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USAID OFFICE OF FOOD FOR PEACE FOOD SECURITY DESK REVIEW FOR KARAMOJA, UGANDA

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ACRONYMS AND ABBREVIATIONS

ASCA	accumulated savings and credit association
AWOTID	Abim Women Organized Together in Development
BCG	Bacille Calmette-Guerin
CAHW	community animal health worker
CLTS	community-led total sanitation
DHS	demographic and health survey
DNCC	district nutrition coordination committee
FANTA	Food and Nutrition Technical Assistance III Project
FAO	Food and Agriculture Organization
FCS	food consumption score
FES	food expenditure share
FEWS NET	Famine Early Warning Systems Network
FFP	Office of Food for Peace
FMNR	farmer-managed natural regeneration
FSNA	food security and nutrition assessment
GHG	Growth Health and Governance Project
GOU	Government of Uganda
HAZ	height-for-age z-score
Hb	hemoglobin
HH	household
HIV	human immunodeficiency virus
IPC	integrated phase classification
KAPDA	Kaabong Peace and Development Agency
KIDDP	Karamoja Integrated Development and Disarmament Plan
KIDP	Karamoja Integrated Development Plan
LC	local council
M&E	monitoring and evaluation

MCA	male change agent
MCG	mother care group
MCHN	maternal and child health and nutrition
MDG	Millennium Development Goal
MIS	market information system
MUAC	mid-upper arm circumference
NGO	nongovernmental organization
ODF	open defecation free
RWANU	Resiliency through Wealth, Agriculture, and Nutrition Project
SACCO	savings and credit cooperative organization
SBC	social and behavior change
SBCC	social and behavior change communication
SGBV	sexual and gender-based violence
SO	Strategic Objective
UBOS	Uganda Bureau of Statistics
UN	United Nations
UPDF	Ugandan People's Defense Force
US$	United States dollar(s)
USAID	U.S. Agency for International Development
VHT	village health team
VSLA	village savings and loan association
WASH	water, sanitation, and hygiene
WAZ	weight-for-age z-score
WFP	World Food Programme
WHZ	weight-for-height z-score

EXECUTIVE SUMMARY

This food security desk review for Karamoja, Uganda, was requested by the U.S. Agency for International Development Office of Food for Peace (USAID/FFP) to help guide FFP development food security activity applicants to design projects to address food security needs in this sub-region. The review draws from secondary resources to understand the history, politics, economy, food security situation, and Ugandan government programs relevant to the sub-region. The review team also interviewed and collected documentation from USAID/FFP staff and current FFP development food security activity implementers in Karamoja—specifically ACDI/VOCA, World Vision, the Tufts University Feinstein International Center, Mercy Corps, Concern Worldwide, and Welthungerhilfe, as well as the local organizations Kaabong Peace and Development Agency (KAPDA) and Abim Women Organized Together in Development (AWOTID)—to compile lessons learned. The review analyzes the food security situation in northern Uganda through the lens of availability, accessibility, and utilization, and presents current ground realities that could promote or constrain food security programming in the short to medium term.

Karamoja suffers from endemic malnutrition and food insecurity. An inter-agency food security and nutrition assessment during the lean season in 2016 found that half (50 percent) of households were moderately or severely food insecure according to the Food Security Index. Half (51 percent) of households were practicing crisis or emergency livelihood coping strategies; almost half (47 percent) of households had food expenditure shares in excess of 65 percent of household expenditure; and about half (52 percent) of households had borderline or poor food consumption scores. The nutrition situation is also concerning: the 2011 Uganda Demographic and Health Survey (DHS) found that in Karamoja, 45 percent of children under 5 were stunted, 32 percent were underweight, and more than 7 percent were wasted; furthermore, almost 70 percent of children 6–59 months of age were anemic. By comparison, in Uganda as a whole, the 2011 DHS found that 33 percent of children under 5 were stunted, 14 percent were underweight, and 5 percent were wasted; 49 percent of children 6–59 months of age were anemic.

Karamoja is presently experiencing a revitalization of pastoralism after a period of conflict, forced disarmament, mandatory placement of livestock in military-protected *kraals*, and repeated drought. Households in Karamoja are increasingly supplementing animal husbandry with crop cultivation. The agriculture sector (crops and livestock) is constrained by low productivity and increasingly erratic climate; lack of access to quality seeds or other inputs; lack of access to public extension. private agricultural, or veterinary services; lack of access to markets; and lack of secure land tenure and widespread pests and diseases for humans, livestock, and crops.

This food security desk review draws from the experience and extensive research conducted by Mercy Corps, ACDI/VOCA, and partners during the current development food security activities, to capture and present lessons learned across the program as a whole. USAID/Uganda is also in the process of developing a new Country Development Cooperation Strategy, based on lessons learned in the country during the last five years, that will guide USAID efforts in Uganda going forward.

1. INTRODUCTION

1.1 OBJECTIVES AND OVERVIEW

This food security desk review for Karamoja in northeastern Uganda was conducted by the U.S. Agency for International Development (USAID)-funded Food and Nutrition Technical Assistance III Project (FANTA) at the request of the USAID Office of Food for Peace (FFP). The review draws from secondary resources to understand the history, politics, economy, food security situation, and Ugandan government programs relevant to the sub-region. The review team also interviewed and collected documentation from current USAID/FFP staff and FFP development food security activity implementers in Karamoja— specifically ACDI/VOCA, World Vision, the Tufts University Feinstein International Center, Mercy Corps, Concern Worldwide, and Welthungerhilfe, as well as the local organizations Kaabong Peace and Development Agency (KAPDA) and Abim Women Organized Together in Development (AWOTID)—to compile lessons learned. The review analyzes the food security situation in Karamoja through the lens of availability, accessibility, and utilization and presents current ground realities that could promote or constrain food security programming in the next few years.

Section 1.2 presents a brief historical background of Karamoja; section 1.3 describes the conflict and security context; section 1.4 discusses the governance context; section 1.5 discusses education; and section 1.6 discusses gender. Section 2 presents the food-security context divided into food availability (2.1), food accessibility (2.2), and food utilization and health (2.3). Section 3 discusses lessons learned during the current Northern Karamoja Growth Health and Governance Project (GHG) and resiliency through Wealth, Agriculture and Nutrition Project (RWANU) FFP development food assistance activities in Karamoja. These activities are divided into cross-cutting project lessons learned (3.1); lessons learned regarding availability, accessibility, and disaster risk reduction (3.2); lessons learned regarding maternal and child health and nutrition (MCHN) and water, sanitation, and hygiene (WASH) (3.3); and lessons learned regarding gender (3.4). Numerous tables and maps are provided in the Annex section of the report.

WHO ARE THE KARAMAJONG?

The term “Karamajong” refers to a cluster of socio-ethnic groups that reside in the Karamoja sub-region of northeastern Uganda. The main groups are the Jie (around Kotido), the Dodoth (around Kaabong), and the Karimojong (throughout southern Karamoja). The Karimojong group further encompasses numerous sub-tribes. Individuals identify as members of a tribe, a section, a clan, an age class, and other localized groupings. Because the term “Karamajong” is used by outsiders and not by residents of the sub-region, this paper uses “people of Karamoja” to refer to the people of the sub-region.

Source: Knighton 2005

1.2 HISTORICAL CONTEXT

From colonial times until recently, the policies of the Government of Uganda (GOU) have aimed to shift the people of Karamoja from pastoralism to agriculture-based livelihoods and end the traditional practice of large-scale cattle raiding (Stites et al. 2016). Since establishing Uganda as a British protectorate in 1894, the British tried to “develop” and reduce conflict in Karamoja by drawing national boundaries, establishing military bases and protected areas, imposing sharp restrictions on mobility, and closing the sub-region off to outsiders (Mwangu 2005; Akabwai and Ateyo 2007). Uganda gained independence from colonial rule in 1962. During Idi Amin’s 1972–1979 rule in

Uganda, violence reigned in the north, while Amin fought to suppress political opposition based in the Acholi and Langi communities. In Karamoja, this involved restricting the movement of people and livestock, which is essential for pastoral livelihoods to function. The fall of Amin in 1979 resulted in an influx of weapons into Karamoja, where people needed to defend themselves from increasingly violent cattle raids by pastoralists from Kenya and South Sudan.

President Museveni's government, which came to power in 1986, sought to disarm the people of Karamoja through gun-collection campaigns. The GOU's 2001–2002 disarmament campaign actually undermined security in Karamoja, as newly disarmed communities were often violently attacked by those who were still armed, and the GOU failed to provide adequate protection (Stites et al. 2007). This disarmament campaign was derailed in 2002 when brutal attacks by the Lord's Resistance Army—the Joseph Kony-led rebel group— against civilians in north-central Uganda diverted Ugandan People's Defense Force (UPDF) units from Karamoja (Stites et al. 2007). The resulting security vacuum necessitated that the disarmed groups in Karamoja rearm themselves, which they did mostly from the arms market based in South Sudan.

The GOU imposed a mandatory disarmament campaign in Karamoja in 2006, which incorporated armed operations to track and recover raided cattle, arrest and prosecute criminal suspects, and disarm civilians (Stites et al. 2007). UPDF troops were widely accused of human rights abuses against the people of Karamoja during this period, until the GOU reined in these abuses (Human Rights Watch 2007). In addition to disarmament, the GOU also imposed mandatory placement of livestock in stationery *kraals* that the UPDF managed and protected, rather than the traditional mobile *kraals* maintained by herders. Improvements in security in the sub-region by 2012 allowed for the dismantling of most of these protected *kraals*, and the UPDF is now scaling down operations and pulling out of Karamoja (Stites et al. 2016). As such, responsibility for security is transitioning to the police and local defense units, although this transition has been hampered by inadequate resources and capabilities and by corruption (Stites et al. 2016). Relationships between the people of Karamoja and the GOU have improved considerably since 2006, and public perceptions about the effects of disarmament on security are largely positive, reflecting GOU efforts to combine disarmament with protection of communities and their assets (Howe and Akabwai 2015).

President Museveni won his sixth term in office in February 2016, three decades after he first assumed the presidency. The election was marred by intimidation and obstruction directed at opposition candidates, preventive arrests, the shutdown of social media, and even allegations of torture (Human Rights Watch 2016). Parliamentary elections also took place in February 2016, and local council elections were held one month later. A new Minister of State for Karamoja Affairs has been recently appointed, and it remains to be seen how this appointment will affect development and GOU policies in Karamoja.

The GOU initially launched the Karamoja Integrated Disarmament and Development Programme (KIDDP) in 2005, revised it in 2007, and implemented the revised program from 2007/8 to 2009/10. The KIDDP aimed to guide an improved disarmament effort that was well coordinated with development efforts. The GOU developed the Karamoja Integrated Development Plan 1 (KIDP 1) for 2011–2015. The dropping of "disarmament" from the title in 2011 marked a transition to a focus on development in the underdeveloped sub-region. The KIDP 2 is presently in draft form and has not yet been finalized (GOU OPM 2007), but the draft document emphasizes both animal- and crop-based production (Stites et al. 2016).

1.3 CONFLICT AND SECURITY

Conflict and violence are endemic in Karamoja, although the conflict dynamics are changing. Historically, inter-ethnic conflict, particularly cattle raiding, was the primary threat to personal security in the sub-region. Although inter-ethnic tensions are improving, conflicts over land are increasing in frequency, concerns about theft and violence within communities and households are on the rise, and sexual and gender-based violence (SGBV) is reportedly common. In Karamoja, traditional authorities are charged with managing conflict in collaboration with local government authorities. The drivers of violence in the sub-region include a lack of effective political engagement or governance, insecurity in neighboring countries, violent cattle raiding by thieves from South Sudan and Kenya, limited alternative livelihood options, and deeply entrenched gender inequality.

Compared to a decade ago, relations among the ethnic groups of Karamoja are reportedly improving, including between the Jie and Dodoth, who are traditionally rivals (Stites et al. 2016). But tensions remain high between the people of Karamoja and the Acholi in north-central Uganda, the Turkana in Kenya, and the Didinga and Toposa in South Sudan, all of whom remain armed (Howe and Akabwai 2015; Stites et al. 2016). Cross-border animal theft involves armed and organized groups of thieves crossing into or out of Karamoja and stealing dozens of animals at a time from mobile *kraals* and even from *manyattas* (semi-permanent household compounds) (Stites et al. 2016). These cross-border thefts are most common between the Dodoth of northern Karamoja and the Turkana of Kenya, and between the Pian of southern Karamoja and the Pokot of Kenya. But the frequency of raids and loss of life (human and livestock) have decreased over the past decade (Stites et al. 2016).

Currently, the largest flash point for inter-ethnic conflict in the sub-region and surrounding areas is access to grazing areas and water points during the dry season. For pastoralism to be viable, herders and their animals must be able to follow the seasonal availability of water and pasture. However, herders' access to traditional grazing lands and water points has been sharply constricted by GOU policies, concerns about security, and inter-ethnic tensions. Livestock migration is discussed further in Section 2.1.2 below.

A security risk of increasing concern is the theft of animals and household goods from the *manyatta* by individuals or small groups of young men. These men, referred to as *lonetia* (thugs), typically steal small numbers of livestock (fewer than 10 animals), cooking implements, agricultural inputs, and other household belongings at night. Thefts by *lonetia* tend to increase during the lean season when cash levels are lowest (Stites and Marshak 2016). Urban Karamoja residents tend to describe *lonetia* as local school dropouts or street kids, while rural Karamoja residents tend to report that *lonetia* are disarmed males, ex-warriors, shepherds who have lost their livestock, or other disenfranchised men experiencing hunger and desperation (Howe et al. 2015; Stites et al. 2016).

Many young men in the sub-region have found themselves without cattle or sustainable livelihoods, unable to fulfill the social role of provider and protector of the family's assets, or to afford the bride price required for official marriage (Stites and Marshak 2016). The protected *kraal* system (discussed above) saved livestock from cattle raids as intended, but alienated young men and adolescent boys from their important role as herd protector and manager. *Lonetia* report feeling powerful after stealing household goods and animals, but recognize that they are not accorded the social respect traditionally given to young warriors who successfully conduct cattle raids of rival ethnic groups (Stites and Marshak 2016). It remains to be seen how

the present revitalization of pastoralism will influence—positively and/or negatively—the frequency of criminality by *lonetia* in the sub-region.

Conflict over lucrative mineral deposits are also of concern. Karamoja is home to deposits of gold, limestone, uranium, marble, graphite, gypsum, iron, tungsten, nickel, copper, cobalt, lithium, and tin (Uganda Investment Authority 2016). The GOU has weak protections in place for local and indigenous populations in granting exploration licenses and mining licenses (Human Rights Watch 2014). Entities are required to negotiate a surface rights agreement with land owners (in this case, communal land owners) before active mining. However, Ugandan law does not require consent from the local population before the exploration work that precedes active mining. This legal discrepancy creates confusion and conflict over land when companies conduct exploratory work for potential future mining activities, without informing or securing the permission of local communities in advance (Human Rights Watch 2014).

1.4 GOVERNANCE

Political/administrative boundaries. Uganda encompasses four regions, which are further divided into districts and the capital city of Kampala (see Map 1 in Annex section). Since 2005, the GOU has greatly increased the number of districts. Karamoja is a sub-region of the Northern Region, which borders Kenya to the east and South Sudan to the north. Karamoja accounts for 27,000 sq km (or 10 percent of the country) and is a semi-desert area (GOU OPM 2015). Karamoja has seven districts: Kaabong, Kotido, Moroto, Abim, Napak, Amudat, and Nakapiripirit. The GOU estimates that the population is 965,008 (according to the 2014 census), but the United Nations (UN) World Food Programme (WFP) and other international partners often use the figure of 1.2 million.

An estimated 8 percent of Karamoja's population resides in urban centers (UBOS 2016). Rural-to-urban migration tends to expand the physical boundaries of urban centers outward, displacing households in nearby peri-urban neighborhoods. Urban centers in Karamoja, as elsewhere, are often surrounded by a peri-urban area where residents have transitioned away from pastoralism but may still engage in some farming combined with mining or other activities (Stites and Akabwai 2012). Urban centers in Karamoja are also the site of expanding commercial enterprises, nonprofit organizations, and public sector institutions (Stites et al. 2014). Most rural-to-urban migrants in Karamoja retain links to their rural families, and the move to town indicates an effort to diversify livelihoods rather than an abandonment of rural life (Stites et al. 2014). Rural-to-urban migrants report that the main triggers for their migration were loss of livestock, hunger, and death of a family member (Stites et al. 2014).

Governance in Karamoja is highly complex and includes two overlapping systems: official GOU legal structures and systems, and systems of customary/traditional authority and law (Carlson et al. 2012). The GOU structures struggle to promote stability and development, guided by policies that are often poorly suited to Karamoja's context, and the traditional system struggles to remain relevant and effective within a changing culture in the sub-region. In practice, the dynamic relationship between the two systems varies from conflict to synergistic collaboration.

GOU structures. Elders are the frontline actors in conflict management in Karamoja, but superimposed on traditional conflict and security management structures are layers of GOU institutions active in security. In 1986, the GOU introduced the local council (LC) system, which established committees at the levels of village (LC I), parish (LC II), sub-county (LC III), county (LC IV), and district (LC V) (Stites et al. 2007). In cases of conflict, the LC I has authority to

handle civil and criminal cases and represent the community's needs and interests to higher levels of government and the police (Carlson et al. 2012). Other prominent GOU actors in the conflict/security domain in Karamoja include district security officers, the UPDF, the Ugandan police, peace committees, and local defense units (Mercy Corps 2013a; Howe et al. 2015). The GOU at district, region, and national levels represents the people of Karamoja at regional and international levels, most notably working with Kenya and South Sudan to reduce cross-border raiding.

Traditional structures. Traditional authority structures are under enormous pressure to adapt to political, social, and economic changes in Karamoja. For many generations, the elders have borne the substantial responsibility of implementing customary law in Karamoja. These adult men have been ceremonially initiated into the senior generation class and sit on a sacred council called the *Akiriket* (Knighton 2005). The *Akiriket* has jurisdiction over a broad scope of issues, including managing communally held natural resources, conducting social events, providing spiritual leadership, mediating disputes, adjudicating crimes, overseeing reparations, and representing the community in diplomatic and peace-building efforts with outsiders (Carlson et al. 2012). In recent years, the authority of elders in Karamoja has been challenged by changing livelihood patterns and the loss of livestock; evolving world views; rural to urban migration; delayed succession, which has left a generation of men without social standing or power; loss of control over youth; increasing crime (e.g., by *lonetia*); inability to negotiate with external groups; and the growing role of the state (Carlson et al. 2012). That said, alongside the resurgence of pastoralism, research in 2016 suggests that elders are once again "seen as *the* authority on livestock movements, animal production, justice and discipline, marriage and initiation, and peace making" (Stites et al. 2016).

To effectively manage conflict and ensure security for the people of Karamoja going forward, it is essential that these key GOU actors and traditional authorities collaborate and backstop one another as needed. Cattle raiding, for example, is primarily addressed through an interaction between elders and the LC I, who collaborate with peace committees, police, or the UPDF to track the stolen animals (Howe et al. 2015). The UPDF often also collaborates with the elders to recover and return the stolen animals (Mercy Corps 2013a). Traditional authorities have also established customary laws to complement and reinforce official GOU laws; for example, traditional authorities established "two for one" resolutions that stipulated that someone found guilty of cattle raiding must pay back double the number of cattle stolen plus one to the victim, and that a community harboring cattle raiders can be held responsible for providing the animals required for restitution (Howe et al. 2015). In contrast, the justice system is less effective when it comes to the theft of household items by *lonetia*, especially in the absence of witnesses or evidence. In most of these cases, the perpetrator is not caught and the victim cannot be compensated.

1.5 GENDER

Gender inequality is deeply entrenched in customary law principles and practice, income and asset ownership, household decision making, and patterns of violence (see Table 4 in Annex section). Polygamous marriage is an accepted practice in Karamoja. Customary laws governing polygamous marriages allocate some rights to livestock and land to wives, but husbands have final decision-making authority in most circumstances, and conflict over land is reported between co-wives. In addition, customary law sanctions wife inheritance, in which a widow becomes the wife of a male relative (often a brother) of the deceased, and her land and livestock become the assets of the new husband (Howe 2013).

SGBV is rampant against Karamoja's women and girls. Although women often report that such violence is increasing, recent statistical data are lacking (Howe et al. 2015). The 2011 demographic and health survey (DHS) found that 44 percent of women and 43 percent of men in Karamoja reported agreeing with at least one reason why a husband may be justified in hitting or beating his wife, such as if she burns the food, argues with him, goes out without telling him, neglects the children, or refuses to have sexual intercourse with him (UBOS and ICF International 2012). In recent research in Karamoja, women report that domestic violence is often linked to alcohol consumption by men, especially local spirits such as *waragi*) (Howe et al. 2015; Mercy Corps 2016c). Although Uganda has outlawed child marriage, the practice is common in Karamoja. Girls who are being forced to marry someone against their will often commit suicide or run away to avoid the marriage (Howe et al. 2015; Mercy Crops 2016c). In addition, declining livestock holdings are making it more difficult for young men to afford the bride price (cattle) to be able to officially marry. As a result, courtship rape (i.e., when a young woman is raped and then forced by her parents and the community to marry the perpetrator) is reported to be increasing. Rape by strangers, such as against women traveling along roadsides or footpaths to collect firewood and water, also still occurs.

Conflict management and justice systems are often less effective in response to SGBV than other forms of conflict or crime in Karamoja. Because violence against women is normalized, SGBV is not usually reported. When victims do report it, they typically report it to their LC I and elders, who may punish both victim and perpetrator for violating social norms (Howe et al. 2015). Reporting SGBV to the police often backfires on the victims. Peace committees are not very engaged in SGBV and domestic violence issues. Aggravating this situation is the fact that women are less engaged in conflict management structures and processes than men (Howe et al. 2015).

1.6 EDUCATION

Uganda introduced universal primary education in 1997 and universal secondary education in 2007. The country also supports alternative education programs such as functional adult literacy (UBOS 2014; UNESCO nd). Universal primary education increased primary school enrollment (from 53 percent in 1990 to 87 percent in 2014) and led to investments in classrooms and teacher recruitment (MOFPED 2015a; UBOS 2014). However, there are high levels of grade repetition and drop outs, and are challenges recruiting and retaining teachers. The cost of materials, meals, and uniforms; distance; and family obligations are common barriers to attendance (MOFPED 2015a). Although the same proportion of girls and boys complete primary school, girls are more likely than boys to have never attended school (22 percent versus 16 percent) and boys are more likely to have completed secondary and tertiary education (see Table 5 in Annex section). Seventy-two percent of adults are literate, and men are more likely than women to be literate (77 percent versus 68 percent) (UBOS 2014). The educational situation in Karamoja is worse. Seventy percent of household heads have never attended school, only 5.6 percent of women 15–49 years have completed primary school, and 12 percent of women are literate (GOU et al 2016b; UBOS and ICF 2015). The exception is in Abim, where 20 percent of household heads have attended school. Approximately 20 percent of households in Karamoja have at least one child who does not regularly attend school, although this is less common in Abim and Moroto. The reasons given for children missing school include cost, household responsibilities, and the need to earn income (GOU et al. 2016b).

2. CURRENT FOOD SECURITY CONTEXT

2.1 FOOD AVAILABILITY

2.1.1 CROP PRODUCTION

Semi-nomadic pastoralism, the traditional livelihood system of Karamoja, is well suited to the area's arid agro-ecological conditions. Most residents produce some crops to access food and income, spread risk, and/or adapt to the loss of livestock. Given the semi-arid conditions in the sub-region, the main staple food crops grown in Karamoja are sorghum, cassava, and maize. More fertile agricultural areas such as the western green belt and the northeast and southeast corners of Karamoja allow for cultivation of rice, maize, legumes (e.g., beans, cowpeas, pigeon peas, groundnuts), roots, and tubers (e.g., sweet potatoes, Irish potatoes), sesame, sunflower, and other crops. Agricultural production statistics are not available for Karamoja, but national-level production estimates for 2010–2014 are provided in Table 6 in the Annex section. The shift toward agriculture is most pronounced in western and southern Karamoja, where actual and potential yields are highest. As noted above, GOU policies have until very recently promoted settled agriculture in the sub-region (Levine 2010). The dramatic loss of livestock holdings since 2008—estimated at 70 percent—has left many households without livestock or below the minimum number of livestock required for a stable and productive herd (Mitchell 2016).

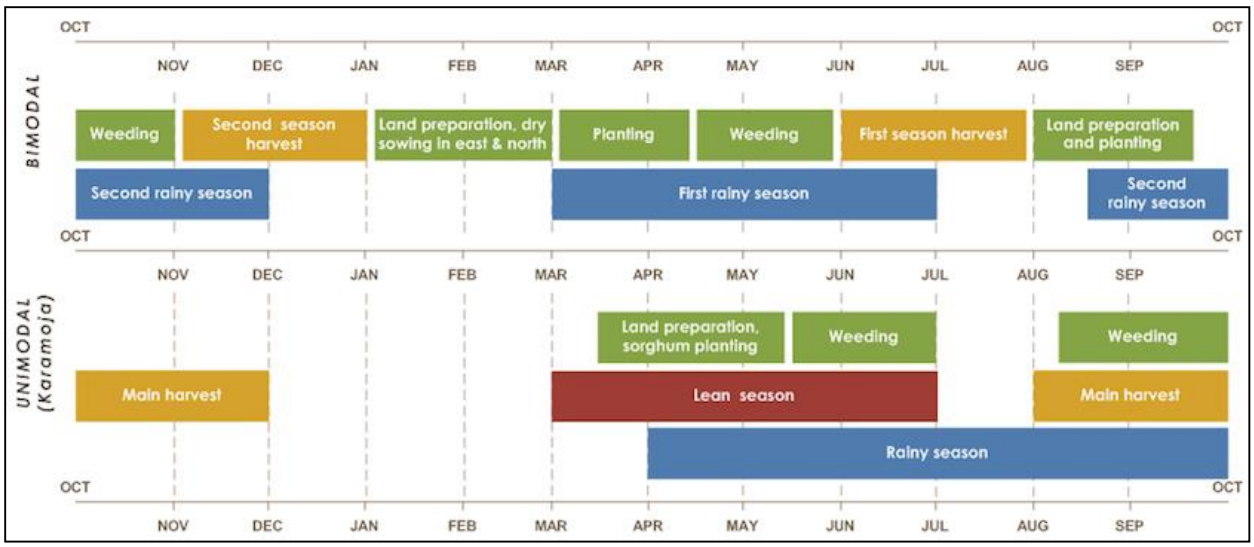
Most of Uganda benefits from two rainy seasons annually, but Karamoja has only one rainy season per year (Figure 1) (FEWS NET 2013a). Karamoja's rainy season normally spans April through September. The green harvest's arrival typically marks the end of the lean season in July, and the main harvest extends from August through December. The rainy season in 2015 was marked by a 3-month dry spell during July–September, and the November rains were insufficient to recover from the damage to growing crops (FAO et al. 2016). This caused a longer-than-average hunger season in 2016. Unfortunately, the 2016 cropping season was also affected by a late start in April 2016 and an unusually long dry spell from mid-May to mid-June (FEWS NET 2016a). The August/September 2016 harvest was slightly better than the previous year, but below average, due in large part to impacts of erratic rainfall on maize, beans, sunflower, and long-cycle sorghum (FEWS NET 2016d). Production was highest in Kotido, and lowest in Napak and Abim. Very poor households are expected to deplete their food stocks by January 2017 (FEWS NET 2016d).

Karamoja receives around 500–1,000 mm of rainfall annually, which is sporadic and unreliable in temporal and geographic distribution (Howe et al. 2015; GOU OPM 2015). Analyses suggest that Uganda is exhibiting changes in rainfall and temperature that are likely to worsen chronic food insecurity in Karamoja. Declining rainfall levels during the June–September and March–June periods are contracting the geographic areas where subsistence agriculture is viable (FEWS NET 2012). Temperatures rose by up to 0.8°C across much of Uganda between 1975 and 2009; it is projected that this warmer climate is "likely to amplify the impact of decreasing rainfall and periodic droughts, and will likely reduce crop harvests and pasture availability" (FEWS NET 2012). Northern Uganda is likely to experience rainfall declines of 50–150 mm annually across the region.

Crop development faces many challenges in Karamoja. The sub-region suffers from environmental degradation, frequent flash floods and droughts, and highly variable topography and agricultural conditions. Communal land tenure systems present many advantages in

traditional semi-nomadic pastoral societies but can inhibit household-level investment in land cultivation. Transhumance is not necessarily inconsistent with farming, but it often draws able-bodied household members away from home at key times when the labor is required on the farm. Farming is constrained by inadequate access to finance/credit/savings, combined with inadequate access to agricultural extension services and private-sector providers of essential inputs and services. Storage infrastructure and markets for production are too nascent to effectively incentivize crop cultivation for sale.

Figure 1. Seasonal Calendar of Uganda



Source: FEWS NET 2013a.

2.1.2 LIVESTOCK PRODUCTION

There is a lack of livestock statistics for Karamoja, and livestock estimates are notoriously unreliable due in large part to reporting bias (Rockeman 2016). The 2008 GOU Livestock Census offers the most recent population-representative livestock estimates, and the Food and Agriculture Organization (FAO) of the UN offers livestock estimates for five districts in 2014 (see Tables 7 and 8, respectively, in Annex section). As of 2008, Karamoja had an estimated 2.25 million cattle, 2.03 million goats, and 1.69 million sheep (MAAIF and UBOS 2009). Karamoja's herds accounted for 20 percent of the nation's cattle, 16 percent of the nation's goats, and 50 percent of the nation's sheep (MAAIF and UBOS 2009). However, the forced disarmament program and compulsory placement of cattle into protected *kraals* resulted in large-scale mortality of cattle, especially calves. The 2013 livelihoods dynamics baseline for Mercy Corps' Growth, Health and Governance Program in northern Karamoja (in Abim, Kaabong, and Kotido Districts) found that 8 to 47 percent of cattle had died since being placed in the protected *kraals* (Mercy Corps 2013b). Based on FAO vaccination campaigns in 2014, the GOU estimated that 70 percent of total head of livestock (i.e., cattle, goats, sheep) had been lost since 2008, although this figure may be an overestimate due to low participation in vaccination campaigns (see Table 7 in the Annex section) (Mitchell 2016). The 2016 Tufts University report found that in two sites in Kaabong, herd losses since entering protected *kraals* in 2008 and 2007 were 39 percent and 47 percent, respectively (Stites et al. 2016).

It is uncertain how livestock losses and subsequent restocking have been distributed across the population since 2008, but qualitative research among wealth groups may provide some insight.

Neither the 2010 Uganda Livelihood Zone Descriptions nor Karamoja's updated 2013 Livelihood Zone Descriptions estimated livestock by wealth group, but Tufts University conducted a wealth ranking exercise in each *manyatta* visited for an assessment and offered two striking observations. First, respondents unanimously reported that very poor households owned no animals (even poultry), which marks a severe level of impoverishment in Karamoja's livestock-based economy. Second, there is now a relatively large difference in livestock holdings between poor households (i.e., 1–20 cattle, 3–50 shoats, and 0–3 donkeys) and better-off households (i.e., 10–150 cattle, 0–150 shoats, and 0–12 donkeys) (Stites et al. 2016). Research is needed to better understand the loss of assets and capital among households across the wealth spectrum and the impact on patterns of wealth inequality, poverty, and food insecurity. The Tufts University study concluded that "the most obvious shift was among populations who had shifted entirely to cultivation and owned few or no animals. (In most instances the loss of animals was not by choice, but was due to the combined effects of raiding, disease and the protected *kraals.*)" (Stites et al. 2016). Pastoralist dropouts are highly vulnerable to food insecurity because of a lack of capital and diversified livelihood options to fall back on in the highly erratic and precarious environment of Karamoja. It is therefore encouraging that a 2016 livestock market assessment found a vibrant market in heifers and young animals, suggesting an emphasis on rebuilding herds among those engaging in markets, although it is not known whether those who lost all of their animals are buying animals now (Rockeman 2016).

Milk and ghee/butter are key food sources during the rainy season, especially for children (Stites and Mitchard 2011). Pastoralists manage their herds with the objectives of ensuring livestock can be sold when cash is needed, maximizing capital (i.e., the herd's overall value and potential growth), and maximizing milk consumption by households and young children (Rockeman 2016). The protected *kraals* have been largely disbanded, except for along the Kaabong-Turkana border (adjacent to Kenya) and the Nakapiripirit-Kween border (in the south of Karamoja) (Stites et al. 2016). Households are resuming their traditional dual settlement system, in which 5 to 15 percent of the herd is kept at the *manyatta* to provide milk for residents, sick or weak animals that cannot travel to the *kraal* sites are left, and several animals are kept for sale (mostly goats and chickens) for cash if needed. The remaining 85 to 95 percent of animals are then kept at the mobile *kraal* (Rockeman 2016; Stites et al. 2016).

Efforts by the GOU and international partners to promote agriculture in western and southern Karamoja, where the best farmland and prized dry season pasture are located, have resulted in pastoralists increasingly coming into contact with farmers, sometimes resulting in conflict (Stark 2011). As farming becomes more common in Karamoja, the GOU increasingly expresses interest in replacing communal land tenure systems with private land ownership. Disputes and conflicts over land are reportedly on the rise, as claims to land are being made by extended family members from outside of Karamoja, by private-sector interests and investors, and by prospective farmers (Howe et al. 2015). Given urbanization, population growth, and increasing demand for farmland, pro-pastoralism policies will need to be complemented by policies that promote diversified livelihoods and alternative (non-agricultural) livelihoods, as well as by conflict mitigation and resolution efforts that include land-related conflict (Rockeman 2016; Mwangu 2015).

