

SEPTEMBER 2017



Five Years On: Livelihood Advances, Innovations, and Continuing Challenges in Karamoja, Uganda

A FEINSTEIN INTERNATIONAL CENTER PUBLICATION 

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Tufts
UNIVERSITY

FRIEDMAN SCHOOL OF
NUTRITION SCIENCE AND POLICY

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Acknowledgements

The authors of this report would like to thank Mercy Corps for their partnership, support, and vision over these five years of collaboration on this program. We would also like to thank the United States Agency for International Development/Office of Food for Peace (USAID/FFP) for their generosity and willingness to critically examine the issues in the Karamoja region. At Mercy Corps, we owe special gratitude to Tracy Mitchell, Maggie McLoughlin, Alex Bekunda, Sean Granville-Ross, Lizzie Robertson, and Jon Kurtz, as well as the all the field staff who have helped us along the way. We thank our excellent Feinstein field team, including Joyce Ilukori, Joshua Kidon, Benjamin Egira, and Robert Mau. We appreciate the time and effort the staff at Whave has taken to help us understand their model. In Boston, we are grateful for the support of Jessica Cote, Ann O'Brien, and Daniel Maxwell at Feinstein, and to Liz Vincent and Jessica Haswell for preparation of the final document. We greatly appreciate Andrew Catley for reviewing this report and Khristopher Carlson for providing the cover photo. Lastly, we are indebted to the people of Karamoja who once again took the time to sit and talk with us.

Suggested citation: Stites, E., Howe, K., Akabwai, D. 2017. "Five Years On: Livelihood Advances, Innovations, and Continuing Challenges in Karamoja Uganda." Somerville, MA: Feinstein International Center, Tufts University.

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Acronyms

CAHW	Community animal health workers
DVO	District Veterinary Officer
DWO	District Water Officer
FAO	Food and Agriculture Organization of the United Nations
GHG	Growth, Health and Governance (program)
GoU	Government of Uganda
HPM	Hand pump mechanic
HPMA	Hand Pump Mechanics Association
KRSU	Karamoja Resilience Support Unit
LC	Local council
MCA	Male change agent
MCG	Mother care group
NGO	Non-governmental organization
NUSAF	Northern Ugandan Social Action Fund
PHH	Post-harvest handling
PVP	Private veterinary practitioner
SACCO	Savings and Credit Cooperative
SD	Standard deviation
UGX	Ugandan shilling
USD	United States dollar
VHT	Village health team
VSLA	Village Savings and Loans Association
WASH	Water, sanitation, and hygiene
WSP	WASH service provider
WUC	Water User Committee

Executive Summary

Background to Study and Methods

This report marks the final year of collaboration between the Feinstein International Center, Friedman School of Nutrition Science and Policy at Tufts University and Mercy Corps as part of the Growth, Health and Governance (GHG) program in the Karamoja region of northeastern Uganda. Feinstein has served as the research and learning partner on the GHG program since its inception, and has conducted yearly studies on evolving and ongoing issues of relevance to the GHG project.

In this final year of GHG, the Feinstein team engaged in two complementary streams of research to understand the changes that have taken place in the northern Karamoja region over the past five years. First, quantitative methods were employed to measure the **changes in product and service utilization** across 31 villages that participated in the 2013 baseline study. Second, qualitative methods were used to understand a range of topics related to **livelihood developments and programmatic innovations** in the region, in line with the evolution of distinct facets of the GHG program. These topics included the sale and use of improved seed varieties and post-harvest handling bags, access to and management of water sources, access and utilization of Community Animal Health Workers (CAHWs), market linkages for agro-veterinary and agricultural retailers, and health service promotion. Data were collected through participatory methods in 14 villages, as well as from interviews with a wide range of key informants.

Findings on Utilization of Products and Services

A quantitative analysis of a representative group of villages indicates that there has been a widespread **increase in the utilization of services** as well as **improvement to well-being** for residents of northern Karamoja since 2013. Positive change has been captured across a wide range of variables as illustrated by the following statistically significant increases:

- **Educational enrollment and attendance** at the primary and secondary levels;
- Utilization of various modes of **transportation** for personal and commercial purposes;
- **Mobile phone use**;
- Male youth's **ability to marry**;
- **Food security** over a 12-month period;
- Use of **fertilizers, pesticides**, and planting of **improved seeds**;
- Use of **ox plows**;
- **Training** in crop production;
- Access to **CAHWs** and **livestock treatment**;
- Utilization of both **public and private clinics**;
- Utilization of **mosquito nets** and **latrines**;¹
- Access to **health and nutritional information**.

While the study design does not allow for us to draw a clear causal line between the GHG program and such positive outcomes, GHG's work has facilitated improvements within villages and across the region through its support to infrastructure, health, security, and markets and financial services, as well as agricultural and livestock production.

¹ As described in the full report, self-report of health-related indicators may be more subject to bias.

Findings on New Innovations and Developments

Improved Seeds and Post-Harvest Handling Sacks

Mercy Corps implemented an agricultural intervention to expand access to and adoption of improved seed varieties. This was done through the targeted distribution of vouchers starting in 2015,² which could be redeemed through participating local private dealers and agents. In addition, the program aimed to improve planting techniques through extension work and farmer trainings.

In terms of usage, the sale of improved seeds by local merchants rose by 300% in the first year of the voucher program (2015). Despite this sizable increase, most study participants in early 2017 described that they either a) planted a small amount in fields with regular seed varieties, and hence were not able to comment on the difference in yield and/or b) suffered widespread crop losses because of erratic rainfall and either reaped no or very little harvest.

The improved seed program had several positive outcomes. First, due to the sensitizations and trainings, awareness and understanding of the benefits of improved seeds expanded. Second, the voucher system facilitated market linkages between national suppliers and local traders. The voucher initiative may have enabled the participating traders in Karamoja to expand their businesses into new premises, to build independent relations with suppliers, to leverage credit from banks and the suppliers directly, and to reach new prospective customers. These advances may in turn allow local retailers to capitalize on expanded demand in the region.

The overall redemption rate of seed vouchers for the 2016 harvest period was approximately 20%. The

study uncovered a variety of reasons behind this relatively low redemption rate, summarized below:

- Higher cost of improved seeds;
- Reluctance to change planting practices;
- Restrictive packaging of the improved seeds;
- Confusion over how to redeem vouchers;
- Late timing of seed deliveries to the merchants.

Mercy Corps also distributed vouchers for the purchase of post-harvest handling (PHH) sacks to be redeemed through participating agents and dealers. Beneficiaries spoke very positively of the PHH sack program. Positive views were due to the extent of the subsidy provided by the vouchers,³ familiarity with the products (sacks for storage purposes), and the fact that they received three regular sacks and three with the treated liners. Dealers and agents were also generally pleased with the program. They were doing a steady business and reported that the sacks were in high demand, despite being recently introduced to Karamoja.

In the case of both the improved seeds and the PHH sacks, local merchants experienced a series of challenges in managing the supply and demand in Karamoja and in coordinating with the national suppliers to ensure timely delivery and a steady stock.

Shifting Water Management Systems

Securing access to water is a central and time-consuming facet of life in the semi-arid and unpredictable climate of Karamoja. The study examined how systems of community-level water management were changing. In Kotido and Kaabong, Mercy Corps has partnered with Whave, a rural service provider, to revise and improve water management, access, and hygiene. In Abim, Mercy Corps is working directly with the Hand Pump Mechanics Association (HPMA). These models introduce the concept of preventative maintenance through regular user fees and seek to improve

² In 2016, vouchers covered UGX 3,250 (approximately one US dollar) worth of improved seeds. Customers must contribute at least an equal amount to redeem their voucher.

³ The vouchers covered 90% of the price of the three sacks, and recipients only had to provide UGX 2,400 of their own funds.

the effectiveness of local water user committees (WUCs). While the relatively recent introduction of these models made it difficult to assess their impact, sampled communities felt positively about the new systems and the revitalization of their WUCs. Efforts to improve hygiene through behavior change remain a challenge.

Animal Markets

The research team collected qualitative data regarding changes in access to markets, infrastructure at animal markets, additional services at and benefits from markets, patterns and strategies of livestock trade, and security at markets. A summary of findings on markets include:

- In support of earlier evidence, **access to livestock markets has increased** across northern Karamoja (although increases have not been uniform across districts). Having more market options within the district means that sellers have a better chance of getting their preferred price for their animals, and they do not have to travel as far to reach markets.
- As livestock markets have become more robust, **the range of services, commodities, and employment opportunities at the markets has also expanded.**
- **Livestock markets are more dynamic and diverse** than previously.
- The general peace among groups in the region and the repairs to fences at markets has led to **an increased sense of security around markets and livestock trade.**
- Some male respondents described the importance **of less tangible benefits afforded by the growth markets**, such as the creation of friendships (including across ethnic groups), relations with traders, and business skills.
- The expansion of markets in the region has increased the role and use of **cash**, which may particularly benefit women.
- Despite these improvements, many markets **continue to have a lack of infrastructure**, and it is unclear how the improvements to basic infrastructure (fences, stalls, shade covers, etc.) will be managed and maintained.
- While security is greatly improved, respondents in many areas pointed to ways in which **security at markets could be further strengthened.**

Private Veterinary Practitioners (PVPs)

In recognition of the problems with the drug supply chain, Mercy Corps has been facilitating the expansion of **private veterinary practitioners (PVPs)** who operate veterinary drug supply shops. The main buyers of veterinary medicines from the PVPs are CAHWs and livestock owners, and the PVPs also work closely with District Veterinary Officers (DVOs). The PVPs were generally positive about their work and involvement with CAHWs and the local community. They reported that their businesses are expanding. Challenges exist around the low purchasing power of livestock owners and the difficulties in maintaining a consistent supply chain.

Constraints and Advances in the Livestock Sector

We analyzed information collected in 2013 from respondents regarding constraints to the livestock sector and compared this to advances made to date and continuing challenges. Constraints identified in 2013 included: shortage and poor quality of water for people and livestock; animal diseases; poor animal health services; poor management at protected kraals; continuing theft of animals and other assets; and lack of reliable markets, among others. While numerous challenges remain, we found that many of the programmatic interventions in the livestock sector directly addressed this set of issues identified by local populations.

Conclusions and Considerations

Life for many residents of Karamoja has stabilized and improved over the past five years. Advances in security have boosted commerce, investment, mobility, and basic safety for most inhabitants. Growing numbers of people can access health care, schools, and local markets. The ability to move animals safely from one area to another has been a boon to livestock markets, and the dynamic markets have attracted traders from outside the region as well as merchants offering a range of goods. Market growth has brought a burgeoning of the cash economy, and this provides an important avenue for potential diversification into a range of sectors. In

particular, the growth of the cash economy may be advantageous for women, who have limited control over livestock but often have greater influence over cash.

Despite the widespread improvements, the challenges in Karamoja remain immense. Substantial hurdles to poverty alleviation and sustainable growth continue to exist. An overarching challenge is the relatively slow pace of economic growth and diversification. International actors are responsible for many infrastructure improvements, but ongoing government investment and support will be required if such interventions are to have long-term benefits. The government has provided some public goods, but much more needs to be done in terms of developing utilities, maintaining and improving new and existing infrastructure, and increasing governance capacity and reliability at the local and district level.

Given the erratic rainfall patterns, animal production continues to be the most viable source of livelihood. Cattle remain the preferred livestock asset for men, and having any form of livestock in adequate numbers allows for diversification, investment, and increased resilience. Earlier research conducted by Feinstein showed that inequity in animal ownership was high in 2013; additional research is needed to know the extent to which this inequity has changed in the intervening period. There is a potential for market-based approaches (such as GHG) to increase

inequality because the better-off households may benefit disproportionately from services provided. For example, improvements to roads and markets are likely to be of most use to those with the resources and ability to access these public goods. Ideally such individuals benefit from such access, but their relative wealth may also increase in relation to those who are not benefitting. We do not know the extent of patterns of use of these services, nor do we know their impact on asset equity or holdings.

Summary of Recommendations for Mercy Corps

- Recognize that change takes time in a context such as Karamoja.
- Continue with an emphasis on programs that strengthen value added, investment opportunities, and diversification within the livestock and livestock-related sectors.
- Improve sustainability and longevity of infrastructure investments by seeking to facilitate local mechanisms of management, maintenance, and ownership.
- Improve coordination with district-level stakeholders and other NGOs.
- Improve outreach, sensitization, communication, and follow-up with local communities.
- Conduct further research into the benefits of a market-based approach for the very poor, particularly with regard to livestock ownership and use of and benefit from services.

Introduction

Life for many of the residents of the Karamoja region of northeastern Uganda has stabilized and improved over the past five years. Advances in security have boosted commerce, investment, mobility, and basic safety for most inhabitants. Growing numbers of people can access health care, schools, and local markets. The ability to move animals safely from one area to another has been a boon to livestock markets, and support to infrastructure at markets has attracted traders from outside the region as well as merchants selling a range of goods. Respondents interviewed across the three districts of northern Karamoja for this study consistently reported overall improvements in their lives and livelihoods. One of the most marked areas of positive change is in the levels of food security. In 2016, respondents in northern Karamoja reported that approximately 50% of households were food secure for 12 months of the year. This compares to less than 20% in 2013. This report investigates the broader landscape of change in Karamoja and finds that while challenges and constraints still exist, particularly for the very poor, overall there has been considerable progress in the region.

Background to Study

This report marks the final year of collaboration between the Feinstein International Center of the Friedman School of Nutrition Science and Policy at Tufts University and Mercy Corps as part of the Growth, Health and Governance (GHG) program in the Karamoja region of northeastern Uganda. Feinstein has served as the research and learning partner on the GHG program since its inception and has conducted yearly studies on evolving and ongoing issues of relevance to the GHG project. In this final year of GHG, the Feinstein team engaged in two complementary streams of research. First, we examined changes regarding use of and access to specific products and services as compared to 2013. Second, we investigated specific new and emerging topics based on innovations to Mercy Corps programming. The role of Feinstein is not to evaluate programs, but rather to provide analysis on developments in the region, including the impact of Mercy Corps activities, particularly on livelihoods. Hence this report provides insights on continuing changes in Karamoja and discusses the ways in which GHG interacts with these developments.

Methods

Research presented in this report relies on both qualitative and quantitative data collected by the Feinstein team in October and November 2016 and in January and February 2017.

Product and Service Utilization

Quantitative methods were employed to understand the change in product and service utilization since the baseline study in 2013. The research team revisited the same 31 villages (11 in Kotido District, 10 in Abim District, and 10 in Kaabong District) that participated in the 2013 study. In each location, a focus group was assembled, comprising both men and women across a range of ages. Through proportional piling methods, focus groups were asked to describe the current access and utilization of various products and services, grouped into eight categories. Topics included transportation, credit and savings, animal health and extension work, agricultural inputs and extension work, human health, education, energy saving products, and “other” (e.g., mobile phone utilization, youth marriage, and food security). Mercy Corps implemented both broad interventions that likely affected product service utilization for residents of Karamoja such as infrastructural and market improvements and targeted interventions tailored to specific villages in the sample. These include improvement to roads and water infrastructure, financial training and financial services, support to community animal health workers (CAHWs) and poultry vaccinators, agricultural support to encourage improved agriculture practices (drought-resistant seeds, soil and water conservation methods, improved land preparation and weeding methods, organic pesticides, post-harvest handling (PHH)), energy-saving products, behavior change initiatives through Mother care groups (MCGs), Male change agents (MCAs) and community dialogues, as well as Village Health Team (VHT) capacity building and support to Health Unit Management Committees (HUMCs). Qualitative

methods were also employed in villages and with key informants in order to solicit a more nuanced understanding of the reasons behind changes in product and service utilization.

Using participatory proportional piling, changes between 2013 and 2016 were calculated based on the number of counters (stones) per pile allocated to each time period. Descriptive statistics are presented in the report. As well, T-tests were conducted to determine if changes between 2013 and 2016 were statistically significant. Results in this study are reported at the $p < .1$ level of significance. The impact of specific Mercy Corps interventions on access and utilization of products and services cannot be measured because interventions were not randomized across the 31 sample villages.

The original selection of 31 villages for the baseline study was both purposive and random. In Kotido District, 10 villages were randomly selected and provided good geographic coverage across sub-counties. In Abim and Kaabong, simple randomization did not ensure adequate geographic coverage across sub-counties. Thus, the strategy was adapted so that one parish was randomly selected from each sub-county, and one village was randomly selected from each selected parish. In Kaabong District, the sample of sub-counties was restricted to include only Karenga, Lolelia, Kathile, and Kapedo, where the Mercy Corps program was being implemented at that time. Since then, the program has expanded focus to all sub-counties in Kaabong, but in order to ensure comparable data, the same Kaabong locations were sampled in the endline. In Abim and Kotido, conclusions about change in product and service utilization can be generalized to the district level. In Kaabong, conclusions can be generalized across the selected sub-counties.

The first section of the findings combines the quantitative and qualitative data on product and service utilization.

New Innovations and Developments

Through conversations with Mercy Corps during the study design phase for this final round of data collection, we prioritized additional subjects for research based on the evolution of the GHG program. These subjects included the sale and use of improved seed varieties and PHH bags, access to and management of water sources, access and utilization of CAHWs, market linkages for agro-veterinary and agricultural retailers, the expansion of financial services (Village Savings and Loans Associations (VSLAs) and Savings and Credit Cooperatives (SACCOs)), health service promotion through MCGs, MCAs, and dialogues, and the sale and consumption of alcohol. In order to adequately cover these topics, the research team asked Mercy Corps for guidance on which issues to prioritize. The team subsequently selected villages that had received Mercy Corps' (or their partners') interventions on MCGs, MCAs and seed vouchers,⁴ water access services and behavior change, and extension support from agriculture extension workers or CAHWs. Ideally, villages were selected where multiple interventions had taken place and where the quantitative research had also been conducted.

In total, 14 villages (4 in Abim District, 5 in Kaabong District, 5 in Kotido District) were selected where interventions had taken place (see Annex B). Within each village, an equal number of focus group discussions were held separately with women, young men, and elders. In addition, key informant interviews were conducted to solicit perspectives from beneficiary communities. We interviewed representatives of VSLAs, MCGs, Water User Committees (WUCs), CAHWs, and Local Chairpersons (at LC1 level⁵). In order to understand the governance and service provider perspective, we interviewed agricultural agents and dealers, District Water Officers (DWOs), District Veterinary Officers (DVOs), Production Secretaries, LC5 Councilors, hand pump mechanics (HPMs), private veterinary practitioners (PVPs), veterinary drug vendors, managers of SACCOs, brewers, and butchers. In addition, the research team also observed livestock markets in all three districts and interviewed a number of traders, sellers, transporters, and brewers operating within these markets.

The second section of the findings discusses new innovations and developments.

⁴ These three interventions were linked in the majority of sites.

⁵ Elected local governments in Uganda are called local councils, or LCs. The term LC is also used to refer to the chairmen of the local council at each level. The local councils are arranged in a hierarchal structure according to administrative level. LC1s cover the village, LC2s cover the parish, and so on up to the LC5 at the district level.

