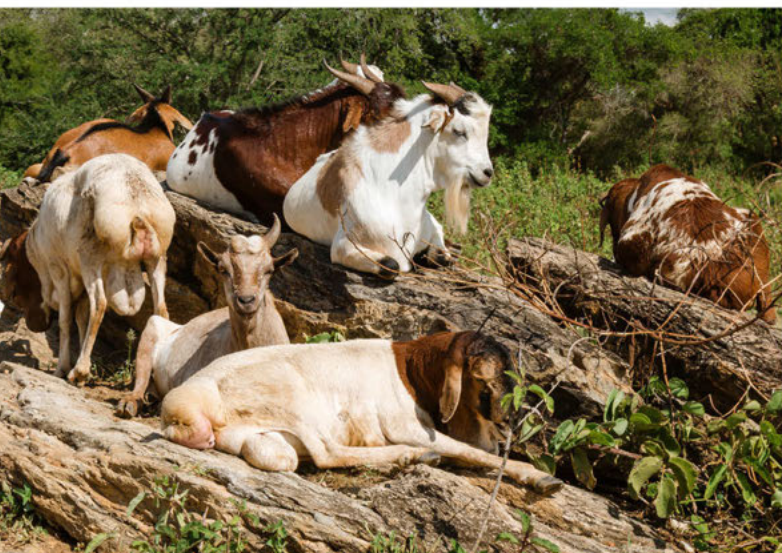




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Karamoja Resilience Support Unit (KRSU)

AGRICULTURAL DEVELOPMENT IN KARAMOJA, UGANDA: RECENT TRENDS IN LIVESTOCK AND CROP SYSTEMS, AND RESILIENCE IMPACTS

March 2018



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KARAMOJA RESILIENCE SUPPORT UNIT (KRSU)
Agricultural Development in Karamoja, Uganda:
Recent Trends in Livestock and Crop Systems,
and Resilience Impacts

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ACRONYMS

ACF	Action Against Hunger
ACTED	Agency for Technical Cooperation and Development
APFS	Agro-pastoral field schools
APZ	Agro-pastoral zone
AZ	Agricultural zone
BCC	Behavior change communication
CAADP	Comprehensive Africa Agriculture Development Programme
CAHW	Community animal health worker
CBR	Centre for Basic Research
CfW	Cash for work
COP	Chief of party
CRS	Catholic Relief Services
CPP	Country Programming Paper of the Intergovernmental Authority on Development (IGAD) Drought Disaster Resilience and Sustainability Initiative (IDDRSI)
DINU	Development Initiative in Northern Uganda
EU	European Union
EWS	Early warning systems
FAO	Food and Agriculture Organization of the United Nations
FAW	Fall armyworm
FEWS NET	Famine Early Warning Systems Network
FGD	Focus group discussion
GAM	Global acute malnutrition
GDP	Gross domestic product
GHG	Growth, Health and Governance program implemented by Mercy Corps
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
IDDRSI	Intergovernmental Authority on Development (IGAD) Drought Disaster Resilience and Sustainability Initiative
IRIS	Institut de relations internationales et stratégiques
KADP	Karamoja Agro-Pastoral Development Programme, supported by Lutheran World Federation (LWF)
KALIP	Karamoja Livelihoods Programme
KDA	Karamoja Development Agency
KDF	Karamoja Development Forum
KfW	KfW Bank aus Verantwortung
KIDDP	Karamoja Integrated Disarmament and Development Programme
KIDP	Karamoja Integrated Development Programme
KPIU	Karamoja Projects Implementation Unit
KRSU	Karamoja Resilience Support Unit
LC	Local Council (system of local government)
LWF	Lutheran World Federation

ACRONYMS

MAAIF	Ministry of Agriculture, Animal Industries and Fisheries
MP	Member of Parliament
NabuZARDI	Nabuin Zonal Agricultural Research and Development Institute
NARO	National Agricultural Research Organisation
NGO	Non-governmental organization
NUSAF	Northern Uganda Social Action Fund
OPM	Office of the Prime Minister
OWC	Operation Wealth Creation
PRA	Participatory rural appraisal
PVP	Private veterinary pharmacy
RNI	Reference nutrient intake
RWANU	Resiliency through Wealth, Agriculture, and Nutrition (implemented by ACDI/VOCA)
SAM	Severe acute malnutrition
SIP	Sector Investment Plans
UN	United Nations
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund
UPDF	Uganda People's Defence Force
UPE	Universal Primary Education
Ush	Uganda shillings (US1 = Ush3,600 at the time of the study)
US\$	United States dollar
USAID	United States Agency for International Development
USAID FFP	USAID Office of Food for Peace
UWA	Uganda Wildlife Authority
VSLA	Village Savings and Loans Association
WFP	World Food Programme

EXECUTIVE SUMMARY

This report is a review of agricultural development trends in the Karamoja sub-region of northeast Uganda. The review was conducted in early 2018, and involved consultations, interviews, and workshops in Karamoja and Kampala, and a review of published and grey literature. In Karamoja, 623 women and men participated in focus group discussions (FGDs) across agro-pastoral and agricultural areas of six districts, supported by researchers from the Nabuin Zonal Agricultural Research and Development Institute (NabuZARDI) and the Karamoja Development Forum (KDF). In Kampala, key informants included representatives of the Office of the Prime Minister (OPM). The review covered both crop farming and transhumance livestock management and examined agriculture at the levels of both policy and programming.

KEY FINDINGS

Agro-ecological realities and production responses:

Dryland areas in East Africa are characterized by marked temporal and spatial variations in rainfall. Ultimately, it is these temporal and spatial variations in rainfall that determine agricultural systems, although at the field level differences are determined by soils. In Karamoja since the 1880s, an integrated crop farming and transhumance livestock management system, also described as agro-pastoralism, has been practiced. This production system dominates Karamoja's central belt and is flanked by pastoralism in the drier eastern areas and crop farming in the wetter "green belt" to the west. As with other agro-pastoralists in East Africa, the Karimojong regard crop farming and transhumance livestock keeping as mutually reinforcing: when the first fails, the second helps absorb the shock, and vice-versa. The Karimojong are acutely aware too that livestock can be trekked away from drought shocks, while crops cannot.

A once-in-a-lifetime drought: Disarmament from 2006 to 2011 has been equated with a "once-in-a-lifetime drought," as livestock numbers, in particular of cattle, were decimated. Recognizing it would take a decade or more for numbers to recover, the Karimojong turned en masse to crop farming. Furthermore, well aware of the agro-ecological vagaries of the central agro-pastoral belt, thousands of Bokora, Pian, and Jie migrated to the wetter "green belt" where, in a good year, rainfall supports a second planting of quick-maturing crops. These shifts however should not be mistaken for a shift in mind set, as evidenced by the reintroduction of bride price and the

recovery in livestock numbers. Barring a major shock, it can be expected that livestock numbers will return to pre-disarmament levels within the next 5–7 years. However, the recovery will likely be inequitable, and many poorer households can therefore be expected to continue to live in abject poverty and become part of a wider East Africa region increase in the number of arid land "drop-outs."

Policy narratives: Since the colonial administration, policy narratives in the sub-region have been dominated by security and pacification considerations that have fuelled support for pro-crop farming and sedentarization policies. These considerations live on today although in more muted form, as the disarmament campaign brought peace and security to the sub-region for the first time. Peace has not only resulted in increased development investment but also recognition of the potential role that livestock can play in improved household resilience and food and nutrition security outcomes. The Karamoja Integrated Development Programme (KIDP) for 2015–2020 provides policy support for this shift, as it affirms that the livestock sector represents "the biggest opportunity for development in the sub-region." The challenge will now be to ensure that development investment is more balanced between crop farming and livestock systems and that investment in the livestock sub-sector is informed by agro-ecology and local technical and social realities as opposed to top-down, blueprint thinking. It could be argued Karamoja can ill afford a second livestock sub-sector-related disaster within such a short period of development history.

Climate change: Policy narratives related to Karamoja are increasingly framed around global climate change. Whereas local informants often described a trend towards the delayed onset, more erratic mid-season rainfall and delayed cessation of rains, the scientific analysis of past and future climate trends in East Africa is characterized by increasing uncertainty. Karamoja's climate might retain its high variability and/or might become drier or wetter. For two of these three options, investments in mixed crop farming and transhumance livestock production far outweigh the proposed transformation pathways to more commercial arable and livestock systems. Ensuring household resilience and addressing food security and malnutrition should be the agriculture sector's sub-regional priority, as to fail to do so would blight the sub-region's future for generations to come.

RECOMMENDATIONS

The recommendations are divided into three categories: a single generic recommendation, followed by recommendations for the livestock and crop farming sub-sectors.

Karamoja is Uganda's poorest sub-region and has a unique agro-ecology and a unique development history. These aggregated differences suggest it is highly unlikely that carefully tailored agriculture strategies and thinking appropriate for other regions in Uganda will be either relevant or transferable to Karamoja. Rather, it would seem that Karamoja will require specialist dryland strategic and technical support in order to make best possible use of its crop farming and transhumance livestock production opportunities and ensure synergies between the two.

As part of this recommendation, it is recommended that coordinated, evidence-based learning should be supported, including more investment in robust and external impact assessment, technical working groups, and ex-post evaluation of pilot projects. Wealth- and gender-differentiated impacts are central to understanding project performance.

Recommendations for the livestock sub-sector

- Good local development requires collective effort and a common vision that inspires stakeholders and coordinates and harmonizes the individual contributions of individual organizations. It is recommended that government, donors, and implementing partners use the opportunity afforded by the KIDP 2015–2020 and future iterations to develop a shared long-term vision for crop farming and transhumance livestock management systems that are secure, productive, and equitable. It is recommended too that this vision be informed by participatory and inclusive policy processes that include agro-pastoral and farming communities.
- Communities in the agro-pastoral and agricultural zones share a common aspiration to maximize herd growth, ensure sufficient milk for household consumption, and facilitate the sale of animals when cash is needed for food and non-food items, e.g., school fees, health costs, and veterinary medicine. It is therefore recommended that livestock projects establish a dialogue with livestock owners that will help accelerate progress towards these outcomes. These are expected to include: continued support for peace-building and good governance; strengthening animal health

services to combine vaccination, treatment, and quality control of veterinary medicines; and enhanced mobility for improved rangeland management. Consideration may also be given to the Livestock Emergency Guidelines and Standards (LEGS) for improved emergency drought preparedness.

- It is increasingly recognized in industrialized and developing countries that sustainable livestock systems can use “traditional” or indigenous breeds, which are often well adapted to local conditions. It is therefore recommended that NabuZARDI take advantage of the increasing flows of development resources to establish breeding herds of indigenous cattle, goats, sheep, and camels and through careful breeding produce more productive animals. Sires and dams can subsequently be shared with local herders for upgrading their herds and flocks.

Recommendations for the crop farming sub-sector

- Karamoja can be sub-divided into pastoral, agro-pastoral, and cropping zones. These three zones are closely connected socially, culturally, and economically. Knowledge, skills, and practices have been shared over generations. It is recommended that development partners that engage in cropping support these connections and information flows, and that innovation is not siloed in one area or sector at the expense of the others. It is therefore recommended that donors support a Karamoja dryland farming learning group to facilitate the sharing of evidence-based good practice that addresses current productivity constraints; this group could comprise government experts, researchers, donors, NGOs and community and private sector actors. It is expected that the work of the group would include: safeguarding and improving soils and water sources; protecting and expanding seeds of choice, including indigenous germ-plasm; consolidating and scaling up integrated pest management; improving agricultural engineering tool design e.g. to address the limitations of disc ploughs in Karamoja; and advances in post-harvest technologies that combine indigenous and new knowledge. It is also strongly recommended that such a learning group focus increasing attention on poorer rather than the richer households, and that increased efforts are made to create and maintain a dialogue with farmers that addresses local priorities rather than meeting donor requirements.

- Future seasonal cropping will be increasingly determined by global climate change as it impacts upon localized changes in weather patterns, including the onset and duration of the rains. Retaining soil moisture will therefore become increasingly important as a climate adaptation strategy. It is therefore recommended that efforts are made now to connect with and learn from other innovative and adaptive practices in sub-Saharan Africa, including re-greening in West Africa and conservation agriculture in Southern Africa, as well as work in Uganda supported by the National Cooperative Business Association CLUSA International. Perhaps development partners might consider prioritizing a program of exchange visits to other dryland regions, to include researchers, production officers, and technical staff of donors and implementing partners, visits that might result in a stimulus to local innovation and practice in dryland farming systems. If such an initiative were to gain ground, it is suggested that NabuZARDI be invited to play a facilitative role to help assess and document impact and outcomes of promising innovations that can be shared with agriculture sector stakeholders.
- Crop pests continue to be an important production constraint in Karamoja, and women in both the agro-pastoral and agricultural zones recognized the impact of pests and diseases, including Fall armyworm (FAW). It is recommended that researchers, together with the technical staff of government and implementing partners, collate and produce a compendium of evidence-based integrated pest management that includes local indigenous knowledge.
- The main report describes how crop sales direct from fields are distress sales that result in poor and indebted households selling today what they need to buy back tomorrow at higher prices. It is recommended that efforts be made to end sales direct from fields. There have been some positive experiences with community-level cereal banks in Karamoja, and this and similar approaches might be scaled-up, but only after careful evaluation and a review of lessons learned from other areas of Uganda.

As part of this recommendation, it is proposed that a review be made of the impact of tractor-mounted disc and ox-drawn mouldboard ploughs on soil organic matter and therefore its water retention properties and ways found to mitigate negative outcomes. As part of this trial, it would also be useful to trial keyline and ripper technologies as alternatives to ploughing. This type of work has not been done before in Karamoja.

- Karamoja's agro-ecology is unique in Uganda, as it is the only semi-arid sub-region. Despite the vagaries of the agro-ecology, the Karimojong have been successful in developing an integrated crop farming and transhumance livestock production system over more than 200 years. It is strongly recommended that development partners take a wider view of agricultural inputs support in the sub-region, in particular seed, and support locally appropriate alternatives such as seed sharing, seed fairs, and other community-based seed initiatives that involve rather than marginalize women. As part of this recommendation, the mapping of traditional sorghum landraces should be extended beyond Moroto and Napak districts, to show yields, characteristics, and susceptibilities, and the findings documented and widely disseminated.

INTRODUCTION

The United States Agency for International Development (USAID) Uganda-funded Karamoja Resilience Support Unit (KRSU) provides programming, policy, and coordination support to donors, government, and non-governmental organizations (NGOs) in Karamoja, with a focus on evidence-based resilience analysis, learning, and documentation. Resilience-related study topics are identified for analysis through periodic consultations with donors, multilateral organizations, and the OPM.

The government and its development partners recognize agriculture as a pathway to resilience building in Uganda and requested that KRSU undertake this review. Karamoja is Uganda's only semi-arid sub-region and, unlike other sub-regions, has a single rainy season that starts in late February and continues with breaks through to September. Rainfall is typically variable, and averages 300mm to 1200mm annually, from east to west of the sub-region.