Disputes are not uncommon between the Ugandan Wildlife Authority at Kidepo National Park and adjacent communities, triggered by wildlife crossing park boundaries, spreading tsetse flies and trypanosomiasis to livestock, injuring and killing people, and destroying nearby farmland. Current Kidepo Park boundaries encompass prized grazing land including salty pasture that is

prized for livestock health, and Kidepo Park is expected to expand in the coming years (Stites et al. 2016). Climate change is expected to increase climate variability and resource scarcity, which will aggravate the effects of loss of mobility among pastoralists and agro-pastoralists. Fortunately, although their authority was challenged during the disarmament period, elders are once again able to negotiate systems of accountability and consensus-based resource management of grazing lands and water points. Elders are working with herders to minimize livestock incursion onto farm and garden plots and are advising farmers to fence off their gardens for protection from grazing herds (Stites et al. 2016).

Map 2 (see Annex section) shows the location of dams and the dry season migration patterns of herders in Karamoja. Unfortunately, dams are not evenly distributed throughout Karamoja but are disproportionately concentrated in Moroto District (especially Rupa Sub-County). Livestock generally access water from boreholes, protected springs, ponds, seasonal rivers, swamps, dams, and valley tanks (FAO et al. 2016). Herders' migration patterns are determined by many factors, including security concerns (e.g., inter-ethnic conflict that cannot be adequately managed through negotiation), water availability, forage requirements (e.g., the types of forage/browse required for the animals in the herd and their availability at prospective grazing areas at specific times), and animal health considerations (e.g., tsetse flies). Decisions about migration are generally made by elder and *kraal* leaders in consultation with their counterparts in prospective grazing destination areas. Mercy Corps is currently leading a livestock grazing mapping effort, which aims to document whether traditional grazing patterns are being resumed or if new patterns are emerging in Amudat, Nakapiripirit, Kaabong, and Kotido Districts (Akabwai 2016, personal communication). Pastoralists tend to take their herds west during the dry season to take advantage of grazing and water sources (Stites et al. 2016; Mugerwa 2014). Herds from different clans inter-mix in multiple districts across Karamoja, and herders and pastoralists negotiate access to agricultural lands for grazing with an eye toward enabling forage/browse access while protecting agricultural assets (Stites et al. 2016).

The principal constraints to livestock production are veterinary diseases and pests; water availability; feed availability; constraints on mobility and access to land; weak extension systems; and underdeveloped markets for live animals, livestock products, and inputs. The main causes of livestock morbidity and mortality in Karamoja include trypanosomiasis; tick-borne diseases (e.g., anaplasmosis, East Coast fever, heartwater, red water/babesiosis); foot-and-mouth disease; contagious bovine and caprine pleuropneumonia, brucellosis, and *peste des petit ruminants*; Newcastle disease; helminthiasis; and lumpy skin disease (Stites et al. 2016; Rockeman 2016; C&D 2010; FAO et al. 2016).

2.1.3 GENDER AND AGRICULTURAL PRODUCTION

Nationally, male-headed households are more likely than female-headed households to own agricultural land (63 percent versus 57 percent), and rural households are more likely than urban households to own agricultural land (71 percent versus 34 percent) (UBOS 2016).[1] The 2011 GOU DHS found that at the national level, 39 percent of women reported owning/co-owning land, and 61 percent of women reported not owning (or co-owning) land; in Karamoja, 42 percent of women reported owning/co-owning land, and 58 percent reported not owning (or co-owning) land (UBOS and ICF International 2012). Qualitative research in Karamoja in 2013

[1] Although neither the Population and Housing Census nor the DHS explicitly defines "ownership" for the purpose of these statistics, it appears likely in both cases that "ownership" includes land owned by the household either via formal/legal ownership (with title), or through customary legal arrangements.

found that men and women agreed that men own land (Howe 2013). Access to grazing land is managed and allocated by elders, and women can be given access to grazing land for the animals that are based at the *manyattas*. Individual families are allocated land for cultivation and for their *manyattas*. Men (husbands) control the land for cultivation/gardening around the homestead, and a husband allocates gardening land to his wife/wives (Rugadya et al. 2010). Women control gardening on the land they have been allocated.

The only animals that women have sole and exclusive rights over are chickens, although in some cases women can own goats and can sell their chickens to "trade up" to goats (Stites et al. 2016). Men control goats, sheep, cattle, and any other animals. Women have partial control over products of livestock kept at the *manyatta*: they can keep and sell milk and livestock products (e.g., butter, ghee, eggs), but if they wish to sell a goat, they typically need permission from their husband. They retain partial to full control (depending on the marriage) of the income they earn from these activities. A husband has the right to take animals owned or managed by his wife and use them to pay the bride price for a new wife. Value chains—which hold promise for increasing women's income but are nascent to nonexistent—include the traditional milk and milk product value chain, the poultry value chain, and the forage value chain (Rockeman 2016).

Widows typically marry their deceased husband's brother, a practice termed "wife inheritance." The widow's assets (land and livestock) are incorporated into her new husband's assets. If she refuses to marry her deceased husband's relative, he may accept her refusal on the condition that he still takes ownership of her assets. Many widows who do not remarry seem to have decision-making power over their land and livestock, but some give these assets to their adult sons to manage. Widows without children are unable to rely on the support of their offspring and thus are often extremely poor (Howe 2013).

2.2 FOOD ACCESSIBILITY

2.2.1 HOUSEHOLD FOOD ACCESS TRENDS AND VARIATION

It is difficult to investigate the relationship between food production and household food access in Karamoja, because seasonal crop production (i.e., planting, yields, and harvest) surveys are not conducted in the sub-region. However, observations can be made regarding trends from 2015 to the present based upon existing food security data and projections. The GOU, UNICEF, and WFP conduct biannual food security and nutrition assessments (FSNAs), which produce household food security and nutrition status data for Karamoja's seven districts.

Table 1 presents data from four FSNAs in Karamoja, conducted between 2014 and 2016. Four indicators/indices of household food security are measured in the FSNAs: food consumption score, food expenditure share, livelihoods coping strategies, and food security index. About half of households in mid-2015 and mid-2016 (50 percent and 52 percent, respectively) had moderate or severe food insecurity as measured by the food consumption score. A larger portion of those households fell into the severely food insecure category in 2016 than in 2015. The percentage of households with moderate or severe food insecurity as measured by the food expenditure share increased from 34 percent in mid-2015 to 47 percent in mid-2016, and the proportion of households falling into the severe food insecurity category increased over that period. About half of households in mid-2015 and mid-2016 (52 percent and 51 percent, respectively) had moderate or severe food insecurity as measured by the use of crisis or emergency coping strategies, and the proportion of households in the severe category decreased slightly. When measured by the overall food security index, the percent of

households with moderate or severe food insecurity increased from 45 percent in mid-2015 to 50 percent in mid-2016, and the proportion of households in the severe category increased. Kotido, Napak, Kaabong, and Moroto Districts were most frequently found to have the highest prevalence of food insecurity during this period.

Food security monitoring and early warning provides another source of data to examine food security trends in Karamoja. The lean season of 2016 brought acute food insecurity for a large percentage of the sub-region's population. An estimated 270,000 people (27 percent of Karamoja's population) were projected to be unable to meet their basic food needs from April to July 2016 (FAO et al. 2016). Additionally, nearly 435,000 people (43 percent of the sub-region's population) were estimated not to be able to access enough cash to protect their livelihoods (e.g., by purchasing planting materials, veterinary drugs, and other productive inputs; and by paying for education and health services) (FAO et al. 2016). FEWS NET projected that from June to September 2016, the very poor wealth group (29 percent of the population) of the Central Sorghum and Livestock Livelihood Zone (see Section 2.2.2) would be in crisis [integrated phase classification (IPC) Phase 3] until July and would improve to stressed (IPC Phase 2) in August (FEWS NET 2016a). Very poor households in the Western Mixed Crop Farming Livelihood Zone were also expected to remain stressed (IPC Phase 2) until July. Food security status improved in August with the arrival of the green harvest (FAO et al. 2016). Areas with higher agricultural production had lower levels of projected food insecurity than areas with lower agricultural production. The September 2016 harvest improved market supplies and reduced market prices, but very poor households are projected to deplete their food stocks by January 2017, with worsening food security status through May 2017 as a result (Maps 1a and 1b; FEWS NET 2016d).

The very poor and poor households of the Central Sorghum and Livestock Livelihood Zone were also the most severely affected by the food crisis of 2015, when low rainfall delayed the green harvest for several months and caused significant crop losses (Maps 1c and 1d). Very poor and poor households relied on reducing the number of meals consumed; increasing sales of firewood, charcoal, grass, and construction poles; seeking additional agricultural labor; increasing brewing; and consuming grain by-products of the brewing process in 2015 and again in 2016; however, the cumulative effects of food and economic stress, combined with reduced agricultural labor opportunities, worsened the food security situation in the lean season of 2016.

Table 1. Food Security Outcomes in Karamoja

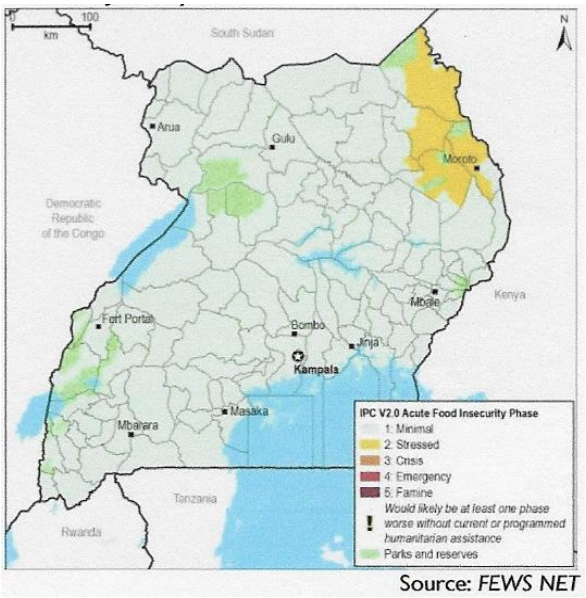
District	Date	Food consumption score (FCS) (% HH)				Food expenditure share (FES) (% HH)				Livelihoods coping strategy category (% HH)				Food security index (% HH)			
		Food secure (acceptable FCS)	Marginally food insecure	Moderately food insecure (borderline FCS)	Severely food insecure (poor FCS)	Food secure (FES <50%)	Marginally food insecure (FES 50-<65%)	Moderately food insecure (FES 65-<75%)	Severely food insecure (FES >75%)	Food secure (not adopting coping strategies)	Marginally food insecure (stress coping strategies)	Moderately food insecure (crisis coping strategies)	Severely food insecure (emergency coping strategies)	Food secure	Marginally food insecure	Moderately food insecure	Severely food insecure
Abim	May/June 2016	40	-	42	17	40	15	12	33	38	11	10	41	13	32	41	14
	Nov/Dec 2015	71	-	27	2	-	-	-	-	-	-	-	-	22	53	22	4
	May/June 2015	42	-	50	8	65	15	8	12	28	27	22	24	21	36	39	5
	May/June 2014	38	-	45	26	-	-	-	-	-	-	-	-	-	-	-	-
Amudat	May/June 2016	80	-	16	4	30	24	12	34	36	20	13	31	25	50	19	6
	Nov/Dec 2015	82	-	12	6	-	-	-	-	-	-	-	-	22	50	23	6
	May/June 2015	84	-	12	3	52	16	8	23	13	19	20	48	19	55	23	3
	May/June 2014	73	-	21	6	-	-	-	-	-	-	-	-	-	-	-	-
Kaabong	May/June 2016	19	-	47	34	46	15	5	34	32	12	16	41	2	28	55	15
	Nov/Dec 2015	23	-	48	29	-	-	-	-	-	-	-	-	4	23	46	27
	May/June 2015	56	-	34	10	56	19	9	16	11	12	8	68	9	49	31	11
	May/June 2014	31	-	39	30	-	-	-	-	-	-	-	-	-	-	-	-
Kotido	May/June 2016	38	-	40	22	32	15	12	41	15	12	11	63	4	31	44	21
	Nov/Dec 2015	42	-	38	20	-	-	-	-	-	-	-	-	3	32	37	28
	May/June 2015	42	-	40	18	45	14	9	32	40	8	4	47	11	36	42	11
	May/June 2014	36	-	47	27	-	-	-	-	-	-	-	-	-	-	-	-
Moroto	May/June 2016	52	-	34	14	33	21	19	28	48	16	11	25	17	43	33	7
	Nov/Dec 2015	57	-	32	11	-	-	-	-	-	-	-	-	9	38	37	17
	May/June 2015	30	-	43	27	48	22	11	20	41	11	9	40	11	27	51	11
	May/June 2014	59	-	28	13	-	-	-	-	-	-	-	-	-	-	-	-

District	Date	Food consumption score (FCS) (% HH)				Food expenditure share (FES) (% HH)				Livelihoods coping strategy category (% HH)				Food security index (% HH)			
		Food secure (acceptable FCS)	Marginally food insecure	Moderately food insecure (borderline FCS)	Severely food insecure (poor FCS)	Food secure (FES <50%)	Marginally food insecure (FES 50-<65%)	Moderately food insecure (FES 65-<75%)	Severely food insecure (FES >75%)	Food secure (not adopting coping strategies)	Marginally food insecure (stress coping strategies)	Moderately food insecure (crisis coping strategies)	Severely food insecure (emergency coping strategies)	Food secure	Marginally food insecure	Moderately food insecure	Severely food insecure
Nakapiripirit	May/June 2016	71	-	25	4	37	16	17	29	32	21	12	34	18	52	26	4
	Nov/Dec 2015	73	-	21	6	-	-	-	-	-	-	-	-	17	55	24	4
	May/June 2015	59	-	31	10	40	17	11	31	37	15	10	38	15	46	34	6
	May/June 2014	34	-	39	28	-	-	-	-	-	-	-	-	-	-	-	-
Napak	May/June 2016	39	-	39	22	34	16	13	37	42	16	11	32	14	30	41	14
	Nov/Dec 2015	53	-	34	13	-	-	-	-	-	-	-	-	17	37	34	12
	May/June 2015	38	-	45	17	35	17	12	36	52	22	4	22	15	37	39	9
	May/June 2014	36	-	44	31	-	-	-	-	-	-	-	-	-	-	-	-
Karamoja	May/June 2016	47	-	35	17	36	17	13	34	34	15	12	39	13	37	38	12
	Nov/Dec 2015	57	-	30	13	44	16	10	30	23	13	13	51	13	41	32	14
	May/June 2015	50	-	37	13	49	17	10	24	32	16	11	41	14	41	37	8
	May/June 2014	40	-	37	23	-	-	-	-	-	-	-	-	-	-	-	-

Sources: GOU et al. 2016b; GOU et al. 2016a; GOU et al. 2015; WFP and UNICEF (2014).

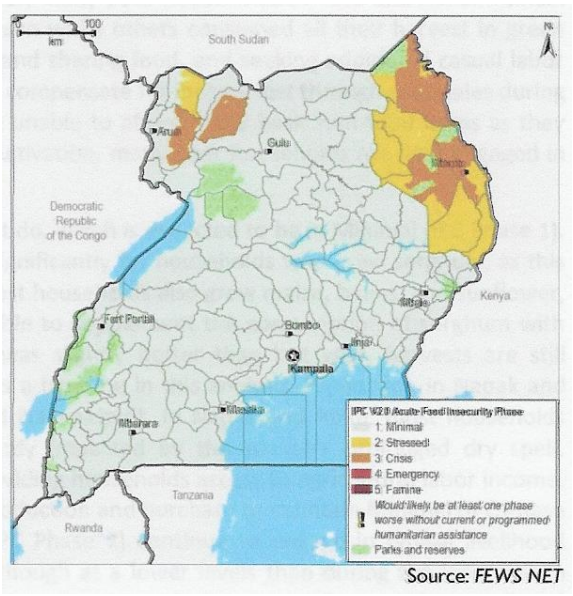
Maps 1a-1d. Projected Food Security Outcomes for Uganda (FEWS NET 2015 and 2016)

Map 1a. Projected Food Security Outcomes, October 2016–January 2017)



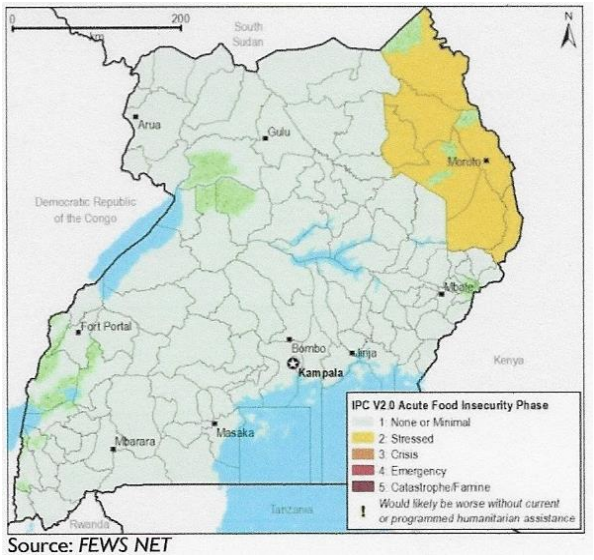
Source: FEWS NET 2016a.

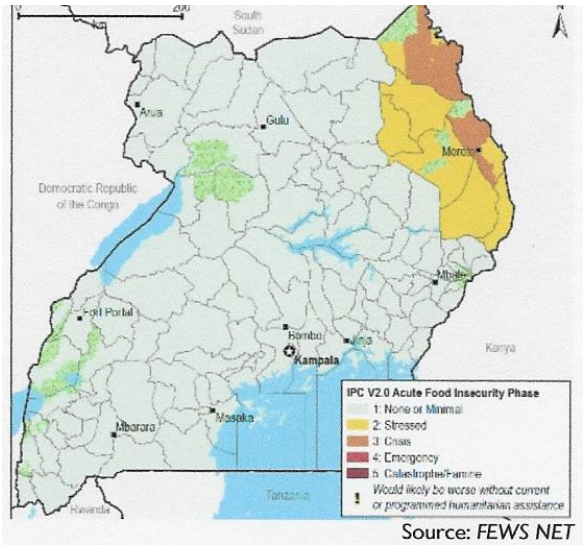
Map 1b. Projected Food Security Outcomes, February–May 2017)



Source: FEWS NET 2016d.

Map 1d. Projected Food Security Outcomes, February – June 2016)





Source: FEWS NET 2016e.

2.2.2 POVERTY, LIVELIHOODS, AND FOOD SECURITY

Uganda has made significant strides in poverty reduction (World Bank 2015). Uganda's poverty headcount ratio at the national poverty line has declined from 56.4 in 1992 to 38.8 in 2002, to 19.5 in 2012 (World Bank 2016). The country's poverty headcount ratio at the international poverty line ($1.90 per person per day or pppd, 2011 purchasing power parity) declined from 41.5 in 2009 to 33.2 in 2012 (World Bank 2016). However, the poor are disproportionately located in northern Uganda including Karamoja, and the country's high population growth rate—3.3 percent—means that the absolute number of people living in poverty remains high (World Bank 2015).

Developed in 2010 and revised in 2013, Karamoja's livelihood zone map includes five rural livelihood zones, plus urban areas, preserves, and parks (Map 2) (FAO et al. 2016). These five livelihood zones are North Eastern Highland Apiculture and Potato Zone, Western Mixed Crop Farming Zone, South Eastern Cattle and Maize Zone, Mountain and Slopes Maize and Cattle Zone (also called Mountain and Foot Hills Maize and Cattle Zone), and Central Sorghum and Livestock Zone (FEWS NET 2013b). A 2014 FAO livelihood baseline study in Karamoja provided detailed profiles of assets, food, income, and expenditure for each wealth group in the five livelihood zones (FAO 2014).

Using the baseline information from that 2014 livelihoods study, the GOU/UNICEF/WFP FSNA (July 2016) found that about a third of households (32 percent) in Karamoja did not have a member who was earning an income (Figure 2). Amudat, Kaabong, and Moroto Districts had the highest percentages of households without a single income earner, while Nakapiripirit, Kotido, and Abim had the lowest percentages of households without a single income earner. The assessment found that income levels are low because the available income-generating activities lack job security and are not well paid. Abim, Nakapiripirit, and Napak Districts had the highest percentages of households whose main income source was crop-based; Moroto, Amudat, and Kotido had the lowest percentage of households whose main income source was crop-based (Figure 3).

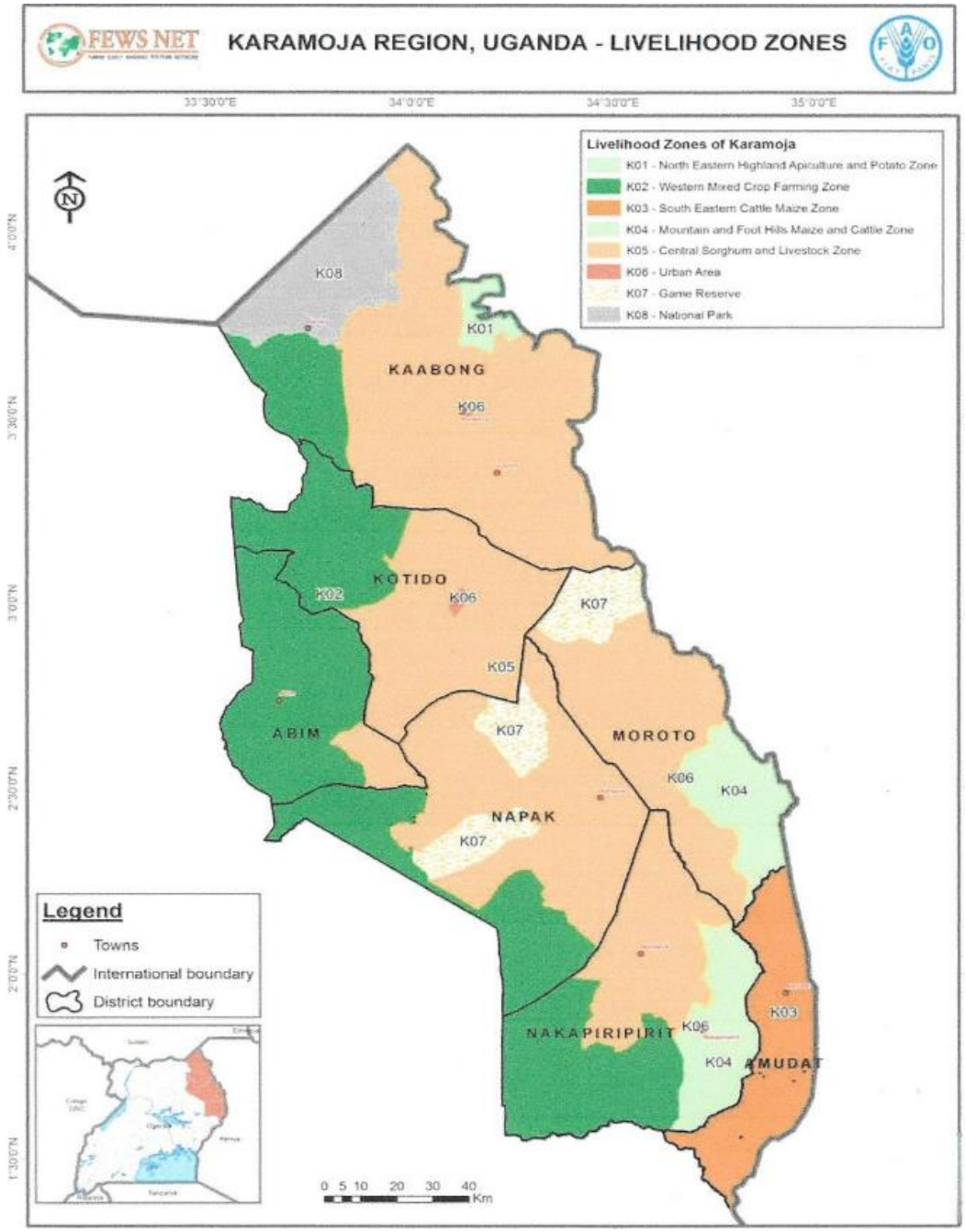
2.2.3 HOUSEHOLD CROP PRODUCTION FOR CONSUMPTION AND SALE

As illustrated by Figure 3, about a third of households in Karamoja have crop-based activities as their main income source; not surprisingly, rates are highest in the western green belt districts of Abim, Napak, and Nakapiripirit and are lowest in the more arid Moroto, Amudat, Kotido, and Kaabong Districts (GOU et al. 2016b). Access to land to cultivate is less of a constraint than the household's resources (e.g., labor and financial resources) to put the land under production. An estimated 90 percent of households reported in June–July 2016 that they had enough land for cultivation (GOU et al. 2016b). Changes in acreage cultivated per household by wealth group by livelihood zone from 2012 to 2015 were documented in the United Kingdom Department for International Development/FAO (2016) Karamoja Food Security Seasonal Assessment (Table 9 in the Annex section) (FAO et al. 2016). The assessment found a 30-percent increase in land cultivated in the Central Sorghum and Livestock Zone, with increases in land cultivated seen across all wealth groups. In the remaining livelihood zones, the better-off (and sometimes middle) wealth groups had increased their acreage cultivated, except for the Mountain Slopes Maize and Cattle Zone, where a shift to gold panning seemed to account for a decline in acreage put under farming.

Most households grow staples with very little diversification: 71 percent of households reported growing sorghum, 50 percent reported growing maize, and less than a third (30 percent)

reported growing beans (GOU et al. 2016b). As discussed in Section 2.1.1, the 2013, 2014, and 2015 cropping seasons were poor, and 2016 was expected to be poor as well. As a result of this poor production, by June–July 2016 only 24 percent of households reported having any food stocks (GOU et al. 2016b). Unfortunately, the survey-based FSNA conducted in July 2016 did not estimate crop production in 2015. The household economy assessment-based interagency assessment released in May 2016 estimated the volume of crop production by wealth group during the 2015 season (see Table 9 in Annex section) (FAO et al. 2016).

Map 2. Livelihood Zones of Karamoja



Source: FEWS NET 2013b.

2.2.4 HOUSEHOLD LIVESTOCK PRODUCTION FOR CONSUMPTION AND SALE

Reliable recent data on the contribution of livestock to household income and diet are not available for Karamoja. However, livestock holdings and milk production by wealth group in 2012 and 2015 were documented in the UKAID/FAO (2016) Karamoja Food Security Seasonal Assessment (see Table 10 in Annex section) (FAO et al. 2016). Livestock holdings over this period declined in the Western Mixed Crop Farming Zone and increased in the other four zones. Many very poor households now lack livestock entirely. Increases in livestock holdings among other (i.e., not very poor) households were attributed in part to GOU and partner-led livestock restocking programs.

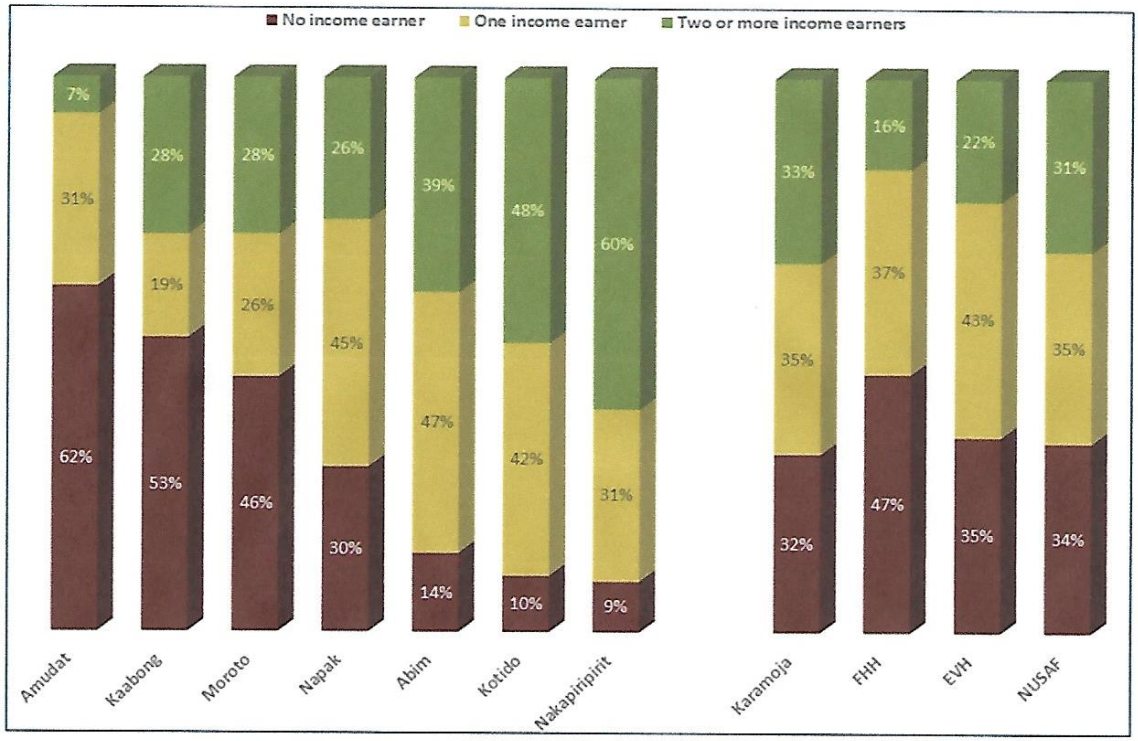
Karamoja's herders do not manage their herds to optimize production and income. Rather, three objectives guide herd management: being able to sell animals when cash is needed, maximizing the herd's value and growth potential (capital), and ensuring sufficient milk is available for household consumption (Rockeman 2016). Livestock owners tend to sell their animals for two main purposes: to obtain cash for food or non-food needs (e.g., school fees, health costs, veterinary medicine) and to "trade up" to improve their herds' value and growth potential (Rockeman 2016). These objectives are reflected in the composition of herds that livestock owners maintain. A typical herd for better-off households mainly comprises breeding female animals. For example, a herd may include 200 breeding cows and 4 to 8 breeding bulls (Rockeman 2016). Breeding cows are selected based on milk yield, physical condition, maturity, and calving interval; heifers and young bulls are selected based on those characteristics in their mothers (dams). Male calves not selected for breeding are castrated. In a typical herd, the ratio of cattle to shoats is around 1:1.4, although as household wealth increases, the relative proportion of cattle to shoats increases. Karamoja's herders tend to prefer goats to sheep because goats are more tolerant of arid conditions, they browse rather than graze (don't complete with cattle for feed), they are capable of twin kidding, they have higher milk production, and they earn higher prices (Rockeman 2016).

At the level of the *manyatta*, women first sell chickens when they need cash; a goat will be sold if more cash is required. A bull may be sold if there is a more serious problem such as sickness in the family, and heifers are sold as a last resort—but these decisions are the prerogative of men (Stites et al. 2016). If a woman decides that a goat must be sold to feed family members living at the *manyatta*, the woman will try to ask her husband if she can sell one; if she cannot reach him, she usually is able to decide to sell the animal and to do so on her own (Stites et al. 2016). Women may also "trade up" and boost the value of their livestock holdings by selling chickens to purchase goats (Rockeman 2016).

Herders try not to sell livestock during the rainy season—the peak time of animal reproduction and milk production—unless they need cash. When livestock owners "trade up," they are typically selling slaughter bulls, younger male cattle, or cows that are "dry" (no longer reproducing or producing milk) to purchase heifers, which increase the herd's future growth potential. A herder's main source of income can be thought of as the capital gains obtained when a bull is sold and a heifer is purchased. Trends in sale of animals are extremely difficult to monitor, as volumes of livestock traded on markets in Karamoja are not systematically collected. However, qualitative research has found that pastoralists value livestock more than cash. Traditionally, there are few uses for cash at the *kraal*, so when those residing at a *kraal* need cash, they sell the number of animals required to obtain the cash needed, at whatever the price is (Rockeman 2016). (The transaction is not conducted in advance in anticipation of the potential need for cash to take advantage of higher livestock market prices.) In contrast, agro-

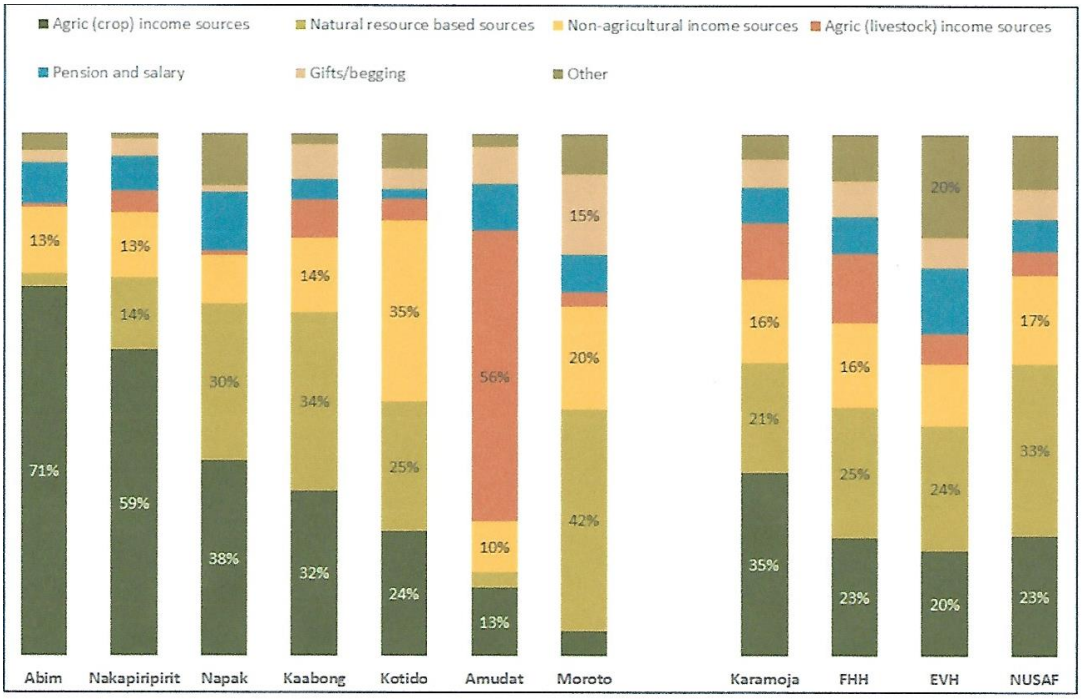
pastoralists and farmers tend to see their livestock more as a source of income, so they are more likely to take price into consideration when making marketing decisions. The prices of slaughter bulls tend to peak at the end of the rainy season when their physical condition has benefitted from months of good forage and water availability (Rockeman 2016). Households in the middle and better-off wealth groups gain the greatest advantage from engaging in livestock markets because they are most likely to own livestock, have cash on hand to support trading, and purchase preventive and treatment products and services to support livestock health. The consumption of milk and milk products from herds is discussed further below. If milk availability is not sufficient at a *manyatta*, milk can be transported weekly from the *kraal* to the *manyatta* to ensure that children have milk.