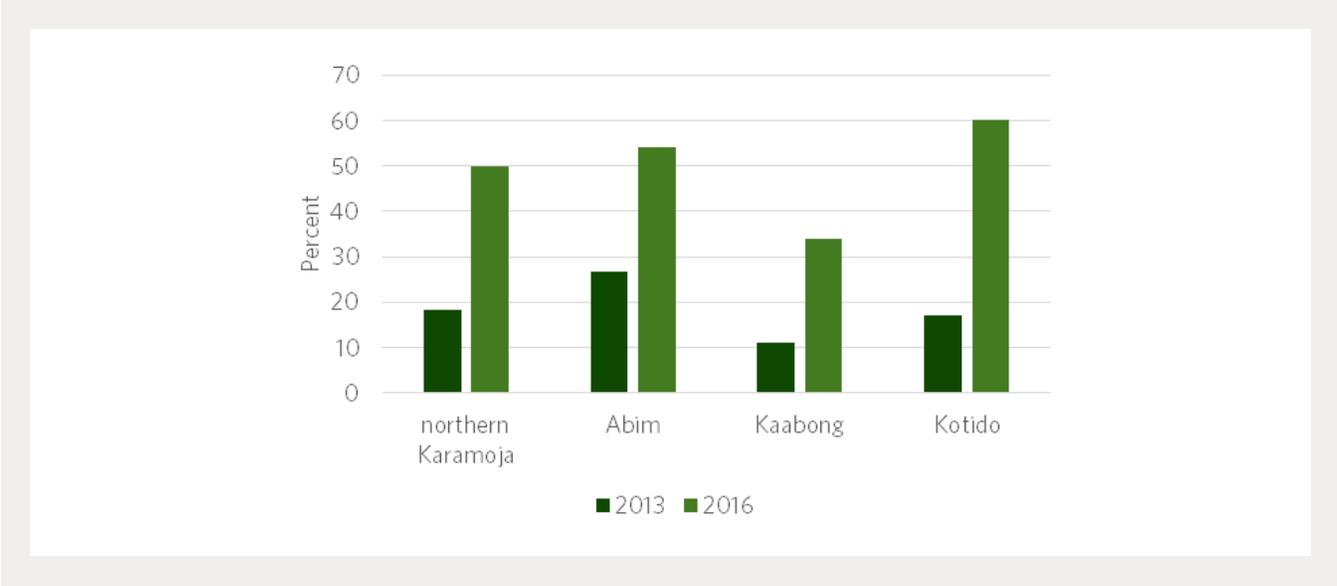
Findings on Utilization of Products and Services

Widespread Increases in Utilization of Services

It is clear that there have been marked improvements in many variables over the course of the GHG program in Karamoja. This includes a marked improvement in food security in the three districts of northern Karamoja (Figure 1).⁶ We hypothesize that this shift is due to a number of underlying and contributing factors detailed throughout this report. Previous studies under the Feinstein-Mercy Corps partnership have detailed the improvements to security and how these changes

have in turn had positive impacts on livelihood strategies and outcomes. People, animals, traders, and stakeholders are able to move freely throughout the region with minimal security concerns. This is a dramatic positive shift from five years earlier (and even more so from 10 or 15 years previously). This change has brought with it improved access to natural resources (including fields for cultivation, animal pasture, and water sources for both humans and livestock), increased trade (within the region and to neighboring areas), and investment by government, private sector, and national and international development actors. All of these factors have contributed to the improved food security illustrated in Figure 1.

Figure 1. Mean Proportion of Residents Reporting Food Security by Year⁷



⁶ To note, although the participatory data collected for this study indicate improved food security, global acute malnutrition (GAM) rates were still high at 11% in mid-2016 and are unlikely to have changed drastically in the interim (WORLD FOOD PROGRAM & UNICEF 2016. Food Security and Nutrition Assessment, Karamoja Uganda. Kampala: World Food Program (WFP) and UNICEF.

⁷ The range in the proportion of residents that are food secure within sample villages in the three districts was between 0 and 88% in 2013 (SD = 18.9) and 0 and 94% in 2016 (SD = 27.2). In Abim District, the range was between 8% and 88% in 2013 (SD = 26.2) and 14% and 94% in 2016 (SD = 26.4). In Kaabong District, the range was between 0 and 30% in 2013 (SD = 12.0) and 0 and 72% in 2016 (SD = 26.8). In Kotido District, the range was between 0 and 50% in 2013 (SD = 14.1) and 8% and 88% in 2016 (SD = 23.4).

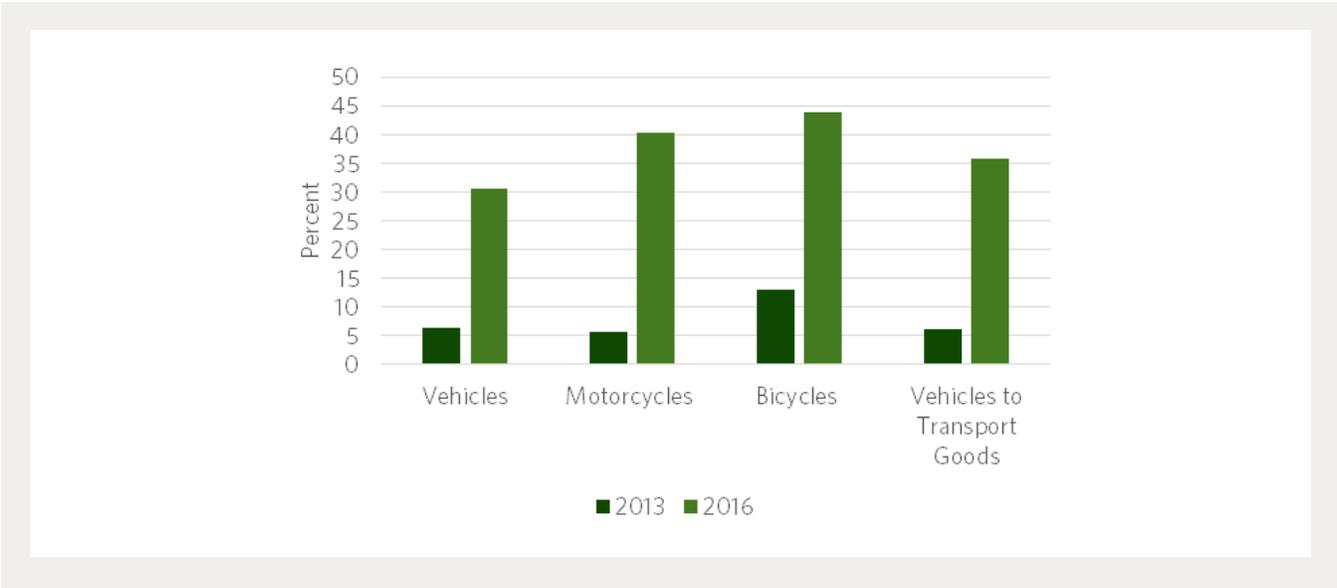
To gauge food security, we asked respondents what proportion of their village was food secure for an entire year. We did not distinguish specific sources of food. Maintaining food security throughout the year is due to a combination of factors that differ from one household to the next, including agricultural production and availability of required inputs (land, labor, seeds, tools, etc.), access to markets, income and consumption rates, and overall resilience to shocks and stressors. As such, a measure of the households that are food secure in a given population can be a useful indicator of average well-being.

The quantitative data on increased utilization of services mirror these overall positive trends in the region. Marked improvements are visible in almost every area examined. In addition, we collected utilization data on several topics that we do not cover in depth in the main findings discussions below, but which are indicative of more general

widespread progress in Karamoja. Education is one such area, with significant trends of increased enrollment and attendance at both the primary and secondary levels in most of the sampled villages.⁸ Use of a range of transportation options for personal and commercial purposes also saw statistically significant increases between 2013 and 2016 (Figure 2). While a handful of villages saw a decrease or no change in utilization of transport, overall the trend was positive in each district. The increase in use of transportation likely relates to a greater reach of trade networks, increased access to capital, and broader commercial linkages.

While progress as measured by growth in utilization of various products and services is significant across many of the variables examined, the specific pathways leading to this growth vary from one service to the next. In some instances, these pathways are unclear and may be misleading. Bias in the study data can also lead to inaccuracies,

Figure 2. Mean Proportion of Residents Using Transport by Year⁹



⁸ Five villages saw sizeable drops in attendance (more than 17%). Three of these were in Kaabong District (Naoyaro-Lokori and Lokori Central in Karenga sub-county and Nakorichokei in Lolelia sub-county) and two in Abim District (Abongodero in Abim Town Council and Gulopono North in Nyakwae sub-county).

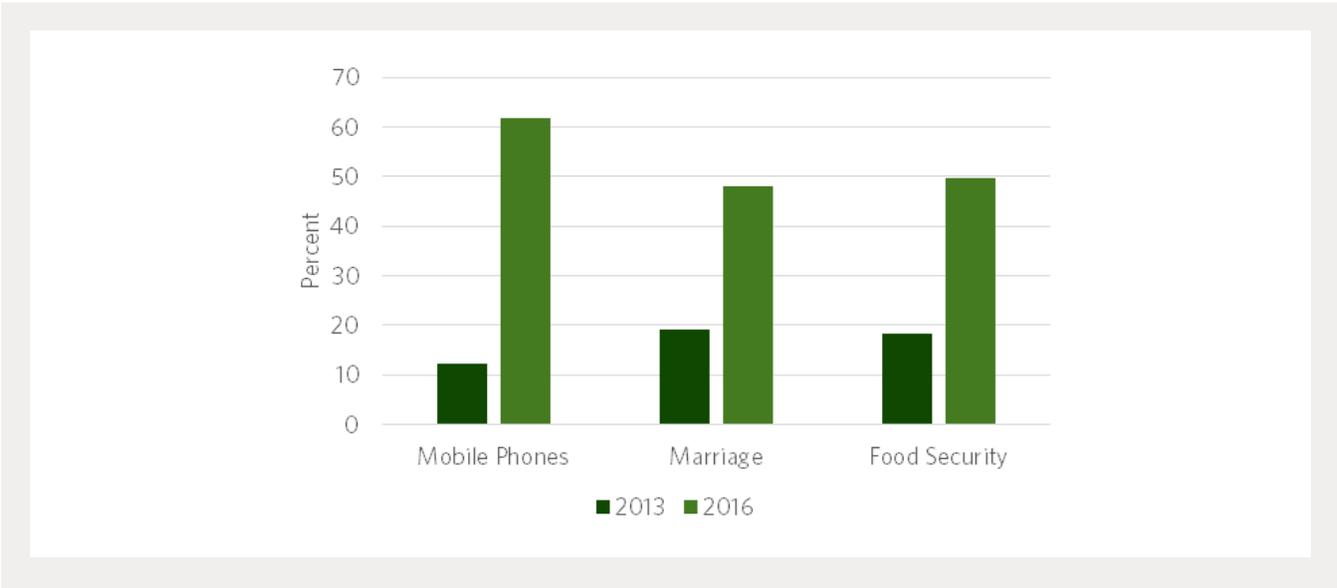
⁹ The range in the proportion of village residents utilizing vehicles within sample villages was 0 to 66% in 2013 (SD = 13.7) and 4 to 96% in 2016 (SD = 12.1). The range in motorcycle usage within villages was 0 to 28% in 2013 (SD = 7.7) and 10% to 98% in 2016 (SD = 23.3). The range in bicycle usage within villages was 0 to 100% in 2013 (SD = 20.9) and 4% to 92% in 2016 (SD = 23.3). The range in access to transport for goods within villages was 0 to 76% in 2013 (SD = 15.0) and 0 to 92% in 2016 (SD = 23.3).

although such information may itself have value. For instance, there is a marked increase in the reported use of latrines. At the same time, open defecation remains an obvious problem. Messaging about the importance of latrines is likely to encourage people to exaggerate latrine use when asked by outsiders. On the other hand, the reports of latrine use—even if exaggerated—indicate the effective reach of the behavior change message, which is an important first step in achieving the desired end results.

We also used the participatory quantitative tools to investigate some topics that fell outside the use of programs or services. Figure 3 illustrates the data on two such topics: extent of mobile phone use and the proportion of male youth able to marry. While not necessarily interrelated, these variables can be seen as proxies for other changes. Mobile phone use (which is likely greater than phone ownership), indicates the expansion of infrastructure, greater economic engagement by users, growing connectedness to labor and agricultural markets, and improved consumer and producer welfare (Aker and Mbiti, 2010). The ability of young men to marry can

be a hallmark of household and community access to animals (because bridewealth is traditionally paid in cattle). Previous research in Karamoja illustrated that rates of official marriage had greatly declined in the early to mid-2000s (Stites, 2013). Other potential explanations for the reported increase in men’s ability to marry may be due to changing community norms, including the growing acceptability of marrying with a bridewealth consisting of a combination of assets (such as cash alone, cash plus cattle, a mixture of livestock types, etc.). Such shifts in traditional concepts of bridewealth may be related to increased exposure to alternative ideas, an expansion of constructs of masculinity once exclusively centered on cattle, or increased access to other types of assets (Stites, 2013). As will be discussed later in this report, however, the information from these and other variables has the potential to be misleading in regard to inequality or poverty within a community. As illustrated in Figure 3 below, these indicators saw marked and statistically significant increases between 2013 and 2016. Increases in the areas below were sizeable at the district level, although with some variations.

Figure 3. Mean Proportion of Residents Utilizing Mobile Phones and Male Youth Able to Marry by Year¹⁰



¹⁰ The range in the proportion of village residents utilizing mobile phones within sample villages was between 0 and 86% in 2013 (SD = 17.3) and between 20% and 100% in 2016 (SD = 24.8). The range in the proportion of village residents reporting that youth are able to marry within villages was between 0 and 84% in 2013 (SD = 19.7) and 0 and 92% in 2016 (SD = 24.5).

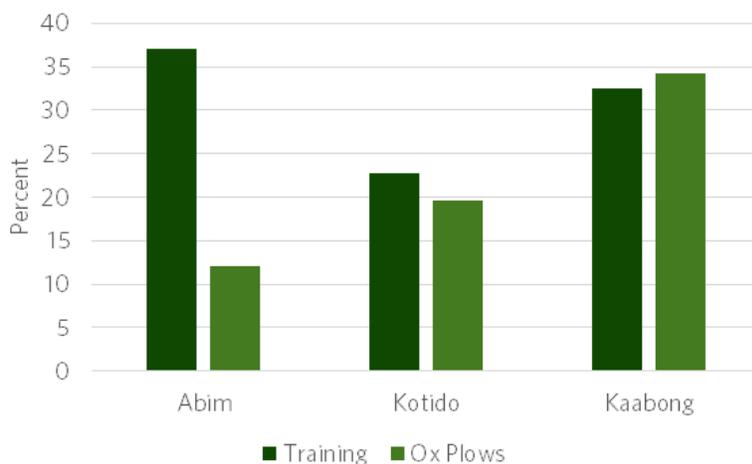
Agricultural Interventions

The data on utilization of products and services included a range of indicators related to agricultural (i.e., agrarian) production. These consisted of participation in training on crop production, use of ox plows, use of tractor tillage, use of fertilizers, use of pesticides, planting of improved seeds,¹¹ and use of post-harvest preservation sacks (subsidized through voucher programs). In the 31 sampled villages, there were statistically significant increases across the two time periods in use of fertilizers, pesticides, planting of improved seeds, the use of ox plows, and participation in training on crop production. Reported use of tractor tillage decreased. In terms of magnitude, the most marked increases over time are in the utilization of ox plows and participation in trainings, although there are differences by district, as illustrated in Figure 4. To note, data for

this study were collected at the community—as opposed to household—level. It is thus difficult to know the differences by wealth group in access to and utilization of these services. Some services, such as ox plows, were shared, whereas others, such as livestock interventions, would have benefitted the better-off households that had livestock holdings. In addition, shocks such as poor harvests would be felt more strongly by poorer households, as wealthier households are more likely to own livestock and hence have more resilience to shocks and a better balance across consumption sources (Stites et al., 2016).

Mercy Corps introduced a program to expand access to improved seeds in 2015 through distribution of seed vouchers and facilitation and support to a network of private agricultural dealers and their agents. This initiative is discussed in the Findings on New Innovations and Developments section.

Figure 4. Change in Mean Proportion of Village Residents Utilizing Ox Plows and Participating in Agricultural Trainings Between 2013 and 2016 by District¹²



¹¹ This finding can be misleading, because not all of the 31 villages or all of the populations in each village received the seed vouchers that could be exchanged for improved seeds. In 2015, Mercy Corps programming through GHG resulted in a 300% increase in the volume of improved seed sales (for a total of 26.8 tons of improved seed sold) in the targeted districts, all handled through local private businesses. Comments on draft provided by Mercy Corps staff member, August 4, 2017.

¹² The range in the difference in agricultural trainings between 2013 and 2015 in Abim District was 0 to 60 (SD = 17.1). In Kaabong District, the range was 0 to 84 (SD = 27.4), and in Kotido District the range was between -2 and 70 (SD = 24.9). The range in the difference in ox plow usage between 2013 and 2016 in Abim District was -58 to 58 (SD = 33.1). In Kaabong District, the range was -12 to 54 (SD = 20.8), and in Kotido District the range was between 16 and 70 (SD = 19.3).

Animal Health

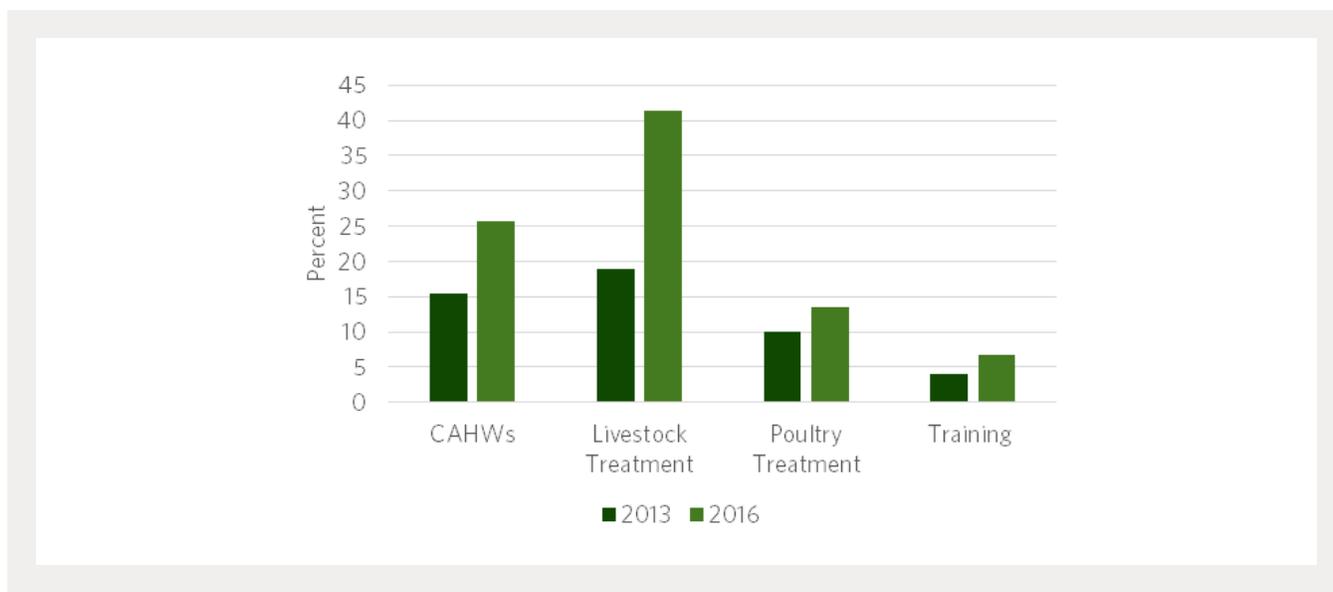
Animal disease continues to be a problem in Karamoja, despite the end of the disarmament campaign's overcrowded protected kraals and the recent efforts by national and international actors to expand both preventative and responsive services. A 2016 review of veterinary services conducted by the Karamoja Resilience Support Unit (KRSU)¹³ found weaknesses in all components of veterinary services, including poor facilitation, low quality and sustainability of service providers, and poor coordination and interaction among actors (Abebe, 2016). While these findings indicate that a great deal of work still needs to be done, quantitative data collected in late 2016 by the Feinstein team show **overall increases in access to and/or utilization of animal services** (including CAHWs and livestock and poultry vaccines and treatment) in sampled villages since 2016 (Figure 5). The increase in access

to CAHWs and livestock treatment and vaccines was found to be statistically significant.