The Terms of Reference (see Annex 1) include the purpose and specific activities as follows:

1. A policy-level review to assess the technical and social feasibility of agriculture-led development policy in Karamoja as a region-wide policy versus livestock development, while taking account of agro-ecological differences and possible synergies between crop and livestock development
 - a. Review the formal policies of the government on development in Karamoja, and the strategies of the main aid donors and implementing agencies;
 - b. Supplement the literature review with key stakeholder interviews, e.g., government at central and local levels; community members; donor and NGO staff; researchers and academics.
2. A program-level review of the main agricultural development strategies and interventions used in Karamoja, to assess the strengths and weaknesses of the different approaches
 - a. Review agricultural and related marketing strategies of government and aid agencies, as presented in project proposals, design documents, and similar literature; analyze the causal logic of each of the main strategies or types of intervention against agro-ecological, social, and other factors in Karamoja;
 - b. Review evaluations or impact assessments of agriculture projects in Karamoja and assess the extent to which different approaches are achieving the expected impacts on livelihoods, food security, poverty, and nutrition;
 - c. Complement the review of strategies and program activities above with field visits, direct observation of agriculture projects, and local interviews with community members and key informants.

The listed deliverables include:

- An inception meeting with key stakeholders—government, international development partners, academics, and implementing organizations;
- A validation workshop in Moroto of initial findings in Karamoja with key stakeholders;
- A presentation of initial findings in Kampala to key stakeholders working in Kampala;
- A draft report;
- A final report;
- A policy brief on agriculture and resilience in Karamoja.

METHODOLOGY

The review was undertaken from February 2 to March 7, 2018, during which time the review team¹ carried out the field work in Karamoja from the February 11 to March 2, 2018. The review team visited six districts² and conducted 28 FGDs in 14 locations that involved 286 men and 337 women (623 in total). The locations were purposively selected to include an equal number of agro-pastoral and farming communities. The locations of the FGDs, together with respective livelihood zones, are presented in Table 1. A detailed itinerary is presented in Annex 2. At each location, the review team led gender-disaggregated discussions. Women's groups were held in homesteads or occasionally, if the group was large, under a convenient

shade tree. Women's groups discussed crop farming, while men's groups met under a shade tree and discussed livestock management.

The review team used semi-structured interviews for the primary data collection that included standard participatory rural appraisal (PRA) techniques: mapping, transect walks, historical timeline/trends, proportional piling³ using 100 stones or seeds; scoring/ranking; and verification/triangulation.⁴ Following a half-day training,⁵ the field methodology was pre-tested in Rupa sub-county⁶ and was adjusted so that the interviews could be completed in two and a half hours.

Table 1. Location of the focus group discussions

District	Sub-county	Village	Livelihood zone
Moroto	Rupa	Lokaal	Agro-pastoral
	Nadunget	Arecek	Agro-pastoral
	Katikekile	Musas	Agro-pastoral
Napak	Nabwal	Kodike	Agricultural
	Lorengchora Town	Kobulin	Agricultural
Nakapiripirit	Lorengedwat	Kamaturu	Agro-pastoral
	Namalu	Lokoreto	Agricultural
	Loregai	Lokibuyo and Loreng	Agricultural
	Lolachat	Nathinyonoit	Agricultural
Abim	Koya	Koya	Agricultural
	Alerek	Alimochan	Agricultural
Kotido	Panyangara	Nadome	Agro-pastoral
	Losilang	Nayese	Agro-pastoral
Kaabong	Kalapata	Napeichokei	Agro-pastoral

¹ The review team comprised the consultant, two staff from the NabuZARDI, and four research assistants from KDF.

² While the review team visited Amudat District briefly, it was not possible to organize FGDs due to time and language constraints.

³ The review team used locally available materials such as stones and seeds to assess the relationship between different variables or indicators, with the biggest number of the 100 stones or seeds assigned to the most important and the least number to the least important.

⁴ Catley et al., undated.

⁵ A number of the review team had not previously used PRA techniques, and KRSU therefore provided a half-day training on PRA techniques in Moroto.

⁶ Atedoi village in Rupa sub-county, Moroto District.

The semi-structured interviews were structured around four key questions and three historical time periods as indicated here:

Key questions

- | | |
|-----------------|--|
| Key question 1: | What are the key agriculture sector trends since the mid-1990s in arable cropping and livestock production? |
| Key question 2: | What are the main production constraints and what are the main technical innovations and developments that are supporting improved production? |
| Key question 3: | To what extent are weather-related changes impacting on household production capacity? |
| Key question 4: | To what extent are livelihood changes reflected in household income and expenditure? ⁷ |

groups to discuss the following questions: 1) What is working and can be taken to scale? 2) What is working less well and can be phased out? 3) What can be done differently and better? The preliminary findings were also presented at a debriefing meeting with development partners on March 7 in Kampala. Names of the participants and transcripts of the discussions are presented in Annexes 4 and 5.

Selected historical time periods:

- | | |
|-----------------|--|
| Mid-1990s–2005: | Escalating cattle raiding. Traditional transhumance livestock management and seasonal cropping. |
| 2006–2011: | Disarmament with “cordon and search” and “protected <i>kraals</i> .” Livestock mobility severely restricted. Internal migration to agricultural settlements. |
| 2012–present: | Improved security. The re-emergence of traditional transhumance livestock management. Further increased migration to agriculture settlements. |

In addition, the Consultant met 50 key informants who represented government—including the OPM and Local Council (LC) and Production Offices—international development partners, implementing partners, local civil society, and the private sector. The names and contact details are presented in Annex 3. Discussions with key informants were structured around trends and outcomes across the selected historical time periods.

Preliminary review findings were presented at a validation meeting in Moroto on March 2. Following the presentation, the participants were divided into three

⁷ It was not always possible to complete all four questions in under two and a half hours. Where this was not possible, either Question 4 or Questions 2 and 3 were dropped. This is reflected in the differences in the number of groups associated with the results in the Figures and Tables.

POLICY REVIEW

This section of the report presents the findings of a review of historical and development literature, together with an analysis of agriculture sector policy and strategy processes in Uganda and Karamoja. Additional background information is also summarized and presented in Annex 6.

NORTHERN UGANDA

In the 1990s–2000s, Uganda reported economic growth rates of 7%. Rates slowed to 4.5% from 2011–2016, the result of “adverse weather, unrest in South Sudan, private sector credit constraints, and the poor execution of public sector projects.”⁸ Despite the slowdown, rates remain impressive by global standards.

Agriculture plays a central role in the economy and is the main source of livelihood for 60% of the population or 3 million smallholder farmers.⁹ While agriculture’s gross domestic product contribution declined from 64% to 37% from 1985 to 2016, it “contributes more than 70% of Uganda’s export earnings and provides the bulk of raw materials for most of the industries that are predominantly agro-based.”¹⁰ The government is committed to sustained agricultural growth, including to generating employment for youth entering the job market.¹¹ Population growth rate is 3.1%, the median age is 16, and the population is forecast to reach 130 million by 2050.¹²

There are pronounced north-south differences. These have origins in the colonial administration that required the north¹³ to supply men for the army, police force, and factories and plantations in the south. Independence failed

to heal the divide, and the 1980s–90s were characterized by an insurgency in Acholi and commercialized cattle rustling in Karamoja.¹⁴ Today, the north accounts for 38% of the population but 70% of Uganda’s chronically poor households.¹⁵ Furthermore, while the government records declining poverty levels from 61% to 43% from 2005 to 2012,¹⁶ the World Bank reports an increase from 39% to 47% in the same period.¹⁷ These differences aside, it is widely recognized that in order to equalize incomes, 2 million northerners will need to move out of poverty in the next 25 years and that this will require GDP growth of 11%.¹⁸ Other north-south differences include agro-ecology and droughts, in particular in Karamoja, that are not experienced in the rest of the country.

KARAMOJA

Karamoja occupies the eastern area of the north and borders South Sudan to the north, Kenya to the east, and the sub-regions of Acholi, Lango, and Teso to the west. The sub-region occupies almost 10% of Uganda’s land area and is divided into 7 districts: Kaabong, Kotido, Abim, Moroto, Napak, Amudat, and Nakapiripirit. The 2014 Census estimates the population at slightly under 1 million, while the United Nations (UN) reports a population of between 1.2 and 1.3 million. It is widely recognized that 75–80% of the population live in absolute poverty.^{19, 20} The vast majority live in rural areas, while an estimated 8% reside in urban/peri-urban centers.²¹ Livelihoods in peri-urban settings are typically diverse and include seasonal cropping, poultry, the collection and sale of firewood and charcoal,²² brewing, casual labor, and

⁸ World Bank, 2018.

⁹ Wagubi, undated.

¹⁰ PricewaterhouseCoopers, undated.

¹¹ MAAIF, 2010.

¹² World Population Review, 2018.

¹³ The north is divided into five sub-regions: West Nile, Acholi, Lango, Teso, and Karamoja.

¹⁴ Bakema and Asmelash, 2017.

¹⁵ World Bank, 2018.

¹⁶ Uganda Bureau of Statistics, 2014.

¹⁷ World Bank, 2018.

¹⁸ De Luca and Verpooten, 2015. Cited by Bakema and Asmelash, 2017.

¹⁹ OPM, 2015a.

²⁰ USAID, 2017.

²¹ Uganda Bureau of Statistics, 2014.

²² A number of key informants linked charcoal production with long-term environmental degradation. One key informant however suggested that properly managed charcoal production could help control woody species that have “invaded” the grasslands. All agree that trees are at the heart of Karamoja’s ecology, providing livelihoods and nutrition for livestock and people when all else fails. See also Mbogga et al., 2014.

mining. In towns there are also shops, services (e.g. health, education), and Government offices. For rural people, migration to the towns is often the result of one or more shocks, for example the loss of livestock, a failed cropping season, or the death of a family member.²³

THE PEOPLE

The sub-region is home to 11 ethnic groups: the largest, “true” Karimojong—Matheniko, Pian, and Bokora; the Jie; the Dodoth; the Pokot; and a number of smaller groups that includes the Tepeth, Nyakwae, Ik or Teuso, Napore, and Ethur.²⁴ The Karimojong are Paranilotic speakers, while the Napore, Ethur, and Nyakwai are Lwo speakers,²⁵ and the Tepeth and Ik speak a separate language.²⁶ Opinions vary as to the origins, but there is general agreement that by 1800 the Karimojong occupied the Magos Hills in Moroto District and that the Turkana, Jie, Dodoth, and Iteso splintered off, mostly amicably apart from the Jie, who broke away by force.²⁷

The Karimojong subsequently settled in the sub-region’s central areas where they developed a mixed cropping and transhumance livestock production system²⁸ as illustrated by this rather delightful traditional Jie invocation:

Leader: There are cattle and they are good.

Response: They are!

Leader: There are crops, and it is good.

Response: It is!

Leader: Should the cattle die, there are crops.

Response: There are!

Leader: If the crops do not grow, there are cattle.

Response: There are!

*Leader: Let there be rain so there will be cattle and crops.*²⁹

Globally, internal security dominates policy processes, and Uganda is no exception. It is therefore important to understand something of Karamoja’s long association with small arms. The origin can be traced to a gun market that was established in southwest Ethiopia in the 1880s. By 1910, private armies occupied great swathes of the sub-region, and local people learned to defend themselves.³⁰ Following the transfer of Uganda’s Rudolf Province to Kenya in 1926, the colonial administration tried to disarm the Karimojong after they refused to surrender guns peacefully. This was unsuccessful, and the British responded by declaring Karamoja a closed district. Until 1962, a notice at Iriri Police Station stated: “You are now entering Karamoja closed district. No visitor may enter without an outlying district permit.”³¹ In addition, the British restricted grazing through the creation of wildlife reserves.³²

Closing the sub-region resulted in the caricaturing of the Karimojong as “backward and uncivilized” for their dress, customs, and fierce sense of independence and lent credence to the view that “solutions” were required to bring Karamoja within the purview of the state.³³ One of the popular “solutions” was that seasonal livestock movements should be replaced by more sedentary production systems, and for this reason, several hundred valley tanks were constructed in the 1970s–1980s. This attempt failed for two reasons: the tanks silted, and the transhumance movements were informed by a search for grazing as well as water.³⁴ This fact was recognized by the Food and Agriculture Organization of the United Nations (FAO), which later called for a halt to the construction of valley tanks, as these were concentrating cattle and causing overgrazing. As a result of poor maintenance, only two valley tanks were reported to be fully functional by 1995.³⁵

²³ Stites et al., 2014.

²⁴ OPM, 2015a.

²⁵ The Karimojong form the core of the wider Central Paranilotics.

²⁶ Lamphear, 1976.

²⁷ Ibid.

²⁸ Key informants confirmed that the Karimojong have been involved with crop farming for generations. What has changed therefore is the shift to the wetter “green belt.” They have not disengaged from livestock keeping.

²⁹ Lamphear, 1976.

³⁰ Mburu, 2002.

³¹ Cisternio, 1979.

³² Wildlife reserves and other protected areas account for almost 50% of Karamoja’s land area, including areas in the wetter “green belt.”

³³ At times “solutions” were accompanied by state violence, reprisal killings, the confiscation of livestock, restricted livestock mobility, and re-gazetting of boundaries.

³⁴ Mamdani et al., 1992.

³⁵ Gomez, 2002. Gomez also notes there were 350 boreholes in Moroto District in 1995, although they were seldom all functional. In the 1980s, boreholes were fitted with Uganda Mark Two pumps, which were more durable.

The overthrow of Idi Amin in 1979 precipitated a period of political instability and militarization, as the Karimojong and their neighbors in South Sudan and Kenya acquired huge numbers of small arms.³⁶ This precipitated new and more lethal forms of cattle rusting.³⁷ In the period of 1980–2000, the Karimojong raided 500,000 cattle from Soroti and Katawi Districts,³⁸ together with hundreds of thousands of cattle from other districts in Teso and the neighboring sub-regions of Lango and Acholi. Raiding, the spread of animal diseases, a drought, and the collapse of health, education, and water services resulted in an outbreak of cholera. As the emergency response was delayed, an estimated 50,000 people died in 1980, including more than 25,000 children.³⁹ Since the famine, World Food Programme (WFP) has consistently provided food aid each year. In at least 12 of these years, food aid went to more than 40% of the population.⁴⁰

In order to protect lives and livelihoods both within and beyond Karamoja, President Museveni launched a disarmament campaign in 2001.⁴¹ This voluntary campaign resulted in the surrender of 9,000 small arms in the period up to April 2002.⁴² Disarmament subsequently stalled, as the Uganda People's Defence Force (UPDF) was redeployed to fight the Kony insurgency in Acholiland. This resulted in a period of intense raiding in which those who had disarmed lost thousands of cattle to those who had not. Communities were forced to re-arm with weapons smuggled in from South Sudan. Key informants interviewed by the review team suggested that the failed disarmament created a "climate of mistrust" that resulted in more oppressive approaches to disarmament.