Figure 2. Number of Household Income Earners per Household



Source: GOU et al. 2016.

Figure 3. Main Sources of Household Income



Source: GOU et al. 2016.

2.2.5 HOUSEHOLD FOOD PURCHASE

Poor households in Karamoja typically consume crops grown from their own production from August through March or April of the following year (earlier in the primarily pastoral zones of southeastern Karamoja; Map 2). These households then shift to market purchase, barter or trade, and working for others in exchange for payment "in kind" with sorghum or maize. In addition to sorghum and maize, households may also buy meat and milk periodically, as well as vegetables to diversify the diet. Figure 4 illustrates the seasonality of staple food access strategies for four livelihood zones.

Figure 4. Seasonality of Staple Food Access Strategies for Poor Households

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Western Mixed Crop Farming Livelihood Zone												
Maize	Own production				Purchase / in-kind				Own production			
Sorghum	Own production				Purchase / in-kind				Own production			
South Eastern Cattle and Maize Livelihood Zone												
Maize	Purchase / barter / trade / in-kind								Own production			
Milk							Own production					
Mountain and Slopes Maize and Cattle Livelihood Zone												
Maize	Purchase / barter / trade / in-kind								Own production			
Sorghum	Purchase / barter / trade / in-kind								Own production			
Wild foods			Gathering of wild foods									
Central Sorghum and Livestock Livelihood Zone												
Sorghum	Own production			Purchase			Own production					
Sorghum			Barter									
Wild foods	Gathering of wild foods										Gathering	

Source: FEWS NET 2013b.

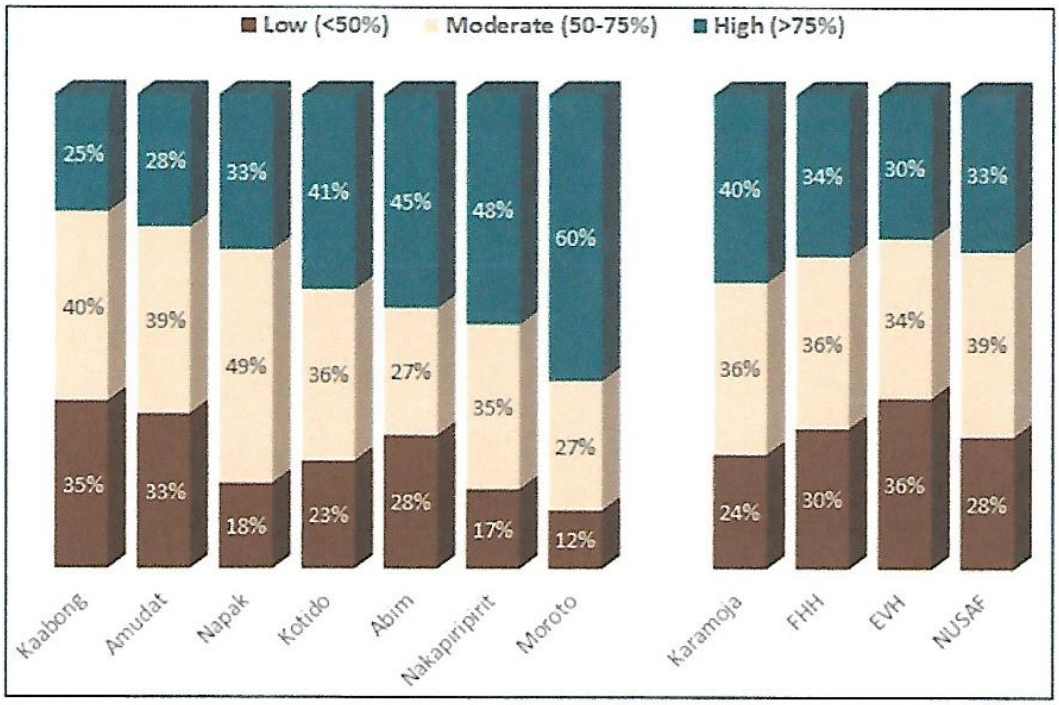
The June–July 2016 FSNA found that for the minority (24 percent) of households with remaining food stocks, those stocks were expected to last until the end of June. August was projected to signal the onset of food availability from households' own production across the sub-region, although as noted in Section 2.1.1, the harvest was expected to be late and affected by the earlier dry spell. Of all food purchased, almost half of the money spent was spent on cereals (48 percent), followed by pulses (27 percent), meat (14 percent), dairy (13 percent), and fruits and vegetables (11 percent) (Figure 5). More than three-quarters of households (76 percent) had medium to high dependence on markets for food (Figure 6). This is concerning, as the prices of sorghum and maize grain were higher in the 2016 lean season than in 2015 (Figure 7). Data on the proportion of expenditure spent on food found that almost half (47 percent) of households in Karamoja were moderately or severely food insecure (Figure 8). WFP collects market price data at district markets monthly, and both WFP and FEWS NET report the price data in monthly reports. The GOU monitors the consumer price index and producer price index monthly.

Figure 5. Food Expenditure Profiles

Food category	Karamoja	Average Monthly Expenditure (UgX) Highest					Lowest	Significant differences (p<0.05)
Cereals	38,800	Amudat (50,700)	Moroto	Nakapiri-pirit	Abim	Kaabong	Kotido	Napak (26,700)	*Napak vs. all districts*
Pulses	22,000	Abim (35,000)	Nakapiri-pirit	Moroto	Amudat	Kaabong	Napak	Kotido (12,900)	*Abim vs. all districts*
Fruits & Vegetables	9,100	Nakapiripirit (18,100)	Kotido	Abim	Kaabong	Amudat	Moroto	Napak (4,900)	*Nakapiripirit & Kotido vs. all districts*
Dairy	10,200	Nakapiripirit (13,400)	Kotido	Amudat	Abim	Moroto	Kaabong	Napak (4,200)	*Kaabong & Napak vs. Nakapiripirit, Kotido & Amudat*
Meat	11,500	Nakapiripirit (18,000)	Abim	Amudat	Moroto	Kaabong	Kotido	Napak (6,300)	*Nakapiripirit vs. all districts*
All food	81,600	Nakapiripirit (119,000)	Amudat	Abim	Moroto	Kotido	Kaabong	Napak (48,000)	*Nakapiripirit vs. all districts*

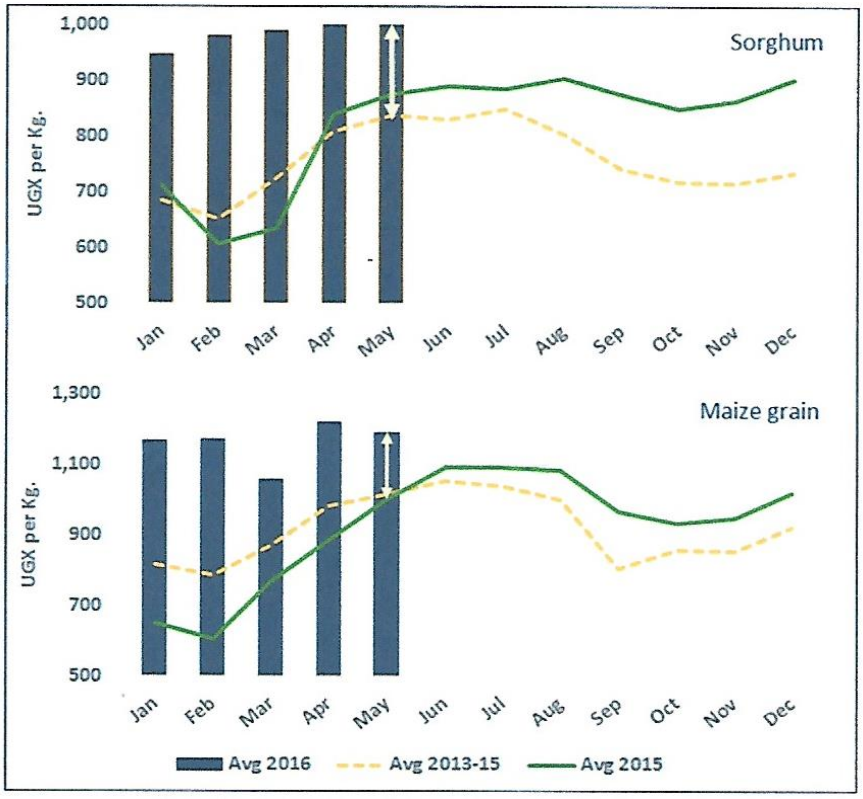
Source: GOU et al. 2016b.

Figure 6. Dependence on Markets for Food



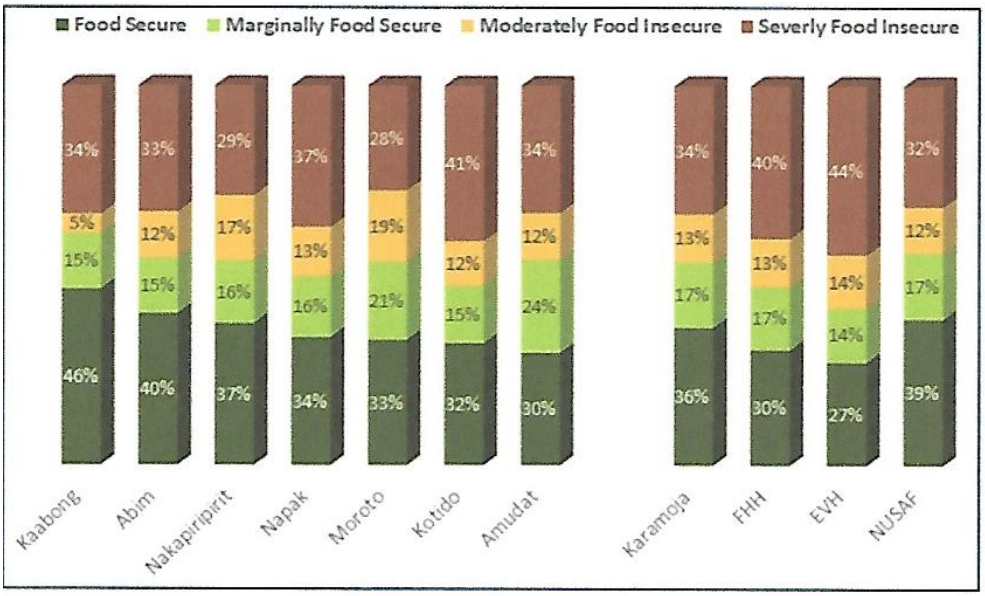
Source: GOU et al. 2016b.

Figure 7. Staple Food Prices in Karamoja



Source: GOU et al. 2016b.

Figure 8. Food Expenditure Shares



Source: GOU et al. 2016b.

2.2.6 NATURAL RESOURCE EXPLOITATION FOR CONSUMPTION AND SALE

Wild foods (i.e., from hunting and gathering) contribute to the diet and household income for some poor households in Karamoja (FEWS NET 2013b). The Northeastern Highland Apiculture and Potato Livelihood Zone has good availability of wild game (e.g., dik-diks, gazelles) and wild plants (e.g., wild fruits). In the Western Mixed Crop Farming Livelihood Zone, poor households consume and sell wild foods from hunting and gathering. In the Southeastern Cattle and Maize Livelihood Zone, some poor households also collect and sell wild foods. In the Mountain and Slopes Maize and Cattle Livelihood Zone, wild foods are a more important source of food than income for the poor. In the Central Sorghum and Livestock Zone, wild food consumption is practiced by poor and better-off households alike, and wild foods available during the zone's long lean season help boost consumption when food stocks are depleted and food prices in the market start to rise. Among poor households in all zones, wild food collection and consumption occur year-round and increase during the lean season.

In addition to relying on wild foods, many poor households also rely on the exploitation of other natural resources to earn income, selling mostly to urban and peri-urban households and restaurants. Rural households tend to use wood as fuel (Hillington and Twesigwe 2016). The percentage of households whose main source of income in June–July 2016 (during the lean season) was based on natural resource exploitation was highest in Moroto (42 percent), Kaabong (34 percent), Napak (30 percent), and Kotido (25 percent) Districts (Figure 3). Poor households cope with shocks by producing and selling charcoal, firewood, thatching grass, and construction poles, which puts tremendous pressure on trees and compounds environmental degradation. Women often perform agricultural labor, supplemented by collection and sale of natural resources (e.g., firewood, charcoal, grasses, wild foods, water). Women's income sources tend to rely heavily on the unsustainable exploitation of natural resources.

2.2.7 CROP MARKETS

The food marketing system is better developed in the green belt than in the agro-pastoral and pastoral zones (i.e., areas outside of the western green belt of Abim, Napak, and Nakapiripirit). Most households' food production is for their own consumption. In addition, sale of a household's own crops accounts for more than a third of household income in Abim, Nakapiripirit, and Napak (Figure 3). Food markets are highly seasonal, with external traders bringing in staple crops (especially maize, sorghum, and rice) during the lean season, and often leaving with cattle. Markets tend to be held weekly. Market intermediaries connect actors along the market chain (e.g., local sellers with urban traders from outside of Karamoja). Market function and efficiency are severely constrained by limited market information, long distances to and between markets, poor quality roads (and thus high cost of transport), large number and limited organization of market actors, lack of post-harvest handling and market infrastructure, and lack of credit to finance agriculture. Sorghum and maize dominate the brewing market.

Other than village-level in-kind bartering, most crop market transactions involve cash. Most producers sell their crop produce individually to traders, who tend to act individually and informally. There is presently little investment in farm-level and local added value processing. Input and tool markets largely provide goods produced outside of Karamoja (Wagubi 2013). The district capitals host markets that link with other regional markets such as Lira, Gulu, Mbale, Soroti, Pader, and Kitgum. A network links district markets with markets at levels of sub-counties to villages (Burns et al. 2013). The market network extends into South Sudan and Northern Kenya, with grain traveling in both directions depending on market dynamics and trader incentives (Burns J et al. 2013).

2.2.8 LIVESTOCK MARKETS

Karamoja's livestock markets are vibrant and competitive, with an increasing number of traders and volume of trade in live animals in recent years (Rockeman 2016). An assessment in early 2016 found active local demand for breeding and young stock, which suggests that herders are rebuilding their herds. In comparison to other livestock markets in pastoral East Africa, one finds a tendency toward face-to-face interactions between sellers and buyers in Karamoja's cattle markets; livestock owners tend to sell their animals to buyers directly rather than hiring market intermediaries (Rockeman 2016). Men conduct the large majority of livestock marketing, except for poultry. Actors in livestock markets include producers/consumers, local producer/traders, external traders, abattoir traders, and butchers. When traders are just starting out, they tend to purchase several young animals, integrate them into their personal herds (as they are also herders), and resell them later. They may evolve to purchasing animals in primary markets and then reselling in secondary markets. If they can accumulate substantial capital and business networks with external traders and market actors, they may get into the business of transporting livestock out of Karamoja for sale. There are also traders who specialize in buying poor-quality animals in distress sales situations, fattening them, and reselling the animals at higher prices.

The male livestock usually sold for slaughter include bulls, rams, and bucks (i.e., adult uncastrated cattle, sheep, and goats, respectively) (Rockeman 2016). Prices for these slaughter males tend to be highest during holidays, especially December to January, Ramadan, and Eid. Herders prefer to sell livestock at the end of the rainy season when body conditions peak and milk production diminishes. Prices of breeding-age female cattle, goats, and sheep follow the same general pattern. Prices of young animals peak at the beginning of the dry season but are

sensitive to forage conditions. The prices of livestock products (e.g., milk, butter, chickens, eggs) are higher during the dry season when availability is lowest (Rockeman 2016).

Livestock marketing in Karamoja faces many constraints (Rockeman 2016). The markets are publicly owned and managed, which reduces efficiency and profitability. Livestock market infrastructure is minimal, minimum hygiene standards are not met, and water is of insufficient quality and quantity at market facilities. There is very limited monitoring and thus statistics on sales and fees collected are scarce. The quality of livestock products would be improved by advancements in livestock health systems, establishment of a forage value chain, land tenure and access improvements, and strengthening of the meat value chain. A livestock market information system reportedly exists, but it is informal and run by the private sector. Price and volume data are lacking for livestock sold at livestock camps for cross-border trade (with Turkana in Kenya and Topoth in South Sudan). The main destination markets for slaughter bulls are Nairobi and Kampala, followed by Juba. Most sheep are traded to Turkana for goats. The main destination market for goat sales is South Sudan, followed by Kampala. Herders and traders in Karamoja do not sell hides and skins, which are a byproduct at the point of slaughter and therefore do not present a valuable market for Karamoja's herders at this time (Rockeman 2016). Maps 3, 4, and 5 (in the Annex section) illustrate livestock markets and flows in Karamoja.

2.2.9 LABOR MARKETS AND EMPLOYMENT

The labor markets that provide opportunities for unskilled daily employment for poor households in Karamoja are predominantly local (in the sub-region) and informal, and participating household members are paid either with grain or in cash to purchase maize and sorghum (FAO 2014). Agricultural labor opportunities are most plentiful in the green belt districts of Abim, Napak, and Nakapiripirit, where better-off households' ownership of oxen and ploughs enables them to increase the size of land cultivated and where they frequently hire on-farm labor during the lean season. Poor households may migrate during the lean season to towns in Karamoja (urban migration), other destinations in Uganda, or Kenya. Labor migration is reportedly becoming more common, due to the loss of livestock in recent years (Mercy Corps 2016c). Local non-agricultural labor opportunities include water collection and repair of huts. Availability of employment opportunities is a key determinant of the duration and severity of the lean season for poor households. Substantial mineral deposits and other lucrative resources also exist in Karamoja, providing labor opportunities in localized areas.

Most rural to urban migrants maintain economic and social linkages to their rural communities of origin (Stites et al. 2014). For them, rural to urban migration represents a strategy to diversify livelihoods or to manage a shock to the household, rather than an intentional shift out of pastoralism. The most important reasons for urban migration include loss of animals, hunger, and death of a family member, as well as the perception that towns offer better security and economic opportunities (Stites et al. 2014).

2.2.10 COMMUNITY REDISTRIBUTION OF RESOURCES AND INDEBTEDNESS

Resource redistribution is key to resilience in many traditional rural societies. This redistribution involves sharing or transferring resources from better-off to poorer households during difficult times, reducing overall vulnerability in the community. In Karamoja, there are many ways poorer households and vulnerable individuals can receive support from better-off households in Karamoja, as those with resources are expected to help others in the community. For example,

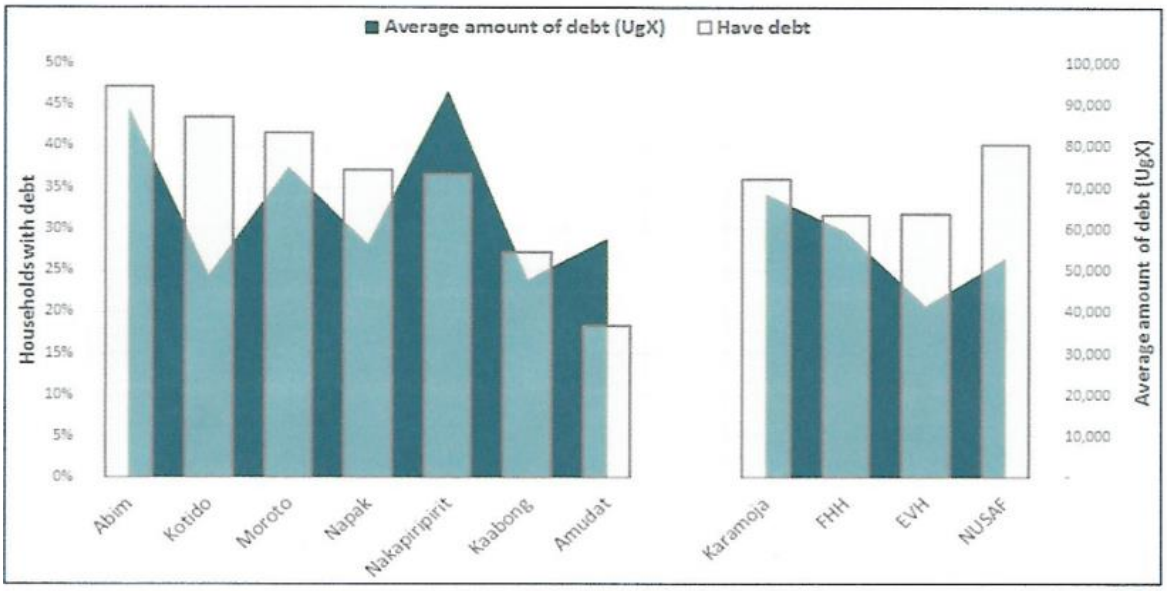
if an individual sells an animal at the market, he is always asked to help others (Stites et al. 2016). In addition, individuals may simply ask for money or food (i.e., beg), or request the opportunity to work for payment in cash or in kind. Those with livestock may ask those without livestock to care for their animals, in exchange for milk or other payment. That said, it is not known how much redistribution is mitigating the effects of loss of livestock, poor cropping seasons, and high food prices at markets in 2016 specifically.

Data on debt from the June–July 2016 GOU/UNICEF/WFP FSNA illustrates the financial stress imposed by food insecurity in Karamoja. The districts in which the highest percentages of households have debt are Abim, Kotido, and Moroto (Figure 9). For those households that have debt, the highest debt levels are in Nakapiripirit, Abim, and Moroto. Figure 10 illustrates that about half (52 percent) of households in Karamoja have borrowed money to buy food; Kaabong, Moroto, and Amudat Districts had the highest rates of borrowing money to buy food, at 74 percent, 55 percent, and 52 percent, respectively.

2.2.11 FINANCE AND SAVINGS

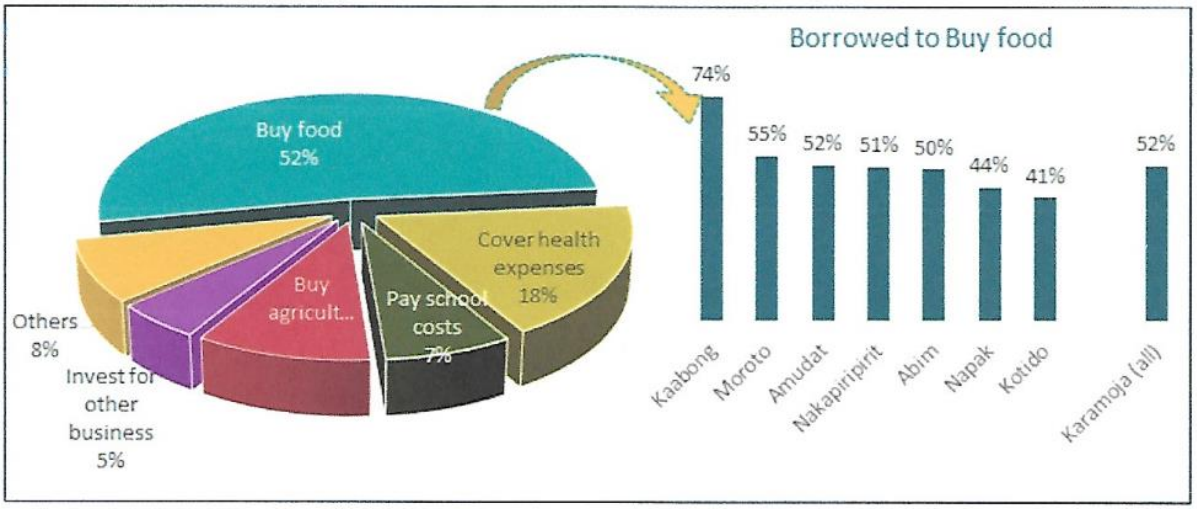
The very limited presence of financial institutions in Karamoja means that access to financial services and savings accounts is extremely uncommon. Most wealth is in the form of livestock rather than savings. Some people—especially women—participate in community-level accumulated savings and credit associations (ASCAs), whereby participants regularly contribute a small amount of money to a communal fund that is made available to participants on a rotating basis to fund income-generating activities.

Figure 9. Prevalence of Debt



Source: GOU et al. 2016b.

Figure 10. Main Reason for Debt



Source: GOU et al. 2016b.

2.2.12 GENDER, INCOME, AND ASSET OWNERSHIP

Women often perform the bulk of agricultural labor, supplemented by collection and sale of natural resources (e.g., firewood, charcoal, grasses, wild foods, water). Women's income tends to be consistently low throughout the year, while men are able to sell livestock to generate income when needed (Mercy Corps 2016d). Because women are the primary farmers, they have a great deal of influence over men's decisions about the purchase of seeds and agricultural inputs (Mercy Corps 2016d). Because women bear the burden of agricultural labor and basic household expenses and may face consequences such as beatings if harvests fail, they prefer drought-tolerant and quick-maturing crop varieties (Mercy Corps 2016d).

Women rely heavily on brewing for income (Mbevi and Lorika 2016). Alcohol consumption is ubiquitous and reportedly increasing in Karamoja, and it raises concerns about the health and well-being of men, women, and even children who consume it; the effects of adult drunkenness on caregiving; and effects on the incidence of SGBV (Mbevi and Lorika 2016; Mercy Corps 2016c).

2.2.13 SHOCKS, COPING CAPACITY, AND RESILIENCE

The key longer-term shocks and stressors that threaten food security in Karamoja include drought, climate variability, and environmental degradation; low land fertility; pests and diseases that affect animals and crops; conflict; underdevelopment and reduced human capacity; inadequate health, education, water, and sanitation services; illness and death of household members; poor governance; inadequate infrastructure; illness outbreaks and epidemics; low agricultural and livestock productivity; women's disempowerment; and weak markets. Rapid-onset shocks include climate shocks, market price shocks (worsened by market fragmentation and possible price manipulation by traders), pests and diseases for animals and crops, livestock quarantines, and violent events (e.g., theft, raiding, SGBV). Pastoralism as a livelihood system is relatively more well-adapted to drought conditions, so Karamoja's herders do not always report drought as the main food security shock they experience, although increasing rainfall anomalies and changes in rainfall timing undermine productivity through uncertainty, flooding, and drought (Figure 11). High food prices and threats of sickness or disease for humans and

livestock are most frequently reported. Additionally, threats to mobility—such as GOU restrictions on migration onto National Park land, and inter-ethnic conflicts that restrict access to traditional dry-season grazing areas—also pose acute threats to livelihoods and food security (Rockeman 2016). Over the past decade, Karamoja has experienced multiple overlapping and cumulative shocks.

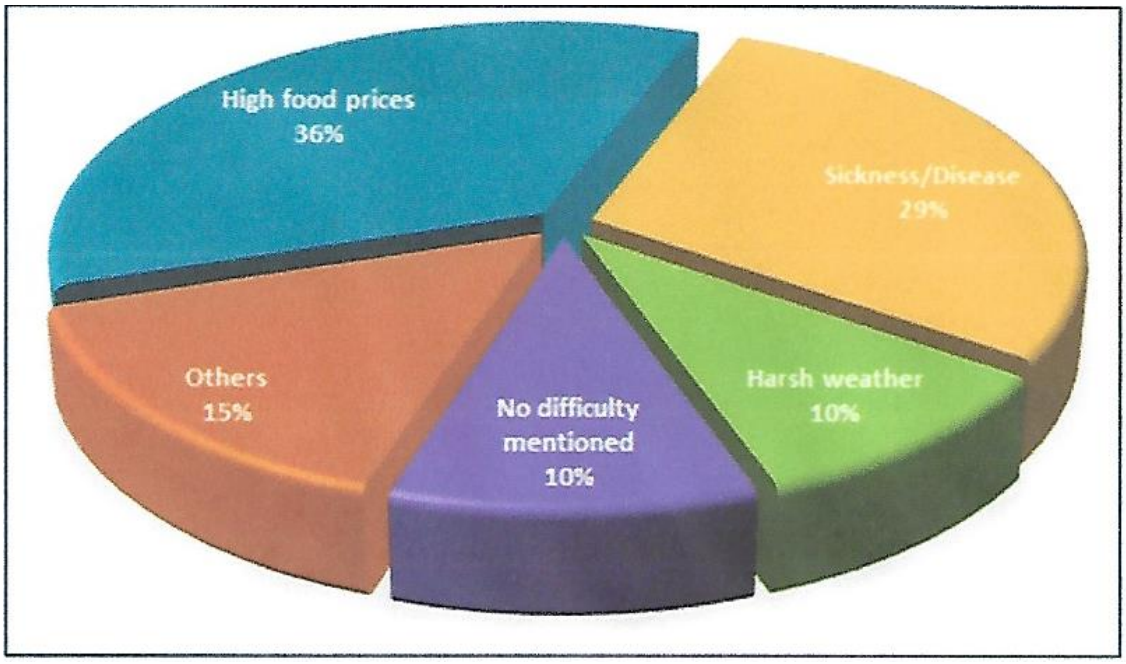
A recent resilience assessment discusses differences in vulnerabilities and resilience by livelihood pattern, wealth status, gender, and age (Mercy Corps 2016c).

- *Livelihood pattern*: Different livelihood groups exhibit different levels of risk from shocks and stressors (Mercy Corps 2016c). Farming households are highly exposed to climatic shocks, particularly new arrivals to Karamoja's remote agricultural settlement areas that lack effective governance and extension services. Agricultural laborers are often poor or are women, and they face even greater vulnerability to climatic shocks because they require agricultural labor for employment, and then use the income from that employment to purchase inputs for their own plots. Town dwellers face food security risks when climate shocks increase market prices, and they face high risks of communicable disease associated with poor water and sanitation systems and flooding.
- *Wealth status*: Loss of livestock in recent years has decapitalized households of the key asset—livestock—used to respond to food security shocks in Karamoja. Households with substantial livestock or land, and with access to finance or savings for essential services and inputs, are best positioned to manage and recover from shocks without resorting to negative coping strategies.
- *Gender and age*: Women and girls face the omnipresent risk of SGBV and, increasingly, HIV. Girls between the ages of 9 and 18 and single, abandoned, or widowed women all face high exposure to the shocks and stressors above, but also face high labor responsibilities combined with a lack of control over household assets (e.g., land, livestock) and household expenditure decisions that would be central to resilience. Lack of options leads to negative outcomes such as inadequate food consumption, early marriage, dropping out of school, migration for work, transactional sex, and risk of violence and trafficking. The elderly, particularly widows, are also at high risk of negative coping strategies during times of food insecurity.

The people of Karamoja rely on financial/economic, human, social, political, natural, and physical assets for food, nutrition, and livelihood security. Savings tend to be retained in the form of livestock rather than cash. While livestock assets are being reconstituted toward pre-disarmament levels, this reconstitution seems to be skewed toward better-off households, with the very poor generally owning no livestock at all. Investments in animal health services will be invaluable to protecting those assets. Financial systems are extremely weak in Karamoja, with households obtaining cash through sale of assets, labor, or incurring debt from others in the community. Access to markets is still weaker than elsewhere in Uganda, but seems to be improving. Human and social capital have improved enormously with the cessation of large-scale cattle raiding and conflict resolution/peace building initiatives. However, levels of human development—especially health and education—are still extremely low, and health and education systems are underfunded and weak. Political capital has improved with the restoration of traditional authority systems, combined with investments in governance by the GOU. Recent investments into large-scale, multi-sector, livestock-led development in Karamoja may help to reduce the centuries-long political and economic isolation of the sub-region. Natural

capital remains precarious given climate change projections. Physical capital in the form of road, education, health, and market infrastructure is undergoing incremental improvements with external investment, but still lags far behind national averages.