To note, the increase in utilization of some of these services may be due to more services being available and accessible and/or may be a result of more households owning livestock or poultry (thereby expanding the numbers of households needing and using such services). While the trend is positive due to either causal factor, additional research would allow for greater nuance in this regard. Figure 6 illustrates the above data by district.

Mercy Corps supported 20 out of the 31 villages in the quantitative sample as part of the CAHW program, but we are not able to quantitatively measure the impact of these interventions given the lack of randomization of village selection. It should also be noted that other organizations (as well as the Government of Uganda (GoU)) may have been active in distributing animal vaccinations and

Figure 5. Mean Proportion of Residents that Utilize/Access Animal Services by Year¹⁴



¹³ The KRSU is implemented by faculty and researchers from Feinstein, but it is not a partner on Mercy Corps' GHG program. At the time of writing of this report, there was no overlap in staffing between the teams, although we are in regular contact to ensure complementary agendas and strategies.

¹⁴ The range in the proportion of village residents accessing CAHWs within sample villages was 0 to 66% in 2013 (SD = 15.4) and 0 to 94% in 2016 (SD = 30.9). The range in access to livestock treatment was 0 to 100% in 2013 (SD = 24.6) and 0 and 100% in 2016 (SD = 30.7). The range in access to poultry treatment was 0 to 100% in 2013 (SD = 23.1) and 0 to 65% in 2016 (SD = 21.1). The range in the proportion of residents in a given village receiving livestock training was 0 to 40% in 2013 (SD = 10.9) and 0 to 56% in 2016 (SD = 16.2).

treatment in the sample locations during this time period. The qualitative data paints a more nuanced picture of improvements in access to services and veterinary medicines in some areas and continuing problems with supply and use in other locations.

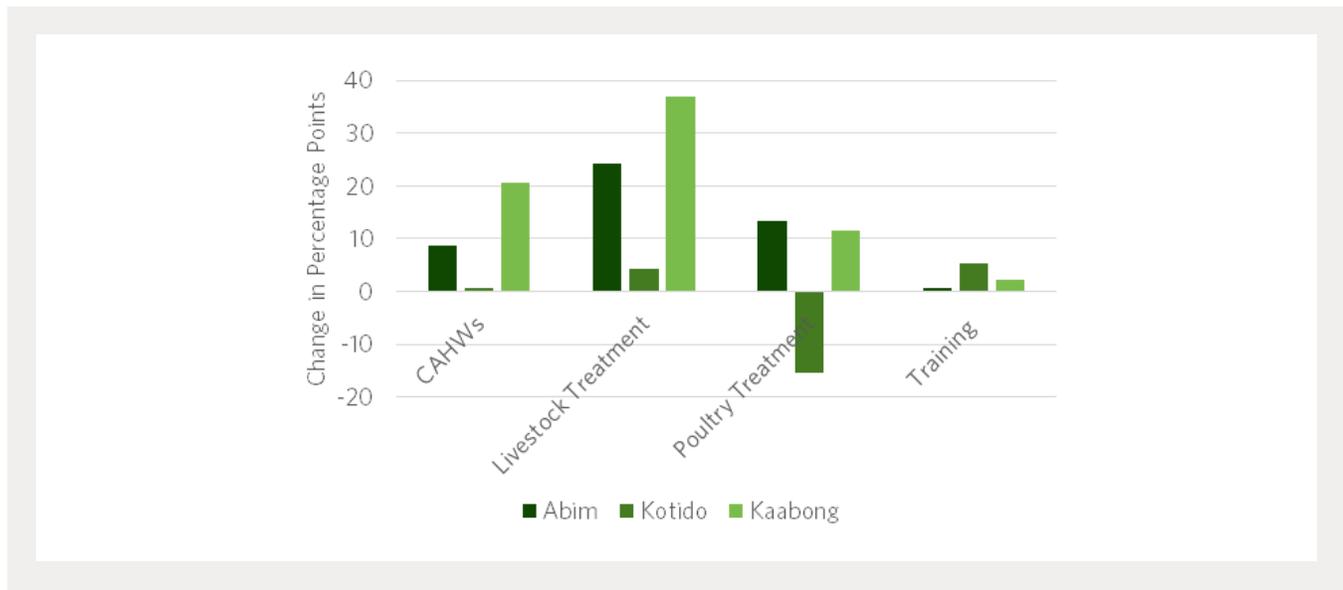
CAHWs

As illustrated in Figures 5 and 6 above, use of CAHWs significantly increased across the periods of data collection. However, **local perceptions on CAHWs varied based on a number of factors**, including the number of CAHWs in a given area, their proximity to a given location, and the availability and cost of medicines. A number of respondents reported that while they had some access to CAHWs, these individuals were not

based nearby. This is consistent with the uneven distribution of both livestock and veterinary service providers in the Karamoja region (Abebe, 2016). The demand for CAHWs remains very high in the study locations, including in the more agrarian areas of Abim.¹⁶ In fact, male elders in almost all locations wished to provide the Feinstein researchers with a list of names of those individuals (men and also women in many cases) in their communities whom they believed would be good candidates for CAHW training.

Respondents generally approved of and respected the knowledge and skills of CAHWs. The KRSU review of veterinary services in the region found that CAHWs were considered the most accessible (after traditional medicine), accepted, and trusted providers of animal health services (Abebe, 2016).

Figure 6. Change in Mean Proportion of Utilization/Access of Animal Services between 2013 and 2016 by District¹⁵



¹⁵ The range in the difference in access to CAHWs within sample villages in Abim District between 2013 and 2016 was -40 to 52 (SD = 26.8). In Kaabong District, the range in the difference in access to CAHWs was -38 to 38 (SD = 18.8), and in Kotido District, the range was -8 to 46 (SD = 20.6). The range in the difference in accessing livestock treatment between 2013 and 2016 was -18 to 72 in Abim District (SD = 29.4). In Kaabong District, the range was -82 to 56 (SD = 41.1), and in Kotido District, the range was -6 to 68 (SD = 18.8). The range in the difference in accessing poultry treatment between 2013 and 2016 was 0 to 58 (SD = 22.8) in Abim District. In Kaabong District, the range was -100 to 16 (SD = 39.5), and in Kotido District the range was between -26 and 64 (SD = 24.4). The range in the difference in livestock training between 2013 and 2016 was 0 to 6 in Abim (SD = 1.9). In Kaabong District, the range was 0 to 48 (SD = 15.1), and in Kotido District it was between -30 and 46 (SD = 19.7).

¹⁶ The need for CAHWs in Abim was raised by respondents in all four of the study locations in qualitative data collection in Abim.

This finding was largely supported by the Feinstein research that was part of GHG. For instance, male respondents in a village in Kapedo sub-county in Kaabong were impressed with the capabilities of their Mercy Corps-trained CAHWs and had in turn received training from this individual. When asked how their own knowledge on animal health had changed, these respondents explained:

There is the knowledge we got from the CAHW for treating the animals...according to each particular disease and pest whereby he teaches the right dosage for a particular animal and the size of the animal. The impact is that we have managed to save the lives of our animals, and there is good production in the animals. We are now able to treat our animals in the absence of the CAHW...We ourselves travel to Kaabong market to buy drugs that our CAHW showed us.¹⁷

Although traditionally a male occupation, some communities have increasingly accepted women as CAHWs. For instance, male respondents in Panyangara sub-county spoke very positively of their female CAHW:

Agnes [named changed] is a free and friendly CAHW who likes the community, and she loves the people and their animals in that she was in position to treat the animals when she is called to treat. She is also in position of prescribing the type of drug to be given to the animal, and we the farmers will be in position to buy that particular drug from the private veterinary personnel in Kotido Town... The impact of these interactions with her has led us to know how to treat our animals and also know the right drug our sick animals are supposed to receive...She has been telling us how to keep and preserve the drugs of the animals so that the drugs don't get spoiled.¹⁸

To note, the general acceptance of female CAHWs reported by these respondents is in contrast to the

findings of a recent gender and behavior change assessment of GHG impact (Wasilkowska, 2017). This assessment found that young female CAHWs faced a number of obstacles, including lack of time, unfamiliarity with larger animals, lack of self-confidence, and inadequate confidence by others in the community of their ability to work as CAHWs. Views on CAHWs differ from one location to the next, based on the skills and nature of the individual CAHW and the interactions with local communities. Hence, while our team was pleasantly surprised at the positive views on female CAHWs as expressed above, we recognize that such views are likely not universal and that women face numerous obstacles in being accepted as CAHWs.

More broadly, respondents in our sample seemed to accept that they must pay for drugs and services for their animals, whether provided by the CAHWs or purchased at markets or in trading centers (although this was countered by private drug providers, as discussed below). The KRSU review found that consumers ranked the affordability of drugs from the CAHWs below those of drugs from the PVPs or private traders. This was primarily due to the markup in prices that the CAHWs must charge after purchasing their drugs from the retailers. However, the review also found that people often preferred accessing drugs from the CAHWs, as they were more willing to provide credit.¹⁹ In addition, the KRSU review found that herders recognized the risks in buying cheaper drugs (such as from the "backpack" drug dealers who visit the various kraals and markets) due to the lower quality and poorer outcomes for their animals (Abebe, 2016).

There was only one location in which we heard complaints about being required to pay for drugs, and this was in an interview with women, who may have had less interaction with drug suppliers or CAHWs than their male counterparts.²⁰ While free vaccination campaigns by the government

¹⁷ Focus group discussion with men, Kalimon-Sangar, Kapedo sub-county, Kaabong, January 17, 2017.

¹⁸ Focus group discussion with men, Lomukura, Panyangara sub-county, Kotido, January 20, 2017.

¹⁹ However, the provision of credit by CAHWs has been found to be a main contributor to the failure of CAHWs in other countries, as they are rarely repaid. Comments provided by Andrew Catley principal investigator of KRSU, September 10, 2017.

²⁰ Focus group discussion with women, Moruangita, Lolelia sub-county, Kaabong, January 12, 2017.

and international actors (such as the Food and Agriculture Organization of the United Nations (FAO)) do continue, these are largely preventative measures implemented nationally against the spread of highly contagious diseases such as foot and mouth disease or PPR (peste des petits ruminants) (Abebe, 2016).²¹ The growing acceptance of a user-fee system by beneficiaries is a major step for populations in a region long accustomed to receiving services for free. This acceptance is likely at least in part a result of much greater engagement on the part of local communities with market-based systems and actors.

Barriers to access included an uneven distribution of CAHWs in some areas, such as Lolelia sub-county in Kaabong, where there were reported to be three CAHWs on the more sparsely populated eastern side of the sub-county and no CAHWs in the five villages on the western side.²² Distance from trained CAHWs was reported as a problem in all locations in Abim and in Kanamwar village in Rengen sub-county in Kotido. This is in line with a mapping exercise conducted by FAO, which found that CAHWs were predominately clustered around towns and along major roads (replicated in Abebe, 2016). The KRSU review of veterinary services found that discrepancies in the quality, content, and regularity of trainings for CAHWs was also a problem, as was the ability of the government to regulate or

supervise the CAHWs (Abebe, 2016).²³ Respondents for the Feinstein study reported that lack of access to appropriate drugs hindered treatment in several locations. In some cases, this lack appeared to be due to CAHWs not having a stocked veterinary kit.²⁴ In other instances, CAHWs explained that their local drug shops were out of supplies. The manager of a shop that supplied CAHWs in Kalapata, Kaabong explained that he had put in an order with the DVO for additional drugs, but that none had been delivered.²⁵

Human Health

The Feinstein team investigated a variety of issues related to human health in the sampled locations in northern Karamoja. The quantitative data show widespread improvements in access to a variety of health services from 2013 to 2016, as illustrated by Figure 7 below. These variables included access to public and private clinics, use of mosquito nets, use of latrines, and access to information about health. None of the villages in the sample reported a decrease in access. The increase in utilization of all the health-related services and health-beneficial behaviors between 2013 and 2016 are statistically significant.

²¹ Notes from meeting with team, Kaabong, January 12, 2017.

²² Focus group discussion with men, Moruangita, Lolelia sub-county, Kaabong, January 12, 2017. Whether density or access to CAHWs correlates to a reduction in disease prevalence is unknown. Such information requires further research and evidence. Comments by Andrew Catley, September 10, 2017.

²³ Mercy Corps' GHG program has supported the College of Veterinary Medicine at Makerere University (Kampala) to develop a standardized CAHW curriculum with different levels of certification. This will allow CAHWs with lower skill levels to receive certification to handle drugs that require fewer skills. The national Ministry of Agriculture, Animal Industries and Fisheries (MAAIF) is expected to endorse this curriculum before it is rolled out later in 2017. Comments by Mercy Corps staff, August 4, 2017.

²⁴ One of our team members, Dr. Darlington Akabwai, was a veterinarian and DVO in the region for many years. He checked the vet kits of various CAHWs at random and found that many were poorly stocked.

²⁵ Interview with two CAHWs, Kalapata sub-county, Kaabong, January 14, 2017.

Figure 7. Mean Proportion of Residents that Access/Utilize Health Services by Year²⁶

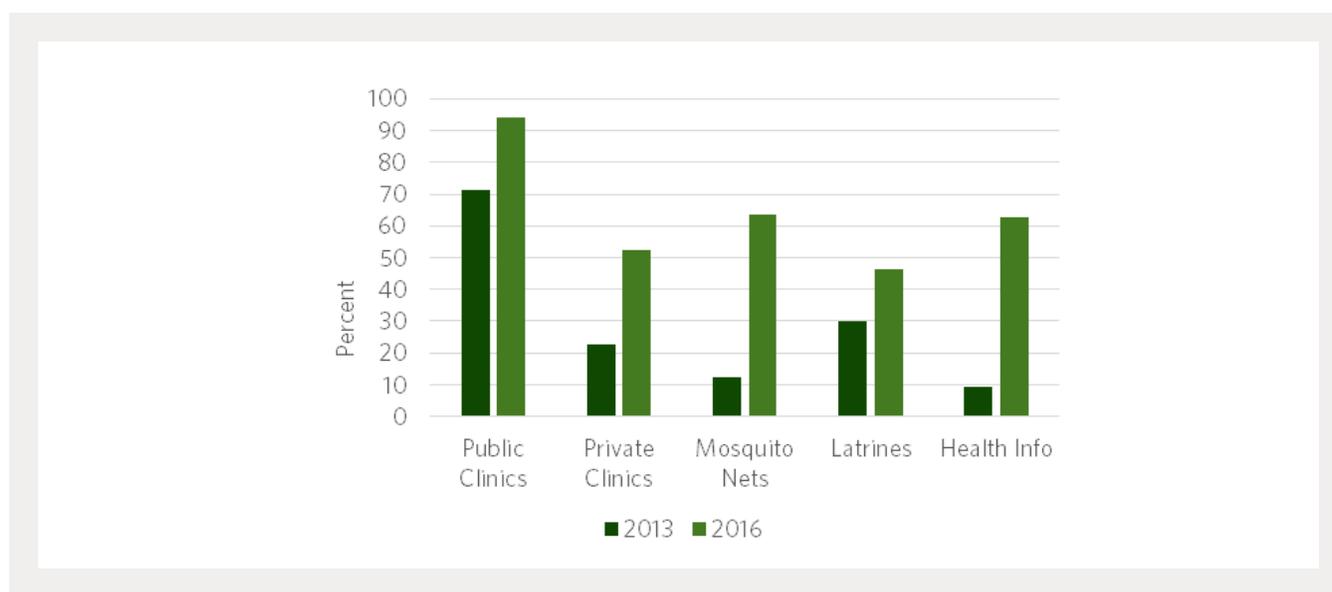


Figure 7 indicates that nearly the entire population could access public health facilities in the 12 months prior to data collection in 2016 (94% as compared to 71% in 2013). Interestingly, however, the number accessing private clinics also rose steeply—from 23% in 2013 to 55% in 2016. Three villages in the sample reported a decreased use in private health clinics in the three-year period, but each of these villages had almost 100% reported use of the public facilities. The relatively high rates of private clinic use (in conjunction with public clinic use) may indicate that public clinics were at times out of certain medicines, that people prefer private clinics for certain conditions, or that using private clinics bestows a certain social status.²⁷ While these improvements in use and access are positive, we do not have information on how the expansion of services is affecting human health among the study respondents. In particular, we would want to know the impacts by major diseases such as diarrhea, pneumonia, and malaria. Additional research is

also needed to know who is accessing private versus public clinics and why, and how this access intersects with gender and wealth group. There were variations by district with regard to the change in the proportion of residents using the various public health services by year, as per Figure 8 below.

Major progress stands to be made in public health outcomes if the trends reflected here continue. That said, there can be a high degree of bias in this sort of public health data. Having been through trainings on, for example, the problems with open defecation, respondents are much more likely to say they use latrines when questioned at a later date. This was readily apparent in one village, where we saw many well-kept latrines, each with a hand-washing station. Respondents reported very high rates of latrine use, but it was clear from walking around the village that open defecation was still a frequent practice. On closer inspection, we found the hand-washing

²⁶ The range in the proportion of village residents who utilize public clinics within sample villages was 4% to 100% in 2013 (SD = 27.2) and 56% to 100% in 2016 (SD = 12.1). The range in the proportion of village residents who utilize private clinics was 0 to 100% in 2013 (SD = 22.8) and 14% to 100% in 2016 (SD = 25.8). The range in the proportion of village residents using mosquito nets was 0 to 100% in 2013 (SD = 22.4) and 0 to 100% in 2016 (SD = 32.7). The range in the proportion of residents within villages using latrines was 0 to 100% in 2013 (SD = 34.5) and 0 to 100% in 2016 (SD = 38.3). The range in access to health information within villages was 0 to 50% in 2013 (SD = 16.1) and 14% and 100% in 2016 (SD = 26.0).