Following Kony's relocation to South Sudan in 2006, the second phase of disarmament began, with voluntary disarmament replaced by "cordon and search" operations.

Soldiers surrounded homesteads at night, and families were forced from their homesteads in the early morning while their homes were searched. The UPDF was accused of widespread human rights violations that required government intervention to bring under control.⁴³ In addition, livestock were moved into "protected *kraals*" herded in close proximity to UPDF barracks. As mobility was restricted, pastures became overgrazed, milk production collapsed, and thousands of cattle were lost to disease.⁴⁴ It is estimated that 75%, 68%, and 65% of cattle, goats, and sheep respectively were lost from 2008 to 2013.⁴⁵ At times, livestock sales were not permitted, and households were unable to purchase food or pay medical and school fees.

One key informant reported that the scale of livestock losses was equivalent to a once-in-a-lifetime drought. Furthermore, it was noted that having lived with drought for generations, the Karimojong would appreciate that even without further losses, it would take a decade or more to rebuild livestock numbers. It would also be known that the interim would be characterized by household food insecurity and under-nutrition with little or no milk and that there would be fewer livestock to sell in the dry season to purchase food.

As security improved, responsibility was gradually transferred from the UPDF to local police and defence units, and protected *kraals* were dismantled from 2012–2014.⁴⁶ Subsequently, relations between the Karimojong and the government have improved dramatically, and the people have come to value peace.⁴⁷ Karamoja is currently enjoying one of the most peaceful periods in its history, marred only by the occasional theft of goods and small numbers of animals by individuals or small groups, known locally as *lonetia* or thugs.⁴⁸ The peace has attracted

³⁶ Numbers of small arms proliferated after the overthrow of Idi Amin in 1979 when the Karimojong and Turkana from neighboring Kenya looted the Moroto Army barracks, which had been abandoned by the fleeing Amin soldiers.

³⁷ Including revenge attacks on Teso for atrocities perpetrated under previous administrations.

³⁸ Gomez, 2002.

³⁹ Biellik and Henderson, 1981. Cited in Cullis, 1999.

⁴⁰ Caravani, 2018.

⁴¹ The President based himself at a tented camp at Morulinga just outside Kangole and met with elders and *kraal* leaders to establish a dialogue on the imperative for disarmament.

⁴² Mburu, 2002.

⁴³ Emerson, 2007.

⁴⁴ Several key informants said that the majority of livestock were lost to tick-borne diseases and that ticks remain more problematic than they were before disarmament.

⁴⁵ FAO, 2014.

⁴⁶ In the period to 2010, more than 30,000 weapons were collected.

⁴⁷ Several key informants made specific reference to the value of the Nabilatuk Declaration, which requires a herd owner who is found with a stolen animal to pay it back, plus an additional two animals for each animal stolen as a fine and another fine that is paid to the security forces.

⁴⁸ Stites and Marshak, 2016.

increased levels of investment and development support.⁴⁹ Tarmac is replacing rutted marram on the main access roads, towns are connected to the national grid, and public and private investment has improved services including health, education, transport, mobile phone connectivity, potable water and sanitation, public and private clinics, mosquito nets, and access to health and nutritional information.⁵⁰ Administrative and market towns have witnessed a period of unprecedented growth and development.

While there is widespread agreement that security is better than it has ever been, several informants expressed concern that the Turkana and Pokot are not disarmed, and they therefore regard the peace as fragile. Some key informants also suggested that groups are slowly re-arming, although not yet to previous levels. One key informant expressed the hope that Karamoja maintains a strong UPDF presence, as without it, the sub-region might “slide back” into raiding and insecurity. The same informant also suggested that much more needs to be done to provide former warriors with alternative and meaningful employment.

Since Independence, settlement patterns have changed significantly. For example, in the 1960s, only 80 families were settled in Namalu. Cattle herders avoided the area because of tsetse fly infestation. In the following decade, numbers increased dramatically, as people saw the potential for cropping. In Napak District, the first settlers arrived in Lorengechora and Iriri in 1984,⁵¹ and, following a severe drought, a second influx arrived in 1995–1996. In May 2001, a baseline survey in Iriri sub-county identified more than 220 settlements, with a total population of 25,600.⁵² The baseline also confirmed that households in the wetter “green belt” continued to own cattle, and the average number was 200 cattle per settlement.⁵³

The survey also confirmed that only 10% of the land on the northern side of Napak Mountain was actually cultivated and that the rest was used for livestock production. This suggested that the agro-pastoral

production system had simply shifted to the west.⁵⁴ This baseline finding was confirmed by other research, including that “it is untenable to advocate for policies that encourage the increasing transformation of the Bokora in particular, and the Karimojong in general, into settled agriculture.” This is because many households that have acquired land, including around Iriri, have done so without becoming completely sedentary or “abandoning their interest in cattle keeping.”⁵⁵

Following the second phase of disarmament and aware it would take a decade or more to rebuild their herds, the Karimojong turned en masse to seasonal cropping, supplemented by income-generating activities: the sale of firewood, poles, and grass; making and sale of charcoal and bricks; brewing local beer; and casual labor, including mining. Recognizing too the agro-ecological limitations of the central agro-pastoral zone, many households joined the migration to the wetter “green belt.” Here, they acquired and cultivated fertile land that, in good years, was able to produce two crops a year, with sorghum, maize, and beans followed by sunflower, groundnuts, and other crops.⁵⁶

A number of key informants suggest the government played a central role in the shift to the wetter “green belt,” perhaps with the hope the Karimojong would be transformed into settled crop farmers. Certainly, the government incentivized cropping. For example, from 2012–2016, the OPM distributed 7,000 oxen purchased in neighboring Teso and ploughed more than 10,000 hectares to encourage people to plant. While key informants suggested that much of the land was never planted, there is widespread agreement this intervention encouraged households to plant more than they had historically, with the result that the area of cultivable land has increased dramatically (see Box 1 below for case studies of changing livelihoods). Despite this trend, most key informants agree that cattle numbers will increase and eventually return to pre-disarmament levels and that a new mixed crop farming and transhumance livestock keeping system will emerge.

⁴⁹ Development partners invested US\$60 million in Karamoja in 2016, and this is forecast to increase to US\$75 million in 2018. The main donors are the UK, the European Union (EU), Germany, Ireland, Italy, Korea, Sweden, United States, and the World Bank. The US is the biggest donor, with 30% of the budget. Investment is highest in basic services, followed by improved food and nutrition security. KRSU, 2017.

⁵⁰ Stites et al., 2017.

⁵¹ Information provided by key informant.

⁵² Aleper, 2002. Cited in Gomez, 2002.

⁵³ Ibid.

⁵⁴ One key informant suggested that 75% of the people of Bokora have resettled to the wetter “green belt” from the central agro-pastoral zone since 2000. The example was given of Apeitolim, which was abandoned in 2002 due to border insecurity. However, in 2007 54 people returned, and by 2017 the number had swelled to 18,000.

⁵⁵ Muhereza, 2017.

⁵⁶ The Pian, Bokora, Jie, and Dodoth migration to new agricultural settlements in the west has been denied the Matheniko, Pokot, and Tepeth of Moroto District, as they have no historical association with the west.

In recent years, Karamoja has become a center for mining, as valuable mineral deposits have been found, including gold, limestone, uranium, marble, graphite, gypsum, iron, tungsten, nickel, copper, cobalt, lithium, and tin.⁵⁷ Mining legislation in Uganda is notoriously weak, and companies

do not require consent from the local population before exploration work begins. This has resulted in confusion and conflict regarding longer-term rights and responsibilities.⁵⁸ There are echoes from the past here, with the north making resources available for the richer south.

Box 1. Emerging livelihoods

Interview: Agro-pastoralist from Loterer, Nadunget

Ayankun has two wives and eight children. Three children attend the local Alternative Basic Education for Karamoja (ABEK) school, and one attends the primary school at Kasimeri.

Ayankun lost 30 cattle and 100 sheep and goats to Pokot raids in 2006. He says he is now mainly dependent on cropping and casual labor in other people's gardens, while his wives collect firewood and make charcoal. Ayankun started working in gardens as a boy with his mother, when most boys were with the livestock. He has continued to do so, as he now has no alternative. Since marrying his second wife, he has established his own garden—each of his wives have their own gardens. Ayankun noted that the best harvests were between 1992–1996 at the time the philanthropist Don Vittorio was assisting local people. The best harvest was in 1996. This was followed by increasing raids that continued to 2008, when there were the first signs of peace in Karamoja.

Ayankun is not able to plant as much as he used to since he has fewer plough oxen. He does hire oxen when he can afford it at a cost of Uganda shillings (Ush) 10,000 a day for a pair. He is forced to do more cultivation by hand.

Last year there was an outbreak of “*ekrut*” (Fall armyworm), and the harvest lasted only four months. The family is again forced to make charcoal. Sacks are sold for Ush12,000 each, and they produce three sacks a week. Ayankun also works in other people's gardens, for which he is paid Ush3,000 per day. He also makes wooden utensils for sale. With the money they earn, the family buys maize flour, small fish, and “*kutukut*,” the residue from the beer brewing.

Ayankun is hoping the rains will be good this year and that there will be a good harvest.

Interview: Commercial farmer in Namalu

The farmer has 200 acres in three blocks. One block is 100 acres. Efforts are made to plant early to ensure a good crop. Planting is done in lines with inter-cropping to ensure a diversity of crops. Rotations are important. The farmer does not use fertilizers, as the soils are fertile and savings can therefore be made, which helps to make the farm more profitable. Crops are stored when possible and sold later in the year when the prices are higher.

The farmer had also invested in a piggery, chickens, which are difficult to keep as they suffer diseases, and ducks.

The farmer noted many positive changes in Karamoja since disarmament, but also suggested that while “people are changing, it will take another generation to adapt to the modern way of life” and that in the transition, there are many challenges to be addressed. Examples given included: *waragi* (cheap alcohol); inflated school fees; the payment of casual laborers with *waragi*; unemployment; land grabbing* by investors; land prices; climate change; weather forecasting (the information is poor and unreliable); food exports (more thought should be given to keeping more food in the sub-region); and how to live with Fall armyworm.

The farmer noted that there are only 25–30 large, fully mechanized farms in Karamoja. The majority operate at a smaller scale of under 30 acres and use a combination of tractors, oxen, and casual laborers.

**There are a number of land tenure-related projects and initiatives that are researching land-related problems—grazing and protected areas, mining, border regions, customary land, and formal land.*

⁵⁷ Uganda Investment Authority, 2016.

⁵⁸ Hinton et al., 2011.

Despite the progress made, poverty indices in Karamoja remain problematic:

- 75% population are considered “destitute;”⁵⁹
- From 2006–2012, incomes rose by 1.9% per annum, which is 3.4% lower than for the rest of the north;⁶⁰
- In 2014, food purchases accounted for 70% of all household expenditure;
- In 2014, half of households were in debt, and 70% of debts were associated with meeting basic food requirements. Savings were typically not reinvested in productive activities.⁶¹

Specific to nutrition, the bi-annual food security and nutrition assessment of June 2016⁶² found that:

- More than half the population were food insecure, and 12% were severely food insecure;⁶³
- From December 2014–March 2016, the number of children without access to milk rose from 30% to 70%;
- Only 12% of households reported access to animal-source proteins;
- Global acute malnutrition (GAM) rates improved from 14% to 11%,⁶⁴ but “this probably reflects a scaling-up of food distributions to almost half the population.” Without intervention, the “trend in GAM in Karamoja over the last five years would likely depict a worsening situation, in particular

for children of 6–23 months where GAM prevalence is at critical levels in most districts.”⁶⁵

Factors driving food insecurity were listed as:

- Erratic rainfall resulting in poor harvests for the “last three consecutive seasons,”⁶⁶ resulting in reduced household food availability, with only 24% of households reporting any food stocks;
- Increased food prices, now at very high levels, have significantly impacted on access to food. Three-quarters of the population derive 50% of their food from markets. Incomes are low and typically earned from agriculture—produce sales and wage labor—and charcoal making.⁶⁷

Mention must be made here of the significant increase in local sales of cheap alcohol,⁶⁸ known locally as “*waragi*.”⁶⁹ This has resulted in an explosion in liver disease. The number of admissions to Matany Hospital for aggravated liver disease has risen from 175 to 653 between 2014 and 2016. A number of key informants also suggested that *waragi* is having an impact on food security, as households are less able to produce, store, and maintain food.⁷⁰ A number of key informants singled out the role that mining companies had played in fuelling alcohol dependence, as not only do they pay their laborers poorly, but at times they use *waragi* in lieu of payment.

THE AGRO-ECOLOGY

Unlike the rest of Uganda, rainfall is mono-modal and characteristically falls from late February to September with an April–May peak followed by a June break. The rains return in July and continue through to early

⁵⁹ Oxford Poverty and Human Development Initiative, 2017.

⁶⁰ UNDP, 2015.

⁶¹ Ibid.

⁶² UNICEF and WFP, 2016.

⁶³ Other assessments suggested slightly different levels of need: 270,000 people were unable to meet their basic food needs, while 435,000 people did not have adequate cash to protect their livelihoods—purchasing planting materials, veterinary drugs, and other productive inputs; and by paying for education and health services (UNICEF and WFP, 2016).

⁶⁴ Some key informants challenged official under-nutrition data and suggested GAM and Severe Acute Malnutrition (SAM) rates were routinely more than 18% and 3.5% respectively. They noted district officials are promoting food security crops e.g. sweet potatoes, to reduce under-nutrition.

⁶⁵ UNICEF and WFP, 2016.

⁶⁶ Ibid.

⁶⁷ A key informant noted that a bag of charcoal was sold for Ush12,000/sack in Karamoja and resold for Ush80,000–100,000 in Kampala. It was suggested that if charcoal production were better regulated, then people in Karamoja would get better prices.

⁶⁸ *Waragi* is sold in 500 ml plastic sachets for as little as Ush500.

⁶⁹ A spirit produced as a byproduct of the sugar industry that is typically 38–48 proof.