Figure 11. Main Shocks to Household Food Security



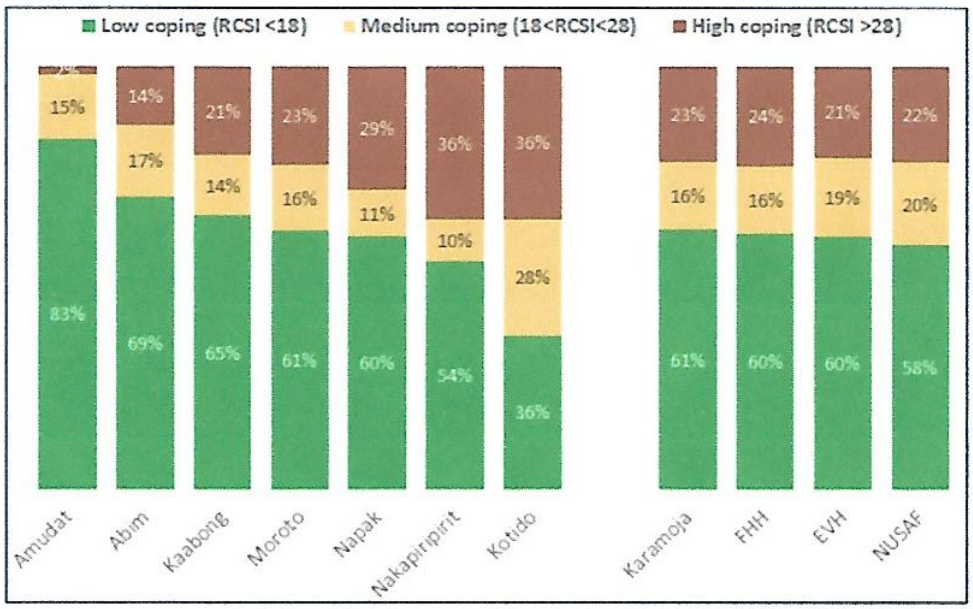
Source: GOU et al. 2016b.

For the people of Karamoja, resilience requires a minimum level of assets and diversification of assets, as well as the flexibility to shift human and financial resources to respond to shocks. People need a combination of land, livestock, mobility, market access, and labor/employment for food/livelihood security. Households that no longer herd need land for cultivation, and herders need negotiated access to lands for grazing and watering livestock. Livestock ownership is central to food security, as it is the principal asset that households can sell when cash or food is needed, and reconstitution of livelihood herds, especially among lower-income households, is key. Mobility allows herders to manage seasonal fluctuations and one-off shocks to grazing/browse and water conditions, and mobility also protects the functioning of the traditional dual-settlement system. Karamoja's herding families maintain a dual settlement system in which people are continually shifted between *manyatta* and *kraal* to optimize food security and livelihoods. During a typical dry season, 5 to 15 percent of the herd is in the *manyatta* and 85 to 95 percent of the herd is in the *kraal* (Rockeman 2016). Households need access to markets for sale of livestock when needed and for "trading up" to increase the value and growth potential of the herd. Labor and employment are needed for all on-farm and off-farm activities in the Karamoja economy.

Households facing shocks can utilize food consumption coping strategies (Figure 12). During the July 2016 hunger period, almost a fourth (23 percent) of households had high food consumption coping, especially in Kotido, Nakapiripirit, and Napak (GOU et al. 2016b). The most common food consumption coping strategies are consuming less preferred (and cheaper) foods, reducing the number of meals consumed per day, reducing the quantity of food consumed by adults, borrowing food, and reducing portion sizes (Figure 13).

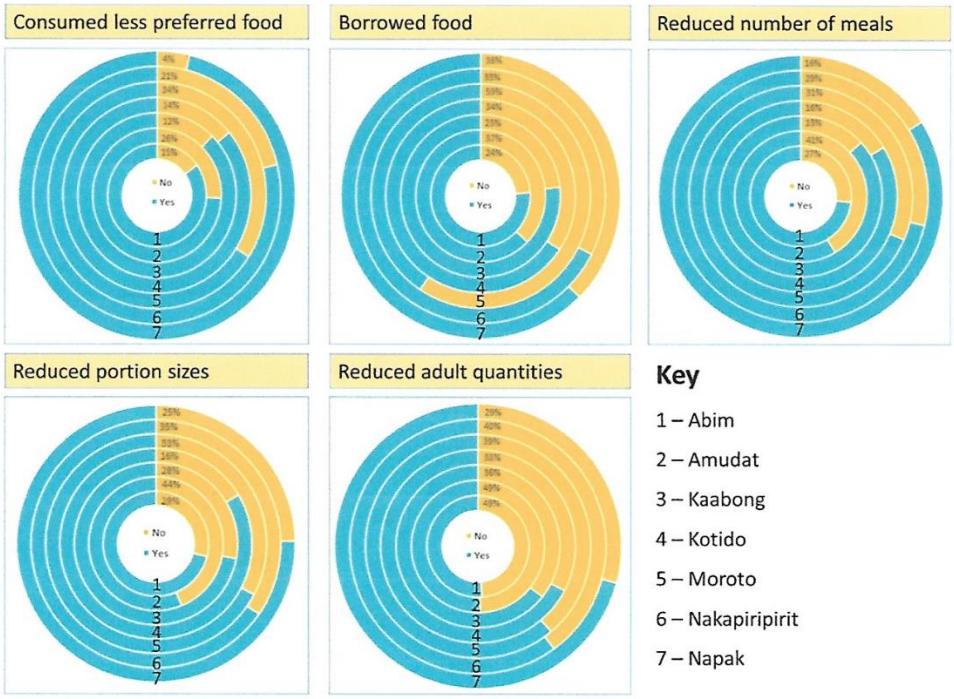
Households also adopt livelihood coping strategies, which reflect the longer-term coping capacity of households. Livelihood coping strategies include stress coping strategies, crisis coping strategies, and emergency coping strategies (Figure 14). Stress coping strategies reduce the ability to deal with future shocks due to a current reduction in resources or increase in debts, such as borrowing money, spending savings, and selling household goods or animals. Crisis coping strategies reduce future productivity, including selling productive assets, reducing essential non-food expenditure, and consuming seed stock. Emergency coping strategies constrain future productivity and are more dramatic and difficult to reverse, such as selling one's house or land, engaging in illegal income activities, and begging. By July 2016, 34 percent of households were not adopting livelihood coping strategies, and 39 percent were applying emergency coping strategies.

Figure 12. Food Consumption Coping Strategies



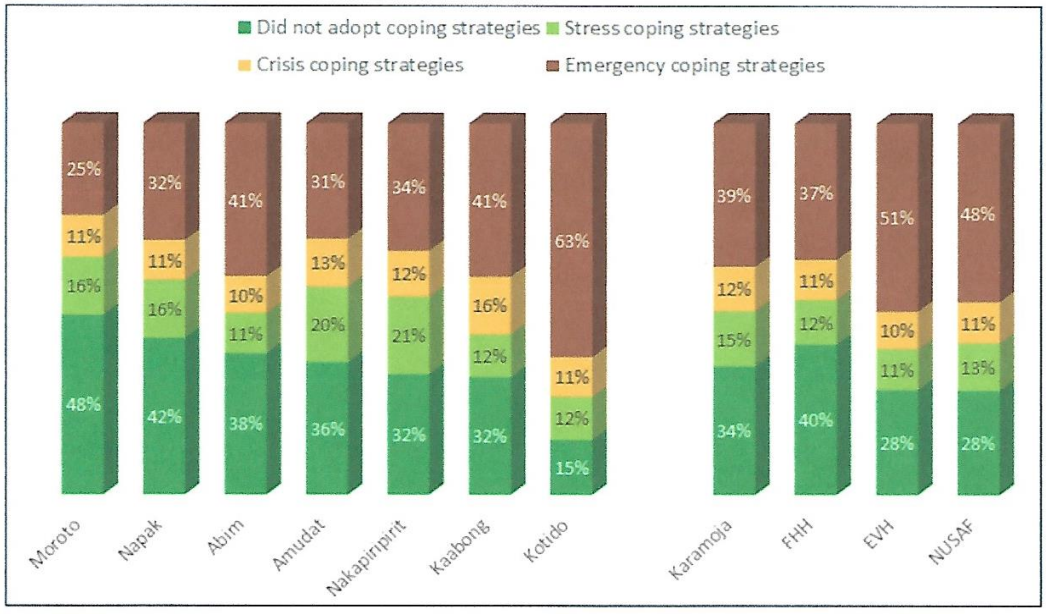
Source: GOU et al. 2016b.

Figure 13. Most Common Food Consumption Coping Strategies



Source: GOU et al. 2016b.

Figure 14. Most Common Livelihood Coping Strategies



Source: GOU et al. 2016b.

Resilience in Karamoja can be analyzed through a resilience capacity lens, which distinguishes among absorptive, adaptive, and transformative capacities (IGAD/RAU 2015). Indicators of absorptive capacity in Karamoja include ownership of livestock and other assets, expenditure levels, coping strategies, informal safety nets, ownership of small businesses, psychological strength, and household cohesion. Indicators of adaptive capacity include livelihood risk diversification, access to productive and secure land, household labor capacity, and food preservation and storage levels. Indicators of transformative capacity include access to social services; access to productive services; safety nets and social protection; and variables related to empowerment, government, and leadership (IGAD/RAU 2015).

The most resilient households in Karamoja are those that are able to balance animal husbandry with crop production. Through diversification of livelihoods, households can smooth income and consumption flows throughout the year, and ensure options to fall back on in case of a major food security shock. Higher diversification of household economic activity only reduces the impacts of food security shocks if the activities are sufficiently profitable to support the household in case of shocks; the extremely poor often diversify into very unreliable, low-return, and ecologically unsustainable activities such as increasing charcoal production, which do not provide secure livelihoods (ILRI 2016). The orientation of GOU development policy appropriately reflects an emphasis on a healthy and vibrant livestock sector integrated with agricultural and off-farm sector development. Investment in household assets, combined with multi-sectoral public and private systems strengthening and environmental protection, will help birth a more resilient Karamoja.

The Mercy Corps resilience assessment identified six resilience capacity groups that households in Karamoja require to absorb, adapt to, and transform the shocks and stressors they face: increased capacity to manage natural resources equitably and transparently, increased access to products and services that reduce risk, increased access to appropriate financial services, increased access to information and early warning systems, improved mechanisms for disaster risk management and response, and increased access to water management and WASH services (Mercy Corps 2016a). Many of these factors are discussed below under Lessons Learned (Section 3).

2.3 FOOD UTILIZATION AND HEALTH

2.3.1 NUTRITION AND HEALTH CONTEXT

Pregnancy through a child's second birthday (the first 1,000 days), when a child is growing and developing most rapidly, is a critical time for optimal nutrition of both mother and child. Malnourished women are at higher risk of pregnancy-related death and more likely to have premature and/or low birth weight babies; moreover, their children are more likely to be stunted by age 2 (Black et al. 2008; Ramakrishnan et al. 2012; Black 2013; Manasseh et al. 2016). Children under 2 are highly vulnerable to malnutrition, which increases their risk of illness and is associated with 45 percent of deaths of children under 5 (Black et al. 2013). The long-term consequences of chronic malnutrition—including impaired growth, delayed cognitive development, diminished educational achievement, and increased risk of chronic disease in adulthood—are difficult to reverse after age 2 (UNICEF 2013; Bhutta et al. 2013). Malnutrition reduces productivity, and malnourished individuals earn less income and may have increased health care costs. This creates overwhelming barriers for individuals, families, communities, and countries to break out of poverty. In fact, it is estimated that if not improved, childhood stunting alone may cost Uganda US$7.7 billion in lost productivity by 2025 (Namugumya et al. 2014).

However, there is opportunity to improve this bleak picture, because children under 2 are very responsive to nutrition interventions (UNICEF 2013, Bhutta et al. 2013).

In recent years, there have been improvements in the health and nutritional status of the Ugandan population. The country achieved Millennium Development Goals (MDGs) related to malaria control and access to HIV treatment and only slightly missed achieving the MDGs related to hunger, under-5 mortality, and water and sanitation (MOFPED 2015a). These improvements are impressive, but more progress is needed. This is especially true in Karamoja, the most vulnerable sub-region, which has worse health and nutrition outcomes than most other regions and where 68 percent of children from birth to 4 years of age live in poverty[2] (MGLSD et al. n.d.).

The complex nutrition situation in Karamoja reflects challenges that stretch beyond the health sector and the household. Low quality diets, sub-optimal feeding practices, and frequent illness directly contribute to poor nutritional outcomes. Underlying these are chronic food insecurity, poverty, a harsh environment and erratic climate, and reduced livestock ownership, which compromise food availability and access, including to milk products. Meanwhile, low levels of education among women and household heads, poor access to safe water and sanitation, high fertility rates, and poor maternal nutritional status contribute to illness and undernutrition and undermine the ability to optimally care for children. Conflict and insecurity, isolation and neglect, poorly functioning government systems, gender inequality, domestic violence, maternal depression, and alcoholism create increased challenges to improving the overall environment to achieve a healthy and well-nourished population in Karamoja (GOU and UNICEF 2015a). Many of the health and nutrition challenges, detailed below—including childhood stunting, wasting, underweight, lower dietary diversity, malaria, diarrhea, and acute respiratory infection—have been linked to low education of mothers and/or household heads, poverty, and mother's nutritional status, all of which are persistent problems in Karamoja (GOU, et al. 2015; UBOS and ICF 2012; GOU et al. 2016a; GOU et al. 2016b; Black et al. 2013; UBOS and ICF 2015).

A Karamoja-specific multi-sectoral nutrition strategy, aligned with the multi-sectoral Uganda Nutrition Action Plan, has been adopted to guide actions to improve nutrition of women and children in this vulnerable sub-region (see Box A in Annex section). Essential in this strategy is a transition from primarily emergency-based programming to a focus on building resilience and long-term development, while responding to crises as needed (GOU and UNICEF 2015a).

2.3.2 CHILD HEALTH AND NUTRITIONAL STATUS

Even with recent improvements in child health and nutrition, children under 5 in Karamoja continue to be at high risk for both chronic and acute malnutrition and are sick with common childhood illnesses more frequently than the average Ugandan child. Infant and young child feeding practices, especially complementary feeding, are sub-par, and there is a need to increase both quantity and diversity of food provided to children starting at 6 months of age. Anemia prevalence has been steadily improving but remains extremely high, potentially due to a combination of poor dietary quality and high prevalence of malaria. All of this contributes to the

[2] This was a non-income-based measure to capture deprivation specific to children. Poverty was defined as children deprived in two or more of seven dimensions: nutrition, water, sanitation, health, shelter, education, and access to information. Extreme poverty occurred when children were extremely deprived in two or more of the dimensions. This is an adaptation of the Bristol multidimensional approach to measuring child deprivation. For more information, see MGLSD et al. n.d.

high risk of mortality in children under 5 and is compromising the growth and development of children who survive (Table 2).

Table 2. Child Health and Nutritional Status

	Uganda	Karamoja	Karamoja	Abim	Amudat	Kaabong	Kotido	Moroto	Nakapiripirit	Napak
	UBOS and ICF 2012		GOU et al. 2016b							
Prevalence of Malnutrition										
% of children under 5 stunted (HAZ < -2)[3]	33.4	45.0	28.0	23.0	17.5	26.1	30.0	34.1	25.6	39.9
% of children under 5 wasted (WHZ < -2)	4.7	7.1	11.0	6.7	10.9	12.8	12.1	13.7	8.3	13.6
% of children under 5 underweight (WAZ < -2)	13.8	31.9	22.4	17.1	16.0	21.6	25.3	26.6	19.2	31.4
% of children 6–59 months with MUAC < 125 mm	—	—	—	4.4	4.1	12.7	13.8	11.7	11.3	10.4
% of children 6–59 months with MUAC < 115 mm	—	—	—	0.2	1.2	1.9	4.0	1.5	2.5	1.9
Anemia and Micronutrient Nutrition										
% of children 6–59 months with anemia (Hb < 11g/dL)[4]	49.3	69.5	57.2	45.7	61.9	61.7	60.1	45.8	66.5	59.5
% of children 6–59 months received deworming in past 6 months (with card or mother's recall)	50.2	64.5	80	87	69	83	77	82	67	90
% of children 6–59 months received vitamin A supplementation in past 6 months (with card or mother's recall)	56.8	73.7	93	97	92	96	90	95	84	95
% of children 6–59 living in house with iodized salt	99	99.8	—	—	—	—	—	—	—	—
Infant and Young Child Feeding Practices—Breastfeeding										
% of children ever breastfed	98.3	99.9	—	—	—	—	—	—	—	—
% of children breastfed within 1 hour of birth	52.5	70.4	80	94	85	65	60	94	90	84

[3] See Section 2.3.2 for a discussion of the unusual fluctuation of stunting in Karamoja from 2015 to 2016.
[4] Karamoja specific data from GOU et al. 2016a. *Food Security and Nutrition Assessment in Karamoja Region.*

	Uganda	Kara-moja	Kara-moja	Abim	Amudat	Kaabong	Kotido	Moroto	Naka-piripirit	Napak
	UBOS and ICF 2012		GOU et al. 2016b							
% of children received prelacteal feeds	41.1	19.2	—	—	—	—	—	—	—	—
% of children under 6 months exclusively breastfed	63	—	75	66	53	84	73	78	77	80
Median duration (months) of exclusive breastfeeding	3.4	4.4	—	—	—	—	—	—	—	—
Median duration of breastfeeding (months)	19.4	23.0	—	—	—	—	—	—	—	—
Infant and Young Child Feeding Practices—Complementary Feeding (6–23 months, breastfed and non-breastfed)										
% of children with minimum diet diversity[5]	12.8	3.5	6	5	3	2	2	7	22	--
% of children with minimum feeding frequency[6]	44.8	30	34	40	57	28	38	19	35	24
% of children with minimum acceptable diet[7]	5.8	2.2	3	4	1	2	1	2	9	--
Prevalence of Childhood Illness										
% of children under 5 who had diarrhea in the 2 weeks preceding the survey	23.4	20.3	12	11	6	7	20	17	9	11
% of children under 5 classified as having malaria (based on microscopy)[8]	18.9	49	—	—	—	—	—	—	—	—
% of children under 5 with fever in 2 weeks preceding survey[9]	30.7	26.1	51	57	47	46	51	58	52	47
% of children under 5 who had acute respiratory infection symptoms in the 2 weeks preceding the survey	14.8	20	8	6	7	8	5	8	17	6

[5] Karamoja-specific data from GOU et al. 2016a.
[6] Karamoja-specific data from GOU et al. 2016a.
[7] Karamoja-specific data from GOU et al. 2016a.
[8] Data from UBOS and ICF International. 2015. *Malaria Indicators Survey.* Kampala, Uganda: UBOS.
[9] Data for first two columns from UBOS and ICF International. 2015. *Malaria Indicators Survey.* Kampala, Uganda: UBOS.

Trends in nutritional status

Chronic malnutrition and underweight have declined in the past decade, yet one-third of Ugandan children under 5 were stunted in 2011 and the Global Nutrition Report suggests that Uganda is not on track to achieve the 2025 World Health Assembly targets of a 40-percent reduction in stunting (UBOS and ICF 2012; IFPRI 2015). The proportion of children under 5 suffering from wasting has remained steady at around 5 percent, and approximately 14 percent were underweight in 2011. Forty-nine percent of children in this age group were anemic, and only 6 percent were fed a minimum acceptable diet.[10] In Karamoja, the situation was worse, with 45 percent of children under 5 stunted, 32 percent underweight, and almost 70 percent anemic—all considered very high by WHO standards. More than 7 percent of children under 5 suffered from wasting (UBOS and ICF 2012). Across surveys and districts, boys in Karamoja are more likely than girls to suffer from wasting, stunting, and underweight (UBOS and ICF 2012; ICF 2014; GOU et al. 2016a). Although all districts in Karamoja are at nutritional risk, Moroto, Kaabong, Napak, and Nakapiripirit have shown the most nutritional vulnerability in recent surveys (GOU et al. 2015; GOU et al. 2016a; GOU et al. 2016b).

District-specific data from 2015 and 2016 indicate that the nutrition situation in Karamoja remains precarious. Wasting was high among children 6–59 months in the 2015 lean season, including critical levels (more than 15 percent) in Kaabong, Moroto, Nakapiripirit, and Napak. The third consecutive failed harvest and extended lean season in 2015–2016 triggered a scale-up in food assistance, which may explain why the prevalences of wasting and severe wasting improved slightly for the first time since 2010, at 11 percent and 2 percent, respectively in June 2016. However, five of Karamoja's seven districts continued to have high levels of wasting (more than 10 percent), and Moroto, Napak, and Kaabong were especially hard hit. Abim is the only district where wasting has consistently been below 10 percent (GOU et al. 2016a; GOU et al. 2015). Children 6–17 months of age were most likely to suffer from wasting (GOU et al. 2016a).

Stunting estimates among children under 5 in Karamoja vary but have consistently been unacceptably high. The DHS found 45 percent of children stunted in 2011, and the FFP development activities' 2013 baseline survey reported 35 percent stunting in Karamoja. The baseline found a higher prevalence in southern Karamoja (38 percent) than in northern Karamoja (32 percent) (ICF 2014; UBOS and ICF 2012).[11] In the 2014–2016 FSNAs, stunting prevalence among children 6–59 months ranged from a low of 28 percent in June 2016 to a high of 39.5 percent in December 2015. Although the studies are not all comparable, these large fluctuations in stunting over a short time are unusual, making it difficult to discern the extent of the problem and know which districts are most at risk.[12] However, Abim and Amudat tend to have lower prevalences of stunting, while Moroto and Nakapiripirit consistently have among the highest. Kaabong is the one district where the prevalence of stunting has consistently increased from survey to survey (GOU et al. 2016a; GOU et al. 2015; Wamani

[10] Minimum acceptable diet (MAD) is a composite population-level indicator to assess quantity and quality of the diet of children 6–23 months by breastfeeding status. It combines minimum meal frequency (a proxy for quantity of food eaten) and minimum dietary diversity (a proxy for quality of the diet). For non-breastfed children, it also assesses whether a minimum number of milk feeds were provided (WHO 2008; WHO 2010).

[11] Southern Karamoja includes the districts of Amudat, Moroto, Nakapiripirit, and Napak; northern Karamoja includes Abim, Kaabong, and Kotido districts.

[12] In some districts the reported prevalence changed by more than 10 percentage points in a 6-month period and changed substantially in the opposite direction 6 months later. These shifts fell outside of the confidence intervals provided with the survey data.

2014; WFP and UNICEF 2014). In Karamoja, the prevalence of stunting is highest in children 18–35 months of age (ICF 2014).

Underweight remains a concern in Karamoja: The 2013 baseline survey reported a prevalence of 21 percent (ICF 2014), and the June 2016 FSNA reported that 22 percent of children 6–59 months were underweight. Moroto and Napak consistently had among the highest prevalences of underweight (GOU et al. 2015; GOU et al. 2016b).

Infant and young child feeding

Exclusive breastfeeding (i.e., no other liquids or foods, including water) starting within 1 hour of birth and continuing for the first 6 months of a child's life provides an infant with all the nutrition he or she needs and reduces the risk of illness and mortality. More than 98 percent of Ugandan children are breastfed at some point. However, only about half of children are breastfeed within 1 hour of birth, and the median duration of exclusive breastfeeding is 3.4 months (UBOS and ICF 2012). In Karamoja, breastfeeding is a strong cultural norm (ICF 2014), and practices there are better than in Uganda as whole. Virtually all children are breastfed at some point, and the majority (70 to 80 percent) begin breastfeeding within 1 hour of birth, from a low of 60 percent in Kotido to a high of 94 percent in Abim and Moroto. Prelacteal feeding is much less common in Karamoja (19 percent) than in Uganda overall (41 percent) (UBOS and ICF 2012; GOU et al. 2016b). About three-quarters of children under 6 months in Karamoja are exclusively breastfed (GOU et al. 2016b). The median duration of exclusive breastfeeding in Karamoja is 4.4 months, while the median duration of any breastfeeding is 23 months (UBOS and ICF 2012). Within Karamoja, breastfeeding practices are fairly consistent across districts. However, Abim and Amudat tend to have a lower proportion of children who are exclusively breastfed (GOU et al 2016a; GOU et al. 2015).

Complementary feeding—the introduction of semi-solid and solid foods of appropriate quality and quantity at 6 months of age while continuing to breastfeed until at least age 2—is essential to support a child's growth and development, and appropriate complementary feeding is associated with reduced stunting (Black et al. 2013). Timing, quantity, and quality of complementary feeding are serious challenges in Karamoja and likely contribute to the high prevalence of stunting. Just 64 to 71 percent of children are given complementary foods starting at 6 months. In Kotido, a high proportion of children (41 percent) are introduced to solid and semi-solid foods too early (GOU et al. 2016b). Meanwhile, the districts that have relatively high proportions of children who start eating solid and semisolid foods later than 6 months can be found in Kaabong (15 to 33 percent), Moroto (10 to 29 percent), Amudat (11 to 24 percent), and Napak (13 to 22 percent) (GOU et al. 2016a; GOU et al. 2016b; GOU et al. 2015). Of even greater concern is that only a tiny proportion of children in Karamoja are fed a minimum acceptable diet, and dietary diversity is the biggest constraint, with the vast majority of children being fed fewer than four food groups (GOU et al. 2015; UBOS and ICF 2012; ICF 2014; GOU et al. 2016a; Wamani 2014; WFP and UNICEF 2014). Grains, roots, and tubers constituted the most commonly consumed food group by far, followed by vitamin A-rich fruits and vegetables and by dairy products, which were each consumed by less than half of children (ICF 2014). Among non-breastfed children, access to milk has also been a problem, with only 5 percent of non-breastfed children given at least two milk feeds per day (GOU et al. 2015; GOU et al. 2016a; GOU et al. 2016b).

Micronutrients

Anemia, often caused by iron deficiency, worm infection, or malaria, increases children's mortality risk and impairs cognitive development. The proportion of children in Karamoja with anemia is extremely high, despite the improvement between 2006, when a shocking 82 percent of children 6–59 months were anemic, and 2011, when 70 percent were anemic (UBOS 2007; UBOS and ICF 2012). A December 2015 survey estimated that anemia affected 57 percent of children under 5. (GOU et al. 2016a). In the most recent survey, Nakapiripirit had the highest prevalence of anemia at 67 percent, and Abim and Moroto had the lowest prevalences, both at 46 percent (GOU et al. 2016a). Diets among children in Karamoja tend to be iron-deficient, with fewer than 10 percent of children 6–23 months consuming iron-rich animal-source foods (UBOS and ICF 2012; ICF 2014). Deworming medication coverage is fairly high, with approximately 80 percent of children 6–59 months covered.[13] However, coverage is lower in Amudat and Nakapiripirit (GOU et al. 2016b). Children under 5 in Karamoja also have the highest prevalence of malaria in the country, measured at 48 percent in the 2014–2015 Malaria Indicators Survey—more than double the national prevalence.

Vitamin A is essential for a healthy immune system. Deficiency increases risk and severity of infections like measles and diarrhea and is the leading cause of preventable blindness in children. In 2011, 38 percent of children 6–59 months in Uganda had vitamin A deficiency. Although Karamoja had the lowest prevalence of vitamin A deficiency in the country, at 28 percent, it was still quite high.[14] In countries like Uganda, where vitamin A deficiency is a public health problem, WHO recommends that children 6–59 months receive vitamin A supplementation every 4–6 months. Karamoja had the highest rate of vitamin A supplementation in Uganda in 2011, at 74 percent, and coverage has remained high with all recent FSNAs reporting more than 90 percent coverage. The 2011 DHS reported that 68 percent of children 6–23 months consumed vitamin A-rich foods in the 24 hours preceding the survey; however, a 2013 baseline survey reported 20 to 40 percent, depending on age group and breastfeeding status. (UBOS and ICF 2012; ICF 2014).

In Uganda, iodized salt is widely available, and nearly all salt in households in Karamoja is iodized. However, almost one-fifth of households in the 2011 DHS survey in Karamoja did not have salt (UBOS and ICF 2012).

Child mortality and illness

Neonatal, infant, child, and under-5 mortality in Uganda improved in the decade between 2001 and 2011, although neonatal mortality only slightly. Although Karamoja experienced meaningful reductions in infant and under-5 mortality and a slight improvement in child mortality in the same period, it still has the highest rates of infant, child, and under-5 mortality in the country. The neonatal mortality rate is similar to the Ugandan average; however, it increased slightly from 2006 to 2011 and its worsening trend is of concern. There is also much room for improvement in coverage of prevention and treatment of child illness (Table 3).

Severe or frequent childhood illness, including diarrhea, measles, respiratory infections, and malaria, contribute to both wasting and stunting and likely play an important role in the nutrition

[13] The cited report does not include a specific age range. It is assumed to be 6–59 months, as that is the standard indicator for anemia.

[14] This represented an increase in prevalence from 2006 that was not completely understood, because vitamin A supplementation had increased. The 2011 Uganda DHS suggests that there may have been problems with the field collection, storage, and transport of samples and that there is not full confidence in these numbers.

situation in Karamoja, where more than three-quarters of children[15] suffered an illness in the two weeks before the June–July 2016 FSNA. Moroto, Nakapiripirit, and Kotido had higher rates of morbidity, while children in Amudat and Kaabong were relatively healthier, although well over half of children there suffered illness. The most commonly reported illnesses in June 2016 were fever/malaria (51 percent), diarrhea (12 percent), and acute respiratory infection (8 percent) (GOU et al. 2016b). As all of these may vary seasonally, it is worth noting that the December 2015 FSNA indicated a similar malaria prevalence of 46 percent, but much higher prevalences of acute respiratory infection (44 percent) and diarrhea (31 percent) (GOU et al. 2016a).

Karamoja has the highest prevalence of malaria in children under 5 in the country (more than double the national average) according to the 2014–2015 Malaria Indicators Survey. This is despite the fact that 95 percent of households in Karamoja own insecticide-treated nets and 85 percent of children under 5 reportedly sleep under them (UBOS and ICF 2015). The 2016 FSNA reported lower mosquito net use of 68 percent and noted that net use was particularly low in Moroto, Nakapiripirit, and Napak. Notably, Moroto also had the highest prevalence of fever/malaria, at 58 percent (GOU et al. 2016b). The majority of caregivers in Karamoja (82 percent) sought care for children with fever (UBOS and ICF 2015). Of concern, just over half of women of reproductive age in Karamoja knew that mosquito bites cause malaria, and more than half identified cold weather as a cause (UBOS and ICF 2015).

In the 2011 DHS, Karamoja had the second highest rate of children under 5 experiencing symptoms of acute respiratory infection. Prevalence peaked in children 6–11 months and is least common in children over age 3 (UBOS and ICF 2012; ICF 2014). Eighty-six percent of caregivers sought treatment for symptoms in children under 5, and 30 percent were given antibiotics (UBOS and ICF 2012).

In 2011, Karamoja reported a lower proportion of children with diarrhea (20 percent) than the national average, and a similar figure (22 percent) was found in the 2013 baseline survey (UBOS and ICF 2012; ICF 2014). In Karamoja, 93 percent of caregivers sought treatment for diarrhea in children, and 66 percent provided the recommended oral rehydration therapy and continued feeding compared with just 36 percent nationally (UBOS and ICF 2012).

The 2011 DHS indicated that about 62 percent of children 12–23 months in Karamoja were fully vaccinated — the second highest coverage in the country behind Kampala.[16] Ninety percent or more of children were given bacille Calmette-Guerin (BCG), DPT, and measles vaccines, with only 66 percent of children fully immunized against polio (UBOS and ICF 2012). The most recent FSNA shows 97 percent of children in Karamoja with full DPT 3 vaccination and just 82 percent with measles vaccination.[17]

[15] Although no age was reported, this is assumed to be children 0–59 months, as that would be the standard age range for these indicators.

[16] Fully vaccinated means one BCG, three doses of DPT, four doses polio, and one dose measles.

[17] Age range not noted in FSNA.

Table 3. Health Care Seeking for Prevention and Treatment of Child Illness

	Uganda (DHS 2011)	Karamoja (DHS 2011)
Immunization		
% of children 12–23 months who received all basic immunizations	51.6	62.2
Prevention and Treatment of Child Illness		
% of children under 5 with diarrhea for whom advice or treatment was sought from a healthy facility or provider	72.4	93
Among children under 5 who had diarrhea in the 2 weeks preceding the survey, % who received oral rehydration therapy	48.2	77.4
Among children under 5 who had diarrhea in the 2 weeks preceding the survey, % who received zinc supplements	1.9	1
% of children under 5 with fever for whom advice or treatment was sought from a health facility or provider[18]	82.0	81.6
% of children under 5 with acute respiratory infection for whom advice or treatment was sought from a health facility or provider	78.7	86
% of children under 5 who slept under a long-lasting insecticidal net the previous night[19]	74.2	84.8

2.3.3 WOMEN'S HEALTH AND NUTRITIONAL STATUS

Children's health and nutrition are closely tied to the health and well-being of their mothers, and women in Karamoja face a host of health and nutrition challenges. Low-quality diets and high workload contribute to high rates of undernutrition and anemia among women, which combined with high fertility and limited family planning likely contribute to the extremely high maternal mortality ratio in the sub-region. Many of these challenges are associated with low levels of education and pervasive poverty in Karamoja. More than 75 percent of women in Karamoja have no formal schooling and 88 percent cannot read, while 93 percent of households in Karamoja fall in Uganda's lowest wealth quintile (UBOS and ICF 2015). Altogether, this enables an intergenerational cycle of malnutrition to persist, with serious consequences for the health and well-being of Karamoja's children.

Women's nutritional status in Uganda, where 12 percent of women of reproductive age and 14 percent of adolescents 15–19 years old are underweight, has not noticeably improved in the past decade. Nutritional status has also been consistently poor in Karamoja, where various surveys over the past five years have reported that between one-fifth and one-third of women of reproductive age are too thin (Table 4). The 2011 DHS showed women in Karamoja to be almost three times as likely to be thin as the average Ugandan woman. Moroto and Napak Districts show even higher prevalences of underweight women (UBOS and ICF 2012; GOU et al. 2016a; GOU et al. 2016b; ICF 2014). This is aggravated by the fact that 43 percent of

[18] Data from UBOS and ICF International. 2015. *Malaria Indicators Survey.* Kampala, Uganda: UBOS.