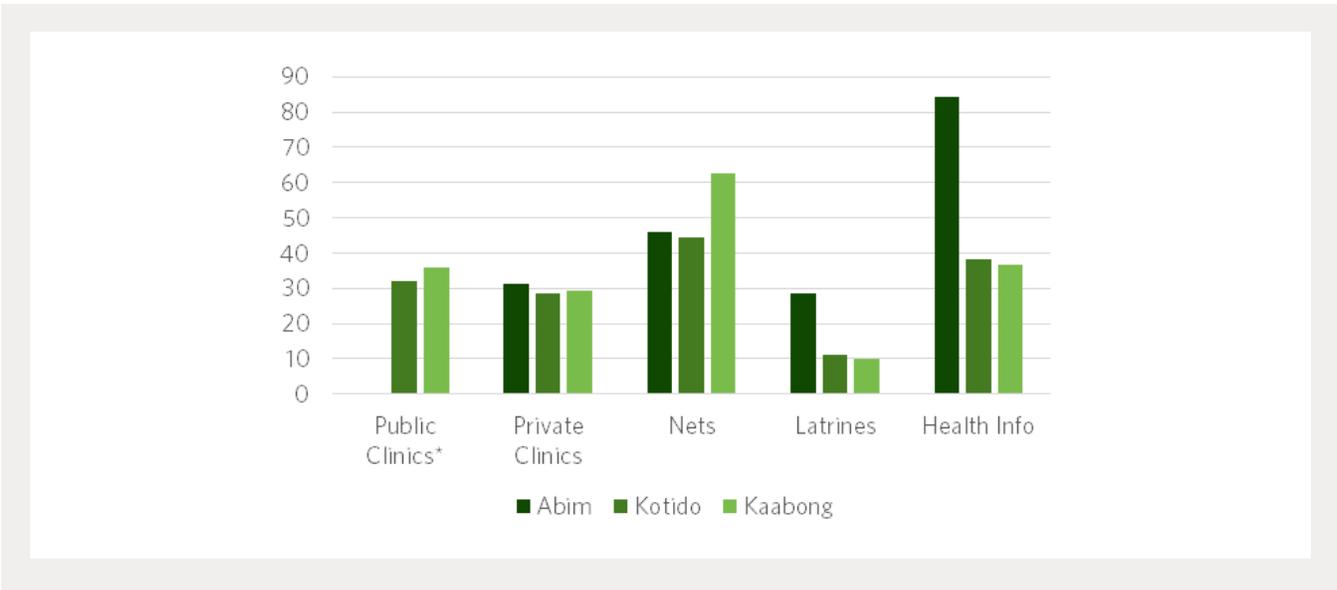
²⁷ Conversation with Mercy Corps staff member, May 16, 2017. Additional research into different perceptions on types of health care would potentially shed further light on these findings.

stations to be without soap or water. Hence, while the data indicate an increase in latrine use among the sampled population from 30% in 2013 to 46% in 2016, it is nearly impossible to ascertain the actual rate of adoption. Interestingly, eight villages (six of which were in Kaabong District) reported a decrease in latrine use between 2013 and 2016. This goes against the logic of reporting positive behavior change after taking part in trainings or sensitizations. While this data on decreased latrine use may well be accurate, respondents may also adjust their responses in the hopes of receiving additional assistance. This is particularly likely when researchers are known to be associated with an NGO already doing programming in the area. Such under-reporting is common in reference to commodities such as mosquito nets that can be used for a number of household purposes or sold on the market.²⁸

The largest increase in access over the three-year period is in the proportion of respondents who had access to health and/or nutritional information. This information could be received through a number

of avenues, including village health team, MCG, or health centers. Additionally, health messages have regularly aired on the Voice of Karamoja radio station (since 2015) and the Karibu FM station in Abim.²⁹ Many women received such information through Mercy Corps' MCG program, which reached a network of more than 20,000 people. In addition, the organization trained village health teams (VHTs) on "soft skills" around health education³⁰ and built health care infrastructure at 13 locations. While we do not know exactly which source people received their health information from, those within the sample who reported receiving such information from any source increased from 10% in 2013 to 63% in 2016. Abim saw the greatest increase in this time period. While it is difficult to know exactly how receiving such information affects health outcomes, such knowledge may contribute to other health-related positive trends, such as increased use of health centers, latrines, and mosquito nets. More information is needed through impact assessments on health and nutritional outcomes.

Figure 8. Change in Mean Proportion of Residents Utilizing Health Services, Mosquito Nets, and Latrines between 2013 and 2016, by District



* Note that Abim District reports 100% access to public clinics in 2013 and 2016. Thus, no value is provided for change in this figure.

²⁸ Skype conversation with Mercy Corps staff member, May 16, 2017.

²⁹ Communication with Mercy Corps staff member, June 25, 2017.

³⁰ Trainings for VHTs were participatory and included, for instance, how to conduct a respectful home visit, hold motivational conversations, and engage in collective problem solving. Conversation with Mercy Corps staff, August 3, 2017.

Findings on New Innovations and Developments

This section covers findings from qualitative data on evolving aspects of the program as well as developments in the region, including initiatives to expand access to improved seeds and PHH sacks, shifting water management systems, animal markets, and support to PVPs.

Improved Seeds and Seed Voucher Initiative

As mentioned above, one of the agricultural interventions implemented by Mercy Corps was a program to expand access to and adoption of improved seed varieties. This was done through the distribution of vouchers that could be redeemed through participating local private dealers and agents. The Feinstein team examined the improved seed program in some depth, although it found that most of the focus of beneficiaries was on receipt and redemption of the vouchers. Regarding the seeds and their performance, we found that, overall, people appreciated the quality and cleanliness of the seeds. However, many who planted the improved seeds either a) planted a small amount in fields with regular seed varieties, and hence were not able to comment on the difference in yield and/or b) suffered widespread crop losses because of erratic rainfall and either reaped no or a small harvest. These factors mean that our data on perceptions of the improved seeds are limited. However, we have ample data on perceptions of the voucher program. Given that the vouchers provided access to improved seeds for the poor, we consider the voucher initiative to be a proxy for the improved seed program, at least to some extent. We know that sale of improved

seeds rose by 300% in the first year of the voucher program (2015) alone, which indicates that there are a good number of improved seeds in use in Karamoja. We feel that the discussion of the voucher initiative captures some of the challenges for the poor in accessing and adopting improved seed varieties.

In order to examine the improved seed program, we purposively sampled a number of sites where seed vouchers had been distributed by Mercy Corps or its organizational partners. The vouchers allowed beneficiaries to access improved varieties at a discounted price through selected merchants in local trading centers. (Anyone could purchase improved seeds from these merchants, not only voucher holders.) Vouchers were primarily distributed to MCGs, to groups of farmers participating in training programs, and to new members of SACCOs. Vouchers had multiple iterations from 2015–2017, each year at an increased scale and a decreased subsidy. In 2016, vouchers were worth UGX 3,250 each (approximately USD 1), and a beneficiary had to contribute an equal amount in order to use the voucher. The voucher value remained at UGX 3,250 regardless of how many seeds were purchased. Hence, the minimum purchase was UGX 6,500 worth of seeds (with 50% covered by the voucher). If an individual wanted UGX 13,000 worth of seeds the voucher would cover 25%, and so on.

The seed voucher initiative had several positive outcomes. First, due to the sensitizations and trainings, awareness and understanding of the benefits of improved seeds expanded. For instance, when asked if they thought there was any difference in the seeds traditionally purchased versus those

promoted through the voucher initiative, a group of women in a focus group discussion in Morungaita, Kaabong agreed that the improved seeds were “much better because there are no weevils.” They added, “In town, you go and buy [seeds], but you risk that you are pouring money into seeds that will be wasted.”³¹ Mercy Corps staff ran sensitization activities in distribution locations to teach the benefits of the improved seeds. Some respondents, such as the women cited above, had a good understanding of these benefits, whereas others gave a blank look when asked to comment on the differences in the seeds. In many cases, however, farmers did not have the opportunity to witness the benefits of the improved varieties given either the failure to plant (due to lack of funds to purchase adequate amounts or late arrival of the seeds) or failure of the seeds to germinate or mature (due to late arrival of seeds and/or the late onset of rains and atypically long dry period in May/June 2016 (FEWSNet, 2016)).

Another positive outcome of the voucher system was the facilitation of the market chain from national suppliers to Karamoja and the support to local traders and agents (see Box 1). Some of these traders have established independent relationships with the supply companies. According to a trader interviewed in Kaabong:

The suppliers are new to Karamoja—they managed to set up here due to the help of Mercy Corps. Yes, these suppliers [such as Askar General Merchandise, a supplier of the post-harvest sacks] have been pleasantly surprised by the level of demand in Karamoja. I think that Askar would stay as a supplier in this area even if the voucher program was to end or Mercy Corps were to leave Karamoja. Part of this depends on the relationship between the supplier and the dealer—establishing a trusting relationship is essential.³²

Some of the merchants trading in improved seeds had long histories as retailers, whereas others had established themselves more recently. The voucher initiatives (seed and PHH sacks) boosted business for these dealers and agents, but longer-term sustainability of their businesses appeared to vary. The larger and urban-based traders sell a range of products and benefit from the urban markets. As was the case for Maria³³ (Box 1), the voucher initiative may have enabled these traders to expand their businesses into new premises, to build independent relations with suppliers, to leverage credit from banks and the suppliers themselves, and to reach new prospective customers. These expansions may have allowed these retailers to capitalize on economic development in the region and an expansion in demand. A trader in Kotido explained: “People are buying in larger quantities now. It is as if people have more money to spend than they used to...With an increase in cash, people are buying beyond subsistence. They are purchasing other things like clothing.”³⁴ The trader linked this increased demand to the movement of more people into agriculture and their sale of grains during the harvest period. “They are now actually a producer of sorghum, and during the harvest they sell. There is a line out the door for people selling sorghum to me, and lorries come daily to export it to other areas [outside Karamoja].”³⁵ However, even these more-established urban traders still face a number of challenges. The primary challenge is having access to limited financial capital, which in turn makes it difficult to stock goods, pay rent in advance, or keep shop attendants employed.

³¹ Focus group discussion, women, Morungaita, Kaabong, January 12, 2017.

³² Interview with female agricultural dealer, Komuria West, Kaabong, January 11, 2017.

³³ Names have been changed.

³⁴ Interview with male commodity trader, Kotido Town Council, January 21, 2017.

³⁵ Ibid.

Smartly dressed in bright colors, Maria proudly welcomes us to her agricultural shop on the main road of a small market town in Kaabong District. Native to the area and in her mid-20s, Maria has been a general merchant since 2014 and has worked in conjunction with Mercy Corps as an agricultural input dealer since 2015. She has participated in several voucher programs and supplies PHH sacks, improved seed varieties, and silos to her own customers and to her network of eight agents.

Joshua, a lanky young man, is one of Maria's agents and has a shop in a neighboring sub-county. His shop pre-dated the voucher system, but voucher-related sales now make up a sizeable proportion of his revenue. He describes that he likes the voucher program "because it is trying to reach the grassroots level—regular farmers and the poor."

During our meeting, at least a dozen customers entered Maria's shop to purchase PHH sacks using their vouchers. Joshua and Maria trained some of the customers on how to use the sacks, requiring them to practice in front of us. Maria and her agents sold their complete stock of 750-liter silos within four days, and 13,000 bags in the last two and a half months. Maria explained that she purposely holds stock of the bags for the voucher holders, as she wants to support the poorest of her community. After the vouchers expire, she will sell the items on the open market. Maria has forged trusting relationships with the large agricultural suppliers new to Karamoja. She explained that

she calls in Mercy Corps when she has a problem, smiling while saying, "Mercy Corps stands up for us [dealers]."

The use of improved seeds over traditional seeds remains suspect in much of Karamoja. Maria and Joshua both keep demonstration gardens to help to teach farmers the merits of improved seeds, despite their higher price tag. We were given a tour of Maria's verdant gardens in the productive soil of the flood plains by the river. Joshua explained that as an agent, he understands the needs of local farmers because he spends his time in villages. He teaches farmers that planting in rows (rather than broadcasting seeds) and spacing are key components for realizing a higher yield. Joshua and Maria explained that more extension workers are needed to increase agricultural knowledge and skill across communities.

Maria and Joshua see Kaabong District as a viable market for products and services and both want to expand their businesses. Maria explained that "many people have turned to vegetables now that there is no more raiding as a way to make a living." With increased security and the accompanying shift in livelihoods, Maria wants to become a mobile money agent with multiple lines, including one for Joshua. She also believes there is a potential for water pumps to irrigate vegetable plots located on the flood plains. Maria sold ox plows as part of Mercy Corps' voucher system in 2016. Customers are now inquiring after spare parts, and she hopes to fill this demand in the near future.

³⁶ Names have been changed.

In contrast to the urban-based dealers, agents in rural locations who were participating in the voucher initiative often have a smaller volume of goods and less business experience. Although there are variations by location, available cash and demand for commodities is much lower in these areas, making it difficult for many of these agents to stay in business without the support of other initiatives such as the vouchers to keep demand high. We visited one rural shop in Kalapata Trading Center in Kaabong that was staffed by the agent's two school-aged sons. (Their mother had gone to Kaabong Town on business for the day.) They were doing a brisk exchange of the PHH sacks but had very few other wares for sale. The boys reported that the customers were only exchanging their vouchers and were not making other purchases.³⁷ While the voucher initiative had created business for the shop and the agent (agents receive commissions from the dealers), it did not appear in this instance that the program had increased demand for other non-subsidized products as well, perhaps due to cash shortages.

Mercy Corps' goal for the seed voucher initiative was to introduce improved seeds to the market and to reduce the risks associated with the adoption of improved varieties for the poorest households in order to influence perceptions on the value of using improved seed varieties. High redemption rates alone were not considered a measure of success, particularly when considering the new technology associated with the electronic vouchers introduced in 2016.³⁸ In addition, the program aimed to improve planting techniques through extension work and farmer trainings. Mercy Corps program staff were interested in learning both why overall rates of

voucher redemption in 2016 were 20% (with wide variations by location) and what, if any, outcome arose from the introduction of the improved seeds.³⁹

The Feinstein team interviewed dealers, agents, and members of recipient communities to better understand the reasons behind low redemption of the seed vouchers. According to our analysis of these responses, the main reasons were i) the costs of the improved seeds, ii) reluctance to change planting practices, iii) issues around the packaging of the seeds, iv) confusion over how to redeem the vouchers, and v) timing of the seed deliveries to the merchants. Each of these points is discussed below, followed by a section on lessons learned.

i) Costs of improved seeds

The improved seeds cost significantly more than regular seeds, even with the contribution from the voucher. Reported cost differences varied by type of seed and respondent, but there was general agreement that the improved seeds cost three to five times the amount of the unimproved seeds available on the market. This higher cost was the main hindrance for many people in redeeming the vouchers they had received. Even when recipients understood that the quality of the improved seeds was better, they had to balance their limited budgets against the amount of acreage they needed to plant. Depending on the crop, approximately five to ten kilos of seeds are needed for an acre. The voucher subsidies covered only one to two kilos of the improved seeds, leaving people with a large deficit to make up.⁴⁰ A dealer in Kaabong explained the problem:

³⁷ Notes from visit to shop, Kalapata Trading Center, Kalapata sub-county, Kaabong, January 14, 2017.

³⁸ The cost of printing the e-vouchers was a fraction of the cost of printing non-forgeable paper vouchers, enabling the program to distribute large numbers of vouchers without concern of wasting funds if recipients do not cash them. The e-voucher program also allowed for automatic transfer of the value of the voucher to the dealer or supplier at the time of purchase. The beneficiaries still received a paper card, but with a code to be entered by the agent or dealer at the time of redemption. Through mobile money, every redemption automatically led to a partial deposit in the account of the dealer or national supplier (depending on the product). When transferring the value of the voucher directly to the agent (in the case of seeds), agents were then able to use mobile money to repay the suppliers. When voucher transfers were made directly to the suppliers (in the case of post-harvest items that were of higher value than seeds), the agents and dealers were not responsible for handling large amounts of cash, which had proved problematic in the 2015 version of the program due to limited financial management skills of the dealers and lack of formal banking services and experience. The use of mobile money vouchers also reduced delays in the payment of both the national supplier and the local retailer/agent as they did not have to wait for monthly reconciliation.

³⁹ The 20% redemption rate was the approximate rate reported by Alex Bekunda, Deputy Chief of Party, Mercy Corps, January 10, 2017. This rate was higher than the 2015 rate, in part because of a switch to e-vouchers, which were seen as more user friendly for both beneficiaries and agents.

⁴⁰ Interview with male agricultural agent, Komuria West, Kaabong, January 11, 2017.

A big reason [for low redemption rates] is the calculation that people make between quality and quantity. They see that they will have to contribute more than UGX 3,000 to get one kilo of improved [maize] seeds, whereas they can get three times that much of the “regular” [unimproved] maize seed sold at the market... People need to plant an adequate amount in their fields, and the vouchers only end up covering one to two kilos. You need between five and ten kilos [of seeds] to plant an acre, so this amount only gives them very little. Because the subsidy is low, people instead use the same amount of money to buy more unimproved seeds and hence plant more.⁴¹

Respondents in communities that had received seed vouchers repeatedly emphasized that the out-of-pocket expenses were too great, even taking the vouchers into account.⁴² (As discussed below, this may have been exacerbated by confusion about how to redeem the vouchers). These problems were compounded by poor harvests the previous year, meaning that people had neither their own saved seeds nor cash on hand from sale of surplus crops. Hence people had to buy all or most of their seeds, and few could afford to experiment with the higher-cost improved varieties. Unfortunately, the combination of the high price of the improved seeds and the confusion over how the voucher system was meant to work appeared to leave many beneficiaries resentful, as captured in the words of a young woman in Karenga, Kaabong: “Is Mercy Corps a business enterprise or is it a helping enterprise? The seeds are so expensive for so little. They send them at the wrong time. You can get 3.5 kilos of seeds for

UGX 5,000 outside [the voucher system].”⁴³ Mercy Corps explained that it was this very perception that they “are trying to change through behavior change” by creating “an understanding of value versus cost and that the value of the improved seed outstrips the cost of a regular seed.”⁴⁴ However, most respondents were primarily focused on the cost as opposed to the value. This was likely influenced by the other factors (timing and weather) that meant that few farmers reaped harvests from the improved seeds in 2016.

ii) Reluctance to change planting practices

Farmers in Karamoja generally use a “broadcast”—or scatter—method to sow seeds of most crops. Compared to planting in rows, broadcasting is a labor-saving technique but requires more seeds to cover a given area. While agricultural extension programs and demonstration gardens illustrate the benefits of planting in rows, local residents are reportedly slow to adapt to these techniques, with exceptions for beans and maize.⁴⁵ One agricultural agent (who also had a demonstration garden) explained that people commonly believe that the broadcast method makes seeds cover a greater area.⁴⁶ The continuation of this practice was also preventing people from realizing the higher yields they could potentially receive from the improved seeds if they adjusted their planting techniques.⁴⁷

However, in the views of respondents, a major downside of using improved seeds relates to traditional seed harvesting and preservation practices. As explained by a seed dealer in Kotido, while only the seed from hybrid maize should not be replanted, there is a misperception among

⁴¹ Interview with female agricultural dealer, Komuria West, Kaabong, January 11, 2017.

⁴² This point was made in focus groups discussions with women in the following locations: Poet, Losilang sub-county, Kotido; Morungaita, Lolelia sub-county, Kaabong; Kalimon Sangar, Kapedo sub-county, Kaabong; Narube, Kathile sub-county, Kaabong; Kanamwar I, Rengen, Kotido; Kachemichemi, Kalapata sub-county, Kaabong; Loyoro North, Karenga sub-county, Kaabong; Lomukura, Panyangara sub-county, Kotido; Lochedimeu, Kotido Town Council, Kotido.