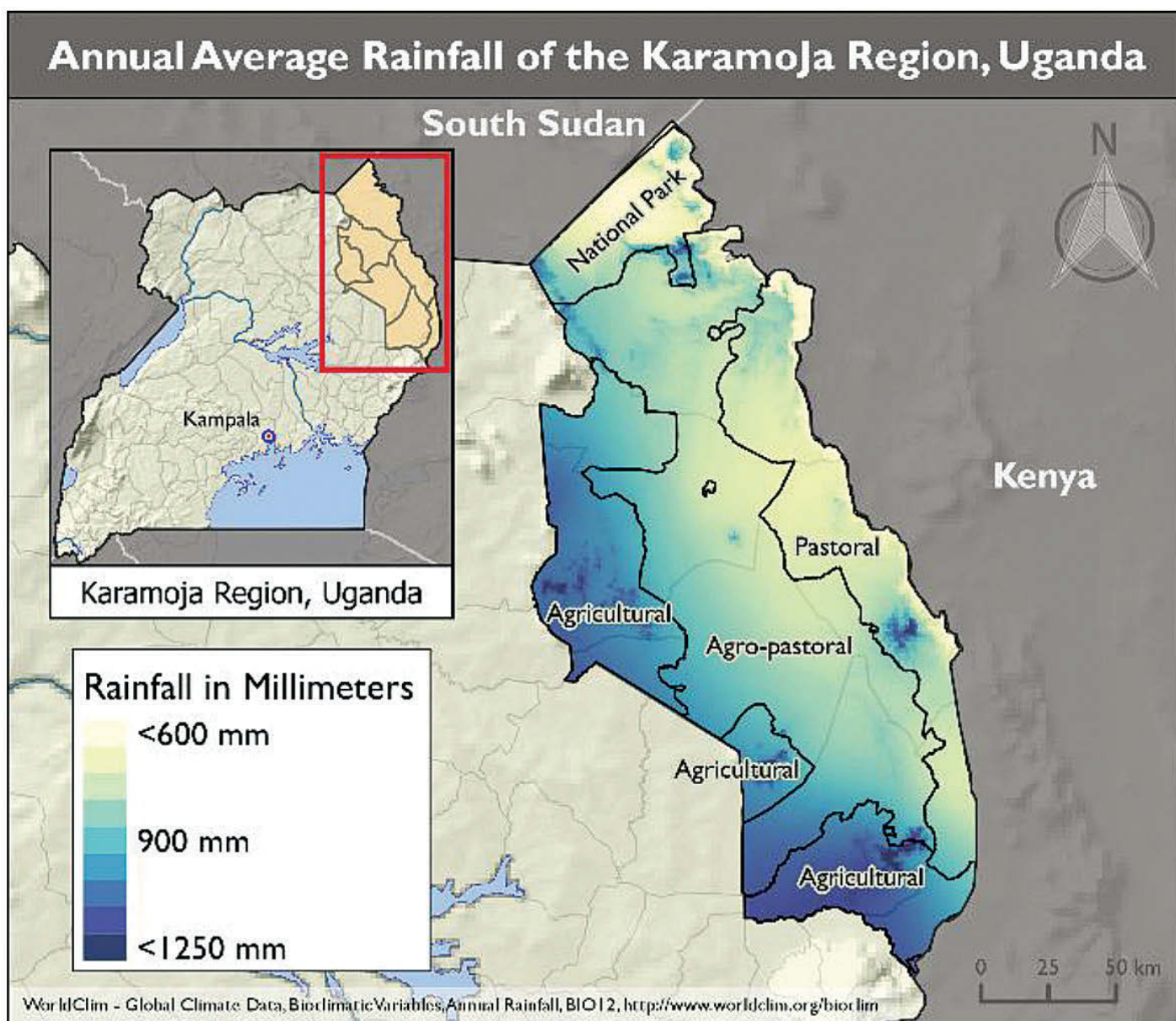
⁷⁰ Caritas, 2017.

November. Annual rainfall ranges from 300–1,200 mm east to west⁷¹ (see Figure 1). Reports suggest rainfall is becoming more variable, with earlier cessation in northern Karamoja, earlier onset/earlier cessation in the central sub-region, and an overall reduction of 8% from 1900–1970 to 2000–2009. FEWSNET and FAO project further

declines of 50–150 mm for 2050⁷², but this prediction is impossible to verify. Notably, other climate models predict increases in annual rainfall of up to 20%.⁷³ Many models indicate that rainfall will become more variable and therefore, more problematic for crop production.

Figure 1.

Map produced by the USAID Climate Risk Profile report for Karamoja, 2017.



⁷¹ OPM, 2015a.

⁷² FEWS NET and FAO, 2013.

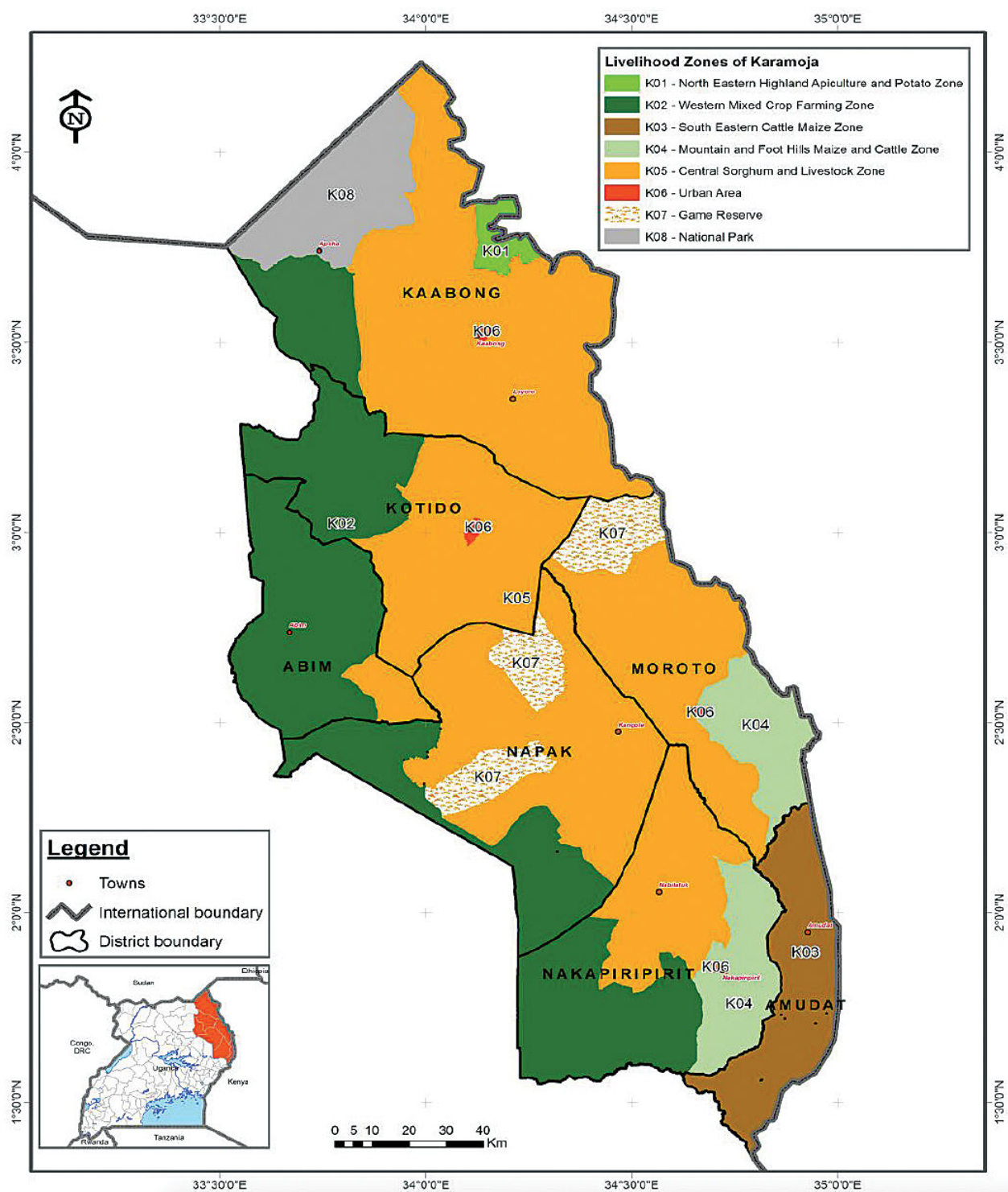
⁷³ Bakema and Asmelash, 2017.

In the wetter zones, soils are categorized as plinthosols and vertisols of sandy, black clay, with loamy and alluvial types in the plains and along river courses. These soils are low in organic matter⁷⁴ and crack in the dry season and become waterlogged in the wet season, in particular in the south. In the central and eastern zones, soils transition to sandy

loams, with some black clay soils and sandy clay alluvial soils. All soils are typically compacted. Nutrient-rich soils are restricted to the banks of dry river courses, and it is these areas that produce high yields in years of good rainfall.⁷⁵

Figure 2.

Map produced by the Famine Early Warning Systems Network and Food and Agriculture Organization. 2013. Uganda-Karamoja Region Livelihood Zones and Descriptions. Uganda. FAO, Rome



⁷⁴ Several participants at the validation and debriefing meetings suggested that much more had to be done to protect Karamoja's soils against erosion. Ideas that were cited included soil and water conservation, agro-ecological farming, and agro-forestry. It was also widely recognized that trees were important for soil health.

⁷⁵ FEWS NET and FAO, 2013.

The product of rainfall and soils, Karamoja has three distinct vegetation types:⁷⁶

1. Northern acacia—Commiphora bushland in the central and eastern border with Kenya (Amudat, Nakapiripirit, Napak, Moroto, Kotido, and Kaabong);
2. Eastern Sudanian savannah along the western belt close to Acholi, Lango, and Teso sub-regions;
3. The spotted East African montane forest in northern and some southern parts of Karamoja region.⁷⁷

LIVELIHOODS

Livelihoods reflect the agro-ecology (see Figure 2) and can be categorized as:

1. Pastoral: a semi-arid zone with mixed livestock and cropping with millet, cowpeas, and groundnuts;
2. Agro-pastoral: a second semi-arid zone with mixed livestock and cropping with sorghum, millet, maize, beans, cowpeas, and groundnuts;
3. Agricultural: a wetter zone or “green belt” that supports livestock and cropping with sorghum, maize, and beans, followed by a second planting of quick-maturing sesame, sunflower, simsim, cucumber (*adekela*), and an assortment of local vegetables and fruits (mangoes, oranges, sweet bananas, passion fruit, paw paw).⁷⁸

As is evident, in contrast to other purer pastoral communities in East Africa, the Karimojong combine seasonal cropping with transhumance livestock management. Livelihood profiles were again revisited in 2014,⁷⁹ and the new zones were listed as:⁸⁰

1. The northeastern highland apiculture⁸¹ zone;
2. The western mixed crop farming zone;
3. The southeastern cattle and maize zone;
4. The mountain slopes maize and cattle zone;
5. The central sorghum and livestock zone.

The Famine Early Warning Systems Network (FEWS NET) analysis identified the first and last of these five zones as the “most vulnerable.”

Traditionally, cultivation was the role of the women, including cultivation, planting, weeding, and harvesting.⁸² While each woman was responsible for her plots, usufruct rights did not confer ownership, as land was owned customarily. User rights could change according to settlement patterns. Women often worked collectively to prepare their plots and to weed. At times, some older men and young boys might also have helped. Plots were cultivated immediately around the homestead, in particular those areas where rainwater runoff was naturally “harvested” and soil moisture was higher. Particularly favored sites included low-lying depressions and along the sides of seasonal streams and river-banks.⁸³ *Mumumwa* or sorghum was the staple and is locally described as the “cattle of the women.”⁸⁴ Sorghum beer plays an important role in almost all customs and ceremonies in Karamoja. Other crops are also grown, including maize in the mountain zones, pearl millet in the north, tepary bean, green gram, and cowpea.

Cattle were traditionally the responsibility of the men⁸⁵ and typically owned by brothers, with the senior brother exercising the greatest authority. Cattle were allocated to their wives to provide food for their children, in particular fresh or fermented milk that is mixed with blood in the dry season when the milk supply is lower. This allocation did not imply ownership, as ownership was an

⁷⁶ Agro-ecology is principally determined by differences in rainfall and soils.

⁷⁷ USAID, 2017.

⁷⁸ Ibid.

⁷⁹ After agencies operating in Karamoja pointed out significant changes in livelihood patterns and socioeconomic conditions.

⁸⁰ FAO, 2014.

⁸¹ Several validation workshop participants expressed the view more could be done to market honey from the sub-region.

⁸² The result of their engagement in agriculture, women in Karamoja have historically enjoyed some of the highest access to natural resources and land in Uganda.

⁸³ Lamphear, 1976.

⁸⁴ Action Against Hunger and Institut de relations internationales et stratégiques, 2017.

⁸⁵ Women have rights over chickens, livestock products—milk, butter, ghee, eggs—and they can influence the sales of sheep/goats, in particular for food.

“aggregation of social rights and responsibilities” that includes rights to milk, calves, and various forms of loans, gifts, and other forms of disposal, including restocking of herders who had fallen on hard times, slaughtering for various ceremonies, and barter/sale for food.^{86, 87}

Young men learned their herding skills as children with small stock before transitioning to cattle as adolescents. Young men were expected to defend cattle herds under the tutelage of the elders⁸⁸ and to acquire cattle through raiding outside the sub-region, in order to replace stock lost to theft, drought, and disease. Building herds also served other social functions including initiation, demonstrating bravery, and obtaining livestock for future bride price.⁸⁹

In Bokora, Pian, and Jie areas, brothers, in-laws, and clan members trek their herds on transhumance routes to the western savannah grasslands and swamps in Teso and Lango, where herds are sustained through the dry season. Following the onset of rain, the herds are returned to the drier savannah woodlands of the central belt. After the harvest, the herds are grazed on crop residues before resuming the westward movement in September. Within this pattern, daily herding decisions reflect local grazing conditions and management priorities: minimizing overgrazing/soiling of pastures; managing different livestock types of cattle, sheep, and goats and herd sizes; the controlled burning of grasslands⁹⁰ to reduce levels of tick infestation and encourage fresh growth; and the use of minerals to help condition animals.⁹¹ In contrast to these movements, the Matheniko follow north-south transhumance routes within the sub-region.

Herders’ decision-making is guided by three objectives: maximizing herd growth, ensuring sufficient milk for household consumption, and being able to sell animals when cash is needed for food and non-food items, e.g., school fees,

health costs, and veterinary medicine. Cows are selected for milk production and drought and disease tolerance, while young bulls are selected based on those characteristics in their mothers (dams).⁹² Male calves not selected for breeding are castrated. Herders prefer goats to sheep because goats are more drought tolerant and browse rather than graze and therefore do not compete with cattle for feed. They also produce more milk and earn higher prices.⁹³

There are 20 major livestock markets in Karamoja, but a trend towards more markets has not been matched by an increase in prices, as the proliferation in number has made it more difficult for traders to aggregate cost effectively.⁹⁴ The increase has also altered the status of certain markets. Kangole, which recorded annual sales in the 1990s of US\$500,000⁹⁵ annually, has declined in importance. Livestock sold in Karamoja are typically re-sold in 20 transit and terminal markets in Uganda, South Sudan, and Kenya. The total revenue from livestock sales in the sub-region is estimated to be US\$6-8 million per year and forecast to rise to US\$10 million in the coming few years.⁹⁶

AGRICULTURE SECTOR POLICIES AND STRATEGIES

The President travels to Karamoja periodically to address policy issues. In addition, as part of his personal interest in agriculture, the President hosts groups of progressive farmers at his Rwakitura farm. State House documentaries include visits from Karamoja and show the President presenting his cattle herds and describing the transition from pastoral to ranch-based systems. The President has also used these visits to encourage visitors from Karamoja to learn from mistakes and to caution them “against making new ones.”⁹⁷ The President continues to be supportive of agricultural development in the sub-region, in particular of commercialization.⁹⁸

⁸⁶ Novelli, 1988.