[19] UBOS and ICF International. 2015. *Uganda Malaria Indicator Survey 2014-2015.* Kampala, Uganda, and Rockville, MD: UBOS and ICF International.

women of reproductive age in Karamoja were anemic in 2011—a significant improvement from 54 percent five years earlier but almost double the already high national prevalence. Yet, just 8 percent of pregnant women receive the required three doses of intermittent preventive treatment for malaria and only 2 percent of women in 2011 reported taking iron for 90 days or more during their previous pregnancy (UBOS and ICF 2012; UBOS and ICF 2015; ICF 2014). Dietary diversity is also poor, with women consuming an average of 2.3 of 9 food groups. Although almost all women consume grains, roots, and tubers and about half consume green, leafy vitamin A-rich vegetables, very few consume organ meat and eggs (ICF 2014).

Table 4. Maternal Health and Nutrition

	Uganda (DHS 2011)	Karamoja (DHS 2011)
Maternal mortality ratio (per 100,000 live births)	432	—
Marriage		
Median age at first union (of women 20–49 yrs)	18.1	18.4
% of women 15–49 yrs in a polygamous union	24.6	51.3
Fertility and Family Planning		
Total fertility rate (children per woman)	6.2	6.4
Number of ideal children as reported by women age 15–49 yrs	4.8	7.2
Median age at first birth (of women 20–49 yrs)	18.9	19.2
% of women 15–19 yrs who have begun childbearing by age 19	23.8	29.7
Median number of months since preceding births (of women 15–49)	30.2	27.5
% of currently married women 15–49 using any modern method of birth control	26.0	7.8
% of women in union reporting wanting to limit births	42.5	27.3
Pregnancy and Delivery Care		
% of pregnant women 15–49 receiving antenatal care from a skilled provider	95.4	98
% of pregnant women 15–49 attending 4 or more antenatal care visits	47.6	—
% of births delivered by a skilled provider	58.0	30.8
Anemia and Micronutrients		
% of women 15–49 who are anemic (non-pregnant <12.0g/Dl; pregnant < 11.0g/Dl)	23.0	43.3
% of women 15–49 reporting having taken iron supplements for more than 90 days during their last pregnancy	3.9	2.0
% of women 15-49 reporting having taken deworming supplements during their last pregnancy	49.9	43.1

	Uganda (DHS 2011)	Karamoja (DHS 2011)
% of pregnant women 15–49 who slept under a long-lasting insecticidal net the previous night[20]	75.4	87.8
% of women 15–49 who gave birth in the preceding 2 years who reported receiving 2 doses of intermittent preventive treatment of malaria[21]	45.2	15.8
% of women living in houses with iodized salt (among women with a child born in the previous 5 years)	99	99.5

Uganda has the highest total fertility rate in East and Southern Africa at 6.2 live births per woman, and the rate in Karamoja is slightly higher at 6.4. Karamoja also has a higher rate of teenage pregnancy than most other parts of Uganda (UBOS and ICF 2012; GOU 2015b). Although women are starting to marry, engage in sex, and have their first child later in life, almost one-quarter of girls age 15–19 in Uganda are pregnant or already mothers, which increases to 30 percent in Karamoja; in addition, just 56 percent of births in Uganda are planned. Although family planning use has increased in Uganda as a whole, it is not commonly practiced in Karamoja, where in 2011 92 percent of women were not using any family planning method (UBOS and ICF 2012) and less than half of women knew how to access family planning services (ICF 2014). More challenging are the cultural barriers to family planning that will likely require extensive time to overcome and are a priority in the Karamoja Multi-Sectoral Nutrition Strategy (GOU and UNICEF 2015a).

Uganda fell short of achieving its MDG of reducing the maternal mortality ratio by three-quarters; the maternal mortality ratio was 438 per 100,000 live births in 2011, showing no improvement from 2006 and no significant improvement from 2001[22] (UBOS and ICF 2012; MOFPED 2015a). Other estimates have indicated a slow and steady decrease over the MDG period and a maternal mortality ratio of 343 per 100,000 live births in 2015, which is still exceptionally high (WHO et al. 2015). Although region-specific data are not available in the DHS, UNICEF reports a much higher, and alarming, maternal mortality ratio in Karamoja of 750 per 100,000 live births (GOU and UNICEF 2015a). The vast majority of women in Karamoja (96 to 98 percent) receive at least one antenatal session from a skilled provider, although only 60 percent receive all four visits (UBOS and ICF 2012; ICF 2014). Use of skilled birth attendants is the lowest in the country (31 percent), and just 27 percent of children are delivered in a facility (UBOS and ICF 2012).

2.3.4 WATER, SANITATION, AND HYGIENE

Poor WASH is an important contributor to undernutrition through increased risk of diarrhea, which increases nutritional needs while simultaneously suppressing appetite and nutrient absorption; intestinal worm infection, which impairs appetite and nutrient absorption; and environmental enteric dysfunction, which is inflammation of the intestines caused by chronic exposure to environmental pathogens that hinders nutrient absorption and has been linked to

[20] UBOS and ICF International. 2015. *Uganda Malaria Indicator Survey 2014-2015.* Kampala, Uganda, and Rockville, MD: UBOS and ICF International.
[21] UBOS and ICF International. 2015. *Uganda Malaria Indicator Survey 2014-2015.* Kampala, Uganda, and Rockville, MD: UBOS and ICF International.
[22] The 2001 and 2006 maternal mortality ratios reported in the Uganda DHS were 524 and 418 per 100,000 live births, respectively, compared with 438 per 100,000 live births in 2011. Confidence intervals overlapped among the three surveys, indicating that the differences were not statistically significant.

poor growth. Meanwhile, malnutrition weakens the immune system, making a child more susceptible to the pathogens present in an unhygienic environment (WHO et al. 2015). Weak WASH infrastructure, management capacity, and practices across the sub-region increase the nutritional risk of Karamoja's population (Table 5).

Table 5. Water, Sanitation, and Hygiene

	% households with access to improved sanitation (GOU et al. 2016a)	**% households with open defecation as primary method** (GOU et al. 2016b)	**% households with access to improved water source** (GOU et al. 2016b)	**% households that treat water** (GOU et al. 2016a)	**Average water access (liters/person/day) (approximate)** (GOU et al. 2016a)	**% households with hand-washing stations** (UBOS and ICF 2012)	**% hand-washing stations with soap and water** (UBOS and ICF 2012)
Abim	21	28	97	4.6	20	—	—
Amudat	12	90	48	2.0	8.5	—	—
Kaabong	10	44	76	26.4	6	—	—
Kotido	8	81	94	4.9	8.7	—	—
Moroto	7	85	92	13.0	8.5	—	—
Nakapiripirit	20	65	82	5.8	12	—	—
Napak	10	70	89	9.6	6	—	—
Karamoja	13	65	83	9.5	10.2	12.5	1.6
Uganda (UBOS and ICF 2012)	16.4	—	70.3	46.8	—	29	27

Karamoja's WASH challenges include limited access to functioning water and sanitation infrastructure, low capacity to maintain a functioning system, and household and individual beliefs and practices. Although there is a relatively high number of water points in Karamoja, pump breakdowns and distance to water sources limit water access and force people to use unsafe sources like unprotected streams, rivers, and ponds (MOFPED and UNICEF 2015b; ICF 2014). On average, water collection in Karamoja takes 1 to 2 hours, and women and girls fetching water have been at risk of violence, although this may be improving (UBOS 2014; ICF 2014; Howe 2016). Fewer than 10 percent of households treat their water, which can be contaminated during transport and storage, and availability of water is lower than the Sphere-standard recommendation of 15 liters per person per day, which limits the ability to maintain hygiene (GOU et al. 2016a; ICF 2014). There is limited capacity within government and water user committees to set up and manage sustainable systems, and there are few qualified hand-pump mechanics and limited access to parts locally. Water fees, essential for sustaining a functioning system, can be a barrier to access for the poorest. In addition, lack of trust between communities, committees, and government undermines fee collection and the overall system as well.

Karamoja has the worst access to improved sanitation in Uganda (13 percent of households), and 69 percent of households have no toilet at all. Entrenched customs of open defecation, which is practiced by 66 percent of the population, have been challenging to overcome despite strong awareness and promotion of latrine use (ICF 2014; RWANU 2013; UBOS 2016; UBOS 2014; GOU 2015). Where there are latrines, non-functional and smelly/dirty latrines can discourage use, as can insecurity and distance to latrines. Perceived high cost and limited access to materials have been seen as barriers to latrine construction. Awareness of the need to wash hands with soap/ash is relatively high and messages are known, but practice is low and handwashing stations with soap/ash are not commonly available in households (CHC 2016; Fernandes 2013; ICF 2014; World Vision/Uganda 2013; UBOS 2014). There is limited information available on food safety/hygiene practices, which are important for disease prevention, and on menstrual hygiene, which can help keep adolescent girls in school.

2.3.5 HEALTH CARE SYSTEM AND ACCESS

Karamoja suffers from understaffed and otherwise under-resourced health centers and limited capacity of village health teams (VHTs) at the community level. This reduces access to quality health care and increases the risks of poor health outcomes in the sub-region.

The Uganda health system is decentralized. Local district leadership manages district hospitals, health centers, and VHTs and reports data to the national level. National hospitals are managed centrally.[23] To create lasting improvement in health and nutrition in Karamoja, this system must be functional, with accessible, well-supplied, and operational facilities; sufficient and qualified health workers who provide dependable, high-quality services; adequate financing; and adequate data for informed decision making.

In 2014, the average walking distance to a health facility in Uganda was 3.2 km, within the Ministry of Health's goal of 5 km (UBOS 2014). However, distance varies. For example, in Napak and Moroto districts, only 59 percent and 49 percent of households, respectively, are within 5 km (Wilunda et al. 2014), and the current development food security activities in Karamoja explicitly target food distribution and outreach to communities farther than 5 km from a health center. Even nearby facilities don't always provide needed services, forcing people to travel farther (Wilunda et al. 2014; Mercy Corps 2013c). Infrastructure quality varies, and some facilities lack electricity or toilets (Mercy Corps 2013c). Stock-outs of key medicines are common, further limiting the ability to provide adequate care (MOFPED and UNICEF 2015a).

Inadequate staffing has afflicted the Ugandan health system for years. A hiring push in 2012 increased staffing to 73 percent. However, the hiring was not evenly spread and health center IIs, which are in more rural areas, and facilities in the Amudat and Kaabong districts were under 50 percent staffed in 2014. Abim and Kotido were the only Karamoja districts with more than 60 percent of health worker positions filled (MOH 2015). The quality of services at facilities also varies; a 2013 assessment in northern Karamoja found long wait times, incomplete assessments, clients being treated by underqualified staff, and limited counseling. However, the majority of clients were diagnosed and treated according to national guidelines (Mercy Corps 2013c). Male and female VHTs— often clients' first contact with the health system—have low education and literacy rates, hindering capacity. A 2013 VHT functionality assessment in northern Karamoja indicated that the majority of VHTs have not completed primary school, and

[23] The health system includes national referral hospitals and regional referral hospitals, which are managed centrally district hospitals.

36 percent have no formal education. Although most northern Karamoja VHTs received initial and follow-up training, the quality and frequency of supervision were lacking, and community involvement with VHTs varies. In addition, many VHTs are not clear on all of their expected duties and struggle with reporting and documentation (World Vision/Uganda 2013).

Public health spending has increased nationally in Uganda since 2003, yet was still just 1.2 percent of gross domestic product in 2013 and 8.7 percent of total government expenditure in 2014 (compared to a target of 9.8 percent). Per-capita public health expenditure is US$12 (MOH 2015; MOFPED 2015c). In addition, households across the economic spectrum are bearing a higher financial burden for health care than they did 10 years ago, up to 70 percent of the cost (MOFPED 2015c).

2.3.6 NUTRITION AND GOVERNANCE

Important steps are being taken to strengthen nutrition governance and coordination throughout Uganda, including in Karamoja. This is being done at the local level to ensure that districts establish nutrition objectives, incorporate nutrition activities into their annual work plans, and allocate resources, so that nutrition activities are coordinated across sectors and partners. However, this effort is in the early stages, and external support is required to build sustained capacity to plan and implement nutrition programs.

Several policy documents in Uganda have highlighted the importance of nutrition. The Uganda Nutrition Action Plan emphasizes strong nutrition governance to plan and coordinate nutrition at national, district, and community levels. At the district level, district nutrition coordination committees (DNCCs), composed of representatives of various sectors, are expected to ensure that multi-sectoral nutrition activities take place within districts by developing district nutrition action plans; integrating nutrition into district development plans, creating nutrition-inclusive annual work plans, and budgets; and seeking resources to implement and monitor nutrition-sensitive and nutrition-specific interventions. The DNCCs also coordinate implementing partner contributions, to effectively leverage resources and avoid duplication or conflict. Coordination is an ongoing challenge, and structures to coordinate partners are needed. DNCCs do exist in Karamoja, but they are in nascent stages.

2.3.7 GENDER, HEALTH, AND NUTRITION

As noted above, gender issues are an ongoing challenge in Uganda and are reflected in disparities in women's and men's education, literacy levels, earnings, and decision-making power as well as in a high prevalence of polygamy, high fertility rates, and violence against women. These disparities have implications for the health and well-being of women, children, and families in Karamoja.

In Karamoja, women hold primary responsibility for household duties and child care, and they work more hours than men (World Vision n.d). Women in Karamoja report more involvement in decisions regarding their own health care, household purchases, and visits to friends and relatives than their counterparts in other areas of Uganda (UBOS and ICF 2012); this does not extend to all decisions, as women report secretly accessing family planning, to which their husbands frequently do not consent (Howe et al. 2013). Also of note, 51 percent of women in Karamoja are in a polygamous relationship, compared with 25 percent of women nationally (UBOS and ICF 2012). This contributes to the high rates of household poverty, since limited resources are divided among multiple households (Ellis et al. 2006).

Women's educational status is associated with improved child-care practices, reduced stunting, and ability to benefit from interventions to improve nutrition (Black 2013). Across Uganda, women have fewer years of schooling and lower literacy rates than men. However, in Karamoja, education of women is almost non-existent (Table 5 in the Annex section). The vast majority (74 percent) of women of reproductive age in Karamoja have never attended school, and 88 percent cannot read at all (GOU et al. 2016b). The low education levels and illiteracy are the primary drivers of the high vulnerability of adolescent girls in Karamoja, which has the highest proportion of vulnerable girls in the country, according to the Adolescent Girls Multilevel Vulnerability Index.[24] Improving their access to education and economic power would be a key step in improving health and development in Karamoja (Amin et al. 2013).

As discussed in Section 1, domestic violence, particularly intimate partner violence perpetrated against women, is a widespread problem in Karamoja and is likely compromising women's physical and mental health and their ability to care for themselves and their children (Yount et al. 2011). Intimate partner violence has been associated with increased risk of physical and mental health problems for the victim, including injury, depression, chronic pain, and gastrointestinal symptoms associated with stress (Campbell 2003). Evidence is also emerging that children's health and nutritional status is compromised when their mother suffers abuse. Recent analyses of DHS surveys in Liberia, Bangladesh, Kenya, Malawi, and Honduras found associations between intimate partner violence and child nutritional status, including increased odds of child stunting (Liberia, Bangladesh, Kenya, Malawi, and Honduras) and underweight (Liberia). Associations were also found between intimate partner violence and under-2 mortality (Kenya, Malawi, and Honduras) (Rico et al. 2010; Ziaei et al. 2012; Sobkoviak et al. 2011), and a study in Mbale, Uganda, found an association between intimate partner violence and child diarrhea, fever, and acute respiratory infection symptoms (Karamagi et al. 2003).

Gender norms also influence day-to-day household operations, and some programmatic research has indicated that food allocation in Karamoja favors the father/husband, followed by older sons, older daughters, and smaller children, with the wife/mother eating last. However, during food shortages, things may be done differently, either prioritizing vulnerable younger children along with husbands/fathers or providing smaller amounts to everyone. Women may go without food in these circumstances (Howe 2013). A baseline survey of male change agents (MCAs) (discussed later in this document) discovered that they were less aware of key health practices than their wives.

2.3.8 HIV

In 2011, 7.3 percent of adults 15-49 years of age in Uganda were HIV-positive, a slight increase from 2004–05 when 6.4 percent were HIV-positive. In North East Uganda, which includes but is not limited to the Karamoja sub-region, the prevalence of HIV was 5.3 percent, which is an increase from the 2004–05 prevalence of 3.5 percent. Among ethnic groups surveyed, the Karimojong ethnic group had the lowest prevalence, at 3.4 percent, which was also higher than the 1.7 percent recorded in 2004–05 (MOH 2011). These data suggest that the proportion of people living with HIV in Karamoja has increased. Whether this is due to higher transmission or people living longer due to improved access to treatment, care, and support is unclear.

[24] This vulnerability index looks at whether girls are deprived in three dimensions: individual (vulnerable if experiencing one deprivation), household (vulnerable if experiencing two of three deprivations), and community (vulnerable if experiencing one of three deprivations). Indicators used to construct the index were specific to age groups 10–14 years and 15–19 years. A girl is extremely vulnerable if she is considered deprived in all three dimensions.

3. LESSONS LEARNED

USAID's development assistance to Uganda (summarized in Table 3 in Annex section) spans a broad range of sectors and complementary approaches (USAID 2016b). USAID funds agricultural development programs through the Feed the Future Initiative, to reduce food insecurity and increase household incomes. Economic growth and trade programs strengthen the capacity of private-sector entities to compete in national, regional, and global markets and create an enabling environment for business. Education programs build the capacity of the GOU to provide quality education, with a focus on girls, vulnerable children, and children in conflict-affected areas. USAID's global climate change and environment programming falls under the Global Climate Change Initiative, and aims to build GOU capacity to protect natural resources in a way that boosts agricultural production and tourism. USAID's interventions in democracy, human rights, and governance focus on supporting free and fair elections, GOU capacity strengthening (at national and local levels), civil society strengthening, and anti-corruption efforts. USAID's efforts in global health fall under the Global Health Initiative, and include immunization, nutritional assistance, anti-malaria interventions, health system strengthening, and efforts against HIV/AIDS. USAID also conducts conflict mitigation and reconciliation in post-conflict northern Uganda as well as USAID/FFP-funded activities in Karamoja in northeast Uganda.

FFP supports two development food security activities in Uganda. These projects started in 2012 and will continue until 2017, and are led by Mercy Corps in Northern Karamoja and ACDI/VOCA in Southern Karamoja. The projects' strategic objectives and activities are summarized in Box 2. The GHG is a US$53 million, five-year FFP development food security activity being implemented by Mercy Corps with partners World Vision, Tufts University, and Kaabong Peace and Development Agency (Mercy Corps 2012; Mercy Corps 2013d). The goal of GHG is to improve peace and food security in Karamoja. The project has activities related to strengthening livelihoods, improving nutritional status, and reducing the incidence of conflict. Cross-cutting areas are gender and youth. GHG aims to reach more than 304,000 people during the life of the project (Mercy Corps 2012).

The RWANU Project is a US$50 million, five-year FFP development food security activity being implemented by ACDI/VOCA with partners Concern Worldwide and Welthungerhilfe. The goal of RWANU is to reduce food insecurity among vulnerable people in South Karamoja (ACDI/VOCA 2016). RWANU includes activities related to improving food production, market access, access to credit, improving health and nutrition, and addressing issues with WASH. Three cross-cutting issues are gender, conflict mitigation, and disaster risk reduction/natural resource management. RWANU aims to reach more than 269,500 people during the life of the project (ICF 2014).

Methods for identifying key lessons learned. The lessons learned presented here are informed by a comprehensive review of each project's design, implementation, and monitoring documents (including quarterly reports, annual reports, and complementary materials), as well as by in-depth interviews with key staff from each project. These lessons are not exhaustive of the learning associated with each project, but rather emphasize key findings across the projects consulted. The lessons presented cover general project design, followed by specific intervention areas: availability/accessibility, MCHN/WASH, and gender. Each set of lessons includes an overview of activities related to a specific topic synthesized from the two FFP projects assessed and a text box with pertinent lessons learned.

BOX 2. STRATEGIC OBJECTIVES AND ACTIVITIES OF FFP-SUPPORTED PROGRAMS IN KARAMOJA, UGANDA

Summary of Strategic Objectives and Activities for Mercy Corps' GHG Project in Northern Karamoja, Uganda

Strategic Objective (SO) 1: Livelihoods Strengthened
- Intermediate Result (IR) 1.1: Improved productivity and market access among male and female agriculturalists, agro-pastoralists, and pastoralists
- IR 1.2: Business investment environment stabilized

SO 2: Nutritional Status among Children under Five Improved
- IR 2.1: Access to quality maternal and child health care improved
- IR 2.2: Increased consumption of nutritious foods for households
- IR 2.3: Reduced incidences of diarrheal diseases among children

SO 3: Reduced Incidences of Armed Conflict
- IR 3.1: Local conflict prevention and management systems strengthened
- IR 3.2: Constructive male and female youth engagement in peace and development initiatives enhanced

Cross-Cutting Objective (CC) 1: Gender

Source: Mercy Corps

Summary of Strategic Objectives and Activities for ACDI/VOCA's RWANU Project in Southern Karamoja, Uganda

SO 1: Improved access to food for men and women
- IR 1.1: Improved smallholder farm management practices adopted
- IR 1.2: Improved smallholder livestock management practices adopted
- IR 1.3: Increased linkages to markets
- IR 1.4: Increased access to credit

SO 2: Reduced malnutrition in pregnant and lactating mothers and children under 5
- IR 2.1: Improved health and nutrition practices at the household level
- IR 2.2: Improved service delivery for prevention and treatment of maternal and child illnesses and nutrition

CC 1: Gender
CC 2: Conflict mitigation
CC 3: Disaster risk reduction and natural resource management

Source: ACDI/VOCA

3.1 CROSS-CUTTING PROJECT LESSONS LEARNED

3.1.1 PROJECT SCALE AND FLEXIBILITY

The current FFP development food security activities in Karamoja demonstrated a high degree of flexibility and adaptability in response to disruptive events (e.g., delays in procurement and approvals, GOU quarantine policies related to animal disease epidemics, political events linked to the 2016 election season), low development and capacity (e.g., constraints to internal management and technical capability of local partners, recurring demands for development interventions by the GOU that were not included in the project proposals), and ongoing sociocultural and economic shifts (e.g., disarmament, dissolution of protected kraals and resumption of traditional migration, changes in gender norms and roles and expectations of youth). The FFP development activities adapted to these challenges by modifying or delaying project activities as needed, building more capacity strengthening of local partners into the projects, and adopting flexible management approaches. Frequent rapid community-level assessments and ongoing dialogue with GOU and other stakeholders were used to analyze changing conditions, draw conclusions, and adjust program implementation strategies.

Awardees expanded the role and scope of monitoring and evaluation (M&E) activities to include regular review sessions and stakeholder/partner consultations focused on introducing new information into plans and, where necessary, modifying activities. To facilitate this, annual work plans outlined general (rather than specific and fixed) activities and were reviewed/revised quarterly. Additional M&E staff were recruited to handle all the projects' research, as it was recognized that the M&E staff were important to the fulfillment of research objectives and integration of SOs, since they were collecting data for the projects' indicator performance tracking tables and annual routine reporting requirements to the donor. Staff were empowered to be curious and collaborative, and were trained in research methods, including participatory field research methods, to ensure quality of quantitative and qualitative data collected and compliance with M&E protocols and standards. Awardees also aimed to learn from similar initiatives in pastoral areas in the region, such as the East Africa Dairy Development Project in Uganda, Kenya, and Tanzania; the Pastoral Areas Resilience Improvement through Market Expansion Project in Ethiopia; and the Northern Rangelands Trust in Kenya.

The FFP development activities' beneficiary-facing M&E tools were tailored for very low literacy and numeracy, as most people in Karamoja are illiterate in their native languages and English. Similar to social and behavior change communication (SBCC) materials, these M&E tools had to rely as much on pictures as possible. When M&E systems determined that a change in project design or implementation was needed, the awardees sometimes had to strengthen their own capacity to find a solution. For example, one awardee found that it had to learn more about addressing barriers to market access for the extreme poor, so it invited in the organization BRAC so it could learn about BRAC's work in microfinance programming using a graduation approach.

Lessons Learned:

- Because of Karamoja's very low level of development, beneficiary households often lacked the knowledge, skills, finances, and risk tolerance to be able to take advantage of market-based project activities. Public, private, and community actors/institutions required fundamental capacity strengthening before they could engage in project activities as planned.
- Because institutional capacity in Karamoja is extremely low, a portion of M&E activities fed into assessments of agency and consortium capacities vis-à-vis project needs. It was necessary to use M&E resources to conduct assessments of internal capacity (among awardees and partners) and engage resource organizations as needed.
- Based upon a flexible management approach, the projects continually built on new information and experiences to improve program design and implementation. This was critical to success in Karamoja, where the projects were amended substantially based on new information about changes in the conflict, livestock, and livelihoods environments.
- Flexible management approaches required greater investments of time, human, and financial resources, staff training, and M&E resources than would have been required if the awardees were simply implementing from a fixed, pre-defined work plan. These resources needed to be accounted for in project planning and budgeting. Flexible management also involved developing contingency plans for how project delays and interruptions would be managed.
- On numerous occasions, district government officials requested project support for activities, such as construction of school and clinic infrastructure, which would not have otherwise been funded and for which the absence would have constrained development. The awardees found that agreeing to these requests, where the work accorded with project objectives and resources, strengthened the partnership between the project and district government partners across all project activities.
- The scope of M&E-related activities was expanded beyond collection of data for routine donor and internal reporting, to encompass rapid, iterative participatory research and analysis of the impact of changing conditions on project design, implementation, and the project's ability to meet its objectives and targets on time. Technical and M&E staff needed skills in research and inquiry techniques, which facilitated collection of required data without excessive delays or interruptions to project activities.
- Tailoring M&E tools that engage project beneficiaries for very low literacy and numeracy levels across the project boosted the accuracy of project monitoring.

3.1.2 INTEGRATION OF PROJECT ACTIVITIES

Integration of project activities aims to avoid the program gaps and inefficiencies that can arise when project design and implementation are stovepiped, typically by sector or SO. Both awardees took concrete steps to boost integration of project activities across SOs. They did this by holding regular meetings for dialogue and collaboration among SO staff, encouraging SO staff to support one another's implementation and M&E activities, co-locating field staff

associated with different SOs in the same offices, developing work plans together, and developing joint SBCC messages. Because many activities related to production, livelihoods, MCHN, and WASH for women specifically, the projects took care to consider women's availability and other time obligations.

Lessons Learned:

- Integration of project activities was achieved by a number of strategies, including ensuring that all staff share an understanding of the project's purpose; co-locating SO staff in field offices; conducting regular (weekly and quarterly) open dialogues among SO staff; joint (across-SO) planning, monitoring, review, and field oversight; joint training; and collaboration in implementation.
- Integration of project activities was further supported by training all staff in the linkages among SOs, so they understand how their activities contribute to the project's goals within the project's theory of change; encouraging them to identify opportunities for cross-fertilization among SOs and cross-cutting issues (e.g., gender); and establishing an organizational culture in which staff are empowered to share their questions and insights and to consider one another's views.
- The awardees strived to avoid inefficiencies and overburdening target beneficiaries in terms of time and effort, such as mother care groups (MCGs) that may be targeted for farming/gardening interventions, WASH initiatives, savings and credit activities, and MCHN messaging. For example, one awardee delivered radio programs about agriculture to MCGs that shared a radio and also received SBCC messaging about MCHN topics during their regular gatherings.

3.1.3 TARGETING

The FFP development activities targeted highly food insecure populations in Karamoja, who had suffered repeated years of drought, high food prices, and conflict. In terms of geographic targeting, all seven districts of the sub-region were subsumed under the two projects: one project covered the three northern districts, and the other covered the four southern districts. Villages were initially selected for program inclusion based upon a review of available secondary data, and further data were collected during the integrated baseline assessment.

Like predominantly agricultural societies, traditional pastoral societies have substantial internal socioeconomic variability, which is evident in inter-household variation in livestock holdings. The extent to which drastic livestock losses in recent years were equally distributed or disproportionately concentrated among poor households is not yet known. The very poor and poor households targeted by the projects have low literacy and numeracy rates, few or no livestock, no access to formal credit, and insecure access to income and employment.

The ethnic groups of Karamoja share complex relationships of interdependence, alliances, rivalries, and inter-marriage. The Jie, Dodoth, Tepeth, Pian, and other ethnic groups of the sub-region have geographically discrete homelands but have long negotiated access to one another's territories for grazing areas and water sources. An integrated baseline assessment provided a comparable picture of vulnerability and needs across targeted villages in the sub-region. Community targeting reflected a conflict sensitivity, in that the two projects collectively implemented activities across all of the sub-region's seven districts; across the predominantly

agricultural, agro-pastoral, and pastoral areas; and across communities with varying degrees of rivalry and conflict. Before approaching communities, the projects partnered with local government and elders.

The FFP development activities modified the roles of project staff who specialized in mainstreaming gender and other cross-cutting issues of vulnerability. Gender-focused staff were charged with mainstreaming gender across all project activities. Staff were added to focus on youth and vulnerable populations. Women were actively targeted for MCHN, WASH, agriculture, livestock, and finance/savings activities. Youth were engaged in those same activities as well as youth-focused interventions such as grants for on- and off-farm income-generating activities.

Lessons Learned:

- Understanding local traditional authority systems, official GOU authority/governance systems (from LC V down to LC 1), and the interactions among traditional and GOU authorities was essential to project success in Karamoja. Conflict resolution over land, livestock, SGBV, and other issues often required collaboration among customary authorities (e.g., elders) and GOU entities (e.g., police, district government, and military), and supporting successful collaborative actions required an understanding of the strengths, constraints, and expectations of each actor in a rapidly evolving context.
- The FFP development activities found that the people of Karamoja are often at a disadvantage when interacting with outsiders (such as urban traders or business owners): they are often ill-prepared to capitalize on market-based activities, and they encounter anti-pastoral cultural prejudice from outsiders.
- In this complex, conflict-affected agro-pastoral environment, conflict sensitivity entailed being sensitive to equity and perceptions of equity in targeting among numerous groups: among ethnic groups; between farmers and herders; among age groups such as elders and youth; and between men and women.
- Although Karamoja's districts are broadly characterized as agricultural, agropastoral, or pastoral, it was necessary to identify microeconomies that might have jeopardized the potential success of the projects. For example, where localized mining employment was available, the lucrative nature of that work drew interest and labor away from the projects' agricultural activities.
- The very poor and most vulnerable households often lacked the assets, savings, financial skills, social networks, knowledge, numeracy, and literacy needed to take advantage of markets-based interventions. The very poor required direct targeting (e.g., through vouchers for improved seeds promoted by the projects) and more intensive support to be able to benefit from project activities.
- Appointment of gender teams helped mainstream gender across all project activities, but other vulnerability issues needed similar dedication of staff resources, especially youth and HIV.
- Through acknowledging and respecting the roles of elders and men in Karamoja's society, the projects were able to provide services to target groups such as women and youth, as well as to engage elders and men as successful change agents in their communities. The projects found that elders and men were often more open to social change than might have been expected.

- There is increasing overlap in men and women's roles in terms of socioeconomic activities in Karamoja. Men are engaging in granary construction, agricultural tasks, and horticultural activities because of the decline in livestock holdings and herding opportunities as well as because of the increasing financial returns from agriculture. Men are also increasingly seen doing chores around the household and caring for their children, which would have been uncommon in traditional society. Women are increasingly investing funds in income-generating activities such as raising poultry and goats, not just using the funds for household necessities. Although women are an important target group for livelihoods activities, targeting only women for livestock products, as done by one awardee, resulted in some men wanting to undermine women's ownership of livestock, so including both men and women in project activities can avoid this pitfall.
- Targeting youth helped them to be more involved in their community and engaged with local government in positive ways, which enabled them to voice grievances and become change agents on issues most important to them, such as bride price, alcoholism, and lack of employment. Engaging youth served to counter antisocial or criminal behavior among disenfranchised youth—a growing public health problem.

3.1.4 STAFF RECRUITMENT AND RETENTION

Staff recruitment and retention is extremely challenging in Karamoja. Because of the sub-region's remoteness, harsh climate, poor telecommunications, low levels of development and technology, history of conflict, and cultural challenges, international and Ugandan staff consider Karamoja a hardship post. The FFP development activities in Karamoja experienced substantial staff turnover at all levels. Project staff observed that expats will generally only spend two or three years in the field before relocating, and Ugandan staff from Karamoja and other areas often aim to develop their skills and then leave the sub-region.

Lessons Learned:

- FFP development activities' human resources systems and procedures in Karamoja needed to be capable of managing high turnover, and of recruiting and orienting new staff quickly (every two to three years). One awardee noted the value of rotating its country staff in and out of Karamoja within one to three years, to retain staff trained in the agency's procedures without risking staff loss due to burnout.
- Recruitment in Karamoja needed to prioritize individuals with the temperament, skills, and other qualities needed to thrive in projects where an adaptive management approach is used. Staff needed to be able to work independently under challenging conditions (and without the anti-pastoralism bias sometimes found in the culture of urban Uganda), to adapt based on regular structured inquiry, and to share information openly and collaboratively with the rest of the project team and communities.
- Because local capacity is so low, training local staff to bring them up to the desired technical capacity required more time and more financial and supervisory resources than originally planned and budgeted.