⁴³ Focus group discussion with young women, Loyoro North, Karenga sub-county, Kaabong, January 15, 2017.

⁴⁴ Comments on draft provided by Mercy Corps staff member, June 26, 2017.

⁴⁵ Interview with male agricultural agent, Komuria West, Kaabong, January 11, 2017.

⁴⁶ This same agricultural agent felt that the smaller average purchase amount of the improved seeds was in fact encouraging people to broadcast their seeds in attempts to make them go farther. We were not able to validate this claim elsewhere, and it would be difficult to prove given how widespread the broadcast method of planting already is among local farmers.

⁴⁷ Interview with male agricultural agent, Komuria West, Kaabong, January 11, 2017.

beneficiaries that none of the improved varieties will regerminate, including from open-pollinated varieties.⁴⁸ While this of course encourages annual market interaction, it is likely a disincentive for households potentially considering the purchase of improved seeds. In addition, given the perception that improved seeds cannot be replanted, a household that shifts entirely to market purchases as opposed to own production would fear becoming dependent on the market to deliver. For instance, in 2017 there was a shortage of groundnut seeds in the markets, so while those dependent on the market struggled to access seeds, households that had preserved their own seeds from the previous year were able to plant. Price spikes in seeds or a drop in the value of the crop at the time of sale could have similar impacts.⁴⁹

iii) Packaging of the improved seeds.

Some respondents and dealers called attention to issues around the packaging of the seeds. As explained by the dealer in Komuria West, the suppliers sent the seeds in ten-kilo bags. Most beneficiaries could purchase only two kilos of the improved seeds but were under the impression that they would be receiving their seeds in sealed bags.⁵⁰ Beneficiaries reportedly objected to the dealer opening the larger bags and weighing out two kilos. The dealer perceived this as an issue of mistrust on the part of the customer regarding the process of dividing the bags and weighing the seeds. This mistrust was compounded by the lack of literacy of many of the customers (meaning they could not closely follow the weighing process) as well as confusion about the voucher system.⁵¹ On the other hand, sometimes the customer was willing to

have their seeds weighed out, but agents refused. Women in Kapedo sub-county in Kaabong reported that the agent refused to open the larger bags, and hence they were unable to purchase the seeds in the smaller amounts that they could afford.⁵² This was confirmed by a seed dealer in Kotido Town, who reported that he sought to avoid opening the five-kilo pre-packaged bags of seeds to measure out the smaller quantities that people requested through the voucher initiative.⁵³ The larger bags of seeds put the retailers in a difficult position, as customers want (and need) to buy smaller amounts, but subsequent customers are often reluctant to purchase seeds taken from an open sack because it is impossible to verify the veracity of the contents or origins of the seeds.⁵⁴ This catch-22 situation may have resulted in some people being unable or unwilling to cash in their vouchers. Mercy Corps encouraged the suppliers to package seeds in smaller amounts but could not dictate the actual packaging size.⁵⁵

iv) Confusion over how to redeem the vouchers

Mercy Corps staff delivered the seed vouchers directly to beneficiaries in an effort to ensure proper sensitization and training around use and redemption.⁵⁶ Unfortunately, the data collected for this study point to ongoing confusion on the part of beneficiaries as to how to redeem the vouchers. Convolved or possibly intentionally misleading information provided by agricultural agents and community agents compounded this problem. The main issue appears to have been around the value of the voucher (UGX 3,250; approximately USD 1 at the time of the intervention) and how to capitalize on this value. Vouchers were activated when the customer contributed the same amount in cash.

⁴⁸ Interview with male seed dealer, Kotido Town Council, Kotido, January 23, 2017. In fact, regermination is not influenced by whether a crop variety is hybrid vs. open-pollination, but the outcome of replanting seed from hybrid crops will result in crops that generally do not resemble the hybrid variety they were harvested from. Replanting seed from *improved* open-pollinating varieties will in fact produce crops that resemble the variety they were harvested from, with some variation due to the type of varieties grown in close proximity to the plant that produced the seed. Comments provided by Mercy Corps staff member, September 10, 2017.

⁴⁹ Comments on draft provided by Mercy Corps staff member, June 26, 2017.

⁵⁰ Focus group interview with agricultural dealers, Kotido Town Council, Kotido, January 23, 2017.

⁵¹ Interview with female agricultural dealer, Komuria West, Kaabong, January 11, 2017.

⁵² Focus group discussion with women, Kalimon Sangar, Kapedo sub-county, Kaabong, January 17, 2017.

⁵³ Interview with agricultural dealer and agent, Kotido Town, Kotido, January 23, 2017.

⁵⁴ Comments on draft provided by Mercy Corps staff member, June 26, 2017.

⁵⁵ Comments on draft provided by Mercy Corps staff member, August 15, 2017.

⁵⁶ Interview with Alex Bekunda, Head of Mercy Corps Kaabong office, January 10, 2017. This was also confirmed by respondents in various locations.

This system was commonly misunderstood, though with different manifestations. In a village in Kathile sub-county of Kaabong, for instance, at least half of the women in the focus group believed that they had to pay money to receive the voucher (as opposed to their cash contribution representing the remainder of the subsidy). The price differentials by seed type combined with the constant value of the voucher also appears to have been difficult for some respondents to comprehend. Hence there was much debate in focus groups around the amount of cash that had to be contributed to “get” seeds; this may have been caused by price variations in the types of seeds. While likely due to poor numeracy and the relatively recent transition to a cash-based economy in the region, this contributed to mistrust of both the voucher system and the agricultural agents in some areas.

The lower subsidy for the improved seeds in the second year of the voucher initiative was a cause of frustration for respondents who had worked hard to acquire the necessary cash contribution for voucher redemption.⁵⁷ Many respondents wanted to use the improved seeds, believing they would be cleaner and better able to withstand the climatic conditions. This points to effective messaging regarding the value of improved seeds, but people found themselves unable to afford an adequate amount. Women worked selling firewood or brewing to raise the cash and then realized that they were only going to receive the equivalent of one or two mugs of seeds for their efforts. This was disappointing and discouraging, as was evident in a focus group of women in Karenga in Kaabong:

Most people got vouchers but none used them because the amount was too small. So most of us refused to use them! You could get two mugs of seeds only! And we don't have money! And we had to pay UGX 6,000 for the two mugs.⁵⁸

Interventions—whether benign or malevolent—by community leaders also compounded the confusion around voucher redemption and the lower rates of use. In a village in Kathile sub-county in Kaabong, the steering committee of the MCG “held” people’s vouchers for them, and individual beneficiaries were only able to “get” their vouchers from the steering committee when they could demonstrate that they had UGX 3,250 in hand. While the steering committee likely implemented this policy to safekeep the vouchers, this practice furthered the belief among some respondents that they had to pay to receive their vouchers.

Women in a village in Lolelia sub-county in Kaabong reported that they had not used their vouchers because they were “still waiting for the seeds to be delivered. We are waiting for any program to distribute seeds.”⁵⁹ Follow-up discussion indicated a major misunderstanding, whereby the women were under the impression that the seeds were going to be brought to them by “a seed organization” and that they would then present their vouchers to receive seeds. This case may have been an isolated one, although this confusion is not surprising considering the long history of aid in the region and the expectation by many in the population that things will be delivered free of charge.

v) Timing of seed deliveries to the merchants.

A major challenge with Mercy Corps’ seed voucher initiative was the timing of seed deliveries to the merchants. Seeds arrived too late—in some locations after the rains had already started. Late arrival of seeds was reported by respondents in several sub-counties in Kaabong (including Karenga, Kalapata, and Lolelia) and was confirmed by dealers and/or agents in both Kotido and Kaabong Towns. The Secretary of Production at the district offices in Kaabong and LC5 Councilors for Kaabong also complained about the late arrival of the improved seeds.⁶⁰ The reasons for the late

⁵⁷ The 2015 voucher program had been a 70% subsidy as opposed to 50% in 2016. Although a range of problems with the 2015 program led to the revisions in 2016, the most apparent change for many beneficiaries was likely the increase in out-of-pocket costs.

⁵⁸ Focus group discussion with women, Loyoro North, Karenga, Kaabong, January 15, 2017.

⁵⁹ Focus group discussion with women, Moruangita, Lolelia sub-county, Kaabong, January 12, 2017.

⁶⁰ Interview with District Production Secretary and LCV Councilors, Kaabong, January 16, 2017.

seed deliveries include: 1) the relationship between the seed companies, agrodealers, and agents is nascent, and few actors are proactive or informed on how to get products ordered/sold or delivered; 2) agrodealers' low capacity to estimate demand and mobilize working capital, leading to delays in ordering (compounded by agrodealers hoping that NGOs will support them with transport and other expenses); 3) seed companies do not produce seed with Karamoja's seasonal needs in mind—they sell seed to other parts of Uganda a few months prior to Karamoja (due to the different planting seasons) and are often sold out when Karamoja dealers are placing orders, necessitating a few months' delay until more seed is harvested and packaged; and 4) the Karamoja market is relatively small and therefore not prioritized by the national seed companies, which reduces their motivation to do custom packaging in smaller packages or meet timing demands.⁶¹

Dealers explained that the problem of timing had to do with the national supplier. A dealer in Kaabong theorized, "Seeds were late in part because of the suppliers—they serve the bigger retailers first and not those where there is a middleman such as Mercy Corps."⁶² Operation Wealth Creation, a GoU seed initiative, likely took precedence over smaller contracts and may have depleted the stores of seed suppliers.⁶³ Regardless, the late delivery of seeds reflects poorly on Mercy Corps and cultivates mistrust on the part of beneficiaries, commodity dealers, and local partners. A woman in Karenga sub-county expressed exasperation: "Seeds need to come earlier! Coming late is a waste of resources!"⁶⁴ While local populations are quick to blame Mercy Corps for failing to deliver in a timely fashion, an agricultural dealer in Kotido pointed out that the problem likely went further up the supply chain. "Because suppliers have so many huge customers, I am not sure that Mercy Corps can advocate for exactly what would work for something like a seed voucher program, such as packaging in smaller

amounts."⁶⁵ To note, he was referring to the specific logistics of packaging sizes; getting seeds to a certain location on time could ideally be dealt with effectively through more advance planning and/or contingency measures.

We asked Mercy Corps to comment on the apparent delays in the supply chain of improved seeds. Staff agreed that there was a problem in the timing of seed availability in a number of locations and highlighted various junctions where problems had occurred. First, as referenced above, convincing national seed companies to distribute seeds on credit terms to small-scale retailers in Karamoja is a major challenge. The suppliers are wary of entering a new market in an untested (and infamous) part of the country and sent their own representatives to screen some of the local retailers at the start of the program. While the ordering process improved from one year to the next, it continues to be slow going. As one staff member commented, "This year we started [working with the supplier] six or seven months in advance of when we needed seeds on the ground, and [it was] still a close call on timing."⁶⁶ Second, in an attempt to foster sustainable market linkages, Mercy Corps moved quickly to hand over the relationship between the suppliers and the local retailers. The retailers were meant to negotiate delivery and timing of the seeds, but Mercy Corps found that they had to re-enter the relationship to apply pressure after delays by the suppliers. Third, many of the retailers had difficulty in raising adequate capital quickly enough to place their orders in a timely fashion. Fourth, once the dealers had received the improved seeds, they then had to get the seeds out to their agents in the remote trading centers. Lastly, matching supply and demand was a major challenge in an unpredictable market. Mercy Corps at times had to become involved again in order to manage surpluses or deficits in supply at a given location, while also running the risk of undermining beneficiary trust in both the program

⁶¹ Comments on draft provided by Mercy Corps staff member, August 3, 2017.

⁶² Interview with female agricultural dealer, Komuria West, Kaabong, January 11, 2017.

⁶³ Communication with Mercy Corps staff member, June 25, 2017.

⁶⁴ Focus group discussion with women, Loyoro North, Karenga sub-county, Kaabong, January 15, 2017.

⁶⁵ Interview with male agricultural dealer, Kotido Town Council, Kotido, January 23, 2017.

⁶⁶ Comments provided by Mercy Corps staff member, June 25, 2017.

and the market as a reliable provider of improved seeds. As a Mercy Corps staff explained:

There are always gaps. The orders go in based on what the retailers think they will have demand for, but once items arrive the community demand doesn't always match the expectation both in volume (going under or over estimates) and type of crop. Thus, we often then have to play a secondary role reshuffling seeds between the retailers to match the demand (for example, bringing cow peas from Kaabong down to Kotido), which also adds time. Also, farmers in Karamoja usually purchase seeds once it begins raining (not in advance of the season itself), which is unpredictable and further complicates the agrodealers' ability to match supply with demand. Throughout it all, if the beneficiary goes once and the retailer or agent doesn't have what they want, then we lose trust. It's an uphill battle but well worth it to help start awareness of how consumer processes work at the commercial level.⁶⁷

In sum, while the on-time delivery of seeds might seem relatively simple to the external observer, the factors at play are in fact much more complicated. In the case of the 2016 improved seed program, problems with timing were not due to lack of awareness of the problem or efforts on the part of Mercy Corps, but rather due to growing pains and perhaps underestimates of the extent of the challenges in linking local retailers and market systems in Karamoja into the national formal economy.

Although the improved seeds clearly arrived late in many areas, a number of beneficiaries reported planting improved seeds acquired through the voucher subsidies and hoping for the best. While

most of the improved seeds did germinate, the late planting combined with the atypical dry spell in May and June of 2016 stunted their growth, with some outright crop failure.

In discussions with the Feinstein team at the start of this phase of the research, Mercy Corps staff indicated that they were both puzzled by the low redemption rates for the seed vouchers and interested in addressing potential problems in order to improve the expansion and use of improved seeds in the coming years. We queried the dealers and agents with whom we spoke about ways to improve the program. To note, this discussion led to reflections on positive changes since the 2015 program, which were primarily the e-voucher system whereby the payment was quickly received via mobile money that could be transferred directly to the supplier and the decrease in paperwork for the agents and dealers. In terms of improvements moving forward, we collected the following responses:

- Make sure seeds are to dealers and agents by the end of January, as this is when people are starting to buy their seeds and preparing their fields.⁶⁸
- Suppliers should package seeds in two-kilo sealed packets, or the division of the larger bags should be agreed upon by the merchants and explained in depth to the beneficiaries.
- Increasing the percentage of the purchased covered by the subsidy would encourage greater redemption and allow more people to experiment with the improved seeds and, ideally, improved planting techniques. One agent felt that the vouchers should cover at least an acre's worth of seeds.⁶⁹ Some of these adjustments were made in GHG's 2017 improved seed

⁶⁷ Comments provided by Mercy Corps staff member, June 25, 2017.

⁶⁸ Mercy Corps staff noted, "In 2016, we had the seeds (and vouchers) in the field in early March, and almost no one started to buy seeds and redeem the vouchers until May, when the rains started." This illustrates the variations in perceptions by different stakeholders and difficulties in meeting demands.

⁶⁹ While a minimum coverage makes sense in principle, it is not practical given the different prices of seeds and the different amounts needed to plant a given area. Because customers can choose which crop type they purchase, subsidy rates would have to vary by crop in order to ensure an acre of coverage. This would add an unwieldy layer of complexity for retailers as well as beneficiaries who already struggle (in some instances) to understand the program. Comments provided by Mercy Corps staff member, June 25, 2017.

program (which was not covered by the Feinstein research).⁷⁰

- Trained agricultural extension workers should be present at a rate of one to two per parish in order to work closely with farmers on planting techniques.

In addition, based on the Feinstein team's observations and analysis, it is clear that sensitization (especially for women) on how to use the vouchers needs to be more thorough and more uniform by location.⁷¹ Follow-up with agents and dealers to ensure adherence to the expected program could also improve trust among beneficiary populations.

Post-harvest handling seed sacks and vouchers:

Although not part of our initial objective, we gathered a good deal of data on the PHH seed sacks and voucher system due to the timing of our field work. The seed sack vouchers were expiring at the end of February (but subsequently extended to the end of April), and hence there was a steady stream of people seeking to redeem their vouchers at the agents and dealers we visited. Overall, beneficiaries spoke very positively of the seed sack program. This was due to the extent of the subsidy provided by the vouchers,⁷² familiarity with the products (sacks for storage purposes), and the fact that they received three regular sacks and three with treated liners. Dealers and agents were also generally pleased with the program; they were doing a steady business and reported that the sacks were in high demand, despite just being introduced to Karamoja this season. A dealer in Kaabong explained that she could easily sell the sacks she had on the open market but was prioritizing the sacks for voucher holders. "If

we didn't do this, the rich would take them all."⁷³ According to Mercy Corps staff, wealthier customers did buy up large quantities of some types of the improved seeds (with no subsidy), particularly in Abim. While this reduced supply for some voucher holders, Mercy Corps was reluctant to restrict the customer base as it went counter to the initiative's goals of expanding market reach and demonstrating the value and suitability of improved seeds.⁷⁴ An earlier initiative that provided subsidies for ox plows saw similar extremely high rates of demand, even by those without the vouchers.⁷⁵

As with the improved seeds, figuring out the market forces and the appropriate balance of supply and demand in Karamoja can be challenging. A dealer in Kotido highlighted issues with the inconsistency of both supply and demand. He explained:

For the bags, there was an extremely high demand at first. I sold 1,500 bags in three days. Next, I sold 4,000 bags in one week. I contacted the suppliers for a re-up, but they took two to three weeks to supply. As a result of being out of stock, demand fell tremendously. The Karamojong want what they want when they want it. Interest falls sharply. Now it has been several days since I have sold any bags.⁷⁶

The inconsistency of demand in Karamoja was not cited by other merchants, but is not surprising given the low purchasing power of most households. Households carefully manage their hard-earned cash, and competing priorities are likely to arise when a given commodity is temporarily unavailable. The challenge of maintaining relationships with national suppliers was a common theme for many

⁷⁰ The 2017 seed voucher provided seeds to double-crop cereals and legumes on one full acre. The subsidy was more significant (57–80%) than in 2016 and varied by crop and beneficiary type (women in the MCG groups, considered the most vulnerable, received three vouchers, compared to one for other beneficiaries). However, redemption rates were only slightly higher (at 25% as of August 2017). Seeds were delivered to dealers and agents in March, but sales didn't pick up until the rains started in May. The increase in redemption rate from 20% in 2016 to 25% in 2017 may represent a gradual adoption of improved seeds by local farmers, regardless of the logistical problems related to supplying Karamoja markets. Comments provided by Mercy Corps staff, August 17, 2017.

⁷¹ Eleven sub-counties in northern Karamoja had been previously covered by a Mercy Corps partner who engaged in the initial round of sensitization regarding the voucher initiative and improved seeds with the MCGs. Mercy Corps took over from this partner in late 2016, and some of the confusion among beneficiaries may have been linked to the roles of two different actors in a given area.

⁷² The vouchers covered 90% of the price of the three sacks, and recipients only had to provide UGX 2,400 of their own funds.

⁷³ Interview with female agricultural dealer, Komuria West, Kaabong, January 11, 2017.

⁷⁴ Comments provided by Mercy Corps staff member, June 25, 2017.

⁷⁵ Interview with female agricultural dealer, Komuria West, Kaabong, January 11, 2017. This was confirmed by Mercy Corps.