⁸⁷ Lamphear, 1976.

⁸⁸ A ceremony prefaced the departure of the raiders that involved the sacrifice of an animal in which the emuron or diviner read its entrails to evaluate the chances the raid had of being successful. The elders also prayed for its success.

⁸⁹ Action Against Hunger and Institut de relations internationales et stratégiques, 2017.

⁹⁰ Several key informants suggested that more research was needed in order to produce an evidence base on the appropriate use and frequency of grass burning as a rangeland management tool.

⁹¹ USAID, 2017.

⁹² It was widely agreed among livestock experts that more should be done to promote local breeds, perhaps including starting and building pedigree herds and flocks at NabuZARDI that stabilize desirable traits, including drought tolerance, weight gains, prolificacy, and milk production. This work has not been done previously.

⁹³ Rockeman et al., 2016.

⁹⁴ Aklilu, 2017.

⁹⁵ Cullis, 1998.

⁹⁶ Aklilu, 2017.

⁹⁷ State House of Uganda, 2015.

⁹⁸ Some key informants suggest the government’s vision for Karamoja was of settled commercial crop and livestock farmers, the latter ranching or dairy farming improved breeds. See also Muhereza, 2017.

Uganda recognizes the importance of agriculture in its **Constitution**. Objective XI (ii) provides that the state shall “stimulate agricultural, industrial, technological and scientific development by adopting appropriate policies and enactment of enabling legislation;” and Objective XXII (a) provides that the state shall “take appropriate steps to encourage people to grow and store adequate food.”⁹⁹ Agriculture is also identified in Uganda’s five-year **National Development Plans (NDP)** and ambitious **Vision 2040 statement**, to “Transform Uganda Society from a Peasant to a Modern and Prosperous Country within 30 Years.”¹⁰⁰ In the latter, reference is made to “transforming the agriculture sector from subsistence to commercial agriculture. This will make agriculture profitable, competitive and sustainable and provide food and income support to all the people of Uganda.” Vision 2040 also states that “specific emphasis will be given to aquaculture and livestock farming.”

Uganda’s vision for agriculture is detailed in the **National Agriculture Policy (NAP)**¹⁰¹ and rolling five-year Sector Investment Plans (SIPs). It is implemented by the Ministry of Agriculture, Animal Industries and Fisheries (MAAIF). The NAP repeats the Vision 2040 statement, calling for a “competitive, profitable and sustainable commercial agriculture sector.” The stated objective is to “promote food and nutrition security and to improve household incomes through coordinated interventions that will enhance sustainable agricultural productivity and value addition; provide employment opportunities, and promote agribusinesses, investments and trade.”¹⁰²

The first agriculture SIP was published in 2005 as the **Agriculture Sector Development Strategy and Investment Plan**. It was updated in 2010 and again in 2015. The current 2015–2020 plan¹⁰³ also repeats Uganda’s Vision 2040 for agriculture and recognizes the importance of increased agricultural productivity, value addition, creation of employment, agribusiness, investment, and trade. It also underlines the government’s commitment to

private sector-led growth supported by “quality public goods and service delivery,” informed by “commodities best suited to local agro-ecologies.”¹⁰⁴ The plan commits the Ministry to equitable development across the country, through the strengthening of district and sub-county service delivery to farmers, both men and women, and requires each district to “articulate, unpack and prioritize the interventions covered under each strategic action... defining outputs and medium-term outcomes as well as the timeframe for implementation.”¹⁰⁵ Of particular interest, the SIP recommends fast tracking the draft Pastoralism and Rangeland Development and Management Policy.¹⁰⁶ It also recognizes that productivity is negatively affected by the “increasing frequency of drought, low water levels in the lakes, silting of dams, flooding, increased pollution from chemicals, declining biodiversity, reduction in soil fertility and soil erosion.”

Uganda is a signatory of the African Heads of State Comprehensive Africa Agriculture Development Programme (CAADP) 2003 that recognized the strategic role of agriculture as the “backbone of the economy and main source of income for 90 percent of rural Africans.” CAADP’s 2015 vision was to attain food security (in terms of both availability and affordability and ensuring access of the poor to adequate food and nutrition) and achieve annual average agriculture growth rates of 6%.¹⁰⁷ Areas requiring particular attention were listed as: smallholder farmers, especially women; increased agricultural trade among members; more integrated markets and African farmers exporting agricultural products; more equitable wealth distribution; and increased investment in agricultural science and technology development, and sustainable land management.¹⁰⁸ However, several key informants commented that conventional CAADP thinking has little to offer Uganda’s 3 million smallholder farmer families.

The 2010–2011 La Niña-induced drought¹⁰⁹ brought Heads of State from the Intergovernmental Authority on

⁹⁹ MAAIF, 2013.

¹⁰⁰ Government of Uganda, 2010.

¹⁰¹ Participants at the validation and debriefing workshops suggested that, as the only semi-arid sub-region, Karamoja required a separate agriculture policy that recognizes the importance of mixed cropping and livestock systems.

¹⁰² MAAIF, 2013.

¹⁰³ The launch of the 2015–2020 SIP coincided with the third generation of the Peace, Recovery and Development Plan for Northern Uganda and Uganda’s adoption of the Sustainable Development Goals.

¹⁰⁴ MAAIF, 2016.

¹⁰⁵ Ibid.

¹⁰⁶ The importance of fast tracking the draft Rangeland Development and Management Policy is also recognized by researchers, who suggest Uganda’s pastoral policies are informed by western European models of livestock keeping and socioeconomic realities, including the exclusion of fire. See Byakagaba et al., 2018.

¹⁰⁷ World Bank estimates for agricultural growth in Uganda for 2016 were 3.2%.

¹⁰⁸ CAADP, 2010.

¹⁰⁹ That affected the lives and livelihoods of an estimated 13 million people.

Development (IGAD) countries in the Horn of Africa to launch the IGAD Drought Disaster Resilience and Sustainability Initiative (IDDRSI). As part of this initiative, each Member State produced a **Country Programming Paper (CPP) to End Drought Disasters in the Horn of Africa**; in 2013, Uganda produced its CPP.¹¹⁰ This is a 15-year strategy that identifies priority areas for intervention, including in Karamoja, Uganda's only semi-arid sub-region.

A rapid review of Uganda agriculture sector policies suggests that there is understanding both of agriculture and agro-ecology. It would also seem there is increasing understanding of Karamoja's semi-arid status and the pressing need to ratify the draft Pastoralism and Rangeland Development and Management Policy.¹¹¹

It is evident however that more has to be done to harmonize policy processes with development partners, including the UN. The UN's 2015 Joint Resilience Strategy¹¹² was drafted specifically for Karamoja and recognizes the historical importance of pastoralism and the limits of crop farming. It is structured around four pillars: 1) strengthened productive sectors to increase household income and food security; 2) improved basic social services to strengthen vulnerable households' human capital; 3) established predictable safety nets to address the most vulnerable people's basic needs; and 4) strengthened disaster risk management. Rather oddly, the Strategy makes no reference to livestock. The Strategy therefore overlooks the opportunity to address high levels of food insecurity in the sub-region through mixed crop farming and livestock production, which could have particular benefits for nutrition outcomes for children.¹¹³ The Milk Matters study concludes that:

- A high intake of animal milk is linked to growth in stature and may contribute to the patterns of child growth seen in pastoralist ethnic groups. It is a very good source of high-quality protein and other micronutrients needed for synthesis of lean body tissue, and increases blood concentrations of insulin-like growth factor;

- High-quality milk protein allows cereal protein to be more fully utilized for growth and development by providing missing amino acids;¹¹⁴
- For young children, two glasses (500 ml) of milk per day can provide 100% of reference nutrient intake (RNI) protein, riboflavin, vitamin B12, and iodine; and 50% of RNI of several other micronutrients, including vitamin A. Vitamin A and iodine are two out of the three nutrients that cause the greatest burden in micronutrient deficiency diseases;
- The transformation of milk into dairy products can help deal with "gluts" of milk during the wet season and supply valuable nutrients during the dry season. Milk products (butter, ghee, and hard cheese) are a particular good source of the energy and fat-soluble vitamins contained in milk;
- Iron, niacin, and folic acid are not well supplied in milk and must be provided by other animal-source foods, legumes, fortified foods, or supplements;
- Fermented milk products with probiotic properties may help control childhood illnesses such as diarrhea.¹¹⁵

The Joint Resilience Strategy is not alone in its failure to recognize opportunities afforded by Karamoja's livestock resources, and the **2015 United Nations' Human Development Report for Uganda**¹¹⁶ recommends complementary reforms in agriculture, to "transition the sub-region from traditional livelihoods to settled existence." Ironically, no reference is made to the fact that the poorest households are already the most settled, as with no livestock, mobility has little utility. The report does include a strong chapter on livestock and calls for investment in livestock productivity (size, quality, better breeds¹¹⁷), water, rangeland improvement, disease control, extension services, product marketing, and more integrated crop and livestock production systems. The report also recognizes the importance of integrating pastoral neighbors from South Sudan and Kenya in economic recovery plans, as they "periodically cross into the sub-region."¹¹⁸

¹¹⁰ Government of Uganda, 2013.

¹¹¹ Produced by the Ministry of Agriculture, Animal Industry and Fisheries in 2014, this policy is still in draft form.

¹¹² WFP/FAO/UNICEF, 2015.

¹¹³ Sadler et al., 2009.

¹¹⁴ Several key informants noted that diets, in particular in the wetter "green belt," were carbohydrate rich and protein deficient.

¹¹⁵ Sadler et al., 2009.

¹¹⁶ This report focusses exclusively on North Uganda.

¹¹⁷ Reference has already been made above to the opportunities to develop pedigree herds and flocks of local breeds and in this way to better assess their genetic capacity, as this capacity is currently undocumented.

¹¹⁸ Uganda Human Development Report, 2015.

AGRICULTURE PROGRAM REVIEW

This section presents the findings of a review of a selection of government- and international development partner-supported agriculture development programs. Where possible, findings are supported by impacts assessments in order to analyze different causal logic, implementation strategies, and impact.

The **Office of the Prime Minister** (OPM) coordinates all development programs, including those in the agriculture sector. The Minister for Karamoja Affairs¹¹⁹ chairs the Karamoja Policy Committee (KPC), while the Permanent Secretary chairs the Karamoja Technical Working Group (KTWG). The former is responsible for overall policy guidance and is attended by Members of Parliament (MPs), LCV Chairs, Ministers of State for key sectors, Heads of Missions, and Ambassadors from countries with active programs in the sub-region. The latter addresses sector priorities and work plans and is attended by technical representatives of sector ministries, development partners, and civil society representatives.^{120, 121} While recognizing the work done by the OPM, key informants expressed frustration that the government and its development partners were not better coordinated and did not invest more in shared learning. Other stakeholders also spoke of competition between NGOs, in particular when large contracts were being awarded.

In the 1980s, the government established the **Karamoja Development Agency** (KDA) through an act of parliament.¹²² Reporting to the Office of the President, the KDA was responsible for: supervising the transformation of Karamoja and bringing about rapid economic and social development; providing adequate water for the purpose of developing the agriculture and livestock sub-sectors; promoting and diversifying local productive capacity; improving health and education facilities; and

coordinating development projects in the sub-region. Sadly, it appears that the KDA was “famed more for loss of funds than for any serious contribution to the development of Karamoja.”¹²³ Possibly aware of the KDA’s shortcomings, the European Union (EU) funded the **Karamoja Projects Implementation Unit** (KPIU) to coordinate and implement EU-funded projects. Operating from 1992–2001, the KPIU supported a wide variety of infrastructure projects together with support for crop-farming, livestock development, and peace-building. The KPIU’s integrity was called into question when MPs called for a forensic audit of programs implemented under the OPM, as this might “help explain why Karamoja is not changing despite the billions of shillings sent by government to the region since 1986.”¹²⁴ Specific reference was made in the request for an audit of both the KDA and KPIU.

In the 1980s and 1990s, international NGOs, including the Church of Uganda, Christian International Peace Service (CHIPS), Cooperation and Development, Karamoja Catholic Diocese, Lutheran World Federation (LWF), Oxfam, and Servizio Volontario Internazionale (SVI), implemented crop farming, livestock development, and food security projects.¹²⁵ Interventions included: training agriculture extension workers; input supply (improved seeds,¹²⁶ ox plough, tractor hire¹²⁷); improved granaries; water for human and livestock populations; agro-forestry and tree planting; training community animal health workers (CAHWs) and support for private veterinary pharmacies (PVPs); cereal banks to address issues of low farm gate prices and price spikes; restocking; and action research. As an example of action research, the LWF funded-Karamoja Agro-Pastoral Development Programme (KADP) completed a study of sorghum landraces in 1998 in Rupa sub-county, Moroto District

¹¹⁹ The First Lady was Minister for Karamoja Affairs from May 2011 to June 2016.

¹²⁰ Nsibambi, 2014.

¹²¹ OPM, 2015a.

¹²² Uganda Legal Information Unit, undated.

¹²³ Odhiambo, 2003.

¹²⁴ Uganda Radio Network, 2012.

¹²⁵ Caravani, 2018. Caravani described the rise of NGOs and absence of the state in this period of development history as a period of “humanitarian autocracy.”

¹²⁶ The Church of Uganda launched the Karamoja Seed Scheme in 1983 to provide new crop varieties—sunflower and groundnuts—and improved seed after the famine in 1980. The project was closed due to insecurity in 1990.