3.1.5 SOCIAL AND BEHAVIOR CHANGE ACTIVITIES AND PROJECT COMMUNICATION

The awardees conducted SBCC on many topics, such as SGBV, gender norms, economic activities, infant and young child feeding, sanitation, hygiene, crop and livestock practices, savings and finance, use of energy-efficient stoves, and income-generating activities. The projects used many strategies to conduct SBCC, including through farmer's and women's groups, public- and private-sector extension agents, radio, and drama. Engagement of MCAs catalyzed male buy-in of SBCC messages. The projects found that men were often very willing to accept and act on the project messages and new sociocultural norms. SBCC activities were always presented to elders first, to secure their support and hear their concerns about key messages.

Regarding SGBV, from a Western perspective, Karamoja's social norms are insensitive to women's rights. Violence against women is endemic, and when women report the violence, they may well be punished by village elders along with the offender. Additionally, the forced marriage of girls to older men is culturally sanctioned and practiced. Although the FFP development activities focused on food security and nutrition, they recognized that violence against women may be both a cause and consequence of food insecurity and poor nutrition in women. The projects were exceedingly careful to conduct SBCC and other activities in a way that it did not increase the risk of violence against women and girls in the community.

Alcohol use cannot be disentangled from violence in Karamoja. Women often report that alcohol was a triggering factor in domestic violence. Elders also report that idle youth abuse alcohol—often gin produced outside of the sub-region rather than locally produced beer—and then commit crimes such as petty theft or sexual violence. Communities are increasingly recognizing alcohol abuse and associated violence as a public health problem. The hard liquor (gin) that is often blamed for alcohol abuse has been banned in some areas, and social pressure on men and youth increasingly discourages consumption of it. Awardees did not have activities explicitly focused on changing alcohol consumption, but such consumption was raised by women as an important issue.

Both projects used radio-based programming in agriculture, livestock, market information, maternal and child health, and other areas. The projects conducted capacity strengthening with newly established radio organizations, conducted interventions to increase availability of and access to locally appropriate radios, and developed a programming schedule around the target beneficiaries' activities (e.g., during MCG meetings) so that beneficiaries could listen in groups.

A host of practices related to infant and young child feeding, health-seeking behavior, WASH, family planning, and gender equity are being promoted as part of the FFP development food security activities in Karamoja. Approaches include MCGs, MCAs, drama groups, community dialogue and education, and training of health system personnel including VHTs and health facility staff.

The central social and behavior change (SBC) effort of both projects was the MCG model, which was widely popular and had high levels of recruitment and participation. In this model, leader mothers are recruited from the community and trained together in small groups according to an established curriculum. The leader mothers conduct household visits with their peers and disseminate the information learned in their training. Peer mothers and children may be at any stage in the life cycle, and some of the messages will be directly relevant while others may be less so. In one project, leader mothers were trained and supervised by local VHTs; the other project used project-paid health promoters to train and supervise the leader mothers.

Recognizing the need to more directly involve men, both projects have adopted the MCA model, which encourages men to examine their gender relationships and household roles and promote positive change. Elected by the community, MCAs participate in training and mentorship in which they identify and try to practice new behaviors. Based on their experience, they engage other men in dialogue to promote behavior change. Evaluations of the MCG and MCA approaches in Karamoja are not yet available. Lessons learned below focus on project learning and experience, rather than behavior change outcomes.

Lessons Learned:

- Irrespective of who the target audience for the SBCC messages is, awardees found it helpful to mobilize the elders, men, and others who influence household and individual behaviors to get them on board, not just as recipients of messages but as central advocates for change.
- Formative research provided a nuanced and local understanding of the context, culture, and barriers and facilitators of change, which helped to ensure that materials and messages were appropriate to their target audience. Gender relations and women's time/responsibilities were identified as an issue with significant bearing on the success of the SBCC component of the program.
- Tremendous economic change can create social crises that place women at greater risk of violence. Broad changes and trends in SGBV can be monitored through community-level qualitative research, to identify changes in risks that primarily women and girls face, and to capture potential unintended effects of project activities.
- Because of the cultural diversity and very low literacy and numeracy among the people of Karamoja, awardees needed to adapt SBCC tools and materials several times to ensure that they were appropriate. This included using a lot of pictures; ensuring pictures used reflect the preferences of a given ethnicity, tribe or culture; no text or limited text in local language; locally relevant story lines; and repeated reinforcement of messages. This also required more intensive supervision of the VHTs.
- Radio programming presented advantages for reaching dispersed populations, but projects discovered that additional effort may be required to ensure that target beneficiaries have access to radios at the right time and that the programming meets their needs. Target beneficiaries may not have radios or may be busy seeking economic opportunities at the time programming is provided. Developing the programming schedule around target beneficiaries' activities—such as during meetings of MCGs—may enable more target beneficiaries to listen to programs. It may be necessary to increase the number of radios in the community through a market-based supply-side intervention.
- MCGs were popular with the communities, and their extensive volunteer network helped achieve a high level of program coverage. Establishing and training MCGs took place over a few years and was a continual process, requiring time to develop good-quality curricula and materials, recruit leader mothers, and train them in individual topics.
- One project chose for MCGs to be supervised by VHTs, which integrated the MCG approach into the existing health system and may promote sustainability.

However, the very low capacity of VHTs can affect the quality of the training and supervision leader mothers receive. The other project used paid health promoters, who are project staff and provided higher-quality training and supervision. However, it is unclear if they will be able to continue after projects exit.

- Seasonal migration and travel challenges during the rainy season affected MCG attendance for months at a time, disrupting training of leader mothers and visits with their peer groups. To cope with this, refresher trainings were held for mothers upon their return, adopting a different training schedule or finding other ways to support their caseload.

3.1.6 CONFLICT

The FFP development activities experienced a large shift in the conflict context, from a focus on large-scale armed cattle raiding to petty criminality, conflict over land, and SGBV. These changes required tremendous adaptability on the part of the projects. Scopes of work of local partners were changed to expand the types of conflict issues addressed by the project, and additional local partners were engaged to address land-related conflict specifically. Land sharing, resource sharing, and trade relationships can be focal points for mutually beneficial interdependence among groups that are otherwise in conflict. The awardees undertook research into land use dynamics to help support the reestablishment of land and water sharing agreements.

The election season of 2016 also presented potential conflict flashpoints. The projects canceled or delayed commodity distributions and other activities that involved mobilizing communities at sensitive times to avoid conflict with GOU actors. Both agencies strived to protect the neutrality and transparency of agency and project operations.

Key community members and project-supported groups were trained on conflict prevention, identification, and resolution, and the projects liaised with GOU-led peace committees. One awardee established community action groups that educated communities on reporting and referral mechanisms; led dialogue and mediation efforts; mobilized and led community meetings in events of conflict, disasters, or other hazards; and sensitized communities about the advantages of peaceful co-existence. Gender-related conflict and other gender issues are discussed in Section 3.4 below.

Lessons Learned:

- Even communities that did not directly experience cross-border raiding suffered indirectly from the raids because of the loss of business and inaccessibility of water and pasture resources. Conflict resolution restored the flow of goods and livestock across borders, with widespread benefits for livelihoods in the region.
- The awardees found it essential to conduct quantitative and qualitative research to explore local conflict dynamics, including the perceptions of actors (i.e., government, elders, men, women, youth) on their risk environment, as well as dynamics of the drivers of conflict. Conflict research was not just conducted pre-design, but rather through ongoing research and monitoring aimed at detecting changes in the conflict context, including consequent-to-project activities.

- Conflict mitigation activities were more effective when they were streamlined into technical project activities, rather than treated as a separate sector of intervention.
- Taking a broad view of conflict—including land, SGBV, conflict over natural resources, and other types of conflict—allowed the projects to proactively adapt to the changing conflict context to address these drivers and to add organizations/individuals with needed new skill areas in a timely manner.
- Conflict was mitigated through strengthening the capacity of key community members. A proactive approach, involving sensitizing community members on conflict management and resolution as well as the advantages of peaceful co-existence, was more impactful than just conducting dialogue meetings between ethnic groups as specific conflicts arose. Training all community groups (e.g., livestock groups, farmer groups, savings and loan associations, women's health groups) on conflict prevention and resolution promoted group sustainability and inclusiveness.
- Project-supported community peace structures were transformed from reporters of conflict to first responders to conflict, through the establishment of funds (such as via internal savings mechanisms or provision of funds by the community) to travel to police stations to report crimes.
- Community peace structures were more empowered and effective when their members were elected in an open community-wide election process, rather than being comprised automatically of local government officials and traditional leaders/elders.
- Local youth groups assisted in productively and proactively engaging youth and helping them avoid becoming involved in criminal behaviors.
- Although cancelling or delaying distributions during politically sensitive periods and events hampered the projects' achievement of targets, it helped to protect the projects' operating space over the life of the activity.

3.1.7 SUSTAINABILITY AND EXIT STRATEGY CONSIDERATIONS

The FANTA Sustainability Study identified requirements for sustainability of impacts of FFP development activities: sustained sources of resources, sustained technical and managerial capacity, sustained motivation and intent, and (often) linkages (Rogers and Coates 2015). A clearly defined exit strategy should include exit approaches, criteria for exiting, measurable benchmarks of progress in meeting the criteria, a timeline for the exit process, action steps and responsible parties, and mechanisms to assess progress (Rogers and Macias 2004).

To maximize the likelihood of sustainable project impact, the projects took market-based approaches to livelihood activities in order to stimulate both supply (which would allow for sources of continued resources) and demand (which the project assumed would also provide motivation to continue engaging in these activities post-project). The projects also adopted a facilitative approach, which emphasized crowding in and strengthening of technical and managerial capacities of local actors, including national actors such as seed companies, regional actors such as large-scale traders and input suppliers, and local actors such as agro-input and agro-vet shops. Awardees documented successes and challenges in market-level

interventions and use of appropriate and affordable technologies (e.g., solar-powered radios). Awardees also helped to build linkages between interested farmers (many of whom are members of farmer groups) and private-sector actors, to ensure sustainability not only of access to improved inputs but also of demonstrations of their application by local farmers.

The projects invested considerable resources to build the capacity of public-sector, private-sector, and community-level actors. Awardees highlighted challenges to sustainability posed by conflicting policies among the GOU and international partners, particularly regarding payment for GOU participation in meetings and field visits. Although USAID/FFP-funded agencies cannot pay such incentives, the UN and other international nongovernmental organizations (NGOs) do, which creates difficulties for USAID-funded agencies trying to boost participation by GOU partners (who are often an important source of linkages for target communities). To ensure motivation, the projects considered target beneficiaries' priorities and risk tolerance.

Lessons Learned:

- The projects created linkages among individual producers via groups, between similar groups, and between the groups and upstream and downstream actors to foster continued learning and sustainability after the project ends.
- The projects aimed to appeal to the priorities, perceptions, and risk tolerance of the beneficiaries, not just those of the donor and NGO communities. For example, the first priority of herders in Karamoja is to reduce livestock mortality, because herd size is directly related to household resilience, wealth, ability to grow the herd's value, and social standing. Once excess mortality is reduced, herders are more open to learning about and investing in preventive measures that reduce morbidity more incrementally. The projects took this into consideration in livestock sector project activities.
- The awardees found that it is important to work with as many market actors as possible in a market-level intervention to achieve maximum scale and avoid creating distortions in the market; it was preferable to provide less project support to a larger number of actors (e.g., seed distributors or food traders) than to provide a larger degree of project support to a smaller number of those actors.
- The population of Karamoja has been receiving emergency assistance for many years, but the awardees implemented mechanisms to gradually shift the burden of costs of goods and services promoted by the project to beneficiaries. For example, beneficiaries of farming support increasingly assumed the cost of improved certified seeds and tillage.
- Inconsistency among implementing agencies about payment and "incentives" for GOU partners caused conflict and confusion and undermined the motivation of some district government staff to engage in project activities without compensation.

3.1.8 INFRASTRUCTURE

The lack of health, education, road, and market infrastructure constrains food and nutrition security and human development in Karamoja. The projects implemented infrastructure activities, including construction and rehabilitation of health facilities, schools, slaughterhouses, livestock markets, and roads. Awardees also worked with communities on construction of improved granaries, latrines, and livestock infrastructure such as pens for holding animals

during veterinary services. Infrastructure is a critical constraint to the livestock sector. Most livestock-related income is linked to the sale of live animals (especially bulls), but animals slaughtered locally are slaughtered and processed in unsanitary conditions.

Lessons Learned:

- During the height of the dry season, many able-bodied men and some women are at distant locations in *kraals*. Therefore, infrastructure projects needed to be preceded by community-level research to clarify migration and production patterns and to determine the best time and methods for reaching targeted beneficiaries, with attention to movement of men, women, boys, and girls between *kraals* and *manyattas*.
- It was found that infrastructure projects that strengthen resources used by multiple neighboring communities, such as water points for herders, markets, schools, health clinics, grain markets, and cattle markets, may help to mitigate conflict while simultaneously improving food security and broader development objectives when implemented with careful attention to equity and conflict-sensitive programming.

3.1.9 COORDINATION

The FFP development activities in Karamoja are among many activities being implemented in the sub-region, including by the GOU, UN agencies, and projects funded by USAID and other donors. All of the partners seek to serve Karamoja's vulnerable communities but have different mandates and approaches. This creates opportunities for learning, sharing, and coordinating to promote effective use of resources, avoid duplication, and ensure harmonized approaches in line with GOU policies and strategies.

Government relationships

As the projects worked to strengthen health, water, and sanitation services and systems, it was imperative to work in collaboration with the government, which both promoted and delayed progress at times. Strong government relationships have proved critical to project achievements in Karamoja, while strains in such relationships have threatened project activities. Expectations that projects would pay safari day allowances or other fees for government participation in activities that are part of their job descriptions caused problems for one project initially.

Lessons Learned:

- Direct engagement with government counterparts helped keep the project activities on track. This included providing training in addition to habitually discussing and seeking input on planned activities and project design, conducting joint activities and review meetings, seeking approval and support, attending government council meetings, and holding in-person meetings.
- Although non-payment of these often-expected fees for government participation slowed initial project activities, clear communication, consistent application of the policy, and willingness to withhold technical support to projects persuaded people to accept the policy.

- Supporting government staff to share local learning and experience at the district, region, or national level helped to increase local ownership of activities and to keep government partners informed of learning taking place elsewhere.

Community relationships

Community experiences and perceptions affect project participation and outcomes. For example, while unclear policies on project eligibility triggered a backlash for the FFP development activities, understanding the community's perspective led to project adaptations, such as increasing the age of enrollment in the food ration project, that better served the community's needs and expectations.

Lessons Learned:

- Even short-term staff represent the project in the community's eyes. Inaccurate promises made during formative assessments or informal interactions led to expectations that the project could not meet.
- Seeking feedback from community members on project services, such as satisfaction with health services, helped to enhance accountability.

Coordination among non-government development projects

Government coordination and leadership are weak in Karamoja, and many projects focus on their individual objectives and do not engage in the larger system/context. This can create geographic and programmatic overlap and cause conflicts, as some projects use long-term development approaches that require individual or community investment, while other projects follow a more emergency-based model of free distribution of services and materials. DNCCs, which plan and coordinate nutrition actions across sectors and oversee nutrition at the sub-county level, have been established by the Office of the Prime Minister but are minimally functional. They suffer from spotty attendance, limited capacity, and no direct funding, so they rely on development partners for support and on the commitment of the district chief administrative officers, who chair and convene the committees, for their success. Supporting DNCCs is currently the mandate of UNICEF, although FFP development food security activities and other partners have convened meetings and supported start-up. In the absence of government leadership, projects have coordinated separately with multiple partners, which is helpful but less efficient and requires commitment from all partners.

The inception of the Livestock Production and Market Strengthening Program Pilot that covers districts in both the north (Kaabong and Kotido) and south (Nakapiripirit and Moroto) of Karamoja has called for greater collaboration between the two awardees. The awardees share information at quarterly meetings to avoid duplicating activities. One awardee formed a livestock working group, which is a high-level broad coordinating structure that includes the GOU, NGOs, and other actors working in livestock. The livestock project focuses on livestock market linkages, private veterinary services, value addition along livestock market chains (e.g., fattening), and understanding trade routes within Uganda as well as cross-border. Both agencies reported that there have been no problems in their coordination so far. The awardees are taking different approaches to working in livestock, with one focusing on groups of women and the other focusing on markets and systems.

Lessons Learned:

- DNCCs are relatively new and need external technical and financial support as they become established and functional. Where DNCCs are weak, FFP development projects coordinated directly with other projects and government whenever possible, but this proved to be a challenge, especially when partners used different approaches in the same geographic area.
- Coordination with other stakeholders takes time and effort but can produce a "coordination dividend" that increases the efficiency and scale of FFP development activities.
- Many people in Karamoja, and some local GOU partners, expect they will receive something every time they are in contact with an organization. There is not a consistent policy among awardees about the distribution of free commodities, and projects feel that working toward a consistent policy could help alter community expectations and promote an expectation of sustainability. Sustainability of project impact requires confidence, a drive for self-sufficiency, and a sense of independence among participating communities. Communities should have the expectation that international assistance will end.

Coordination with local partners

The Karamoja environment is challenging, and the FFP development activities address health, nutrition, WASH, livelihoods, agriculture, conflict, and gender, among other problems. The projects relied on partnerships with other NGOs, local civil society organizations, and personnel operating within the government system, like VHTs. Although these partnerships can help a project better engage with local communities, strengthen local capacity, and increase the likelihood that activities will continue beyond the life of the project, their success depends on the local partners' capacity. In Karamoja, where education and literacy rates are quite low and overall development is limited, partner capacity is often very weak. Successful partnerships require that partners' capacity be strengthened before they take on a prominent role. Ensuring that all implementing partners have been fully vetted and are prepared to conduct activities as required can avert disruptions due to low partner capacity or engagement or inconsistent implementation among local partners.

Lessons Learned:

- Effective internal project review, adjustment, and coordination were critical to working with local partners. Holding regular internal meetings and project reviews with all partners identified successes that could be scaled up and highlighted bottlenecks and challenges to be resolved. Internal meetings across SOs were essential for enhancing cross-sectoral collaboration and integration of project activities.
- There were challenges with local partner capacity, requiring unplanned investments to strengthen their capacity. Awardees suggested that partner capacity should be thoroughly assessed before engaging, and any needed capacity strengthening should be included in the project design. This may go beyond technical capacity and include management, finance, and governance.

- Co-locating offices with partners facilitated project oversight and management, and quick-problem resolution.
- Although working through a smaller number of local partners can yield efficiencies, if the partner is untested, awardees found that it may be preferable to work through a larger number of local partners to spread risk.

3.2 AVAILABILITY, ACCESSIBILITY, AND DISASTER RISK REDUCTION LESSONS LEARNED

3.2.1 FARMER ORGANIZATION, TRAINING, AND EXTENSION

Agriculture is increasingly common in Karamoja. The FFP development activities tailored farmer organization, training, and extension strategies to varying local contexts. Agriculture in northern Karamoja focused more on boosting household production through rain-fed subsistence farming for household consumption. Agriculture in southern and western Karamoja ventured more into organizing/collectivizing producers, strengthening cash crop production and marketing, and linking to savings and credit associations (i.e., transitioning to commercial farming). The baseline capacity of traders, dealers, and wholesalers is higher in the green belt and in southern Karamoja than in the north.

The FFP development activities organized farmers into groups, provided training/extension for improved farming practices through field extension workers, provided links to early warning information, strengthened access to improved seeds and other inputs, and linked to buyers to support marketing. Seed companies and local agro-input dealers set up demonstration plots for improved seeds. The projects supported horticulture groups as well as horticultural production (kitchen gardening) among women's groups, using small-scale drip irrigation at nursery beds.

Lessons Learned:

- Although some new farmers have transitioned out of pastoralism by choice, others "dropped out" when loss of livestock reduced their holdings to below the minimum herd size required for reproduction and sustainability, and they lacked the resources to restock via the market. The projects found that assessing the reasons for households' and communities' adoption of agriculture helped to clarify their motivation to engage in farming vis-à-vis animal husbandry.
- Although producers in Karamoja are accustomed to free handouts, they were willing to invest in agriculture and absorb financial costs associated with farming if given the right skills and linkages to affordable and appropriate services.
- Where adoption of recommended techniques was low at first, assessment of obstacles to uptake and augmentation/intensification of extension services boosted the adoption of recommended practices. Mechanisms for peer-to-peer learning were invaluable to demonstrate potential impact of improved techniques under local conditions. Karamoja's farmers were observed to learn and adopt recommended practices more quickly through on-site visits with model farmers than from program staff, learning that was catalyzed by participants' willingness to ask questions of the model farmers from their community.

- Teaching time- and labor-saving techniques, such as row planting or procuring oxen and ox plows, encouraged both men and women to farm.
- One awardee found that in northern Karamoja, most households grow crops for consumption rather than sale. A minimum level of food security needed to be established before households were prepared to shift to growing crops for sale.
- Organizing farmers (e.g., through collective/block farming) provided many advantages for transitioning from subsistence production to commercial farming, such as cost-efficient procurement of inputs and tillage, social support and mentoring, demonstration of good agricultural practices, and collective marketing.
- Adoption of horticultural production techniques, including the use of drip irrigation systems, was more successful among lead farmers and small farming groups than among larger farming groups.
- Conducting exchange visits between low-performing and high-performing farmer groups reinforced the factors essential to group success, such as recommended practices for internal management and governance.
- Public agricultural information systems were nascent in Karamoja. It was necessary to install rain gauges to measure rainfall, for example, and to interview farmers to assess the performance of the cropping season in the absence of national surveys.

3.2.2 AGRICULTURAL INPUTS AND MARKETING

The FFP development activities recognized the need for a market- and systems-oriented approach to increasing input access, complemented by targeted interventions for the most vulnerable households unable to secure these inputs at market price. The projects increased the scale of improved seed promotion activities when the actors were better organized; they set up a distribution structure, distinguishing between wholesalers and retailers. Farmers were directly linked with agro-input dealers/shopkeepers, who were directly linked with seed suppliers, who were in turn directly linked to rural agents and input producers; all relationships were actively supported and strengthened in a way that aimed to achieve mutually beneficial profit-driven relationships. The projects tried to avoid free seed distribution. Seed suppliers that served the Karamoja market were subsidized and supported to meet and work with local dealers/shopkeepers as well as conduct demonstration sites to generate interest among Karamoja's farmers. This was designed to ensure that improved seeds were available and that interest was high by the time planting season arrived.

The FFP development activities implemented interventions designed to boost smallholders' marketing of their own produce and to expand capacity of traders bringing staple foods into Karamoja during the lean season. Karamoja's farmers are beginning to store/bulk their own produce and sell it collectively for a higher price during the lean season. Most marketed crop produce is sold for local consumption. Exports are not expected to constitute a large proportion of trade in Karamoja in the foreseeable future. Destination markets for livestock are in Karamoja, elsewhere in Uganda, and Kenya and South Sudan. Farmer groups were organized into collective farmer's associations that marketed the groups' produce. Bulking centers were established to combine production for sale.

The awardees used different approaches for providing market information, including radio and dissemination of information via field extension workers to all levels of producer groups. Producers used this information to select crop varieties to plant and to determine when to sell and how to handle produce. Awardees also explored using private-sector actors to provide market information to producers. Farmers are increasingly purchasing farming inputs from established local agro-dealers instead of buying home-saved seeds on local markets or purchasing seeds from outside of the sub-region.

The FFP development activities in Karamoja used different approaches to addressing needs in urban centers. In one project, an urban team advised on urban-focused activities in district administrative towns. In the other FFP development activity, staff opted not to establish an urban team or conduct explicitly urban-focused activities. The urban team's activities focus on butcher associations, slaughterhouses, urban markets, production of energy-efficient stoves and briquettes, and urban gardens (i.e., market gardens on the outskirts of the urban areas that produce for the urban markets).

Conflict over land is increasing. Herders are advocating for access to grazing routes, the number of farmers seeking access to farmland plots is increasing, outsiders are applying for plots of land, and mining companies are exploring potentially lucrative concession areas. Traditional collective land tenure regimes, combined with Ugandan law that allows for long-term land use but not genuine ownership, increase the likelihood of land-related conflicts and the need for mechanisms to adjudicate these conflicts at local and district levels.

Lessons Learned:

- A market-oriented approach to boosting agro-input availability in Karamoja is essential. Markets are nascent, so capacity strengthening of all levels of market actors was often required. To ensure access for the extreme poor, local seed multiplication activities were combined with market support to boost availability of improved seeds.
- Awardees found that while most farmers in Karamoja can save money during the year to purchase seeds (largely from local shopkeepers), they rarely had access to credit and were averse to accumulating debt to purchase inputs.
- Engaging rural shopkeepers in the project helped them to grow their business and promoted village-level availability of and access to improved inputs and techniques at the same time. Small-scale shopkeepers needed training in keeping records, managing inventory, and marketing.
- Selecting crop strains for drought resistance and quick maturation is a priority for resilience in Karamoja. Erratic rainfall means that seed replanting may frequently be necessary. Farmers showed a preference for improved short-maturing, drought-resistant crops.
- Seed procurement processes should be started early and multi-year approval sought to avoid delays in procurement, project activities, and planting. One project addressed credit constraints faced by agro-input dealers by facilitating financial agreements between them and national seed suppliers, with no financial payout by the project.
- Although men often purchase agricultural inputs, research in Karamoja revealed that women have high influence over those decisions. Based on this finding,

marketing outreach strategies considered the perceived needs and priorities of women as well as men, even when it is men who have authority over final input purchase decisions.

- Even successful market-based interventions promoting improved seeds may unintentionally exclude women, girls, and the very poor, so direct targeting (e.g., using vouchers) was sometimes needed for these groups. The projects established negotiated flat rates for the sale of seeds by local agro-input dealers and vendors in order to avoid exclusion resulting from varying sales prices.
- Towns in Karamoja Sub-Region are relatively small and predominantly agricultural. They often host key actors in agricultural markets, such as shopkeepers, agro-dealers, veterinary practitioners, and traders. However, they also offer some off-farm livelihood options for rural-to-urban/peri-urban migrants. Urban-focused project activities can complement those focused on rural communities.
- Strategies used by the projects to achieve scale included identifying marketable commodities such as sorghum, maize, and sunflower that could serve as both food and cash crops; partnering with seed companies; crowding in output-buying companies; fostering a network of buying agents; paying on commission those buying agents who are incentivized to try to increase community production of marketed commodities; and gradually expanding bulking centers' capacity to encompass input procurement, microfinancing, processing, and marketing.
- Soils in Karamoja are too hard and compacted for tillage by oxen or low horsepower tractors. Projects used rippers to break the hardpan and worked with potential tractor vendors to increase availability of tillage services at scale.

3.2.3 POST-HARVEST HANDLING AND STORAGE

Subsistence farmers in unimodal Karamoja suffer high post-harvest losses because of a lack of improved post-harvest handling and storage techniques and technologies. Post-harvest handling techniques and technologies are urgently needed in Karamoja, including for threshing, shelling, grading, sorting, storage, and transport. Awardees trained groups of farmers on improved post-harvest handling and storage techniques, and linked these activities to other activities along the value chain. Promoted techniques included the use of pallets, cocoons, aerated cribs, and hand-held maize shellers. Household-level improvements in post-harvest handling and storage are essential to increase household consumption among food-insecure populations and to protect any surplus production for sale months later when prices start to rise. Improved post-harvest handling and storage also allow producers to negotiate better prices with potential buyers. Traders are only beginning to store crops produced in Karamoja for sale later in the season; traditionally, local consumers would rely on sorghum, maize, and other crops brought in from Uganda's greener regions by non-local traders. Increasing local capacity for commercial grain storage should boost demand by traders for produce at harvest and potentially reduce the cost of grain for Karamoja's consumers during the lean season.

Lessons Learned:

- Post-harvest losses are high when traditional post-harvest handling techniques and structures (e.g., granaries) are used. Locally appropriate and affordable storage alternatives, such as metal grain silos, were successfully promoted for construction by local artisans for profit.
- Collective storage, such as that managed by the production group at a collective/block farm project site, can also enable collective cleaning, grading/sorting, drying, and marketing/price negotiation. Community grain banking has also improved the quality of drying and post-harvest handling in Karamoja.
- Because of successful SBCC on agriculture and gender roles, male farmers in Karamoja increased their participation in construction of granaries and in many types of farm work that were traditionally the responsibility of women.

3.2.4 LIVESTOCK

The FFP development activities in Karamoja supported the revitalization of the livestock sector through organizing community livestock groups, promoting improved animal husbandry practices (e.g., shelter, feeding, health care, and breeding), linking livestock production to savings and credit to support livestock-related costs, strengthening agro-vet dealers and other market actors (e.g., private veterinary practitioners and veterinary pharmaceutical importers and manufacturers), and disseminating market information to herders. Project strategies varied in the degree to which they focused on systems-level changes, although both projects aimed to take a market-based approach by mid-term. The projects also included research with Makerere University on the growing threat of trypanosomiasis. Primary livestock destination markets for Karamoja's cattle and small stock are in Uganda, South Sudan, and Kenya. The resumption of traditional migration patterns places the burden of health services and animal husbandry back on herders and their underfunded GOU and private extension systems and markets. Once the ongoing rangeland mapping exercise is completed, a rangeland management strategy is needed to protect rangelands and guide access in a way that prevents depletion or overutilization of valued grazing areas and water points.

Traditional social norms govern how women and men engage in the livestock sector. Men manage all large livestock, while women manage poultry, goats (sometimes), and livestock products such as milk and ghee. Men manage almost all of the livestock trade at markets, as well as herding. Most of Karamoja's traders are also herders; few people specialize only in trade in the sub-region. As noted above, herders' first priority with livestock is reducing mortality, but once excess mortality is reduced, herders shift their priority to secondary issues such as improved breeding practices and improving livestock body conditions to earn higher prices at the market.

Lessons Learned:

- To achieve sustained increases in livestock ownership, productivity, and profitability, it was necessary to pursue systems-level changes rather than focus on distribution of livestock and key services and inputs.
- Through intensive capacity strengthening with herders and market actors in the livestock sector, the projects facilitated the adoption of more proactive and market-oriented behaviors by herders, such as fattening bulls and goats prior to selling to capitalize on higher prices for better body condition.
- Herders are increasingly prepared to buy preventive agro-vet inputs such as deworming drugs and tick washes, but demonstration methods are needed to convince herders of the products' impact on animal mortality, morbidity, milk yield, body condition, and market value.
- The awardees found that veterinary health inputs and services must be physically and economically accessible to herders and their livestock, including those in distant locations during the peak of the lean season. Public and private systems for the provision of animal health inputs are weak in Karamoja, and agro-vet dealers typically do not take advantage of the aggregation of livestock at *kraals* to sell animal health inputs. Agro-vet dealers tend to be located in towns, and few *kraal* leaders buy veterinary inputs for the *kraal* herds. Opportunities existed for the partners to work with community animal health workers (CAHWs), including those based in rural areas, to make inputs available along established migration routes and to train *kraal* leaders on the value of keeping some veterinary inputs on hand while migrating.
- It was best to engage private-sector actors to provide vaccinations and other veterinary services to livestock before they were distributed to beneficiaries. These services were paid for by the target beneficiaries rather than by the FFP development activities. Beneficiaries readily accepted the cost of covering that service.
- Fodder banks using climate-resilient varieties of seedlings or grasses supported animal health and marketability, milk yield, and household resilience. Using drought-resistant multi-use native plants in fodder production increased confidence among participating herders.
- When linking actors along the veterinary market chain, veterinary pharmaceutical companies preferred to work with qualified veterinary practitioners rather than with CAHWs. The majority of veterinary outlets (i.e., drug shops) were not licensed and lacked the capacity to store or manage vaccines or veterinary pharmaceuticals, and as such capacity strengthening was required.
- When distributing goats and teaching animal husbandry as a business to women in a traditionally pastoral society, the awardees found it important to avoid implying that the role of herding should shift to women, as this triggered resistance among men. As an additional measure to avoid conflict with men over distributing goats to women, village elders were requested to sign a memorandum of understanding stating that the goats were the property of the female beneficiaries.
- Migration of herds to distant locations made it logistically challenging to monitor the health and productivity of recently distributed livestock, an issue that was somewhat addressed by liaising with CAHWs who were better positioned to report on the conditions of those animals during the dry season.

3.2.5 FINANCE, CREDIT, AND SAVINGS

Experience with microfinance in Karamoja is more limited than with agriculture, livestock, and other sectors discussed in this document. Formal finance and microfinance institutions are scarce in the sub-region. The GOU runs a microfinance support center that provides loans at low rates to farmers and farmer groups. Many savings and credit cooperative organizations (SACCOs) in Karamoja were established by the GOU before going bankrupt, so public confidence in these structures is low. However, access to finance is a key constraint to economic development, food security, and resilience to shocks in chronically shock-prone Karamoja.

In addition to establishing village savings and loan associations (VSLAs) and SACCOs/ASCAs, awardees trained producer groups such as farmer training groups, MCGs, and women's livestock groups on savings mobilization and group management. Crop, apiary, and livestock producer groups were organized into ASCAs and given materials (e.g., lock boxes and passbooks). Many farmers have opened small shops using VSLA loans, so that household necessities can be purchased locally for lower cost. SACCOs targeted a higher level of finance than VSLAs, which are more suitable for poorer households. VSLAs were linked to on- and off-farm income-generating activities.