⁷⁶ Interview with male agricultural dealer, Kotido Town Council, Kotido, January 23, 2017.

of the dealers. The creation of autonomous linkages between suppliers and retailers was one of the goals of the program, which aimed to promote sustainable markets in the region. Mercy Corps facilitated the initial relationships through various strategies, including bringing retailers from Karamoja to Kampala and national suppliers to the region.

Observations by the Feinstein team point to two other possible challenges with the PHH sack program: timing and training. As mentioned above, the upcoming voucher expiration date (initially February but shifted to April) meant that people were cashing in their vouchers at a steady pace in January. However, given that the harvest period runs from August to October, few households would have grains remaining from their harvest to store in the sacks. We asked a number of beneficiaries what they planned to do with the sacks in the short term and received responses ranging from “storing bags in a safe place until the next harvest”⁷⁷ to:

It is valuable. It can be used for many things—like gathering wild fruits, storing utensils, or to carry things if you need to go into town. They did sensitize us that these are for keeping seeds, but we have no seeds to keep.⁷⁸

The late pickup and likelihood of ensuing loss or damage to the bags as a result might be minimized by an earlier start date of the program or an expiration date closer to the harvest period.

Trainings in the use of the PHH sacks were meant to take place at three junctures: upon receipt of the vouchers in the community; when the customers used their vouchers in the stores to acquire the sacks; and finally in the field with agricultural extension workers. The Feinstein team witnessed an agent train three female customers when they purchased the sacks in Kaabong. This training, however, was the only one we saw take place. Some merchants asked customers if they knew how to use the sacks (all customers said that they did), but

most transactions at the time of purchase that we witnessed did not include discussion as to how the sacks should be used.⁷⁹ There has been a continuing effort to get retailers to provide training; however, project staff have reported that it is important to be realistic about the quality and quantity of training retailers will actually provide. Agricultural extension workers are meant to provide comprehensive education on use of the sacks. While we did not evaluate this specific aspect of the program, we know from the quantitative data that there was a statistically significant increase in the proportion of residents who received agricultural training from an extension worker in the past three years, with nearly a third of residents reporting receiving training in the sampled sites. As discussed above, retailers suggested that additional extension work with communities would be beneficial.

Shifting Water Management Systems

Securing access to water is a central and time-consuming facet of life in the semi-arid and ecologically erratic climate of Karamoja. Previous reports have discussed the cyclical and seasonal movements of herds in search of water sources and how these movements have changed with improved security in the region (Stites et al., 2016). For this year’s study, we examined the ways in which the systems to manage water sources at the community level were changing. These traditional water sources are primarily for household use but are at times also used for agrarian and livestock purposes. In conjunction with the organization Whave, a rural service provider (see Box 2), Mercy Corps has been working to improve the ways that rural communities in Kaabong and Kotido access and manage their water sources. Mercy Corps is working directly with the Hand Pump Mechanics Association (HPMA) in Abim District.

⁷⁷ Focus group discussion with women, Kotido Town Council, Kotido, January 22, 2017. Similar responses were recorded in Rengen and Panyangara in Kotido and in Karenga, Kaabong.

⁷⁸ Focus group discussion with women, Kachemichemi, Kalapata sub-county, Kaabong, January 14, 2017.

⁷⁹ Mercy Corps explained that they have learned from experience that there is little value added from trainings provided by merchants and that the more important trainings are meant to be provided by agricultural extension workers in the field. Comments provided by Mercy Corps staff member, June 25, 2017.

Uganda's 1995 Water Statute gives ownership of water supplies to the communities and the responsibility of managing these supplies to local WUCs (Government of Uganda, 1995). According to guidelines published by the Ministry of Water and the Environment, communities should establish a WUC for each water point (Government of Uganda, 2012). Responsibilities of the WUCs include collecting payments for water source rehabilitation or repair, maintaining a list of water users, undertaking preventative maintenance, managing repairs, and handling disputes regarding water use and access (National Associations of Professional Environmentalists (NAPE) and Harrison, 2013). WUCs existed in almost all of the communities that we visited, although impressions regarding their effectiveness and trustworthiness varied widely. For instance, a group of male elders in Abim reported:

The WUC are very hard working. They have got the caretaker who looks after the borehole, though they are not paid because they volunteered to work for the betterment of the community. The treasurer keeps the money until there is need for the use of the money, especially repairing the borehole.⁸⁰

Not all experiences were so positive. For instance, when asked about the purpose of the WUC in their village, a group of women in Kaabong responded:

We are not sure!! They used to collect UGX 500-1,000 for maintenance for when the borehole would break down. But then when the HPM would come the WUC would say that there was not enough money to pay him, and they would ask us for more money to fix the boreholes. The WUC was not managing the money well, and this is when we rebelled and said 'No! We won't pay more money for this!'⁸¹

We also asked people about their traditional water supply and their views on the source. A range of problems were listed in the following broad categories:

- Water source too great a distance from homes;
- Too many people using the source;
- Water source contaminated (bacteria, too salty,

rust, "orange");

- Borehole or other water supply system (such as pipes and taps) broken;
- Sharing the water source with animals;
- Seasonal access to water (such as from streams or swamps that dry up);
- Limited access to boreholes based on location, such as on school grounds;
- Prohibitive cost of privatized water system (such as paying UGX 100 per jerrycan).

As described in Box 2, the Whave service provision model in Kotido and Kaabong Districts is designed to address some of the concerns raised by respondents while also moving towards a sustainable model that includes community participation and responsibility. Given the relatively recent joining of Whave to the GHG program, it was difficult for the Feinstein team to analyze outcomes of the new model at the community level, at least in terms of regular and reliable access to water. However, we were able to gather data on recent changes in perceptions about water access and use in locations where Whave was in the various early phases of implementation. For instance, in a village in Kotido sub-county where Whave had been active for about eight months, women reported that their WUC was now functioning well, with a treasurer managing the money (this appears to have not been the case in the previous iteration of the WUC). The HPM fixed problems with the borehole promptly. Other benefits included a reduction in diarrhea in children and adults (ascribed to a hand-washing facility near the borehole) and additional time for women to work on other tasks such as farming and household chores given the decrease in the distance required to fetch water.⁸² Respondents in most locations were already accustomed to paying for borehole maintenance or repair. Few objected to such a system, except when it was corrupt. As explained by women in Karenga sub-county in Kaabong: "We think that the system of paying monthly is okay as long as it is well-managed."⁸³ Women earned the cash for the monthly payments through collecting and selling firewood in towns or from contributions from their relatives who had jobs in towns or other locations.

⁸⁰ Focus group discussion with male elders, Guloona North, Nyakwae sub-county, Abim, January 27, 2017.

⁸¹ Focus group discussion with women, Loyoro North, Karenga sub-county, Kaabong, January 15, 2017.

⁸² Focus group discussion with women, Poet Losilang, Kotido sub-county, Kotido, January 23, 2017.

⁸³ Focus group discussion with women, Loyoro North, Karenga sub-county, Kaabong, January 15, 2017.

Whave is a rural service utility company founded in 2012 and registered in Uganda. Whave works to develop permanent and sustainable solutions for clean water, sanitation, and hygiene (WASH) and aims to have the work in Uganda serve as a prototype for other developing countries. Whave follows a service utility approach focusing on sustainability, harmonization with government priorities, and local ownership and management of water sources. Whave is operational in eight districts in Uganda, including Kaabong and Kotido.

The company's approach in Karamoja follows several steps:

Mapping of all existing water sources in a given sub-county;

Identification of sources that could benefit from an intervention based on GoU guidelines;

Engagement with community to provide support and training in meeting prerequisites, including:

- Economic contributions from each household for water source rehabilitation or drilling;
- Improved hygiene standards (based on index figures⁸⁴);
- Establishment of a trained and functioning WUC;
- Finalization of a formal land agreement for the water source.

After the rehabilitation work is completed, Whave supports communities for a six-month period (during which household payments are not required) by:

- Monthly visits that include water testing of sources and a random sample of households. Water sources that do not pass are chlorinated, communities taught to boil water, and larger problems assessed and addressed;
- Focus in this period on improved hygiene and becoming accustomed to the model;
- Servicing boreholes free of charge under most conditions. (Exceptions include the drying up of the source and vandalism);
- Connecting the WUC with a WASH service provider (WSP) that receives support from Whave. Remuneration is performance based. Previously, these individuals—normally called HPMs—had no guarantee that they would be paid, and the community had no way of knowing if it was receiving a fair price or good service. This system fostered distrust and created a disincentive for preventative maintenance. The Whave model reinvents this relationship, whereby instead of being paid only when the borehole stops functioning, the WSP is paid when it does not break down. Scheduled maintenance visits by the WSP are verified through stamps given by the community. This system incentivizes the WSP to seek to minimize problems and to respond quickly when repairs are needed. Prices for services are standardized, and repairs must occur within 24 hours of a breakdown for the WSP to be paid the full price for the service. Payment decreases in accordance with the length of the delay. The objective of this model is to encourage a culture of preventative maintenance. Whave manages the relationship with and payment to the WSP, with financing coming from the payments made by the community members to the WUC.

After the six-month guarantee period, a community has the option to extend its contract with Whave for another year:

- Communities may either sign a Preventive Maintenance Water Service Agreement (PMWSA) for one year or opt out of further support from Whave. Communities that opt to sign contribute UGX 200,000 for the year of continued maintenance (this is normally paid through monthly collections);
- To date, after experiencing a year of reliable maintenance and access to safe water, most communities have opted to continue services with Whave.

⁸⁴ The index figures combine data on the number of latrines in a community, quality of these latrines (well maintained, in use, not in use), presence of a hand-washing station, and the diarrheal disease incidence data. Information provided by Mercy Corps staff member, September 11, 2017.

As detailed in Box 2, Whave aims to rehabilitate and repair existing water sources as opposed to creating new water points. While communities largely appreciate the service model, there were still numerous pleas in the study locations for the creation of new water infrastructure, particularly from male elders, who may perhaps be motivated by a desire to accrue tangible resources for their constituents. Whave staff members felt that NGO-sponsored borehole construction over the years (sometimes with limited knowledge of water tables, animal movements, and community dynamics) increased expectations by local communities that they should receive new boreholes free of charge.⁸⁵

Whave also faced broader challenges around the coordination of water-based interventions, in particular the provision of free boreholes from other implementing partners. According to Whave staff members, this issue is symbolic of different views of the situation in Karamoja. Organizations that perceive Karamoja as a humanitarian emergency are more likely to drill a new water source and move on, whereas organizations (including Whave) that take a development approach want to work with the local communities on sustainable models. Whave staff reported that the national Ministry of Water and the Environment and the district water officials agree that “punching new water sources” in Karamoja is a thing of the past;⁸⁶ this was largely confirmed in our discussions with local officials. The DWO in Kotido explained, however, that the problem with planning and coordination continues, whereby many NGOs seemed to implement infrastructure programs such as drilling a borehole and then “disappear.”⁸⁷ Local politics further complicate these issues, as village and sub-county officials and elders are able to take credit when services and infrastructure appear free of charge, and hence there is little motivation at the community level to discourage such “emergency” interventions.⁸⁸

Mercy Corps works directly with the HPMA in Abim District. The chairperson of the Abim HPMA explained that the association began as a government program in 2010, when the district water office trained two HPMS in each sub-county. The chair was elected in 2011 and ensured that the HPMA was registered as a community-based organization (CBO) with the District Community Development Office and later with the National NGO Board. The association has 16 registered members who pay a subscription of UGX 50,000 annually, works closely with local government entities, and is supported by the district government with office and storage space.⁸⁹ To note, the existence and apparent functionality of an association of this nature in Karamoja should not be taken for granted. The DWO in Kotido explained the experience with HPMS in his district:

In 2012, the government attempted to have them [HPMS] work in association. But this is difficult because their level of knowledge on how to be organized is low, and there were big differences in their level/skill of work. The government is trying to get them to work in uniform, and to charge a flat rate. But this has been difficult.⁹⁰

The DWOs in Abim, Kotido, and Kaabong all spoke positively about improvements to water management systems in their districts. The DWO in Kaabong appreciated the Whave model of community participation as opposed to free borehole repairs. Referring to the initial fee paid by communities to repair a borehole, he said, “The contribution of UGX 80,000 makes sense. It is good to repair for free in an emergency, but this is not an emergency.” The Kaabong DWO also approved of Whave’s efforts to build the capacity of HPMS and to teach community members how to take care of basic maintenance and light repairs to boreholes on

⁸⁵ Interview with Whave staff members, Kaabong, January 13, 2017.

⁸⁶ Interview with DWO, Kotido, January 20, 2017.

⁸⁷ Ibid.

⁸⁸ Comments provided by Mercy Corps staff member, June 25, 2017.

⁸⁹ Interview with HPMA chairman, Abim, January 28, 2017.

⁹⁰ Interview with DWO, Kotido, January 20, 2017.

their own. Whave does regular water quality testing and provides reports to the DWO—another aspect that he was happy with.⁹¹ The DWO in Kotido also approved of the Whave model, which he said was in line with the community-based model supported by the government. He explained that Whave was having some problems in Kotido with getting the local communities to fully engage, which was most apparent in community failure to raise the required funds and slow responses to behavior-change messaging around sanitation and hygiene.⁹² In Abim, the DWO appreciated the capacity-building work of Mercy Corps for the HPMA. He also stressed the importance of rehabilitating and repairing existing boreholes, as opposed to drilling new ones. He did, however, feel that work was still needed to build the capacity of the local association and to ensure a regular supply of spare parts to enable the HPMA to do their work effectively.⁹³ Mercy Corps explained that they do have a performance-based arrangement in place with the HPMA that assists with spare parts.⁹⁴

Animal Markets

The increase in livestock markets throughout the region and Mercy Corps' support to markets led the Feinstein team to collect qualitative data regarding changes in access to markets, infrastructure at animal markets, additional services at and benefits from markets, patterns and strategies of livestock trade, and security at markets.⁹⁵ As discussed in previous reports, **access to livestock markets has been improving across northern Karamoja** in recent years (Rockeman et al., 2016, Stites et al., 2016). These improvements in access are not uniform. Kotido District, for instance, has many more secondary livestock markets than do Abim or

Kaabong. Many of these secondary markets have become more formal and vibrant in recent years, and some have received support for infrastructure from various Mercy Corps programs.⁹⁶ Secondary markets listed by respondents in Kotido District include Kapadakok (Rengen), Kokoria (Kacheri), Lokomebu (Kotido sub-county), Watakua (Nakapelimoru), Napumpum (Panyangara), and Rengen. Respondents appeared more likely to travel farther afield to make purchases but sold animals closer to home, as explained in a male focus group discussion in Kotido:

We do buy our animals from Kapadakok market, Kanawat market, Watakau market, Napumpum market, Lokomebu market, Kokoria market, Rengen market within the villages, and sometimes we do buy from Kaabong market, Bokora, and Turkana (Kenya). This has been fluctuating in the last four years whereby we [used to] always buy from the major market of Kanawat.

Where do you sell animals? Has this changed in the past four years?

We do sell our animals within the markets in our district, for example, Kanawat market, Napumpum market, Lokomebu market, Kokoria market, Rengen market, etc. This has changed in the last four years in that it used to be Kanawat market only, but the other sub-markets have come up; for example, Rengen market, Watakau market, Lokomebu market, and Napumpum market.⁹⁷

Having more market options within the district for the sale of livestock means that sellers have a better chance of getting their preferred price, and they do not have to travel as far to market. Male respondents in Lolelia and Kalapata sub-counties in Kaabong viewed the system of sub-markets in

⁹¹ Interview with DWO, Kaabong, January 17, 2017.

⁹² Interview with DWO, Kotido, January 20, 2017.

⁹³ Interview with DWO, Abim, January 25, 2017.

⁹⁴ Comments provided by Mercy Corps staff member, June 25, 2017.

⁹⁵ As part of the qualitative data collection, the Feinstein team visited the Kanawat market (Kotido), Bartanga and Makatin markets (Abim), and Komoria (Kaabong) market as part of this round of field research.

⁹⁶ Under GHG, Mercy Corps supported the Komuria (Kaabong Town Council) and Panyangara (Kotido) markets and the vegetable market in Napumpum (Kotido). Rengen, Panyangara, Kanawat, Kacheri, and Watakua markets (all Kotido) received support from either the Building Bridges to Peace Program or the Horn Food Price Crisis Program. Comments provided by Mercy Corps staff member, June 25, 2017.

⁹⁷ Focus group discussion with men, Lomukura, Panyangara sub-county, Kotido, January 20, 2017.

Kotido favorably and expressed hope that a similar network of secondary markets would eventually develop in their district.⁹⁸ Kalapata was said to have had a daily market within the past decade (post-disarmament), but it collapsed, reportedly as a result of bad road conditions and traders' reluctance to bring vehicles to the market.⁹⁹ A regular market also exists in Loyoro Napore in Karenga but does not have a dedicated day and is reportedly smaller than other livestock markets.

Most of the secondary markets that exist in Kotido District appear to have emerged spontaneously (or have been previously operational and rehabilitated) in response to increased supply and demand. This increase in market activity can be traced to the growth of Kanawat market just outside Kotido town. Many respondents credit Mercy Corps for their support to basic infrastructure at Kanawat. This low-cost support pre-dated the start of the GHG program and consisted primarily of providing fencing around the central market area, construction of loading ramps, offices for the tax and veterinary officials who regulate and authorize market sales, and latrines. Over time and with continued investments from Mercy Corps, this market support has allowed for improved security and greater confidence on the part of potential customers. Noting the durability and benefits of the Kanawat market improvements, Mercy Corps provided similar infrastructure under GHG at the Komuria livestock market in Kaabong.¹⁰⁰ This infrastructure has had similar positive impacts, as explained by a group of women: "Now there is only one gate so that if a thief comes in you can catch him."¹⁰¹ The fences do, however, play another role in their creation of a divide between those who are making official sales and those who are not.

Those who sell on the outside of the fence are not paying the local taxes required of those who enter the enclosed area.¹⁰² (Reluctance to pay taxes may be due to lack of funds or may be because the tax collectors are known to simply pocket the money.) As learned on a previous visit to Kanawat market in Kotido, those who sell outside often sell to middlemen who take the animals inside and seek a desired price. These middlemen are able to hold out until they get the price they want (which may include taking the animals home to fatten them), while those who sell on the outside are more likely to be engaged in distress sales and need to get a given price on a given day (Stites et al., 2016).

Respondents in many locations discussed the **problems with a continued lack of infrastructure in livestock markets**. In Abim, for instance, inputs needed for the markets included fencing, a water source in the market, demarcated areas for animals versus goods, and latrines. In addition, respondents noted that the lack of a veterinary office at the market hindered the ability of vets to issue movement permits or check the general health of animals to prevent disease transmission.¹⁰³ The lack of movement permits issued at the market itself meant that traders and buyers were often harassed by police officers on the road when moving animals from markets without permits.¹⁰⁴ Similar problems with a lack of water source and proper hygiene facilities were noted at the Bartanga market in Abim and at markets in Kaabong and Kotido.¹⁰⁵ The lack of shade cover was also cited as a problem in all locations, particularly for those selling animal drugs. Respondents and the Kaabong DVO listed the sale of drugs in areas exposed to sun and wind as a particular problem at the Kaabong market.¹⁰⁶

⁹⁸ Focus group discussions with men, Moruangita, Lolelia sub-county, Kaabong, January 12, 2017 and Kachemichemi, Kalapata sub-county, Kaabong, January 14, 2017.