¹²⁷ Several key informants suggested the government continue to provide a tractor hire service for “ripping” and not disc ploughing. The latter is associated with the oxidization of organic matter and soil carbon and the reduced retention of soil moisture, which increases the level of risk in crop farming. In contrast, ripping breaks soil “pans” and increases water infiltration.

and identified and categorized 36 different landraces by drought, pest and disease tolerance, grain characteristics, (size, taste, and color), ease of threshing and grinding, and storage quality.¹²⁸

The next generation of government-led development programs followed the 2001 disarmament campaign and included the **Karamoja Integrated Disarmament and Development Programme** (KIDDP). Implemented by the OPM from 2005 to 2007, the goal was to “achieve effective and sustainable disarmament.” Second and third phases were implemented from 2008–2010 and 2011–2015. In 2011, the program was renamed the **Karamoja Integrated Development Programme** (KIDP), as Karamoja “has been pacified and there is need to focus on development.”¹²⁹ An internal performance review identified the following achievements: consolidating disarmament and increased police deployment; the construction of schools in hard-to-reach areas; the production of maize at Namalu Prison farm for school feeding in Karamoja; electronic cattle branding; the distribution of agricultural inputs, livestock, and small-scale irrigation kits; procurement of maize-milling machines for youth and women’s groups; and improved infrastructure, including progress on tarmacking the Moroto-Nakapiripirit and Soroti-Moroto roads and hydropower lines that connected Karamoja to the national grid.¹³⁰

The current **KIDP** (2015–2020) is aligned with the National Development Plan (2015–2020), Uganda’s 2040 Vision, and the Uganda CPP and seeks to “improve human security and promote conditions for recovery and development in Karamoja.” Associated priorities include: sustaining peace and security, enhancing justice, and providing the basic infrastructure that Karamoja lacks. Importantly, the program recognizes that “due to the semi-arid climate, agro-pastoralism will remain the most viable livelihood.” Elsewhere, it is recognized the livestock sector represents “the biggest opportunity for development.” Listed opportunities also include crop farming, specifically “agricultural inputs, improving soil fertility, water conservation and better access to markets.” It is also recognized that investment in primary production will not be sufficient to drive economic development across the whole sub-region, and reference is made to livelihood diversification, in particular for households without livestock and youth in urban areas. References are also made to the importance of gender, and it is noted that

“women and girls in Karamoja are particularly vulnerable to poverty, violence and deprivation, and their specific needs must be a focus of all interventions.”¹³¹

The **Karamoja Action Plan for Food Security** (2009–2014) was launched by the OPM as an implementation tool for the KIDP. Costed at US\$35 million or US\$10 per person annually, the plan ambitiously stated that it would ensure that the sub-region could feed itself within the period of implementation. This was not achieved and up to 50% of the population required food assistance in 2016. La Niña- and El Niño-induced droughts affected Karamoja in 2010–2011 and 2015–2016.¹³²

Following disarmament in 2011, increased attention and donor support for Karamoja are confirmed by a rising number of special programs coordinated by the OPM, including:

- *Northern Uganda Social Action Fund (NUSAF I II and III)*: a World Bank-funded program for Northern Uganda. Originally launched to support the recovery of Northern Uganda from the Kony insurgency and cattle raiding in Karamoja, the first phase was considered something of a failure.¹³³ The primary aim of the current phase is to improve income for the poor and construct community infrastructure through public works.
- *Karamoja Livelihoods Programme (KALIP)*: an EU-funded program that sought to promote development as an incentive for peace through the implementation of community livelihoods, alternative income generation, and strengthening the law and order sector. More details are provided below.
- *Food Security and Resilience Building Project*: a United Nations Development Programme (UNDP)-supported food security and resilience project that aimed to improve livestock health, the provision of water, and environmental conservation in Nakapiripirit and Amudat Districts.
- *Drylands Project*: implemented by the Millennium Promise Alliance with Islamic Development Bank funding. The primary purpose was to reduce

¹²⁸ Orum and Cullis, 1998.

¹²⁹ OPM, 2015a.

¹³⁰ Ibid.

¹³¹ Ibid.

¹³² Okiror, 2016.

¹³³ Caravani, 2018.

vulnerabilities, build resilience, improve livelihoods, eradicate extreme poverty, ensure sustainable local economic development through technological, institutional, and business development initiatives, and strengthen local governance and leadership for sustainability.

- *Development Initiative in Northern Uganda (DINU)*: recently funded under the 11th European Development Fund to eradicate poverty and under-nutrition and strengthen the foundations for sustainable and inclusive socioeconomic development in Acholi, Lango, Teso, West Nile, and Karamoja, this initiative will be structured around food security and agriculture, transport infrastructure, and good governance. Among other interventions, the feasibility study identified agro-ecologically based value chains for Karamoja, including cattle, shoats, sorghum, millet, beans, maize, groundnuts, and cassava.¹³⁴

The OPM is not alone in implementing projects. MAAIF started to implement the US\$40 million, five-year Regional Pastoral Livelihoods Resilience Project (RPLRP) in mid 2016, funded by the World Bank and aligned with IDDRSI and Uganda's CPP.

In response to the slow pace of transformation of Ugandan society, in particular in Northern Uganda, the President launched Operation Wealth Creation (OWC) in 2014 to “improve household income, create wealth and improve overall prosperity through sustainable commercial agricultural production.”¹³⁵ Implemented by the Ministry of Defence and Veteran Affairs, soldiers replaced National Agriculture Advisory Service coordinators to:

- Mobilize the masses to engage in commercial agricultural and boost household incomes;
- Distribute inputs equitably and in a timely fashion to boost production and productivity at household level;
- Facilitate rural technological upgrades to assist smallholders to become small-scale industrialists;
- Stimulate local and community enterprise development;

- Facilitate infrastructure development, particularly in rural areas.

A performance review in mid-2017 in 12 districts, including 2 districts in Karamoja, reported that the program was beset with challenges related to the procurement and the timely distribution of inputs—cattle, seeds, and seedlings—and inadequate and poor extension support.¹³⁶ What the performance review did not do was to question the appropriateness of the breeds of cattle or the varieties of seeds, which typically included exotic cattle and hybrid seeds. While of potential benefit to wealthier households, the choice of inputs has little to offer poorer households. Ideally, OWC would be more focused on improving outcomes for the poor. Perhaps not surprisingly, some key informants suggested Uganda should return to a more traditional extension service and that extension workers in Karamoja should be trained in dryland farming techniques and approaches.

Mention has been made of **WFP's** long history of engagement in Karamoja. In addition to providing food aid continuously since the 1980 famine, WFP has also implemented resilience programs at scale. For example, with funding from the UK's Department for International Development in 2011, WFP implemented a parallel NUSAF program as part of its **Karamoja Productive Assets Programme**. This program was reportedly the biggest food/cash-for-work program in Karamoja's history. However, instead of helping families graduate, an impact assessment found that families were unable to generate savings and productive investments, “due to the unreliability and limited amounts of the transfers and the unproductivity of the public assets created.”¹³⁷ Communal gardens were cited as a particular example of a poorly conceived investment. The impact assessment appears to support the view that large programs are overly optimistic about what can be achieved by way of poverty reduction in the sub-region.

Of interest, an internal assessment carried out by one of WFP's implementing partner reported the following gains:

- A reduction from 40% to 27% for households that live on one meal/day;
- An estimated 74% of households have not experienced starvation in the past 12 months, while 7.4% have;

¹³⁴ Bakema and Asmelash, 2017.

¹³⁵ Ministry of Defence and Veterans Affairs, 2018.

¹³⁶ Office of the Clerk to Parliament, 2007.

¹³⁷ Caravani, 2018.

- An estimated 47% of respondent rated their income situation as “good” or “very good” at the time of the impact assessment;
- An estimated 41% say that their ability to meet basic needs has improved in the past 12 months;
- An estimated 30% of beneficiaries allocate less than half of their monthly expenditures to food;
- An estimated half of households would be able to cope with an economic shock.¹³⁸

While these improvements appear encouraging, they relate only to the period of implementation. Furthermore, in view of the fact that the program distributed food and cash payments, it is unlikely the benefits would have been sustained beyond the life of the project.

The EU-funded **Karamoja Livelihoods Programme** 2010–2015 (KALIP) was aligned with National Development Plan, the National Agriculture Policy, and the Karamoja Integrated Development Plan.¹³⁹

Interventions reported by the program included: the excavation of valley tanks and water ponds; the building of grain stores, drying slabs, rainwater-harvesting structures, and crop storage facilities; and the opening of community access roads. Other interventions included the building of farmers’ capacity through agro-pastoral field schools (APFSs). Through APFS groups, KALIP also provided quality foundation seed developed at NabuZARDI.¹⁴⁰ KALIP achievements are presented in Annex 7 and are typically “upbeat.” To KALIP’s credit, its internal completion report also documents challenges and shortcomings: the silting and poor maintenance of water points; the limited dissemination of improved production methods beyond APFSs; and the reality that only 55% of recipients—or 40% of the target—of cash-for-work (CfW) schemes procured household assets. The KALIP completion report also includes a number of practical and helpful recommendations:

- Future programs should build on evidence-based best practices and only implement new interventions as small-scale pilots;
- Proposed interventions and implementation modalities should be endorsed by stakeholders at district and sub-county levels, but leave room for adjustments based on the day-to-day realities on the ground;
- The design team should be constituted from a mix of independent experts drawn from the EU, government implementing agencies, and the contracting authority. This mix of experts will ensure that the interventions respond to government priorities, donor interests, and evidence-based good programming;
- Future programs should have a mix of hardware (infrastructure) and software (training);
- The Program Management Unit model should be included in future programs.

In 2011, **USAID Food for Peace** (USAID FFP) awarded grants totaling US\$105 million to two implementing partners: the “Resiliency through Wealth, Agriculture, and Nutrition” (RWANU) implemented by ACDI-VOCA¹⁴¹ and the “Growth, Health and Governance” (GHG) implemented by Mercy Corps.¹⁴² Earlier this year, USAID FFP awarded follow-on grants totaling US\$75 million for 2018–2022. Unlike the previous award, however, Catholic Relief Services (CRS) will operate in the wetter agricultural zone, while Mercy Corps will operate in the drier agro-pastoral areas. USAID FFP’s will therefore be operating according to Karamoja’s agro-ecology.

An independent evaluation of RWANU could not be located.¹⁴³ However, RWANU did conduct an internal impact assessment of a restocking intervention, using imported Galla goats from northern Kenya, with a view to improving the availability of milk and hence improving child nutrition. Typically, 30 does and a buck were

¹³⁸ Danish Refugee Council and Danish Demining Group, 2013.

¹³⁹ KALIP was implemented by Mercy Corps Scotland in north Karamoja; Arbeiter Samariter Bund in partnership with GOAL in Abim, Moroto, and Napak; and DanChurch Aid in south Karamoja with the Agency for Technical Cooperation and Development, Cooperation and Development, and Canadian Physicians for Aid and Relief. KALIP used grants for the labor-intensive works (LIWs) approach to build productive assets and CfW payments to the beneficiaries. KALIP also contracted FAO to distribute farm tools and inputs and train farmers and cattle keepers using the agro-pastoral field school (APFS) approach.

¹⁴⁰ OPM, 2015b.

¹⁴¹ In partnership with Concern Worldwide and Welthungerhilfe.

¹⁴² In partnership with World Vision, the Kaabong Peace and Development Agency, Feinstein International Center (Tufts University), Whave, and the Kotido Hand Pump Mechanics Association.

¹⁴³ For example, on the USAID Development Experience Clearinghouse website.

distributed to a women's group. The impact assessment noted that 39% of women beneficiaries reported better nutrition for their children. The assessment also reported jealousies, fines for goats that trespassed into others' fields, other forms of abuse, and theft, all the result of limited distribution. Group members also highlighted problems with health, abortions, and the cost of veterinary medicines. Almost a quarter of the women members expressed concerns that "CAHWs stopped coming to their village, did not respond promptly or visit regularly, and couldn't heal their goats."¹⁴⁴

Once again, the impact assessment was carried out during the period of implementation, and it is not known whether the level of reported impact was sustained. Notably, some of the assessment findings differ from the experiences of other restocking interventions.¹⁴⁵ Specifically, it was surprising to read of jealousies, fines, and other abuse, as livestock are routinely redistributed within households so women and their children have access to milk and milk products. Livestock are also redistributed through marriage. The review team therefore speculated whether RWANU had been able to identify a culturally appropriate approach to restocking. Certainly, the review team felt it would be unfortunate if the RWANU restocking assessment discouraged further investment in restocking, in particular in view of the significant livestock losses during disarmament.

The GHG program was implemented in northern Karamoja and structured around three strategic objectives: 1) livelihoods strengthened: pro-poor market development to build local capacity to provide vital products and services on a commercially sustainable basis; 2) nutritional status of children under five improved: improving local public and private healthcare, promoting improved household food consumption, and improving water infrastructure and sanitation and hygiene behaviors; and 3) reduced incidences of conflict: helping local conflict mitigation structures adapt to the current conflict dynamic, while supporting traditional authority structures and male and female youth to play more constructive roles in improving security. The program sought to improve food security and livelihood outcomes for 54,000 people.

A final study report¹⁴⁶ presented findings of change against the baseline survey. While this did not allow for a clear causal link between changes and program activities, the report did conclude that GHG had played a supportive role in: improved seed; storage bags for harvest; water

resource development; markets; and animal health. A summary of achievements is presented in Annex 8. The study also recognized that "substantial hurdles to poverty alleviation" continue to exist and that "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." The study offered a number of useful recommendations that could inform wider thinking among stakeholders in the sub-region:

- 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.

The Federal Republic of Germany (FRG) is another new donor and has opted to focus on water resource development in the sub-region for "improved drought resilience and improved agriculture sector production and productivity."¹⁴⁷ Investment is aligned with the IDDRSI and CPP together with District Development Plans. As part of this support, the **KfW Bank aus Verantwortung**¹⁴⁸ commissioned a feasibility study on water for productivity. While recognizing the shift to cropping, the study noted that livestock continue to play a key role in the livelihoods and that livestock disease alone resulted in annual estimated losses of US\$10 million. The study also noted that large numbers of Toposa, Turkana, and Pokot periodically cross into Karamoja during the dry

¹⁴⁴ Lepillez, 2016.

¹⁴⁵ LEGS, 2014.

¹⁴⁶ Stites et al., 2017.

¹⁴⁷ GFA Consulting Group, 2017.

¹⁴⁸ The KfW Group seeks to improve the living conditions of people in developing and emerging countries.

season, with seasonal influxes at times reaching up to 200,000 tropical livestock units (TLUs).¹⁴⁹ The study went on to suggest that, as a consequence of these influxes, the Karimojong are pushed westwards into neighboring districts in search of grazing and water, and concluded that access to water is “the most important need for the people in Karamoja.”¹⁵⁰ Looking forward, the study proposed the construction of three large dams that will be supported by a number of valley tanks to reduce grazing pressure immediately around the dams, reduce conflicts among livestock keepers, and limit the spread of animal diseases.¹⁵¹ Other recommended investments include cattle and small ruminant crushes, water troughs, animal health services, and spot road improvements. While welcoming the commitment to support the livestock sector, visits to the two dams at Kobebe and Aracek and the badly silted dam at Lokisile did raise concerns about both silting and the long-term impact of high concentrations of livestock on local vegetation.

While recognizing the limitations of this review, it is nonetheless illuminating that the literature appears to chronicle a range of shortcomings associated with the implementation of large-scale development projects. Setting aside issues of corruption and the diversion of funds, large-scale agriculture projects appear to find it difficult to maintain planned levels of spending, as the absorption capacity is low. Positive development outcomes appear to take longer than development planners would like. Furthermore, it would seem inadequate use is made of shared learned and joint action research, with the result that the same mistakes are repeated. There are also too few independent impact assessments and benefit-cost ratio studies. Perhaps for these reasons, it was not surprising that the review team witnessed first-hand a wide range of failed and poorly performing development investments: silted ponds, leaking water troughs, empty beehives, dead tree seedlings, poorly maintained soil and water conservation measures, unused livestock crushes, failed drug shops, and empty grain stores. All is of course not negative, and the

team also visited and learned of many positive interventions that are supporting communities to address and overcome production constraints in crop farming and livestock management.