Lessons Learned:

- Women in Karamoja readily generated savings to invest in income-generating activities. Although women bear financial responsibility for household needs, they were ready to use cash loans to invest in income-generating activities such as beer brewing, poultry and goat rearing, briquette making, and improved stove fabrication.
- VSLAs were found to be more appropriate than SACCOs/ASCAs for communities and households with very low levels of development.
- Microfinance interventions were linked to other support services, such as technical training on income-generating skills and life skills, to help the poor establish secure livelihoods. In line with this approach, BRAC, an organization that focuses on poverty alleviation among the extremely poor, was engaged to provide a training on poverty alleviation that links microfinance with other services to help beneficiaries graduate out of poverty.
- Official registration of SACCOs allowed them to benefit from complementary government programming. Advanced farmers and farmer groups were able to obtain loans from the GOU Microfinance Support Center, but the agreements required project facilitation in the beginning because of capital constraints faced by farmers. One project established longer-term relationships between SACCOs and the GOU Microfinance Support Center with the objective of availing larger levels of credit to the SACCOs than were available from the funds internally generated by the SACCO members.
- Savings depend on productivity, so when agricultural yields were poor, many people dropped out of savings interventions and used available income to meet basic needs rather than invest in more productive activities.
- VSLAs and ASCAs suffered from poor record keeping and internal management,

due in large part to very low literacy and numeracy rates. Training community-based savings facilitators in record keeping and other internal management skills increased the effectiveness of VSLAs/ASCAs.

- VSLAs/ASCAs seemed to build unity and social cohesion, which provide the bonding capital that is often linked to resilience to food security shocks.
- The improved agricultural practices promoted by the projects created opportunities for income-generating activities for local artisans, such as construction of improved metal grain storage silos.
- Some savings groups initiated co-funded joint investment ventures among groups, increasing the scale and likely sustainability of project impact.

3.2.6 ENVIRONMENT

The awardees adopted various approaches to environmental issues in Karamoja, where use of charcoal and wood as fuel leads to deforestation. Permagarden activities incorporate water conservation principles. Drought-resistant seeds were promoted. Sensitization was conducted with herders to encourage them to stop burning pastures. Fabrication of renewable-energy briquettes, using crop by-products and household waste, was promoted for use with energy-efficient stoves. At farmer-managed natural regeneration (FMNR) sites, trees were systematically regenerated from tree stumps, roots, or naturally growing seedlings—a cheaper approach than procuring seedlings with low survival rates. FMNR groups were identified among existing farmer training groups and honey production groups. Other producer groups were encouraged to reduce the number of trees cut on their farms. Selected tree species were planted within horticulture sites to provide windbreak and control runoff. Regeneration of local trees (e.g., Ekorette and Edapal) has improved browsing for goats and thereby improved goat condition. Wild fruits and leaves from the trees under regeneration also boosted people's food intake and dietary diversity.

Awardees conducted studies to inform project activities on improved stoves and renewable energy sources. Both awardees worked to promote energy-efficient and labor-saving stoves. Construction of the stoves is an emerging income-generating activity for women. Mothers also report that the new stoves have reduced incidences of accidental burns among children in the *manyattas*. The stoves are built during the early dry season when water needed for their construction is readily available. Production of biomass briquettes has been investigated as an alternative to firewood and wood charcoal.

Lessons Learned:

- FMNR benefitted from the regeneration and preservation of local species of trees and bushes, which are well adapted to harsh environmental and climate conditions of Karamoja.
- Prolonged drought and extensive tree-cutting initially undermined the success of FMNR sites, underscoring the need for a very participatory approach to FMNR with high community involvement.
- Local materials were available for improved stoves and local artisans who were able to produce them for profit.

- Women readily used the recommended fuel-saving stoves, but poor management of the stoves reduced the stoves' lifespan. Sensitization of women's groups was necessary to ensure proper stove management.
- Potential raw materials for biomass briquettes were available from farms, organic waste from markets, and by-products of small and medium sized businesses. Briquettes appealed to an urban and peri-urban market, replacing the wood charcoal produced largely by rural women, so the briquette value chain may engage and benefit rural women.

3.2.7 DISASTER RISK REDUCTION, EARLY WARNING, AND EMERGENCY RESPONSE

Karamoja is a drought-prone sub-region that is likely to face increasing climate variability in the future. Security has improved with disarmament and reductions in armed cattle raiding, but other forms of conflict remain. The sub-region's long-term dependence on humanitarian aid underscores the need to address underlying causes of vulnerability and boost resilience going forward. Resilience is a key lens for identifying strategies for promoting sustainable development in settings of recurrent shocks. Both awardees aimed to integrate disaster risk reduction and resilience into their projects. For example, they promoted natural resource management techniques around homesteads and farms, reforestation, sustainable development, and livelihood diversification; aimed to reduce conflict; and worked to strengthen capacity of public- and private-sector actors to meet future needs. The projects worked to strengthen capacity of the GOU in disaster risk reduction, early warning, and emergency response. One awardee trained field extension workers on hazard identification and prioritization ranking, vulnerability assessment, capacity assessment, and action and contingency planning, with the objective of developing a participatory disaster risk assessment to identify risks and measures to address covariate (shared) risks. They encouraged communities to diversity into off-farm and off-season agricultural activities, such as livestock, apiculture, and artisan activities.

Given the insufficient meteorological forecasting information available to producers, one project established weather stations, provided weather forecast information to district governments and producers, and linked with national meteorological forecasts. The weather forecast system was being handed over to the GOU Agricultural Research Center in Karamoja. The FFP development activities in Karamoja worked with the GOU on disaster mitigation plans, which the district governments used during the drought of 2015–2016. The plans included measuring systems to determine the severity of the situation and defined trigger points for response. The projects promoted market-based responses over free distribution wherever possible, including when localized dry spells necessitated targeted distributions. During the 2016 lean season (following a poor harvest in 2015), the projects advocated for market-based interventions to increase staple food supply in local markets. The GOU conducted minimal targeted free distribution to the most food-insecure households, while development partners implemented market-based food-security interventions. This signals a shift in thinking, at least among development partners, about market-sensitive approaches to addressing seasonal acute food insecurity. Anticipating a poor production season, the projects encouraged traders and producers to strengthen bulking centers and stock produce purchased from neighboring areas for later sale in Karamoja. The emergency interventions were combined with seed distribution and seed vouchers to ensure planting in 2016.

Lessons Learned:

- Resilience to food security shocks was strengthened by ensuring that households have multiple livelihood strategies with non-overlapping vulnerabilities. Examples in Karamoja included ensuring households have livelihoods in farming and livestock, farming and apiculture, or sustainable income-generating activities and livestock.
- Although government partners in Uganda often lacked the funds to implement emergency response interventions, collaboration with the GOU on disaster mitigation planning improved the timeliness of response, clarified "triggers" for when to respond and scale up monitoring, and facilitated consensus about how to implement a response.
- Strengthening a community-based early warning information system empowered project beneficiaries with a set of capacities to generate and disseminate timely and meaningful information to enable individuals, communities, and organizations to take necessary preparedness measures and act appropriately in sufficient time to reduce the possibility of harm or losses.
- FEWS NET's rainfall forecasts would be invaluable to many farmers, but Karamoja's farmers often have very limited access to this information because of lack of radio coverage or access to FEWS NET reports.
- Because Karamoja is diverse, the awardees found that early warning information was needed below the sub-region level, and on a district level if possible, to understand local hazard risks and optimize local mitigation efforts.
- During periods of acute food insecurity, able-bodied people sometimes migrate to nearby agricultural or urban areas for work, making them less available for trainings or other project activities.
- The awardees found that market systems could fulfill an important role in responding to humanitarian crises involving grain shortages. For example, subsidizing traders' transport and storage costs boosted market distribution of grains and mitigated price volatility during the lean season.

3.2.8 APICULTURE

Awardees took a market-based approach to apiary production to ensure sustainability. Buyers from outside of Karamoja were engaged to train local producers in improved honey production, local production of quality hives, and quality standards that the honey must meet to be sold. Producers were organized into groups, as with other farming groups. Tasks required for honey production were culturally proscribed by gender; for example, in northeastern Karamoja, men tend to own the bee hives and control production, while women seem to control bulking at community honey centers and manage income generated from honey sales. Apiculture was profitable for honey producers, buyers, and providers of the improved hives. Establishing agreements with private-sector buyers incentivizes beekeepers to increase production, and working with established private-sector buyers had increased the sale price per kilogram and ensured availability of honey from Karamoja in Kampala's supermarkets. Established producers served as community-based facilitators who disseminated improved production techniques to others in the community. Challenges to honey production included drought, lack of harvesting

and post-harvest equipment, birds and other pests, falls and injuries, lack of markets (especially for the hive wax), insecurity during collection, theft, low hive quality, and wildfires (Mercy Corps 2016a).

Lessons Learned:

- Men, women, youth, and many elderly and disabled people participated successfully in apiary production. However, apiculture took at least a year to generate substantial returns, and required close monitoring. Beneficiaries who were unable or unwilling to invest that time were often less successful in this income generating activity.
- Although apiculture is often practiced in semi-arid areas, it required specific types of ecological conditions to be most profitable. In Karamoja, it was successful in the green belt and farming areas in Kamion Sub-County, but was unsuccessful in more arid zones.
- To be successful, projects had to consider several factors in scheduling the start-up of this income-generating activity, including the timing of the bee swarming season, seasonality of availability of water for bees, and natural population cycles of pests that attack bees.
- Active supervision was needed to ensure that bee-rearing protocols for hive colonization, bee hygiene, improved beekeeping practices, and honey management protocols were closely followed, and to intervene quickly when problems arose.
- Initially, producers lacked the essential equipment recommended by the apiculture industry, so distribution of honey starter kits and beehives was necessary.
- The same principles that guided agricultural development applied in apiary production: organization of farmers, establishment of training and demonstration mechanisms, linking to private-sector input providers and buyers, and supporting the activity until profitability ensures motivation to continue the practice among producers.
- Linking producer groups to national and international apiculture events helped the groups maintain better practices and meet quality standards that are required by marketing agreements and are expected by buyers and urban consumers.
- Adoption of FMNR principles and practices, as well as planting of fast-maturing plants of high pollen and nectar for bee foraging (e.g., sunflowers), boosted honey yields. Integration of FMNR principles into apiary production reportedly doubled the crude honey volume produced.

3.3 MATERNAL AND CHILD HEALTH AND NUTRITION AND WATER, SANITATION, AND HYGIENE LESSONS LEARNED

3.3.1 PREVENTION OF MALNUTRITION

Provision of food rations

To address the high levels of stunting in Karamoja, both FFP development activities used a preventive approach, targeting the first 1,000 days from pregnancy to age 2. Preventive rations were provided to all pregnant women, women up to 6 months postpartum, and children up to age 2 who lived in FFP development activity communities more than 5 km away from a health center. Those within 5 km of a health center were eligible for WFP rations. In addition, a protective household ration was provided in the lean season to reduce the risk of sharing among other household members, as is common in this context. The projects used secondary data in year one and identified far fewer beneficiaries than expected, leading to excess commodity. Some beneficiaries in one project were initially confused about age eligibility for receiving rations and preventive services. Viewpoints on the appropriateness of providing preventive rations varied, and there was general concern about avoiding dependency, promoting self-sufficiency, and avoiding market disruption while also acknowledging that the area is highly food insecure and needs support accessing food. There were some reports that rations often did not last the entire month. Although the projects planned for a four-month lean season from March to June, three years of drought and crop failure has extended the lean season and the duration of the household ration. During the rainy season, ration distributions were disrupted by the weather at times. Fueling concerns about dependency is anecdotal evidence that people may have received double rations from the WFP food distribution by using different names or falsified ration cards.

Lessons Learned:

- Developing and sharing clear eligibility criteria for entering and remaining in the project helped to reduce confusion among beneficiaries.
- Coordination with WFP and other programs helped to prevent beneficiaries from participating in multiple programs.

3.3.2 TREATMENT OF MALNUTRITION

The Integrated Management of Acute Malnutrition is a Uganda-wide program that operates in Karamoja. FFP's development food security activities provided surveillance, trained MCG leader mothers and VHTs in screening and referral, and screened and referred children during outreach services. They also conducted supportive supervision to review whether health workers were adhering to the national guidelines.

Lessons Learned:

- Because of their regular community contact, FFP development food security activities provided an opportunity to screen for acute malnutrition and refer children for early treatment.

3.3.3 STRENGTHENING OF HEALTH FACILITIES

At health facilities in Karamoja, both projects sought to strengthen the overall system by addressing infrastructure and equipment, health worker performance/community satisfaction, health facility management, and data quality. Data quality is further hampered by the rollout of a new health management information system, for which the tools have not yet been distributed to Karamoja.

For infrastructure and equipment provision, one project used a performance-based system, developing formal performance agreements with health facilities, such as improved reporting accuracy, which (when achieved) triggered previously agreed infrastructure and equipment improvements. The project provided supportive supervision and mentorship to help the facilities achieve their benchmarks. The other project provided needed equipment to facilities based on a needs assessment that identified obstacles to providing quality care. Both projects used participatory community feedback systems, including community scorecards, citizen report cards, and community dialogues to help the communities understand their rights as health system users and hold facilities accountable. Both projects interacted with health unit management committees, which are management boards that link facilities to district leadership, with one project focusing on strengthening the committees through mentorship and performance assessments.

Lessons Learned:

- Participatory community feedback mechanisms helped promote health facility accountability and prioritize actions to improve service delivery. These approaches helped improve relationships among health workers and clients, engage health unit management committees, and improve health center performance. When joint monitoring and supportive supervision identified challenges at a health facility, the problems were more easily resolved when shared with the head of the facility before being publicly disseminated.
- Districts with performance-based agreements for health facility construction and equipment purchases achieved their targets, which reportedly improved data quality and supervision.
- Trained health unit management committees, which did not receive any additional financial support, met proactively and engaged in problem solving. They provided an opportunity to advocate for investment in health facilities, facilitate community engagement, and hold facilities accountable for quality service delivery and good management.

3.3.4 STRENGTHENING OF COMMUNITY HEALTH SERVICES

The FFP development activities in Karamoja engaged with community health service providers including VHTs, preventive and curative outreach services provided by health facilities, and leader mothers of care groups (discussed in the SBC section). VHTs are volunteer community members who mobilize communities, promote health through counseling and home visits, treat basic child illnesses through community case management, and refer clients to health facilities as needed. They have a wide range of responsibilities and, with such low rates of formal education in Karamoja, are often illiterate or have very low literacy, limiting their capacity. Both

projects trained VHTs to strengthen their capacity; one project also provided regular mentoring and review meetings. One project incorporated VHTs as the supervisors of MCG leader mothers. Both projects also supported health facility outreach, with one focused more on immunization outreach and coordination with health facilities, and the other on supporting health facilities to conduct more comprehensive outreach that provided preventive and curative services to a wide population. Food distribution days provided a common opportunity to conduct outreach. Karamoja has many very remote and difficult-to-reach areas, and access and transport posed challenges to supporting community health services.

Lessons Learned:

- The projects found that strengthening the capacity of minimally educated VHTs was a long-term, deliberate process and suggested that establishing incremental milestones may be helpful. In addition to training, effective mentoring and supervision with regular feedback could build their skills over time. With many demands on VHTs' time from different agencies, streamlining meetings to prevent duplication was necessary. Reporting and other tools were simplified so VHTs with low levels of literacy could accurately report data.
- Health facility outreach provided needed preventive and curative services to communities with limited health facility access and has been well received by communities, district health officials, and facility staff. The partners acknowledged that the challenge going forward is for funding for comprehensive outreach to continue beyond the projects' life.
- Food distribution days, when people were already gathered, were an appropriate time to hold outreach services. This was coordinated with district and facility health officials.
- It was necessary to plan for extensive transportation time for outreach activities. Placement of staff and provision of adequate transport for staff and VHTs (e.g., bicycles) was necessary to assure outreach in some isolated areas.

3.3.5 FAMILY PLANNING

Family planning services are available at most health centers. Injectables and condoms were the most common approaches, and a trial of cycle beads (a tool that supports women using the Standard Days method to track their fertility) is under way. However, family planning is not a cultural norm, is not well understood, and is not commonly practiced among the people of Karamoja. A high proportion of the projects' target population lives outside of the health facilities' 5 km catchment area, so assuring access had to be considered along with demand creation. Men play a primary role in decision making around family planning and have been found to be resistant. Women who seek family planning services without a husband's consent may be at risk of domestic violence. Both projects included family planning modules in their MCG approach and, after additional formative research, one project directly included family planning in its MCA trainings and held community and religious leader sensitizations to create broader social support for family planning. The family planning activities are fairly new and are not completely rolled out, so results are not yet available and projects are still learning what does and does not work and building their understanding of effective ways to increase access, demand, and use of family planning in Karamoja.

Lessons Learned:

- Sensitizing and engaging men, community leaders, and religious leaders helped to gain their support for family planning in their families and communities. MCAs were informed/engaged before discussing family planning with women to reduce family conflict.
- The flexibility to learn and adapt has allowed projects to try different models to promote family planning. These models were adapted as the projects learned promising approaches for the unique environment of Karamoja.

3.3.6 WASH

Both projects in Karamoja include the following WASH interventions:

- Drilling, repair, and maintenance of boreholes to improve access to safe water.
- Establishment of gender-balanced water user committees to maintain water sources.
- Community-led total sanitation (CLTS) to achieve open defecation free (ODF) communities.
- Promotion of key hygiene and sanitation behaviors.

Both projects engaged communities to take responsibility for maintenance of water and sanitation infrastructure; one project deliberately focused on building both government and private-sector capacity and applying a market-based approach to improving water access in the area. One project also included construction of ventilated improved pit latrines and handwashing facilities at schools.

Despite intensive efforts, progress on WASH has been particularly challenging. Previously drilled boreholes had fallen into disrepair because of limited capacity, communities' mistrust in water user associations, and reluctance to pay user fees, and because skilled mechanics and needed parts were not always available. CLTS triggered communities to build latrines, but with open defecation widely accepted, people reverted to previous practices. Achieving ODF communities was particularly challenging. Poverty also meant that community members could not always afford water user fees or purchase inputs for latrines. Programmatic changes were required throughout the projects' lives to address the ongoing challenges.

Lessons Learned:

- Activities such as community oversight, ensuring responsible management of funds, and continual feedback helped to build community confidence that water user committees would use fees responsibly, and it encouraged payment of the fees.
- The projects found that repairing or constructing boreholes and forming user committees was not enough to ensure long-term access to water. Awardees adjusted their focus to strengthening the entire system including links with government; reliable, well-run user committees with good management of financial resources; regularly paid fees; skilled mechanics with good business models and access to parts for maintenance and repair; and standardized monitoring.

- Requiring communities to raise money and demonstrate commitment to water user fees and maintenance before construction or repair increased ownership.
- Because leadership approval was needed for new initiatives to take hold, strong political will and the support of village elders was needed to mobilize communities and successfully trigger CLTS in communities.
- Intensive and regular follow-up was required for communities to achieve ODF status under CLTS. Stronger social structures may have helped one district achieve a higher number of ODF communities.

3.4 GENDER LESSONS LEARNED

3.4.1 PROGRAMMATIC GENDER INTEGRATION

Effective integration of gender into the FFP development activities required the awardees to establish a baseline understanding of the gendered development and food security context, ensure equity in project activity participation rates by gender, and promote the empowerment of women and girls through project activities. The awardees pursued (broadly) the same objectives, but adopted different programmatic strategies to achieve those objectives.

The projects took different approaches to recruiting staff charged with mainstreaming gender across the projects. One awardee established a three-person team of gender, youth, and vulnerable population specialists, and the other awardee recruited one person to be the gender specialist for the project.

Both awardees conducted research into the gender context. Awardees conducted research on many topics including gender and livestock production; gender and household decision making (e.g., related to health, education, management of household finances, livelihoods activities); gender and participation in community and government structures; gender and access to justice; gender and access to services; gender, health, and nutrition; and gender and violence/conflict. Gender research was conducted at the beginning of the program, as well as during the program, to inform program design and implementation, staff training, and beneficiary training. This research took time and substantial resources but proved to be indispensable to understanding how the gender context was changing, to understanding the implications of these changes, and to translating this learning into programmatic actions through a flexible management approach.

As discussed at numerous points throughout this desk review, gender inequality is multi-dimensional and deeply entrenched in Karamoja. Although the gender context is changing in the sub-region, these changes may in some cases be further eroding women's rights. Disarmament and peace initiatives have reduced the risk of violence and rape associated with large-scale cattle raiding. The sub-region's relative peace has afforded women greater freedom of movement and economic opportunities, but women face high risk of SGBV from their domestic partners and pursuant to rising criminality against women and households. Recent qualitative data from the sub-region suggest that domestic violence is both extremely widespread and brutal (Howe et al. 2015). Gender inequality remains deeply entrenched, how women are valued has not improved significantly, and women continue to be perceived as men's property. The

shift from pastoralism to agro-pastoralism entails rapid changes to the social roles and labor obligations of men and women.

Based upon the gender research results, and upon each awardee's approach to gender, the awardees both developed their strategies for addressing gender across the project. Midway through the project, one awardee developed a gender and youth theory of change, which informed the revision of their strategy and work plan for addressing issues such as gender and access, gender and decision making, gender and time usage, and gender and exposure to violence. The awardees conducted gender sensitization training for all project staff, project partners, and project beneficiaries. The awardees both strived to ensure equity in project participation rates by gender, with several variations in approach. The projects had minimum targets for male, female, and youth participation for key activities. Both projects disaggregated beneficiaries by gender for some activities, and monitored the participation of women in key community committees and other structures, such as peace committees, water committees, and district and local government bodies.

Both projects aimed to empower women and girls through project activities. They worked closely with elders and community leaders, who were almost exclusively male, to engage them as supporters of all messaging and behavior change efforts. Both projects engaged MCAs, trained them in gender issues, and supported them in bringing about positive behavior changes in their households and communities. One awardee tended to target both men and women for livestock and livelihoods activities—on the premise that relative to other areas of Uganda, all of the people of the Karamoja sub-region are vulnerable groups in need of livelihood strengthening—while the other awardee targeted women exclusively with livestock distribution activities.

Importantly, the shift in livelihood activities in the sub-region has both resulted in men facing the challenge of redefining their roles in society and increased the burden for women as they become more responsible for meeting household food security needs. The FFP development activities targeted men to help redefine their roles, but this effort must be expanded further to protect, support, and redefine women's roles and rights and to give men a different perception of self-worth regarding their role in providing for their families and fulfilling their responsibilities. Both projects sought the empowerment of women and girls through reducing SGBV (Section 3.4.2); seeking gender equity in agriculture, livelihoods, and disaster risk reduction (Section 3.4.3); and strengthening MCHN (Section 3.4.4).

Lessons Learned:

- The awardees found it essential to integrate gender from the inception of the project, because how the project is implemented depends on a sound understanding of and approach to addressing gender issues that affect men's and women's participation in program activities. Doing so required completion of a high-quality and thorough gender analysis during the first year of implementation, followed by ongoing rapid assessments to adapt and respond to rapidly changing gender dynamics.
- Development of a gender and youth theory of change was instrumental to identifying the specific pillars and focal objectives of the project related to gender and youth, based upon a detailed and up-to-date understanding of the changing gender context.
- The awardees trained staff on gender in the project's first year to equip them with a better understanding of gender issues in the project context, but it was also necessary to

train project beneficiaries (across the SOs) as well as partners on gender, because gender inequality is so pronounced and culturally sanctioned in Karamoja.

- The awardees hired staff with expertise in gender at the start of the project to serve as stewards of gender integration in the project, although these individuals were not solely responsible for effective integration in practice. One awardee revised the project's staffing structure on gender, youth, and vulnerable groups; the other awardee had one gender specialist but learned that it was necessary to add a youth specialist and possibly a specialist for other vulnerable groups. The fact that around half of youth and numerous vulnerable groups (e.g., the elderly, the disabled) are women suggests a logic behind having a combined advisory team that spans the issues of gender, youth, and vulnerable groups. The gender position needed to be at a high enough level to provide the authority to direct and oversee how gender is integrated and hold staff accountable.
- Committees such as water committees were gender balanced, and gender and youth specialist staff advocated for greater participation on peace structures, although participation was still low.
- MCAs and their spouses undertook positive actions in their homes related to MCHN, WASH, communication, and decision making within the household. The success of the MCA model was higher when the household received repeated follow-up visits and mentorship.

3.4.2 SEXUAL AND GENDER-BASED VIOLENCE

It is difficult to know whether the nature of SGBV has changed as a result of the relative peace and stability Karamoja enjoys today or whether the peace and stability simply further exposes previously existing SGBV in households. Recent data indicate that SGBV in Karamoja is so severe that many women and girls are committing suicide or have been murdered (Howe et al. 2015). In addition, qualitative data from 2015 suggest that SGBV and the forced marriage of girls are substantial threats that women and girls face in Karamoja (Howe et al. 2015). These are complex socio-cultural issues that help clarify why gender inequality is so deeply entrenched in this sub-region. The practice of cattle raiding in Karamoja helps to enable men to obtain the bride price required to marry. With the shift away from cattle raiding, families have fewer assets and consequently are trading fewer assets. The loss of livestock over the years and the shift from pastoralist to agro-pastoralist livelihoods is affecting marriage transactions. For example, families who cannot meet their food security and livelihood needs try to marry off their girls early so they can obtain the bride price to sustain their livelihoods, exacerbating the forced marriage of girls. The SGBV women face is both sanctioned and condoned by prevailing gender norms in Karamoja: because a bride price is paid for a woman at marriage, she is considered a man's property, which some men may believe gives them license to physically and sexually abuse her under certain conditions. While under customary law, a formal marriage transaction confers some rights to women (e.g., access to land to farm), wives still have limited rights regarding their sexuality, fertility, or time, because they are considered the property of men.

The projects adopted several strategies to addressing SGBV. Most notably, SGBV issues were integrated into gender sensitization curricula for men, women, community leaders and elders, partner agencies, and government partners. Project activities were designed in such a way as to minimize the risk of SGBV for women. Efforts to partner with local civil society organizations

regarding peace building and conflict mitigation were successful to the extent that they were able to mitigate conflict and maintain peace, but they focused predominantly at the community level, and less on SGBV issues affecting women and girls.

Lessons Learned:

- Women in Karamoja face the greatest risk of SGBV from their spouses, but rape inflicted on women and girls by small-armed bands of thieves is also common. To address these threats, awardees needed to develop a project-wide plan aimed at anticipating and addressing SGBV and protection issues; training all staff on this plan; and incorporating this into the conflict, human rights, and gender activities/curricula.
- The issue of identifying, preventing, and seeking referrals and justice in incidences of SGBV needs to be integrated into peace-building and conflict-mitigation approaches in Karamoja. Tremendous cultural sensitivity and engagement of elders and community leaders was required because of how culturally engrained SGBV is in the cultures of Karamoja.
- Awardees found that trying to achieve transparency of project decision making and operations in the community helped to reduce suspicions about the project that otherwise may have increased the risk of SGBV.
- Rapid flexible learning approaches enabled continual research into gender constraints, how they are changing, how they affect women and girls, and how program activities need to be modified as a result.
- Successful SBCC to change gender norms in Karamoja benefits from messages that affirm the value of both men and women in the household and community, and appeal to men's values and priorities within the local cultural context. For example, SBCC that targeted men on SGBV referred to the consequences of SGBV for women but was based on the local context; the message for men was that drinking and wife beating lead to poor agricultural yields, poor health, unhappiness, loss of labor, and serious injuries or death.

3.4.3 GENDER IN AGRICULTURE, LIVELIHOODS, AND DISASTER RISK REDUCTION

Agriculture. The transition from pastoralism to agro-pastoralism in Karamoja has resulted in more men and women engaging in small-scale farming. Animal husbandry is traditionally the responsibility of men and farming is more the responsibility of women, so the shift toward farming disproportionately places the burden of household subsistence activities on women. The projects targeted men and women with individual and collective/block farming activities, apiculture, and livestock. One awardee targeted women specifically with goat distribution. Women who participated in MCGs were targeted with gardening/horticulture activities via the MCGs. Where project reporting did not disaggregate indicators by sex, it is difficult to know how many men and women were reached with agriculture activities, except where women were specifically targeted. The livestock activities did empower female beneficiaries to some extent, increasing their opportunities to engage in previously male-dominated activities, and strengthening their ability to influence household decision making. The projects also tried to increase husbands' engagement in family farming, which tends to increase the size of land cultivated and annual production. Female agricultural extension workers were recruited to reach female smallholders.

A woman's access to land and livestock is predicated on her being formally married, which per customary law means her family was paid a bride price (Howe et al. 2015; Burke and Kobusingye 2014). However, there is an increasing trend in which men are not paying the bride price, making the marriage an informal union in which the wife lacks the right to access land and livestock that belongs to the man's family or clan. In Karamoja, a woman's access to and control over resources is tied to prevailing gender norms and whether she is formally married to her spouse. Women will need to continue to engage in diversified livelihoods, as marriage transactions reduce their access to their spouses' assets. At the same time, as the GOU seeks to harmonize land rights in Karamoja, it will be important to ensure that women have land tenure rights and are not excluded from either the process or the new laws. This is directly relevant to FFP development activities because they seek to engage women in agriculture and livestock activities. If women are not permitted to access land or livestock due to their informal marital status or lack of land tenure rights and customary laws, then they likely cannot participate in agriculture and livestock activities that projects implement.

Livelihoods. Livelihoods are transitioning in Karamoja for men and women. Women's livelihood activities have become increasingly diversified with the shift toward agro-pastoralism, as the loss of livestock has changed the roles of men and women in the household as well as their livelihood activities. Women's livelihood activities include petty trading, brewing, and making and selling charcoal and construction poles. However, some of these activities harm the environment, and brewing increases access to alcohol, which communities have identified as a trigger of domestic violence against women. The FFP development activities have helped men and women in Karamoja adopt alternative livelihoods, but it is not clear how sustainable the activities will be without continued support, particularly for women. Consistently, more women than men participated in VSLAs, and often women used the added capital to expand their trade in brewing and selling liquor. This suggests that the women could have benefited from additional training in alternative sustainable livelihood activities, but this type of training appears to have been limited. Women's participation in other livelihood activities was mixed. In certain cases, women were targeted specifically, but in instances when both men and women were engaged, more men participated than women. Women's lower participation in some of these livelihood activities is likely attributable to their competing household responsibilities, time poverty, and general lack of access to and control over resources.

Disaster risk reduction. Karamoja has high vulnerability to climate and economic shocks. Men, women**,** girls, and boys experience disasters and shocks differently, based upon their access to economic and social resources, age, and social responsibilities. The FFP development activities in Karamoja did not place a large emphasis on disaster risk-reduction programming relative to other sectors. One awardee worked with district governments on contingency plans, which helped to guide emergency response and monitoring during and after the 2015 drought. The projects did not appear to have made specific efforts to address the unique vulnerabilities of men and women in disasters.

Lessons Learned:

- While farming and livestock interventions were successful at engaging women in Karamoja, the awardees found it necessary to strategically engage elders and husbands to avoid situations where husbands would take their wives' assets (e.g., goats), or take over economic activities that were becoming more lucrative.

- The shift toward agriculture in Karamoja has increased women's labor responsibilities in the household. Time-saving and labor-saving technologies were essential to reducing women's time poverty.
- VSLA activities were very effective at building social capital and access to credit among women; yet they need to be combined with providing men and women with skills and training for alternative income-generating activities so that the activities do not cause further social harm or environmental damage.
- Adoption of more sex-disaggregated indicators for these technical sectors would have been useful to better track how well male and female beneficiaries are doing over the course of the project.

3.4.4 GENDER IN MATERNAL AND CHILD HEALTH AND NUTRITION

Although the MCHN objectives predominantly engaged women, both projects also actively engaged MCAs. At least initially, most of the focus on MCAs was to orient them on maternal and child nutrition issues, but over time some efforts focused on gender issues such as household decision making, women's workload, and domestic violence. One project not only trained men intensively on gender inequality and its consequences but also focused on having them serve as mentors for male peers. Community leaders were also engaged in community dialogues, but the focus of the discussions was predominantly on MCHN and not on the underlying gender issues that affect maternal and child nutrition or community leaders' role in improving gender norms. For example, although research indicated that SGBV was widespread, most project activities did not seek to address these gender issues; this was emphasized to a degree with MCAs but not as much in community dialogues. Key challenges were the scale of activities engaging men; for example, the number of MCAs was small compared to the need. As noted under the SGBV section above, SBCC activities should target men and elders in particular to address gender issues, clarify their roles in how to support and care for women and children, and explain the consequences of SGBV on nutrition and food security.

Lessons Learned:

- The approach of engaging men as male peers was successful, but the scale of these activities was small relative to the need and as result had limited impact. The focus of the activities also did not align with the earlier research undertaken by the projects that identified specific gender issues such as SGBV that needed to be addressed.
- Community dialogue was a successful approach. However, the focus was on maternal and child health and nutrition issues, and not specifically on gender issues such as SGBV, despite earlier research by the projects that identified specific gender issues that needed to be addressed to promote normative change in these communities.