⁹⁹ Notes from team meeting, Kaabong, January 14, 2017.

¹⁰⁰ Mercy Corps constructed a similar livestock market in Panyangara, Kotido under the GHG program in 2017, after the data had been collected for this study.

¹⁰¹ Focus group discussion with women, Kachichimeni, Kalapata sub-county, Kaabong, January 14, 2017.

¹⁰² Notes from observations and discussions at Kaabong market, January 16, 2017.

¹⁰³ Focus group discussion with men, Guloona North Ward, Nyakwai sub-county, Abim, January 27, 2017.

¹⁰⁴ Interview with animal buyer, Bartanga market, Orwamunge, Abim, January 30, 2017.

¹⁰⁵ In 2017, Mercy Corps, under GHG, provided support to the Panyangara, Kotido livestock market, including a crush and market stalls to encourage only licensed sellers to trade drugs. Comments provided by Mercy Corps staff, August 17, 2017.

¹⁰⁶ Interviews with traders at Komuria market, Kaabong, January 16, 2017. Interview with the DVO, Kaabong, January 16, 2017. GHG created stalls at the Panyangara livestock market in Kotido to address this problem. They hope that the formal structure will also discourage informal drug sellers and cut down on the sale of counterfeit medicines. Comments from Mercy Corps staff, August 3, 2017.

Additional infrastructure improvements listed by respondents as ways to benefit markets include crushes, paddocks and stalls for improved animal handling (Kaabong), storage for goods at the markets (Abim), administrative offices for police and local officials (Abim, Kotido), fencing where it does not already exist (Abim and secondary markets in Kotido, including Watakau, Napumpum, and Rengen), and kiosks for the sale of goods (Kotido).

Mercy Corps has provided basic low-cost infrastructure at markets, but coordination by district officials will be required to maintain and further improve the market infrastructure over time. Regular maintenance, cleaning, upgrading, and repairs will require funds and organizational capacity. Such capacity will need to be greater as market infrastructure becomes more advanced (i.e., stalls, latrines, offices for tax collectors, police posts, etc.). Management systems will need to be in place to ensure that the markets do not fall into disrepair and disuse. Taxes collected from market revenue should be directed towards such efforts.

As livestock markets have become more robust, the **range of services, commodities, and employment opportunities at the markets has also expanded.** Services available at the markets included accommodation, bicycle repair, help loading and off-loading animals, cooked food, transportation (such as motorcycle taxis, or boda bodas), and butchering. Commodities listed by respondents include household items (clothing, cooking utensils, mattresses), food items (cereals, legumes, butchered meat, cooking oil, dried fish, and fresh vegetables such as cabbage and onion), and farming and livestock inputs (animal drugs, ox plows, lead lines for livestock). Cooked food and traditional brew were also available at all markets and sold by women. Many women in markets were doing a brisk trade in the sale of brew. (Commercially distilled spirits are also likely available, though we were not told this specifically.) Various and numerous other

employment opportunities related to the livestock trade have emerged at the most vibrant markets. For instance, young men at the Kanawat market collect sand from nearby riverbeds and sell it to transporters to line their truck beds before loading the animals.¹⁰⁷ Specific jobs were also done by the poor at and around livestock markets. Respondents said that roles for the poor included loading and off-loading animals and other commodities, driving animals to the home of the buyers, and serving as middlemen or agents in bargaining for animals or other goods.¹⁰⁸

Some male respondents described the importance of **less tangible benefits afforded by the growth markets**, such as the creation of friendships (including across ethnic groups), relations with traders, and business skills. Respondents from Kotido were the most likely to mention such benefits, which may be due to the more extensive market network there that allows for regular contact. It may be a result of the size and vibrancy of the main Kanawat market in Kotido Town. Although not always clear which market was being referred to (i.e., the main market or a district secondary market), this social element was a theme in multiple sub-counties in Kotido. For instance, men in Panyangara said that while the market allowed them to acquire “all the basic needs required at home,” there is “also friendship making in the market. There is also acquisition of knowledge and skills.”¹⁰⁹ Referring to Kanawat, male focus group respondents in Kotido sub-county reported that there was the “creation of friendship in the market between the traders, sellers, and buyers.”¹¹⁰ Women also create social links at markets, as was evident through informal associations of brewers and traders. In 2016, for instance, we met women at Kanawat market who had created a savings and loan group that allowed them to rotate opportunities to make and sell brew, helping each other to sell on a given market day.¹¹¹ Women also dominate the non-livestock trade at the market.

¹⁰⁷ Interview with female brewer, Kanawat market, Kotido, January 18, 2017.

¹⁰⁸ Interviews with animal buyer and with three traders, Bartanga market, Orwamunge, Abim, January 30, 2017; Interview with three traders, Kanawat market, Kotido, January 18, 2017.

¹⁰⁹ Focus group discussion with men, Lumukura, Panyangara sub-county, Kotido, January 20, 2017.

¹¹⁰ Focus group discussion with men, Poet-Losilang, Kotido sub-county, Kotido, January 23, 2017.

¹¹¹ Focus group discussion with women, Kanawat market, Kotido, March 2, 2016.

Notes from a focus group discussion with men in Nakapelimoru illustrate the wide range of market benefits and highlight that these benefits were due in large part to the **growth** of the market:

What have been the impacts of these changes (if any) in market access and strategy?

The main impact is that the livestock market has become a center of attraction to solve many livelihood-related problems. One can access various goods and services in the market such as animals' drugs, clothes, food, etc. It has also led to the creation of friends or socialization. One informant disclosed that you can even get a wife to marry at the market meeting place. It has also led to the acquisition of knowledge in business skills. It has also promoted trade amongst the traders. "We used to value only our animals but now market access has made even money to become important."¹¹²

The expansion of markets in the region has gone a long way in increasing the role and value of cash, as highlighted in the above excerpt. It was not long ago that the economy in Karamoja was based primarily on barter and exchange—a marked difference from the market-based system that many households now rely on as both consumers and producers. As discussed later, more work is needed to understand who is not benefitting from this market system and associated interventions.

Respondents discussed their **strategies for animal purchase and sale**. As expected, **animal prices** are higher in the wet season than the dry season, as animals are healthier, and there are fewer available for sale (as they are reproducing and producing milk for households). Prices also increased during the festive season around the time of the harvest (September/October), with goats in Kaabong selling for more than three times their dry season

low price.¹¹³ Answers varied on longer-term price trends. For instance, women in Kalapata in Kaabong explained that while the "price that you get [for animals] has been going up, the price of the food you need to buy has also been going up, so you don't necessarily get more food for the money."¹¹⁴ Men, however, had a contradicting view on sale prices in Kaabong:

The price is down—the main market is spoiled by the Sudanese and those who sell at low prices because they are going to the market when they are desperate—such as when they are sick, hungry, etc. People come here [to the Kaabong market] with no knowledge of what the price should be.¹¹⁵

Like others interviewed in Kaabong, these men felt that they would get a better price for their animals if there was a system of secondary markets in Kaabong similar to the one in Kotido.

Household market strategies fluctuate by season, external demand for livestock, and household need for cash. Male respondents in Kapedo explained that the late dry season was a busy time for external livestock buyers coming to Karamoja and that this corresponded with rapid sales because household-level livestock "sellers are in need to use the money urgently for activities such as to buy food, pay school fees, pay medical bills etc."¹¹⁶ The sale of animals to cover school fees came up in multiple locations. This pattern was corroborated by a buyer from Mbale at a market in Abim, who said, "The prices in this market fluctuate, for instance during the school going days and when there is famine in this region of Karamoja. The prices tend to drop down and it favors us, the traders."¹¹⁷ Unfortunately for local households, the timing of the payment of school fees corresponds with the dry season period of low sale value of the animals. In Abim, goats would sell for UGX 40,000 to 80,000 "during school going days and

¹¹² Notes from a focus group discussion with men, Poet, Nakapelimoru sub-county, Kotido, January 21, 2017.

¹¹³ Focus group discussion with men, Kalimon-Sangar, Kapedo sub-county, Kaabong, January 17, 2017.

¹¹⁴ Focus group discussion with women, Kachemichemi, Kalapata sub-county, Kaabong, January 14, 2017.

¹¹⁵ Focus group discussion with men, Moruangita, Lolelia sub-county, Kaabong, January 12, 2017. To note, in June 2017 Mercy Corps launched a new livestock market information system that is designed to allow traders to know the average prices in each market.

¹¹⁶ Focus group discussion with men, Kalimon-Sangar, Kapedo sub-county, Kaabong, January 17, 2017.

¹¹⁷ Interview with animal buyer, Bartanga market, Orwamunge, Abim, January 30, 2017.

the period of famine” and cows for UGX 350,000 to 800,000.¹¹⁸ (These figures are equivalent to USD 11 to 22 for goats and approximately USD 100 to 220 for cattle at the time of writing.) In contrast, during the August to October harvest season:

The livestock owners are satisfied; therefore, they do not sell their livestock randomly. They only sell a few to meet basic requirements like meeting medical bills for sick family members. Or paying bridewealth. The prices are very high, where a cow will sell at UGX 900,000 to 1,500,000 [USD 250–420], while goats go for UGX 70,000 to 200,000 [USD 20–56].¹¹⁹

To outsiders accustomed to formal banking and investment systems, selling animals at the bottom of the market to meet a predictable annual expense such as school fees makes little sense. However, most livestock owners in Karamoja see their investment portfolio as their herd, not their cash assets. Hence decisions are made to maximize the capital formation of the herd, and the animals sold to meet cash needs are often surplus members of the herd. The price received for the animal is relevant primarily in the extent to which it meets the cash need at hand—in this case, the required school fees (Rockeman et al., 2016).

Respondents generally agreed that the **livestock markets were more dynamic and diverse** than previously. Men in Kapedo in Kaabong explained that while cows and goats once dominated the market, there were now pigs and poultry readily available.¹²⁰ Traders from many different parts of the country now come to Karamoja to purchase animals, a marked contrast from the past when the combination of poor roads, insecurity, and uncertainty as to availability of animals at the markets served as disincentives to external traders. Karamoja also plays a central role in the important international trade dynamics in the region. Although the increased relevance of cash and cash exchanges in Karamoja is apparent in many dimensions, field work in early 2017 showed that

barter remains a component of trade, particularly across international borders. Male respondents in Kapedo explained that, due to hunger in South Sudan, people from Kaabong take food across the border and exchange it for livestock “which they bring back home to sell in the market or restock for breeding purpose.”¹²¹ The men continued:

The Jie [of Kotido] also barter food for animals of the Turkana [of Kenya] and bring [the animals] for sale in Kotido markets. There is also a direct bartering of heifers for big Turkana bulls by either Jie or Dodoth traders, which they bring to sell in Kotido and Kaabong markets. This barter trade can also involve exchange of goats and sheep for Turkana and Toposa [of South Sudan] cows and bulls.¹²²

Security in Karamoja continues to be generally very good in comparison to previous years. The general peace among groups in the region and the repairs to infrastructure at markets have led to **an increased sense of security around markets and livestock trade**. As discussed in an earlier report, security has improved greatly on roads, at grazing grounds and water points, and in towns; these changes greatly facilitate market access (Stites et al., 2016). The fencing of the main markets in Kotido and Kaabong has allayed some of the fears of those who may have previously avoided the crowded and chaotic market places, as evident in the previously-cited quotation by the women who referenced that having “only one gate” to the market area discourages thieves. As explained by Ugandan members of the research team, thieves are very unlikely to take the chance of seizing an animal inside a fenced area, as they know that their chances of getting out of the enclosure are slim once the alarm is raised. Similarly, thieves “are now hesitant to bring stolen animals to the market because they cannot run away if the animals are recognized.”¹²³

While security is greatly improved, respondents in many areas pointed to ways in which security

¹¹⁸ Focus group discussion with men, Guluopono North, Nyakwai sub-county, Abim, January 27, 2017.

¹¹⁹ Ibid.

¹²⁰ Focus group discussion with men, Kalimon-Sangar, Kapedo sub-county, Kaabong, January 17, 2017.

¹²¹ Focus group discussion with men, Kalimon-Sangar, Kapedo sub-county, Kaabong, January 17, 2017.

¹²² Ibid.

¹²³ Notes from meeting with team, Kaabong, January 12, 2017.

at markets could be further strengthened. While many people suggested the fencing of additional markets, there are some markets (such as Kokorio) where the fenced area is not being used, and most of the trade appears to be taking place outside the fence.¹²⁴ While additional research may be needed to understand the role of fencing in specific sites, respondents in many locations pointed to the need for a greater security presence to keep law and order in marketplaces. As explained by a group of men in Abim, this need for security was at least as much about settling disputes as about preventing theft: “there needs to be enough security in the market to keep law and order in case of misunderstanding among the traders.”¹²⁵ Other male respondents in Abim felt that security personnel were needed to combat corruption in the market.¹²⁶ Male respondents in Kaabong also stressed the need for “enough security” at the market.¹²⁷ Unfortunately, in most instances we do not know whether respondents felt that an increase in police would be most effective or whether the enhancements to security should be more community based in nature.

Private veterinary practitioners (PVPs)

In recognition of the problems with the drug supply chain, Mercy Corps has been facilitating the expansion of **private veterinary practitioners (PVPs)** in the region. The Feinstein team met with PVPs in Kotido and Abim, and talked to CAHWs and others about their interactions with PVPs.¹²⁸ The two PVPs interviewed had established their businesses in their respective towns long before the start of the Mercy Corps program. (One (female) PVP started her drug shop in 2009 in Abim, and one (male) PVP established his practice in Kotido in 2004.)

They explained that the main contribution of Mercy Corps was training in business skills. The PVP in Kotido said that he had been hoping for drugs from Mercy Corps¹²⁹ but that instead he was going to be receiving equipment such as refrigerators and office equipment. Both PVPs interviewed had their own independent relationships with suppliers and with networks of CAHWs.

The main buyers of veterinary medicines from the PVP shops are the CAHWs, followed by livestock owners themselves. A PVP in Kotido reported selling to traders from other regions as well, including traders from Kenya, Amuria (in the Teso sub-region), and Kaabong. Many types of drugs were in high demand, including trypanocides to combat trypanosomiasis (cause by tsetse flies), aricides to prevent tick-borne diseases, antibiotics, and dewormers. The two vets interviewed work closely with the DVOs in their respective districts, and the PVP vet in Abim reported that the DVO relied on her store for his stock of medicines. The vet in Abim explained that PVPs in the region relied on each other to help cover shortages of specific drugs at any one time.

The PVPs were generally positive about their work and involvement in the local community. Interactions with CAHWs seemed particularly positive. Such relations were due at least in part to the skills of the vets interviewed. Both PVPs interviewed felt that their veterinary experience brought distinct benefits to their businesses. The PVP interviewed in Abim said that her skills allowed her to work directly with farmers to explain the right drugs and dosage and to play an advisory role to CAHWs in Abim. This role seemed to be well received, as she explained that the CAHWs “always come for more advice and consultation from my veterinary drug shop when they are stuck.”¹³⁰ The PVP in Kotido said that his

¹²⁴ Comments provided by Mercy Corps staff member, June 25, 2017.

¹²⁵ Focus group discussion with men, Ajwokodinyo, Abim sub-county, Abim, January 26, 2017.

¹²⁶ Focus group discussion with men, Yeglemi North, Abim Town Council, January 25, 2017.

¹²⁷ Focus group discussion with men, Kalimon-Sangar, Kapedo sub-county, Kaabong, January 17, 2017.

¹²⁸ Information on the PVPs comes from interviews with PVPs in Kotido and Abim on January 18 and 25 respectively. There is at least one other PVP operating in Abim and Kaabong and several in Kotido.

¹²⁹ Mercy Corps staff stated that veterinarian drugs were never part of the arrangement with the PVPs and that this view was likely due to a combination of respondent bias and miscommunication.

¹³⁰ Interview with PVP, Abim, January 25, 2017.

veterinary experience allowed him to have “love for the job” and the willingness to “move from kraal to kraal to treat the animals.” He went on to describe the close interaction between the PVPs and the CAHWs in the area:

We always share with [the CAHWs] on how to help the community on treating the animals and also to be in the field so that the animals are safe. At least once in a month we call the CAHWs for some training. If they don't turn up we do follow them up to their home areas of work. We carry out monitoring of the work they are assigned to do in their area of operation.¹³¹

The PVP in Kotido reported that his business was expanding to the extent that he was planning to open a second shop. For comparative purposes, the Feinstein team also interviewed a non-PVP-associated drug trader in Kotido. Unlike the PVPs, he did not rely on deliveries of his supplies but travelled to Mbale every two months to purchase them. Such backpack dealers travelling to purchase their own medicines increase their retail drug prices to cover these transport costs.¹³² This particular backpack trader rotated through the Kotido livestock markets to sell his wares and also visited some kraals, particularly those along the Kenyan border where the Turkana came to graze and barter. He explained that he was in the business to make a profit and boost his standard of living. Challenges included competition from other backpack drug dealers who “are not cooperative in terms of the prices—some sell expensively and others sell cheaply,” the long distances to be travelled to find potential customers, and problem of some drugs selling slowly and becoming expired.¹³³ In addition, drugs purchased on these nonregulated markets are often counterfeit or are believed to be so by communities (Abebe, 2016), which decreases utilization of medicines and trust in efficacy.¹³⁴ These challenges exemplify the potential benefits brought by the PVP model. The

business of the backpack trader suffers from a lack of reliable suppliers willing to deliver, no permanent shop, problems managing reliable stock, fierce competition, and a need to chase down customers who may have preferential relationships with other suppliers.

While largely satisfied with their work, the PVPs we interviewed also face a number of challenges. One such challenge, reported by the PVP in Abim, is that local livestock owners feel that the drugs are expensive. Although respondents told the Feinstein team that they are willing to pay for medicines, the PVPs interviewed reported that many customers still want the drugs to be provided for free. The PVP in Abim felt that this expectation arose from dependency created by receiving free medicine and services for years as part of government campaigns. PVPs also reported that the CAHWs complained about the inaccurate dosing of animals by some owners. While many livestock owners likely do follow the instructions properly, others may adjust doses to make the medicines last longer. As explained by a PVP:

[The farmers] always ignore the prescriptions for the animal, and it becomes hard for them to complete the dosage that is always given to the animal. For instance, if the animal is supposed to receive the dosage for three times a day, then they tend to under-dose.¹³⁵

Relations with suppliers were at times problematic. The PVP in Abim explained that she had been using the supplier Norbrook in Kampala for the medicines, but that Norbrook instituted a minimum-delivery policy whereby a trader had to purchase UGX 5,000,000 (almost USD 1,400) worth of drugs to receive a shipment. This minimum was well out of reach of the PVP, and she switched to two suppliers based in nearby Soroti District. The PVP interviewed in Kotido used several different Kampala-based suppliers, including Norbrook, and

¹³¹ Interviews with PVP, Kotido, January 18, 2017.

¹³² Mercy Corps has been linking PVPs to direct suppliers who are willing to give wholesale prices in an attempt to counteract the inflation of drug prices. Communication with a Mercy Corps staff member, June 25, 2017.

