	273,804	57,887
Low intensity	WFP /FFA	Tana River	292,885	57,882

Source: Population of each county was projected to 2015 by KNBS based on the 2009 Kenya census. Number of households in 2015 was calculated by dividing the population by the household size, which also was derived from the 2009 census.