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ANNEXES

Table 1. Selected Public Health and Development Indicators for Uganda and Karamoja

Indicator	Karamoja	Uganda
Population		
Total (million) (UBOS 2016)	0.965	34.6
Rural population (% of total) (UBOS 2016)	92.1	78.7
Population density (per sq km) (UBOS 2016)	35	173
Population growth rate (%) (World Bank 2015)	-	3.3
Economy		
Gross domestic product per capita (current US$) (www.data.worldbank.org, 2015)	-	675.6
Consumer price index (2010=100) (www.data.worldbank.org, 2015)	-	156.6
Poverty		
Age dependency ratio (% of working age population) (www.data.worldbank.org, 2015)	-	102
Population below poverty line of US$1.25 a day (% of population) (World Bank 2015)	-	30.6
Population below poverty line of US$1.90 a day (% of population) (World Bank 2015)	-	33.2
Human Development		
Human development index (www.hdr.undp.org, 2014)	-	0.483
Gender development index (www.hdr.undp.org, 2014)	-	0.886
Mobile cellular subscriptions (per 100 people) (www.data.worldbank.org, 2014)	-	52
Internet users (per 100 people) (www.data.worldbank.org, 2014)	-	17.7
Agriculture		
Food production index (2004–2006=100) (www.data.worldbank.org, 2013)	-	112.5
Agriculture value added per worker (constant 2010 US$) (www.data.worldbank.org, 2015)	-	473
Cereal yield (kg/ha) (www.data.worldbank.org, 2014)	-	2,019
Education		
Literacy rate (adult female—% of women ages 15 and above) (www.data.worldbank.org, 2012)	-	62
Literacy rate (adult male—% of men ages 15 and above) (www.data.worldbank.org, 2012)	-	79
Literacy rate (male and female—% of people ages 15–24) (www.data.worldbank.org, 2012)	-	84
Net primary school enrollment (% of primary school age children) (www.data.worldbank.org, 2013)	-	94
Net primary school enrollment (female—% of female children of primary school age) (www.data.worldbank.org, 2013)	-	95
Net primary school enrollment (male—% of male children of primary school age) (www.data.worldbank.org, 2013)	-	92
Net secondary school enrollment (male and female—% of people of secondary school age) (www.data.worldbank.org, 2010)	-	23
Net secondary school enrollment (females—% of young women of secondary school age) (www.data.worldbank.org, 2010)	-	22

Net secondary school enrollment (males—% of young men of secondary school age) (www.data.worldbank.org, 2010)	-	24
Life Expectancy, Fertility, and Mortality		
Life expectancy at birth (female) (www.data.worldbank.org, 2014)	-	60
Life expectancy at birth (male) (www.data.worldbank.org, 2014)	-	57
Total fertility rate (births per woman) (www.data.worldbank.org, 2014)	-	5.8
Under-5 mortality rate (per 1,000 live births) (www.data.worldbank.org, 2015)	-	55
Infant mortality rate (per 1,000 live births) (www.data.worldbank.org, 2015)	-	38
Neonatal mortality rate (per 1,000 live births) (www.data.worldbank.org, 2015)	-	19
HIV Prevalence		
Prevalence of HIV (% among girls 15–24 years) (www.data.worldbank.org, 2014)	-	3.7
Prevalence of HIV (% among boys 15–24 years) (www.data.worldbank.org, 2014)	-	2.3
Maternal Health		
Maternal mortality ratio (modeled estimate, per 100,000 live births) (www.data.worldbank.org, 2015)	-	343
Median age at first marriage for women age 25–49 (years) (http://legacy.statcompiler.com, 2011)	-	17.9
Median age at first birth for women age 25–49 (years) (http://legacy.statcompiler.com, 2011)	-	19
% of women 15–19 years who have begun childbearing by age 19 (www.dhsprogram.com, 2006)	-	24.9
Food Security Indicators		
Global hunger index (www.ifpri.org, 2015)	-	27.6
Proportion undernourished in total population (%) (http://faostat3.fao.org, 2015)	-	25.5
Dietary Diversity Indicators		
% of dietary energy supply from cereals, roots, and tubers (www.uganda.opendataforafrica.org, 2011)	-	45
Water and Sanitation		
Improved sanitation facilities (% of households with access) (GOU et al. 2016b) (2016)	13	16.4
Improved water source (% of households with access) (GOU et al. 2016b) (2016)	83	70.3
Malnutrition		
Stunting prevalence (children under 5) (UBOS and ICF International Inc. 2012) (2011)	45.0	33.4
Wasting prevalence (children under 5) (UBOS and ICF International Inc. 2012) (2011)	7.1	4.7

Table 2. Data on Districts from 2014 GOU Population and Housing Census

		Abim	Amudat	Kaabong	Kotido	Moroto	Nakapiripirit	Napak
Population		107966	105769	167879	181050	103432	156690	142224
Land area (km^2)		2352	1616	7310	3610	3538	4202	4977
Pop. density (persons/km^2)		46	66	23	50	29	37	29
Urban/rural (% hh)	Urban	16	11	7	8	14	2	3
	Rural	84	89	93	92	86	98	97
Highest education grade completed (15+ years) (%)	Never been to school	28	80	74	88	75	80	77
	Primary	39	10	15	5	11	11	13
	Secondary	33	10	11	7	14	8	10
Literacy status (18+ years) (%)	Literate	60	18	21	10	22	17	19
	Not literate	40	82	79	90	78	83	81
Marital status among female children (12–17 years) (%)	Ever or currently married	4	7	4	4	9	6	6
	Never married	96	93	96	96	91	94	94
Childbearing among female children (10–17 years) (%)	Ever gave birth (excludes those currently pregnant for the first time)	5	9	5	7	10	8	14
	Never gave birth (or currently pregnant for the first time)	95	91	95	93	90	92	86
Ownership of birth certificate (<5 years) (%)	Yes	57	38	27	30	28	31	32
	No	43	62	73	70	72	69	68
Orphanhood (mother OR father died) (<18 years) (%)	Yes	15	5	12	9	12	12	12
	No	85	95	88	91	88	88	88
Disability status (2+ years) (%)	Yes	17	7	11	7	8	8	8
	No	83	93	89	93	92	92	92

		Abim	Amudat	Kaabong	Kotido	Moroto	Nakapiripirit	Napak
Disability status (2–17 years) (%)	Yes	11	4	5	3	3	4	3
	No	89	96	95	97	97	96	97
Disability status (18+ years) (%) (extrapolated)	Yes	25	12	18	12	12	14	14
	No	75	88	82	88	88	86	86
Mosquito net (% HH)	Yes	97	87	98	95	96	93	94
	No	3	13	2	5	4	7	6
Access to at least 2 sets of clothing for every HH member (% HH)	Yes	69	54	40	32	45	51	46
	No	31	46	60	68	55	49	54
Salt (% HH)	Yes	83	85	80	69	76	85	78
	No	17	15	20	31	24	15	22
At least 2 meals per day (% HH)	Yes	45	80	40	47	49	34	48
	No	55	20	60	53	51	66	52
Construction of wall (% HH)	Temporary	85	95	94	93	91	97	96
	Permanent	15	5	6	7	7	3	4
Construction of roof (% HH)	Temporary	83	77	82	82	67	86	77
	Permanent	17	23	18	18	33	14	23
Construction of floor (% HH)	Temporary	89	93	93	91	83	95	95
	Permanent	11	7	7	9	17	5	5
Energy source for lighting (% HH)	Electric	5	2	3	8	9	3	3
	Paraffin	28	22	2	5	6	3	7
	Other	66	76	94	88	85	92	91
Drinking water (% HH)	Protected	98	57	78	85	84	81	86
	Unprotected	2	43	22	15	16	19	14
Toilet (% HH)	Improved	15	4	<1	5	5	5	5
	Unimproved	51	9	36	20	17	14	27
	No toilet	34	87	53	75	78	80	68
Own at least one mobile phone (% HH)	Yes	53	47	21	21	31	23	30
	No	47	53	79	79	69	77	70

Source: UBOS 2014.

Table 3. U.S. Government Assistance to Uganda

Request by Account	FY2014 (actual)	FY2015 (actual)	FY2016 (request)	FY2017 (request)
Global Health Programs – State	313,467,000	334,369,000	320,176,000	320,176,000
Global Health Programs – USAID - *USAID/Health Tuberculosis* - *USAID/Health President's Malaria Initiative* - *USAID/Health Maternal and Child Health and Nutrition* - *USAID/Health Family Planning/Reproductive Health* - *USAID/Health and Nutrition*	90,500,000	90,500,000	88,200,000	89,500,000
Development Assistance - *Feed the Future Initiative* - *Climate Change and Environment* - *Democracy and Governance* - *Education*	63,270,000	57,350,000	49,775,000	47,359,000
Title II	23,678,000	22,453,000	10,000,000	0
International Military Education and Training	569,000	602,000	520,000	720,000
Nonproliferation, Antiterrorism, Demining, and Related Programs	200,000	0	200,000	200,000
Foreign Military Financing	200,000	200,000	200,000	0
TOTAL	491,884,000	505,474,000	469,071,000	457,955,000

Sources: United States (US) Department of State (DOS). 2015. Congressional Budget Justification: Foreign Operations. Washington DC: US DOS.
United States (US) Department of State (DOS). 2016. Congressional Budget Justification: Foreign Operations. Washington DC: US DOS.

Map 1. Political Map of Uganda

Table 4. Gender Indicators

	Uganda (DHS 2011)	Karamoja DHS (2011)
Income and Asset Ownership		
Women 15–49 yrs		
% who report their income is less than their spouse's	76.2	44.2
% who report they do not own a house	56.4	36.5
% who report they do not own land	61.3	58.3
Men 15–49 yrs		
% who report they do not own a house	36.9	20.4
% who report they do not own land	61.3	58.3
Women's Empowerment and Decision Making		
% of women 15–49 who are literate	64.2	22.8
Who decides on use of married women's income, reported by women 15–49 years:		
Woman	52.7	68.6
Woman and spouse	30.9	22.7
Spouse	14.3	7.4
% of married women 15–49 years who make decisions on their own or jointly with their husband on:	37.5	69.2
Own health care	60.2	81.6
Major household purchases	57.4	78.4
Visits to her family or relatives	59.5	80.7
All three decisions	37.5	69.2
% of married women 15–49 years who participate in none of the three decisions (i.e., own health care, household purchases, visits to her family or relatives)	20.7	7.3
Domestic Violence		
% of women 15–49 yrs who report use of violence against women is acceptable for at least one reason[25]	58.3	43.9
% of men 15–49 yrs who report use of violence against women is acceptable	42.8	42.7
% of women 15–49 yrs who report having experienced acts of physical violence against them in the past 12 months	26.9	34.3
% of women 15–49 yrs who report experiencing sexual violence in the past 12 months	16.2	10.9

[25] Reasons provided in Uganda DHS include that the wife burns the food, argues with him, goes out without telling him, neglects the children, or refuses sexual intercourse.

Table 5. Educational Attainment of Men and Women

	% Women 15–49 years who report:[26]				% Men 15–49 years who report:			
	No formal education	Some/ completed primary school	Some/ completed secondary school	Are literate (2015)[27]	No formal education	Some/ completed primary school	Some/ completed secondary school	Are literate (2011)
Abim	27	57	15	—	—	—	—	—
Amudat	85	13	3	—	—	—	—	—
Kaabong	83	14	3	—	—	—	—	—
Kotido	94	5	2	—	—	—	—	—
Moroto	83	12	4	—	—	—	—	—
Nakapiripirit	81	15	4	—	—	—	—	—
Napak	78	20	2	—	—	—	—	—
Karamoja (FSNA)	74	21	5	—	—	—	—	—
Karamoja (DHS/MIS)	74	22	3	22 (DHS) 12 (MIS*)	30	41	28	62.8
Uganda (DHS/MIS)	15	54	25	64 (DHS) 66 (MIS)	4	60	27	77.5

*MIS refers to the 2014-2015 Uganda Malaria Indicators Survey

[26] All district-specific and Karamoja 2016 data from GOU et al. 2016b, which does not specify whether schooling was "completed" or "started" at the primary and secondary levels.

[27] UBOS and ICF International. 2015. *Uganda Malaria Indicator Survey.* Kampala Uganda: UBOS and Rockville, MD: ICF International.

Table 6. Crop Production of Uganda (2010–2014)

Crop	National					
	2010	2011	2012	2013	2014	Average
Bananas	4,594,396	4,663,312	4,503,000	4,375,000	4,578,000	4,542,742
Maize	2,373,501	2,551,000	2,734,000	2,748,000	2,868,000	2,654,900
Cassava	3,017,118	2,712,000	2,807,000	2,980,000	2,812,700	2,865,764
Sweet Potatoes	1,987,203	1,798,000	1,852,000	1,811,000	1,817,900	1,853,221
Beans (dry)	948,771	915,000	870,000	941,000	1,011,000	937,154
Sorghum	390,779	437,000	336,000	299,000	299,000	352,355
Rice, Paddy	218,111	233,000	212,000	214,000	237,000	222,822
Millet	267,973	292,000	244,000	228,000	236,000	253,595
Potatoes	167,153	180,000	185,000	175,000	181,000	177,631
Groundnuts (with shell)	275,767	327,000	295,000	295,000	295,600	297,673
Sunflower Seed	253,047	265,000	230,000	238,000	290,000	255,209

Source: GOU CountryStat. 2016. Available: http://countrystat.org/home.aspx?c=UGA&tr=7.

Table 7. Livestock Population Estimates (2008)

Animal		Karamoja	Uganda
Cattle	Total head	2,253,960	11,408,750
	% national total	19.8%	100%
Goats	Total head	2,025,300	12,449,670
	% national total	16.3%	100%
Sheep	Total head	1,685,500	3,410,370
	% national total	49.4%	100%
Pigs	Total head	340,460	3,184,310
	% national total	10.7%	100%
Chickens	Total head	1,362,820	37,385,800
	% national total	3.6%	100%
Ducks	Total head	67,450	1,458,250
	% national total	4.6%	100%
Turkeys	Total head	11,800	348,330
	% national total	3.4%	100%

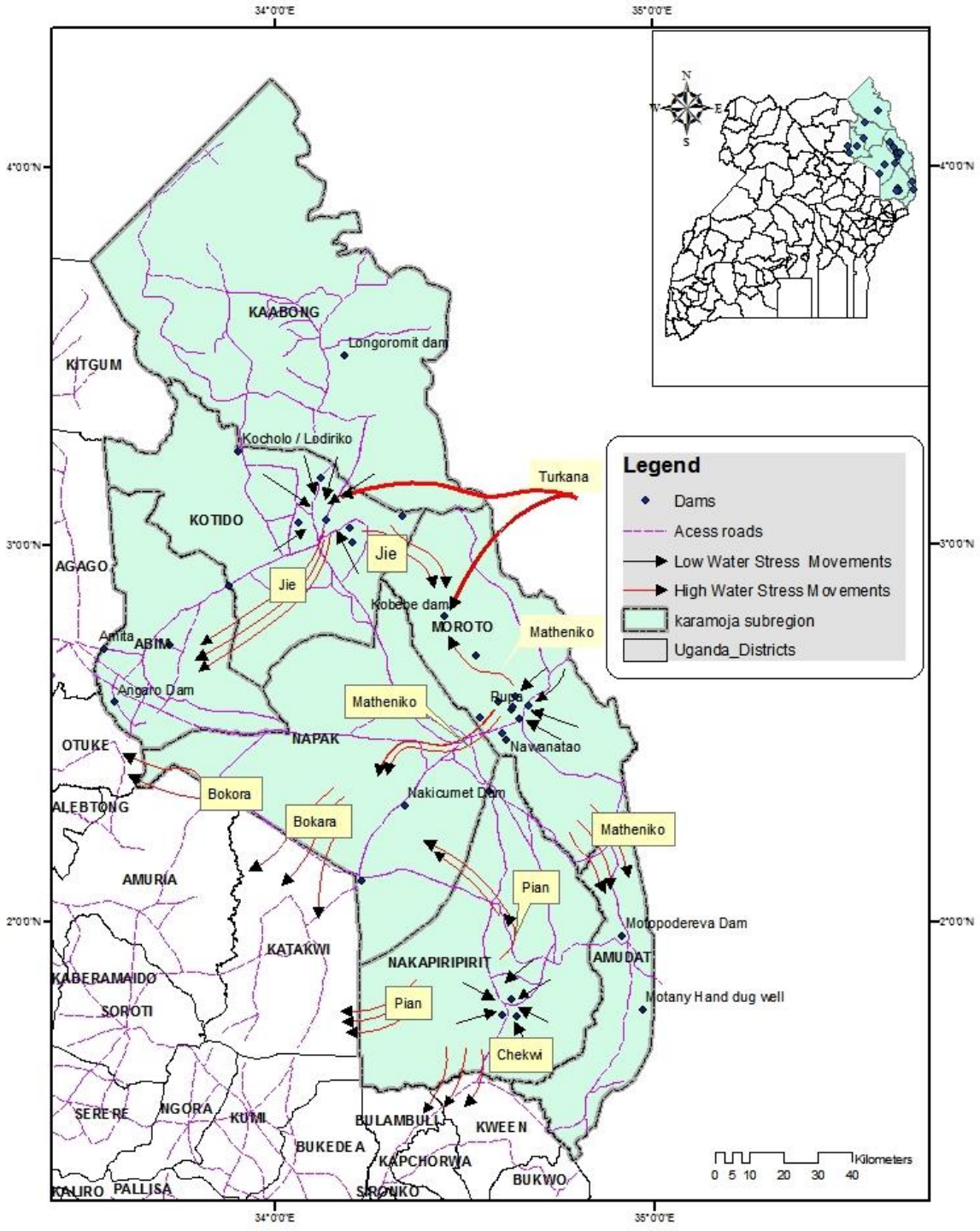
Source: MAAIF and UBOS 2009.

Table 8. Livestock Population Estimates by District (2014)

Animal		Kaabong	Kotido	Moroto	Nakapiripirit	Abim
Cattle	Total head	103,000	280,000	165,000	143,137	20,000
Goats	Total head	112,000	300,000	180,000	174,687	54,354
Sheep	Total head	113,000	380,000	200,000	136,921	12,236

Source: FAO/GIEWS 2014.

Map 2. Location of Dams and Dry Season Migration Patterns



Source: Mugerwa 2014.

Table 9. Changes in Acreage Cultivated and Volume of Crop Production per Household by Wealth Group and Livelihood Zone (2012–2015)

Zone	Year	Crop production							
		Area cultivated (acres)				Harvest of cereals (kg)			
		Very poor	Poor	Middle	Better-off	Very poor	Poor	Middle	Better-off
Western Mixed Crop	2015	0.75	1.50	3.00	5.50	58	160	375	608
	2012	0.75	1.50	3.00	4.00	210	425	975	1,100
	Change	0%	0%	0%	38%	-72%	-62%	-62%	-45%
Southeast Cattle and Maize	2015	1.0	2.0	2.0	1.5	0	70	137	150
	2012	1.0	1.0	1.5	1.5	530	540	740	760
	Change	0%	100%	33%	0%	-100%	-87%	-81%	-80%
Mountain Slopes Maize and Cattle Zone	2015	1.25	1.5	1.5	1.75	8	86	227	553
	2012	1.5	1.5	2.0	2.0	690	690	980	980
	Change	-17%	0%	-25%	-13%	-99%	-88%	-77%	-44%
Northeastern Highland Apiculture	2015	1.0	1.75	2.50	4.25	48	115	226	356
	2012	1.0	1.5	2.0	2.5	375	520	880	1,050
	Change	0%	17%	25%	70%	-87%	-78%	-74%	-66%
Central Sorghum and Livestock	2015	1.25	2.0	4.0	5.5	-	-	-	-
	2012	1.0	1.5	3.0	4.0	-	-	-	-
	Change	25%	33%	33%	38%	-	-	-	-

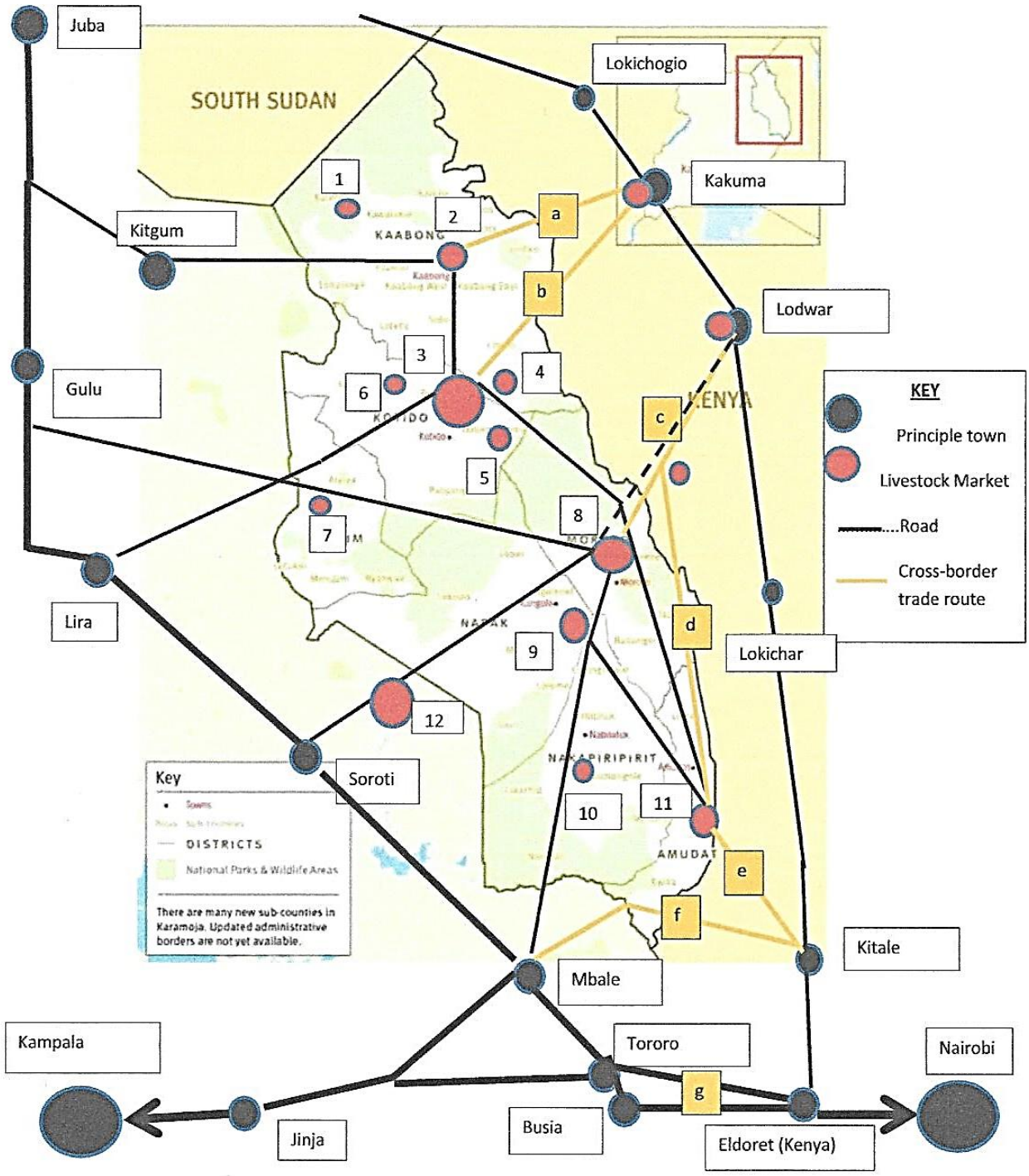
Source: FAO et al. 2016.

Table 10. Changes in Household Livestock Holdings and Milk Production by Wealth Group and Livelihood Zone (2012–2015)

Zone	Year	Livestock holdings								Milk production	
		Cattle				Shoats				Cattle	Shoats
		Very poor	Poor	Middle	Better-off	Very poor	Poor	Middle	Better-off		
Western Mixed Crop	2015	0.0	1.0	4.0	7.0	0.0	2.0	5.5	10.5	2.5	0.5
	2012	0.0	1.0	6.0	7.0	0.0	2.5	9.0	13.0	2.5	0.5
	Change	0%	0%	-33%	0%	0%	-20%	-39%	-19%	0%	0%
Southeast Cattle and Maize	2015	4.0	10.0	17.5	22.0	11.0	17.0	27.0	27.0	4.0	0.6
	2012	8.0	8.0	13.0	19.0	11.0	13.0	23.0	25.0	3.3	0.4
	Change	-44%	25%	35%	16.0%	0%	31%	17%	8%	21%	50%
Mountain Slopes Maize and Cattle Zone	2015	1.0	7.0	7.0	9.0	4.5	12.5	12.5	18.5	4.0	0.4
	2012	1.0	5.0	5.0	10.0	6.0	10.0	10.0	28.0	4.0	0.4
	Change	0%	40%	40%	-10%	-25%	25%	25%	-34%	0%	0%
Northeastern Highland Apiculture	2015	0.0	0.0	2.0	3.0	0.0	2.0	4.0	10.0	-	-
	2012	0.0	0.0	0.0	2.0	0.0	2.5	3.0	10.0	-	-
	Change	0%	0.0%	-	50%	0%	-20%	33%	0%	-	-
Central Sorghum and Livestock	2015	0.0	3.0	9.0	14.0	4.5	12.5	24.5	41.5	2.5	0.4
	2012	0.0	2.5	8.0	12.0	3.5	10.0	19.0	34.0	3.0	0.5
	Change	0%	20%	13%	17%	29%	25%	29%	22%	-17%	-20%

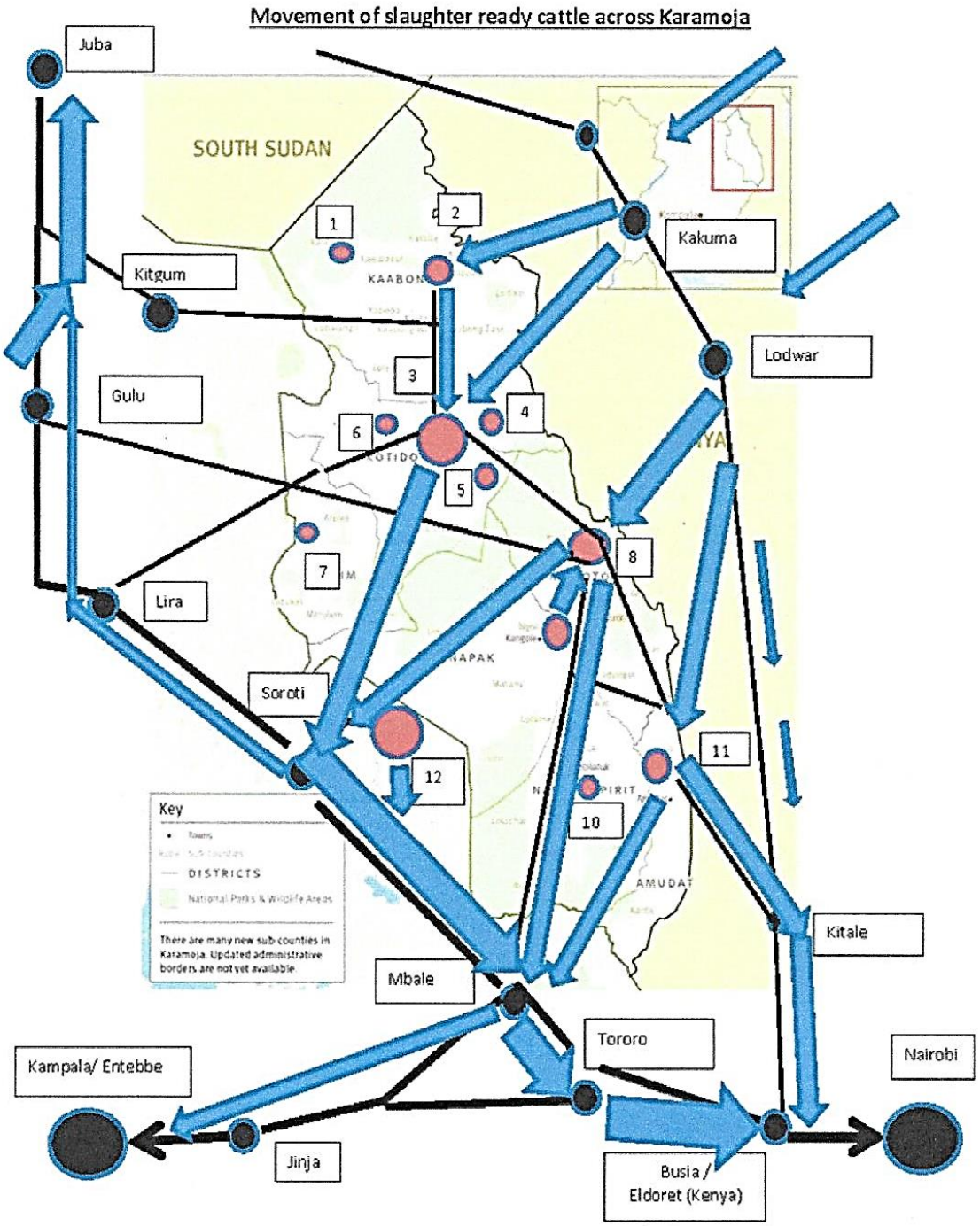
Source: FAO et al. 2016.

Map 3. Main Livestock Markets in Karamoja



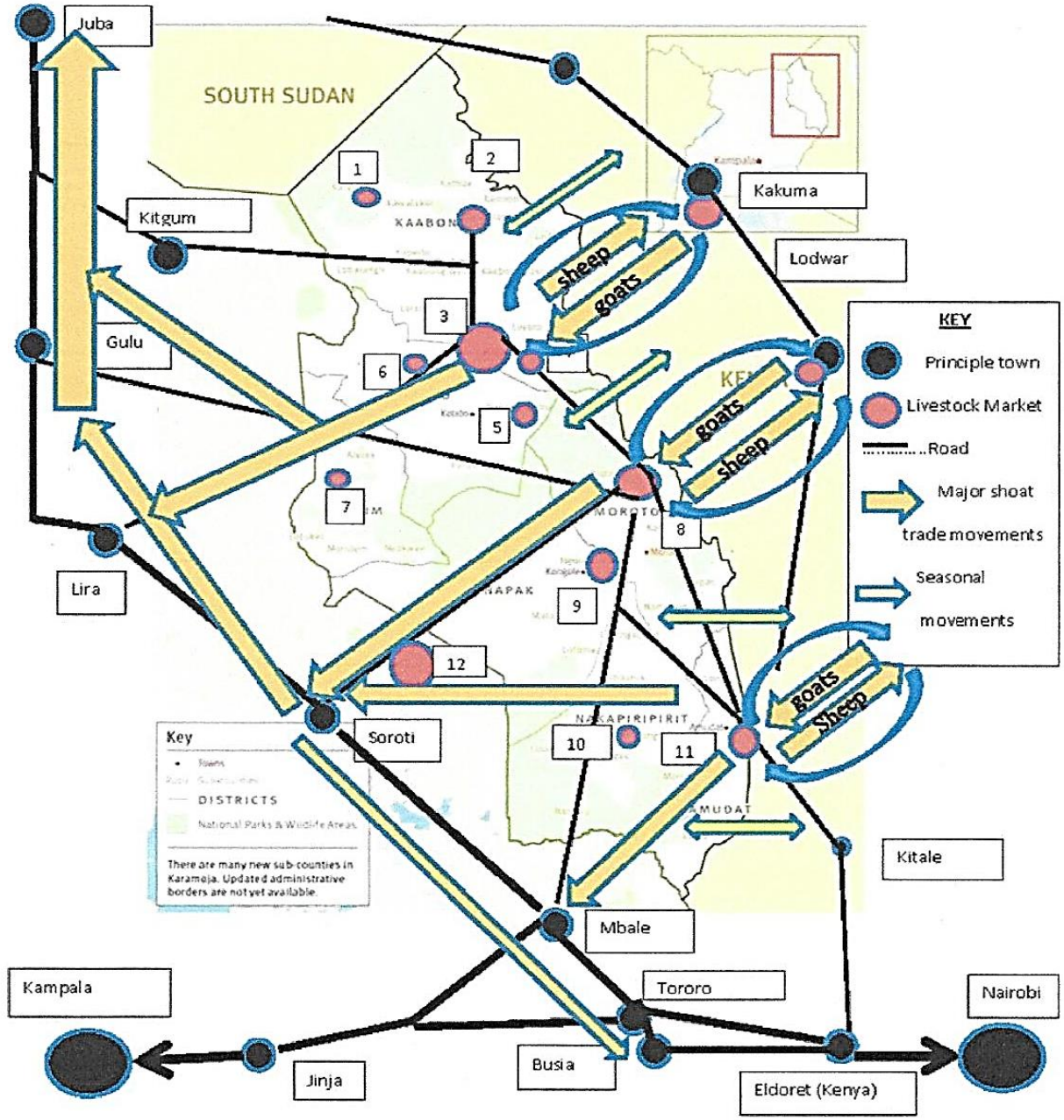
Source: Rockeman 2016.

Map 4. Movement of Slaughter Bulls



Source: Rockeman 2016.

Map 5. Sheep and Goat Movement



Source: Rockeman 2016.

Box A. Nutrition Strategies for Uganda and Karamoja

With the goal of reducing malnutrition among women of reproductive age, infants, and young children, the multi-sectoral Uganda Nutrition Action Plan 2011–2016 guides nutrition programming throughout Uganda. Eight sectors have committed to its five objectives, which focus on improving access to and use of nutrition services, enhancing consumption of diverse diets, protecting households from shock, strengthening the policy environment and programming, and creating awareness and commitment to nutrition programs (GOU 2011).

The Karamoja Multi-Sectoral Nutrition Strategy (2015–2020) aims "to reduce malnutrition levels among women of reproductive age, infants, and young children from 2015 through 2020 and beyond." The strategy asserts that improving the health and nutrition situation in Karamoja requires a two-pronged multi-sectoral approach that both builds resilience to address the underlying and basic causes of undernutrition and remains prepared to address nutrition emergencies. The sector-specific objectives outline nutrition-sensitive and nutrition-specific contributions for given sectors, and the strategy calls on all sectors to help strengthen the enabling environment that will support scale-up of nutrition actions across the region by strengthening human resource capacity, supporting coordination through district nutrition coordination committees, integrating nutrition activities into budgets and plans, using an integrated package of key messages for advocacy, and monitoring and evaluating strategy indicators (GOU and UNICEF 2015a).

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