¹³³ Interview with drug trader, Kanawat, Kotido, January 18, 2017.

¹³⁴ Communication with a Mercy Corps staff member, June 25, 2017.

¹³⁵ Interview with PVP, Abim, January 25, 2017. This was also discussed in the 2016 report by the Feinstein team; see Stites et al., 2016.

had fewer problems. He reported that he was able to buy on credit from his suppliers when necessary and that the suppliers assisted by either providing transportation free of cost or at reduced rates if he purchased in bulk. Problems with acquiring and maintaining adequate stocks of drugs at shops was found to be a major problem by the KRSU review of veterinary services in the region (Abebe, 2016).

Some Constraints and Advances in the Livestock Sector

We now turn to a more in-depth analysis of advances and challenges within the livestock sector.

In 2013, the FIC team collected information from local respondents on how to improve livestock production. The box below includes the “constraints” and “suggestions” from the 2013 data and adds the “advances” column to indicate how some of these constraints have been addressed in the intervening years. The “continuing challenges” column shows where additional growth might be achieved. As illustrated, many of the interventions implemented by Mercy Corps and other actors (including private sector companies) have been very much in line with the perceptions and priorities of the local communities. While there are still major challenges to overcome, the progress that has been made represents substantial accomplishments and is largely in line with the views of the communities.

Box 3. Community Suggestions for Improving Livestock Production (2013) and Advances and Continuing Challenges (2017)

Constraints (2013)	Suggestions (2013)	Advances (as of 2017)	Continuing Challenges (2017)
Shortage of quality water for people and livestock	<ul style="list-style-type: none"> Rehabilitation of damaged boreholes and installation of hand pumps to reduce risk of supply interruption due to absence of wind Mechanized dams with canals and water outlets <ul style="list-style-type: none"> Establishment of effective water management system and strong WASH training 	<ul style="list-style-type: none"> GHG has rehabilitated 200 boreholes in years 1–4 and will rehab another 90 in year 5. Most include livestock troughs. Strengthened the Abim HPMA Reinvigorated WUCs (water management system) Preventative maintenance model with incentives for service providers introduced HPMs trained in WASH 	<ul style="list-style-type: none"> Insufficient coordination among all actors Continued efforts needed on WASH behavior change Expansion of prevention model needed
Salty borehole water	<ul style="list-style-type: none"> Construct boreholes away from valleys and flood zones 	<ul style="list-style-type: none"> Only appropriately located boreholes rehabilitated 	<ul style="list-style-type: none"> Some communities lack reliable water source

Animal diseases and poor animal health services

- Promote establishment of privatized CAHW systems through:
 - Refresher trainings and start-up stock for active CAHWs
 - Job contracting private veterinary professionals to supervise and compile CAHWs monthly treatment reports among other routine activities
 - Initiate community-based tsetse fly control program such as traps and use of recommended chemicals
- Standardization of CAHWs training curriculum and expansion of network through multiple donors
 - PVP system strengthened and relationships built between PVPs and CAHWs
 - CAHWs outreach to local communities improved
 - User payment systems for services widely accepted
 - Medicine supply chain through PVPs improved
 - Trypanosomiasis study conducted to identify specific strains for improved treatment and prevention
- More coordination needed of training programs
 - Facilitation of DVOs still low
 - Fragmented drug supply chain
 - Animal diseases remain a problem, with few innovations in control models
 - Animal health services still insufficient overall

Herders' failure to repay credit service used from CAHWs

- Discourage CAHWs from providing credit services through training and kit agreement (through which CAHWs generally insist on upfront cash payment)
- Overall improvement of CAHW model, with fewer NGOs providing drugs as part of the kits, thereby supporting private sector supply chain and payment of user fee
- CAHW model still not uniform or fully self-sustaining
 - Regular outreach and trainings needed
 - Female CAHWs still face stigma

Failure of electronic branding (through boluses) to control cattle theft

- Herders did not like program, said that the "chips" the animals had to swallow led to death
- Ear tags introduced as an alternate form of identification
- Ear tags still not widely used

Poor management at protected kraals

- Further research to quantify livestock mortality and production losses due to protected *kraal* system
- Protected *kraals* phased out except in few areas of Kaabong
- Better relations with military
- Protection model continues in other places, but with increased mobility (see (Stites et al., 2016))
- *Kraal* herd health programs conducted with focus on prevention of tick-borne diseases
- Still some security issues with cross-border raiding, necessitating protection in border areas such as Kalapata, Kaabong

Continuing theft of animals and other assets

- Better coordination and response by national security forces
- Greater involvement of traditional authority mechanisms
- Effective peace committees involving local actors, local officials, and security forces in place in both northern and southern Karamoja
- Elders brought into community justice process
- Marked improvements in security, largely ascribed to peace committees and success of local initiatives
- Smaller-scale thefts still continue in some areas
- Cross-border raids a seasonal problem
- Domestic violence widespread and compounded by alcohol abuse

Lack of reliable markets due to bad roads and conflict

- Promote use of bush markets and decentralization of market service delivery system through linking external traders to village-based markets and traders with mobile phones
- Market infrastructure support by Mercy Corps and others
- Growth of secondary markets throughout Kotido
- Better access to markets with improvements to roads and security
- More vibrant, dynamic, and diverse markets
- Linkages developed with external traders
- Capacity of local traders developed, including joint action through associations
- Poor market infrastructure in many areas
- Limited market options in Kaabong
- Little value added at the markets
- Distress sales of livestock by the poor continue

Source: Excerpts from Table 13, page 16, in Burns et al., 2013.

Conclusions and Considerations

Northern Karamoja has seen major advances in the past five years. As described in this report, much of this change has been fueled by the improvements to peace and security in the region and associated economic advances. Programs initiated by national and international actors have also contributed to these advances. Despite the widespread improvements, the challenges remain immense. Substantial hurdles to poverty alleviation and sustainable growth continue to exist. A major challenge is the relatively slow pace of economic growth and diversification. The government has made some investments in the development of infrastructure and public services, such as NUSAF-funded water valleys and dams, but much more needs to be done in terms of public utilities and economic investment. International actors are responsible for much of the infrastructure advances that have taken place, such as the Mercy Corps-funded construction on health centers, markets and butcheries, and a 36-kilometer road in Kaabong. Ongoing government investment, commitment, and support will be required if such interventions are to have longer-term impacts. For instance, medical staff need to be trained, recruited, and supported, roads need to be maintained and linked to market hubs, animal markets need to be maintained and managed, the electricity grid needs to expand, and appropriate and adequate urban planning and infrastructure is required to keep pace with the growing urban population. District offices will need the mandate and capacity (and lack of corruption) to handle planning and budgeting for these management and maintenance activities. Whave's water utility program has introduced the concept of paying for preventative maintenance; such models could be replicated in other sectors with adequate planning, funds, and political will. Private sector involvement

remains limited, but there is potential for expansion if efforts were made to improve local governance, the provision of services and infrastructure, and accessibility of the region. Southern Karamoja has seen relative increases in public sector investment in recent years (in the form of roads and electricity), but the north lags behind.¹³⁶ Economic growth is taking place in the towns, as evidenced by the growing number of hotels, restaurants, markets, shops, and services such as mobile money, barbers, butchers, and other similar enterprises. As is the case across much of Africa, this growth is in the informal sector and is unregulated, meaning that workers are without protections, and little revenue flows from this growth to the district coffers.

Livelihood opportunities remain limited within the region, due to a combination of lagging investment and economic development, remote and arid location, and relatively small population base. Given the erratic rainfall patterns, animal production continues to be the most viable source of livelihood. Cattle remain the preferred livestock asset for men, and having any form of livestock in adequate numbers allows for diversification, investment, and increased resilience. Inequity in animal ownership was high in 2013 when the Feinstein research team conducted an initial assessment for the GHG program. Using participatory wealth ranking techniques, the researchers found high levels of inequity in livestock holdings, although the general feeling among respondents was that the total number of livestock in their communities had declined as a result of drought, raiding, and the protected kraal system. As the team pointed out in 2013, however, it was unclear:

to what extent the loss of livestock has resulted in an absolute decline in livestock

¹³⁶ The 2016 upgrade of Kotido from a town to a municipality may be a sign that additional public sector investment is coming in the near future. Comments by Mercy Corps staff, August 15, 2017.

numbers and to what extent there has been a dramatic redistribution of livestock holdings into the hands of the few. Either way, the majority of people now consider themselves poor because they have fewer livestock. (Burns et al., 2013, 32)

Five years later, we do not have a definitive answer on the breakdown of animal holdings by wealth group, but qualitative evidence continues to point towards inequity and concentration of animals in the hands of the better off. This is due, in part, to the difficulties of the poor in recovering from animal losses (whether due to disease, raiding, distress sale, or other factors), while those with more animals can not only recover relatively easily from losses, but they also have the ability to shed surplus animals to meet cash needs or invest in new stock to build their herds. These presumed patterns of inequity are in line with the trends across much of the Greater Horn of Africa, whereby poorer herders are pushed out of pastoral production, and increasingly larger herds are held by fewer wealthy animal owners (Catley and Iyasu, 2010, Catley and Aklilu, 2013, Aklilu and Catley, 2009, Aklilu and Catley, 2010). Evidence from these studies also indicates that a market-based approach (such as that pursued by Mercy Corps under GHG) has the potential to increase inequity because better-off households often benefit disproportionately from services provided. For example, improvements to roads and markets may be of great use to those with the resources and ability to access these public goods. (Hopefully these individuals will benefit from such access by increasing their wealth and well-being.) Information is lacking, however, on who is not able to use such public goods, why they lack access, and what the impacts of this lack of access may be. More in-depth research into trends in animal holdings and use of public goods and services by wealth and demographic group is required to evaluate change in equity and possible correlations with Mercy Corps programs.

Earlier research shows that many people exited animal production in the first part of the forced disarmament campaign (Burns et al., 2013). A sizeable proportion of these people have since shifted partly or entirely to an agricultural-based livelihood. Balancing animal production with opportunistic cultivation has long been a way of life in the region, but many poor households today have few or no livestock and hence are unable to maintain this balance. Heavy reliance on crops is a risky prospect in an area characterized by erratic rainfall and frequent droughts, and annual losses to crop diseases and poor storage and PHH techniques compound the challenges. Some respondents who were farming as their primary livelihood reported that their shift away from animal husbandry was permanent. They had either lost all their animals and saw no hope of regaining them or had opted to pursue a new livelihood, often due to the physical insecurity associated with animal raids. Others in this category had made a profit in one or more years in farming (or knew others who had) and were eager to pursue this endeavor. Still others saw the shift to farming as temporary and stated that they were hoping to make enough money through the sale of crops to purchase animals and gradually rebuild herds.

Exiting pastoral production can bring positive results if there are adequate and sustainable economic opportunities to absorb those who leave this sector. However, pastoral areas are often peripheral to national power centers, and such regions rarely have adequate economic opportunities to support large numbers of wage seekers. In Karamoja, individuals or households that exit animal husbandry often migrate to urban or semi-urban areas. This may be on a daily, seasonal, temporary, or permanent basis and may involve entire households or specific household members. Livelihoods based on natural resource exploitation (such as brick-making, firewood

collection and sale, charcoal production and sale) are widely practiced around the growing urban centers in Karamoja. These maladaptive livelihoods appeal to the unskilled, but quickly destroy the already fragile reserves of natural resources in the area.¹³⁷ Only healthy and able-bodied individuals can pursue these physically demanding livelihoods, and hence they are not suitable for older populations, the disabled, or those with multiple dependents. A Feinstein study from 2014 showed that urban livelihoods are highly gendered, with women primarily engaged in domestic services and brewing, and men often finding work as daily wage laborers in construction, brick-making, and wheelbarrow transport (Stites et al., 2014). Migration outside of Karamoja is also common, to either urban or rural destinations. Such migration patterns will probably continue, as it is unlikely that the economy in Karamoja will grow sufficiently to absorb all job seekers at any time in the foreseeable future.

An area of major development with links to many of the points above is the growth of markets. The advances in livestock markets are highly visible, although it is difficult to ascertain how many sellers are making sales for investments versus distress sales. The expansion of livestock markets has created opportunities for the sale of services and other commodities, including a range of livestock, household, and personal products. Market growth has brought a burgeoning of the cash economy, providing an important avenue for potential diversification into a range of sectors. In particular, the growth of the cash economy may be advantageous for women, who have limited control over livestock but often have greater influence over cash. This is evident, in part, in women's growing participation in VSLAs and in the popularity of the sale of brew by women for cash. Some female respondents discussed their investment strategies, using either the proceeds from brewing or a gradual trading-up of assets. Poultry—long considered a female domain—can play into this as well, with

women able to sell a few birds to buy a goat and start developing their own herds and asset bases.

Recommendations for Mercy Corps

Recognize that change takes time in a context such as Karamoja.

Given the historical lack of development and low levels of human capacity in Karamoja, interventions may require extended periods before impacts are visible or widespread. Establishing linkages and building the capacity and customary base of PVPs, for instance, require investments that will likely only bear fruit over the long haul. Similarly, the adoption of improved seeds by farmers will be gradual, and there will be numerous setbacks caused by erratic weather, logistical challenges, and reluctance of local communities to shift away from long-established practices. A tipping point in acceptance, knowledge, and adoption may occur when enough farmers take up improved seeds, but such patterns are likely to vary widely by context and location.

Continue with an emphasis on programs that strengthen the value added, investment opportunities, and diversification within the livestock and related sectors.

In the past five years, Mercy Corps has made numerous and sustained investments in programs directly related to livestock—such as animal health, mapping grazing areas, supporting animal markets—and in sectors that increase the quality and availability of livestock value-chain inputs (such as support to the private veterinary sector) and the value of outputs (such as through the support of urban butchers). In the broader context of improved security and mobility, these investments have contributed to the expansion and diversification of markets, have created linkages both within Karamoja and to commercial centers and actors outside the

¹³⁷ Maladaptive livelihoods are those that are unsustainable, incompatible with peace processes, have irreparable negative environmental impacts, incur serious personal risk, or cause fear, human rights violations, or suffering for others. See Young, 2009 and Young and Jacobsen, 2013. YOUNG, H. 2009. The Conflict-Livelihoods Cycle: Reducing Vulnerability through Understanding Maladaptive Livelihoods. In: LEROY, M. (ed.) *Environment and Conflict in Africa: Reflections on Darfur*. Addis Ababa: University for Peace, YOUNG, H. & JACOBSEN, K. 2013. No Way Back? Adaptation and Urbanization of IDP Livelihoods in the Darfur Region of Sudan. *Development and Change*, 44, 125-145.

region, and have provided improved livelihoods, food security, and access to services for large numbers of people. Progress remains somewhat uneven, with areas such as Kotido having well-developed secondary markets in comparison to Kaabong. Similarly, some areas have a strong and effective network of CAHWs, while others report spotty geographic coverage.

Address issues of sustainability and longevity.

The long history of development efforts in Karamoja indicates that infrastructure programs are not sustainable without local mechanisms in place to provide for management, maintenance, and ownership. Mercy Corps' partnership with Whave seeks to address these issues on a small scale and at a local level in the water sector. Broader efforts will be required to build the capacity and reliability for public goods such as markets, roads, health centers, etc.

Improve coordination with district-level stakeholders and other NGOs.

District-level officials interviewed for this study were displeased with coordination efforts and outreach by Mercy Corps. While recognizing that a variety of factors are likely contributing to such views, policy change at the district and national level is difficult without the support of the local power structures. Livestock working groups in each district are working to improve coordination, but more dedication to this

issue is required in order to increase political buy-in by officials.

Improve outreach, sensitization, communication, and follow-up with local communities.

In general, respondents in the communities visited for this study continue to feel isolated from decision-making processes, uninformed about aspects that might improve their lives, and confused about interventions. This was particularly true among female respondents. Mercy Corps has invested time and resources into local sensitization programs, but repeated, ongoing, and verified sensitization is needed.

Conduct further research into the benefits of a market-based approach for the very poor, particularly with regard to access to assets and services.

While the improvements in Karamoja in recent years may appear obvious, there is still much beneath the surface that is unknown. Who is benefiting, who is not, and why? What are the impacts on equity? What is happening to those who step out of the livestock sector temporarily or exit it entirely? What are the prospects for those who migrate to urban areas, either within the region or farther afield? These questions remain largely unanswered, but they are key to understanding the longer-term dynamics and prospects for those in the region.

Annex A. Village Interview Locations

Village name	Sub-county	District	Quantitative Data collection 2013 and 2016	Qualitative Data collection 2017
Abongodero	Abim TC	Abim	X	
Ajwokodinyo	Abim	Abim	X	
Aywee North	Abim TC	Abim	X	
Gulopono North	Nyakwae	Abim	X	
Katabok Gulonger East	Morulem	Abim	X	
Katabok Odollo West	Morulem	Abim	X	
Olem Loyoroit Central	Alerek	Abim	X	
Ribocing	Alerek	Abim	X	
Wipolo	Lotuke	Abim	X	
Yeglemi	Abim TC	Abim	X	
Kadukan	Rengen	Kotido	X	
Kalowapet	Nakapelimoru	Kotido	X	
Kanamwar	Rengen	Kotido	X	X
Lochedimeu	Kotido TC	Kotido	X	X
Lomejan	Rengen	Kotido	X	
Lomukura	Panyangara	Kotido		X
Longerep	Nakapelimoru	Kotido	X	

Lopedur	Kotido TC	Kotido	X	
Nagolopoi	Kotido	Kotido	X	
Nangolemuria	Rengen	Kotido	X	
Namonicek	Kotido	Kotido	X	
Poet Losilang	Kotido sub-county	Kotido		X
Poet	Nakapelimoru	Kotido	X	X
Kachemichemi	Kalapata	Kaabong		X
Kalimon-Sangar	Kapedo	Kaabong	X	X
Komem	Kapedo	Kaabong	X	
Lokori Central	Karenga	Kaabong	X	
Loyoro North	Karenga	Kaabong	X	X
Moruangita	Lolelia	Kaabong	X	X
Nakorichockei	Lolelia	Kaabong	X	
Naoyaro-Lokori	Karenga	Kaabong	X	
Napetabul	Lolelia	Kaabong	X	
Narube	Kathile	Kaabong	X	X
Tulianyang	Kathile	Kaabong	X	

Annex B. Villages Selected for Qualitative Data Collection and Interventions

Village name	Sub-county	District	Seed Vouchers	CAHW Trainings	WASH	Quant. Data site
Kanamwar	Rengen	Kotido	X	X	X	X
Lochedimeu	Kotido Town Council	Kotido	X	X		X
Lomukura	Panyangara	Kotido			X	
Poet-Losilang	Kotido sub-county	Kotido			X	
Poet	Nakapelimoru	Kotido		X		X
Kachemichemi	Kalapata	Kaabong			X	
Kalimon-Sangar	Kapedo	Kaabong	X	X		X
Loyoro North	Karenga	Kaabong	X	X	X	X
Moruangita	Lolelia	Kaabong	X	X		X
Narube	Kathile	Kaabong	X	X		X
Ajwokodinyo	Abim sub-county	Abim	X	X	X	X
Guluopono North	Nyakwai	Abim	X	X		X
Olem Central	Alerek	Abim	X		X	X
Yeglemi North	Abim TC	Abim	X	X	X	X

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