Improved security has attracted an **increasing number of NGOs**¹⁵² to the sub-region that are implementing a range of interventions, including: agro-forestry and tree planting; input supply (improved seeds and planting materials, ox ploughs, and restocking); animal health; soil and water conservation and agro-ecological crop farming; and Early Warning Systems (EWS) information and analysis. With regard to EWS information, the review team learned that until recently Agency for Technical Cooperation and Development (ACTED) produced monthly informational bulletins for each district. A review of these bulletins confirmed that they provided useful information on: the overall situation; drought cycle stage; vegetation index; rainfall; weather forecast; livestock body condition, diseases, and migrations; cropping and updates on crop planting, yields, and prices; and finally, terms of trade based on sales value of charcoal, firewood, and livestock, and the purchase of cereals and water. In view of the increased levels of investment being made available to NGOs in the sub-region, it is unfortunate that this facility has not been maintained. As a result, it is likely that ACTED’s institutional memory will quickly be lost, and experienced staff will move on to other and potentially unrelated work.

Key informants in government expressed their concern about the work of NGOs, including that too few take adequate time to understand and build relationships with planned beneficiary communities. The key informants also offered examples of poorly conceived development interventions that they suggested included: market-led approaches that fail to meet the needs of poorer households; inappropriate marketing infrastructure;¹⁵³ gender-based interventions that are unrelated to local realities and opportunities; private sector and value chain

¹⁴⁹ Tropical Livestock Units are livestock numbers converted to a common unit. Conversion factors are: cattle = 0.7, sheep = 0.1, goats = 0.1, pigs = 0.2, and chickens = 0.01.

¹⁵⁰ Currently, only three medium-sized earth dams exist in Karamoja that carry water throughout the year and more especially throughout the dry seasons and droughts (Kobebe in Moroto is 1.5 million m cubed, Arechek in Napak is 2 million cubic m; Longoromit in Kaabong is 1.2 million cubic m). A significant number of valley tanks (typically 10,000–20,000 cubic m) and boreholes have been constructed to address the water availability problem. Many of them are partly or fully dysfunctional due to operation and maintenance issues.

¹⁵¹ While recognizing the importance of investment in water resource development, several key informants noted that there has already been considerable investment in this sector and that in recent years an additional 80 valley tanks had been constructed on transhumance routes. They therefore questioned the need for additional valley tanks, suggesting instead that increased attention should be given to maintenance of existing water sources.

¹⁵² A mapping of NGOs in the sub-region in 2016 reported that 37 NGOs were working on livelihoods through 54 projects, 17 NGOs were working on disaster risk reduction, 16 organizations were working on crops and livestock activities—though not necessarily the same—and implementing 39 projects, and 15 organizations were working on market systems though 18 projects. See KRSU, 2017.

¹⁵³ The fencing of livestock markets was singled out by two informants as a “complete waste of investment,” as an open area was all that was needed. Other informants did, however, state that loading ramps were required and that much more should be done to address animal welfare issues associated with long-distance transport.

development that typically benefit traders from outside the sub-region; behavior change communication (BCC);¹⁵⁴ and training ever more CAHWs.¹⁵⁵ They also made reference to the apparent imperative that agencies produce and circulate case studies and “fact sheets” that present their work in a favorable light. Specific agencies were singled out for this criticism. Finally, these informants suggested that NGOs should be more involved in restocking¹⁵⁶ (including restocking with plough oxen), animal health, locally appropriate agronomic practices that conserve and build soil fertility,¹⁵⁷ and cereal banks. A number of these observations and comments were underlined in the group work in the validation meeting in Moroto, including that NGOs need to become more “people centered.”

Finally, in this section it is important to note that NGOs are not solely involved in implementation and internal assessments and that some commission studies and analyses. In this regard, a study commissioned by **Action Against Hunger** (ACF) and **Institut de relations internationales et stratégiques** (IRIS)¹⁵⁸ is particularly useful. It concludes helpfully that farming and pastoralism will continue to play a predominant role in Karamoja’s livelihoods portfolio for the foreseeable future. The study also cautions that the current transition from pastoralism to more sedentary agriculture and livestock keeping will likely continue, and that it is likely to be painful in terms of cultural and traditional resistance to changing ways of life and, in particular, gender roles. Ensuring that government, NGOs and donors share and build on these

studies collectively could be a useful joint donor initiative.

FIELD WORK FINDINGS

As outlined in the methodology section, the review team used semi-structured interviews for the primary data collection that included standard PRA techniques, including proportional piling, scoring/ranking, and verification/triangulation. In addition, the review team collected background information that included historical timelines, and settlement and natural resource mapping. An example of a historical timeline is presented below.

The historical timeline for Kodike, Iriri sub-country is interesting, as it confirms what has already been documented in a previous section of this report: crop farming in the wetter “green belt” is integrated with livestock, as evidenced by elders’ reference to livestock raids, associated displacement, and livestock disease in 6 of the 18 years. It is also interesting to note the elders reported that yields were lost to erratic and poor rains, floods, theft, weeds, and pests and diseases in 9 of the 18 years. This would appear to confirm that crop farming in the wetter “green belt” is not synonymous with reliable yields. Furthermore, through the traditional naming of the years, the elders confirmed that the contribution made by government and NGOs is noted and appreciated. In addition to the Kodike timeline, historical timelines were also developed with elders from other communities. These are presented in Annex 9.

¹⁵⁴ One development worker interviewed expressed the view that “attitude is a constraint in Karamoja” and even went so far as to suggest that “local people are too lazy to work in the fields” and therefore that BCC is an essential component of all projects.

¹⁵⁵ A number of development partners in Moroto District have recently committed to a CAHW harmonization initiative that will require the use of standard training materials and accredited trainers.

¹⁵⁶ One informant did however suggest that restocking be targeted to households and not groups, as Karamoja do not have a history of shared livestock ownership.

¹⁵⁷ One informant noted that soils in Karamoja are typically acidic, compacted, and hard to work, and that rainwater runoff reduces levels of effective rainfall. The informant noted that there is an urgent need to “rethink mechanical operations” and to employ better cropping systems that include elements of conservation agriculture.

¹⁵⁸ ACF and IRIS, 2017.

Historical timeline, elders at Kodike, Iri sub-county, Napak District

Year	Name in Nga'karimojong	Translation into English	Classification: Very good, good, average, poor, and very poor	Description
2000	Ekaru A Lonetia	Year of petty thieves	Very good	There were enough rains, good harvest, food was available but stolen by thieves, both from the gardens and the granaries.
2001	Ekaru A Lobongot	Year of returning	Average	The people returned to Nabwal after they left due to insecurity. There was peace and some harvest.
2002	Ekaru A Red Cross	Year of Red Cross	Average	There was little food harvested, the Red Cross helped the community with supplies for resettlement.
2003	Ekaru A Red Cross	Year of Red Cross	Good	The Red Cross continued to provide assistance.
2004	Ekaru A Moto	Year of striga weed	Poor	A very poor harvest, as the crops were affected by striga weed.
2005	Ekaru A Keirit	Year of running	Good	There was insecurity due to massive raids from the Pian. People were forced to abandon their homes.
2006	Ekaru A Lobongot	Year of returning	Good	People again returned to Nabwal, and some families produced a good harvest.
2007	Ekaru A Kalele	Year of floods	Poor	A very poor harvest, as crops were lost to floods. There was an increase in animal diseases.
2008	Ekaru A Nachan	Year of WFP	Average	There was little harvest as rains were poor. WFP provided relief food.
2009	Ekaru A CLIDE	Year of CLIDE	Good	The Community Livestock Integrated Development (CLIDE) Consultancy supported the livestock recovery.
2010	Ekaru A Sanco	Year of Sanco	Poor	A lot of crops were lost due to drought. Sanco introduced cassava to Nabwal Parish.
2011	Ekaru A Kalele	Year of floods	Poor	Crops were lost to floods, and the harvest was poor.
2012	Ekaru A Ngikiain	Year of soldiers	Poor	Soldiers were lost in a river, and crops were destroyed.
2013	Ekaru A Rwanu	Year of RWANU	Average	The RWANU program started in Napak and Nabwal Parishes.
2014	Ekaru A Lolibakonyen	Year of Hepatitis B	Average	There was an outbreak of Hepatitis B in the parish; several people died.
2015	Ekaru A Lokona	Year of Lokona	Average	There was a good harvest and few animal losses to disease.
2016	Ekaru A Kaheon	Year of elections	Good	There was an even better harvest than the year before, peace in the parish, and little livestock disease.
2017	Ekaru A Ekrut	Year of Fall armyworm (FAW)	Poor	A very poor harvest, as crops were lost to FAW.

I) Livestock sub-sector

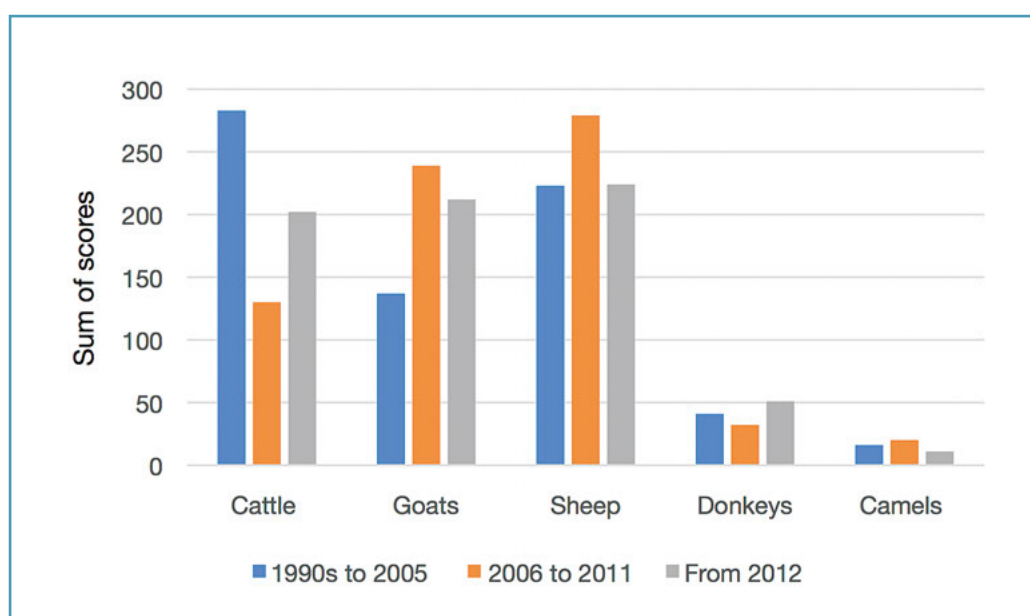
Key question 1 (livestock): What are the key livestock production trends since the mid-1990s?

Information on the composition of “family herds” was collected from men’s groups using proportional piling and, in order to confirm trends, was repeated for the different time periods: the mid-1990s–2005, 2006–2011, and 2012–present. The findings are presented in Figure 3. As can be seen, the importance of cattle has fluctuated in

both the agro-pastoral and agricultural zones, although the decline in the importance of cattle during the disarmament period is more marked in the agro-pastoral zone than in the agricultural one. As can also be seen, cattle are once again playing a more important role within “family herds” following the return to more traditional herding. Figure 3 also confirms that goats and sheep played an expanded role during disarmament and that the importance of goats has continued in the agricultural zone, while the importance of sheep has declined.

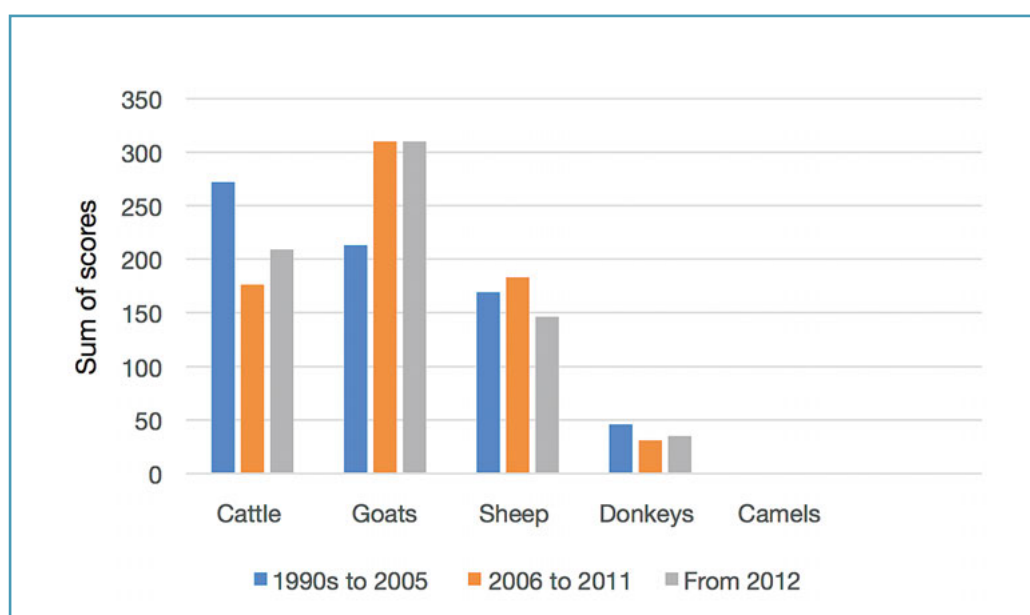
Figure 3. Trends in proportional herd composition

A) Agro-pastoral zone



Note - data derived from proportional piling with 7 groups of men.

B) Agricultural zone



Note - data derived from proportional piling with 7 groups of men.

The men's focus groups were asked additional questions about changes in livestock mobility, labor profiles, milk production, and bride and sales prices. The information is

presented in Table 2 and, where required, is disaggregated by livelihood group.

Table 2. Herd management and production level trends

Time periods	Mid-1990s–2005	2006–2011	2012–present
Production issues			
Mobility	<ul style="list-style-type: none"> - Herding decisions informed by the search for good grazing, water, and avoiding disease - The Jie, Bokora, and Pian trekked west into neighboring sub-regions - In the agricultural zone (AZ), cattle were herded closer to home as more grass available - The Tepeth herded in the mountains 	<ul style="list-style-type: none"> - Animals herded in “protected <i>kraals</i>,” which resulted in huge losses, in particular of cattle - The Tepeth continued to herd in the mountains and largely avoided the “protected <i>kraals</i>” 	<ul style="list-style-type: none"> - The herds have returned to traditional grazing areas, but the <i>kraals</i> are more dispersed, with improved security - Cattle in AZ are again herded closer to home - The Tepeth are now herding their cattle off the mountains
Labor profiles	<ul style="list-style-type: none"> - <i>Kraals</i> herded by warriors under the guidance of elders - Women involved in the milking and watering 	<ul style="list-style-type: none"> - Soldiers and men - Women, warriors, and boys withdrawn for safety 	<ul style="list-style-type: none"> - Men and young boys again under the tutelage of the elders¹⁵⁹ - Communal herding for owners with small numbers of cattle - Local Defence Units assist <i>kraals</i> in border areas - Women again involved in watering and milking
Milk production	<ul style="list-style-type: none"> - Adequate milk: 20–40 ltrs/ herd/day in agro-pastoral zone (APZ) in the wet season¹⁶⁰ - Milk production: 6–8 ltrs/ herd/day in the AZ 	<ul style="list-style-type: none"> - Most herds little or no milk, others 1–5 ltrs/ herd/day - The soldiers consumed and sold milk 	<ul style="list-style-type: none"> - Most people do not own cattle - Those who do, increases to 5–8 ltrs/herd/day in APZ and 3–5 ltrs/herd/day in AZ in the wet season
Bride price	<ul style="list-style-type: none"> - Traditional bride price depended on clan size; typically, 60–120 cattle 	<ul style="list-style-type: none"> - Traditional marriage largely suspended - Some marriages continued with goats and some cows 	<ul style="list-style-type: none"> - Bride price reinstated but typically fewer than 50 cattle
Sales prices	<ul style="list-style-type: none"> - A mature bull sold for Ush80–100,000 	<ul style="list-style-type: none"> - A mature bull sold for Ush350,000–400,000 	<ul style="list-style-type: none"> - A mature bull sells for Ush1.2 million or more

Note – findings derived from 14 focus group discussions.

¹⁵⁹ The recent increase in traditional marriages, initiations, and other ceremonies and rituals has helped re-empower the elders, although it is perhaps unlikely they will assume their previous status.

¹⁶⁰ These figures are unlikely to be absolutely accurate but are rather indicative of trends in milk production.

The discussions with the men's groups confirm a number of policy review findings, including that transhumance livestock management is informed by a search for both grazing and water, and not water alone. It was also confirmed that the Karimojong suffered a massive reduction in livestock numbers during the disarmament due to starvation, disease, raiding,¹⁶¹ and the sale and slaughter of cattle while being herded in the “protected *kraals*.” The men also added that “everyone lost someone” during the 1990s–2000s to raiding and reprisal killings.

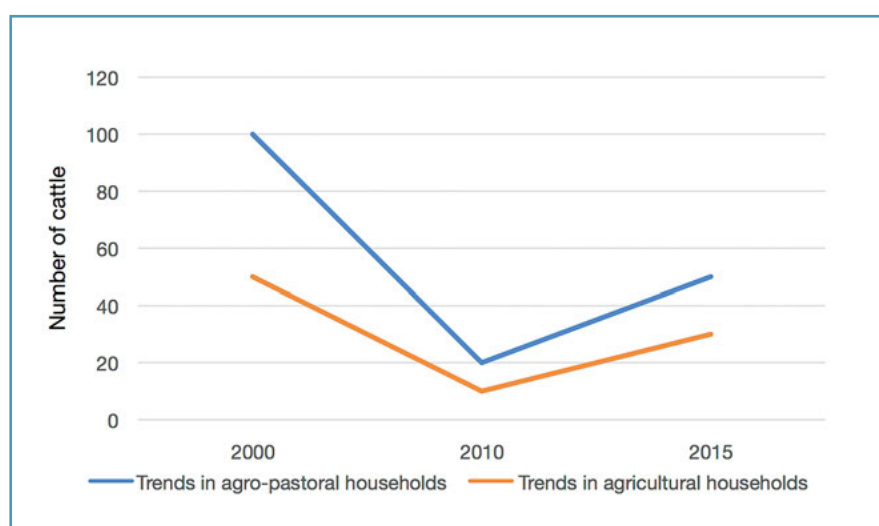
Recognizing that the Karimojong and neighboring pastoral communities in East Africa are reluctant to share information on livestock numbers, the review team asked for details of trends in cattle numbers for an “average household comprising two or more brothers, from an average wealth group.” While the different groups provided slightly different numbers, the trends present in Figure 4 are consistent. Specifically, there is a common significant decline in cattle numbers during the period of the “protected *kraals*” from around 100 to 20 in the agro-pastoral zone, and 50 to 10 in the agricultural zone, followed by a slow recovery to 50 in the former and 30 in the latter.¹⁶² Almost all groups confirmed that while cattle holdings are increasing, a large minority of households have no cattle at all. The immense scale of the cattle losses is also confirmed by other information collected and presented in Table 2 above, including the suspension of traditional bride price payments and, as a result of increased dangers, the withdrawal of women and young boys from herding duties during the time of the “protected

kraals.” The men also spoke of the collapse in milk production and a rise in under-nutrition in children.

Despite significant human and livestock losses and associated deprivations, most men's groups expressed their appreciation for the improvement in security and stated that as a result, they can now enjoy a better life. They also confirmed that cattle numbers are recovering and that poorer households are again starting to acquire cattle, following the reinstatement of traditional marriages. However, they noted that bride price has not recovered fully.

The men's groups also provided information on trends in marketing and livestock prices. For example, they stated that immature animals are typically purchased by local herders who are rebuilding their herds. In contrast, mature male animals are purchased by traders and transported to markets outside the sub-region. The men also added that relatively few livestock were sold before disarmament and that more are now sold to meet households needs, including food, and medical and school fees. They also noted that livestock prices have increased significantly from Ush350,000 to Ush1.2 million for a mature bull. They suggested this increase was linked to the increase in the number of markets and buyers, and improved price information sharing through mobile phones. Several men's groups also mentioned the emerging donkey trade, the result of increased demand for donkey meat and skins in China.

Figure 4. Trends in household cattle ownership, Karamoja, 2000 to 2015



Note – data derived from 14 focus group discussions with men. ‘Number of cattle’ refers to average herd of several brothers, averaged across 7 groups in the agro-pastoral zone, and 7 groups in the agricultural zone.

¹⁶¹ Informants reported that an estimated 5,000–7,000 cattle were raided from the Kagatta “protected *kraal*” in 2005.

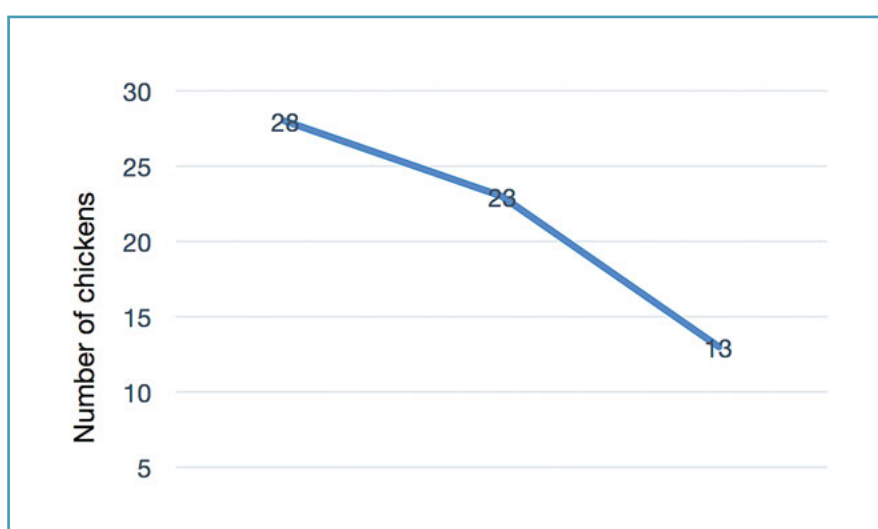
¹⁶² The government has distributed some cattle through a restocking intervention. It was noted by several key informants that these cattle from Teso are smaller and milk production is poorer than that of the local breeds.

The review team asked the women's groups to provide information on trends in poultry keeping, as women are the main carers. The women responded that the Karimojong historically kept few chickens, as most families had adequate numbers of cattle, sheep, and goats. They said that they had been forced to keep more chickens to compensate for the increasing livestock losses to raiding. As presented in Figure 5, household chicken numbers peaked from 2000–2005, with an average of 28 chickens/household. Thereafter, numbers have fallen progressively to 23, the result of a combination of disease, sales to meet basic household needs, ceremonies, and gifts. The recent accelerated decline to 13 chickens/household was attributed to increased disease outbreaks. The women said that eggs were fed to young children, as they have little or no milk.

Key question 2 (livestock): What are the main production constraints and what are the main technical innovations and developments that are supporting improved production?

The men's groups were asked to score and rank the major livestock production constraints over the last 20 years and to provide information on particularly useful indigenous coping strategies and development interventions that helped them overcome these constraints. The scoring and ranking was done using 10 stones, with the most important awarded the most stones and the least the fewest. The results are presented in Tables 3 and 4. Responses in Table 4 that are presented in blue italics were identified by four or more groups.

Figure 5. Trends in household ownership of chickens, pre-2006 to 2017



Note – data derived from 14 focus group discussions with women.

Table 3. Livestock production constraints

Constraints	Agro-pastoral zone (total score/rank)	Agriculture zone (total score/rank)
Diseases	15/2	22/1
Drought	12/3	19/2
Insecurity	43/1	7/3
Grazing conflict with the Uganda Wildlife Authority (UWA)	0	2/4
Total	70	50

Note – data derived from scoring with 7 men's groups in the agro-pastoral zone and 5 men's groups in the agricultural zone; 10 stones were used for scoring in each group.

Table 4. Important local innovations and development interventions

Constraints	Local innovations	Development interventions
Diseases		
Agro-pastoral zone	<ul style="list-style-type: none"> - <i>Traditional medicines and healers</i> - De-ticking by hand - Separating sick animals (“aperor”) 	<ul style="list-style-type: none"> - <i>Vaccinations</i> - <i>Cattle crushes</i> - <i>Providing animal medicines</i> - Tick spraying - Training CAHWs - Opening vet shops
Agricultural zone	<ul style="list-style-type: none"> - <i>Use of local herds, traditional remedies, and assistance of traditional healers</i> - Reducing congestion through mobility - Traditional rituals 	<ul style="list-style-type: none"> - <i>Vaccinations</i> - <i>Access to modern veterinary medicines</i> - Cattle crushes - Hand-sprayers for tick control
Drought		
Agro-pastoral zone	<ul style="list-style-type: none"> - <i>Mobility to areas of better grazing and water</i> - <i>Digging wells in river beds in areas of good grazing</i> - Meetings with neighbors to facilitate mobility into other districts - Traditional prayers 	<ul style="list-style-type: none"> - <i>Dams, e.g., Kobebe</i> - <i>Boreholes/wind pumps</i> - Valley tanks
Agricultural zone	<ul style="list-style-type: none"> - <i>Mobility of younger and non-lactating animals to areas of better grazing and water</i> - Digging wells and herding animals near water - Digging of “atapars” (ponds) - Burning grass for new growth - Traditional invocations for rain 	<ul style="list-style-type: none"> - <i>Boreholes</i> - <i>Valley tanks and dams</i>
Insecurity		
Agro-pastoral zone	<ul style="list-style-type: none"> - <i>Peace meetings and elders’ exchanges</i> - <i>Traditional rituals and invocations</i> - Punishments for cattle thieves - Avoiding certain areas where raiding common 	<ul style="list-style-type: none"> - <i>Government-supported peace meetings</i> - <i>Creation of Local Defence Units to follow up on stolen livestock</i> - Formation of village peace committees - Disarmament - Solving cross-border conflicts
Agricultural zone	<ul style="list-style-type: none"> - <i>Pre-2006 self-defence with armed warriors to dissuade attackers</i> - Community peace meetings - Pursuit of raiders to return livestock 	<ul style="list-style-type: none"> - <i>Disarmament and improved security</i> - <i>Facilitated peace meetings</i> - Local Defence Units - Boluses for electronic tagging - Ear tags - Disciplinary meetings for “lonetia” thieves - Strategically positioned barracks in border areas
Grazing conflict with the UWA		
Agricultural zone		- Facilitated meetings by local government

Note – findings based on 7 men’s focus groups in the agro-pastoral zone and 5 men’s focus groups in the agricultural zone; findings in blue italic type were mentioned by 4 or more groups.

As can be seen, the scores in the agro-pastoral areas and pastoral areas are slightly different. In the agro-pastoral zone, livestock keepers remain concerned about insecurity, while in the agricultural zone this threat is hardly recognized. Rather, men's groups in the agricultural zone ranked livestock disease the most significant threat, followed by drought. In the agro-pastoral areas, livestock disease was ranked second and drought third. In one group, grazing conflicts with UWA was also mentioned.

As is seen in Table 4, the men's groups in the agro-pastoral zone identified a number of indigenous coping strategies including: the use of traditional medicines, herbs, and healers to address animal diseases; mobility and the digging of wells in river beds to overcome drought; and peace meetings, elder's exchanges, and traditional rituals to address insecurity and raiding. In the agricultural zone, the men's groups listed: the use of traditional medicines, herbs, and healers for animal health; mobility of younger and non-breeding animals to overcome drought; and armed warriors to dissuade raiders. These are all consistent with the findings of the policy review. For the priority development interventions, the men in the agro-pastoral zone expressed an appreciation for: vaccinations and the construction of cattle crushes (these are routinely used for vaccinations); improved access to quality veterinary medicines to address issues of animal diseases; and boreholes, valley tanks, and dams to overcome drought. The men also valued disarmament, improved security, and facilitated peace meetings.

Based on the information provided, men's groups value improvements in animal health, water resource development, and improved security, but they also continue to value mobility—not only as a key drought avoidance strategy, but also because dispersed herds are less likely to be contaminated with disease—traditional rituals, and invocations. While speculation is to be avoided, it may be that rituals help reinforce a sense of community, shared values, and decision-making processes, and also help reinforce the power and position of elders, which were severely eroded during the height of the raiding, as the warrior class broke free from the elders. Finally, it is interesting to note that the majority of listed development interventions have been available to the Karimojong for at least a decade and that there are few recent, valued development interventions.

Key question 3 (livestock): To what extent are weather-related changes impacting on livestock production?

The men's groups also provided information on weather-related changes and their impact on livestock production. They spoke, for example, of higher temperatures compared to a decade ago, with an increase in the number of days with high and drying winds.¹⁶³ They also spoke of the delayed onset of the rains, though they recognized that this was not consistent in all years. Specific to the wet season, they also noted an increase in flooding and associated damage to homes, gardens, and crops, and the loss of livestock after very intense rain storms.

The men's groups in the agricultural zone also spoke at length of increasingly erratic rains, resulting in a deterioration of grazing around the homesteads. They said that this had necessitated the adoption of more mobile livestock production systems, including sending non-breeding cattle to the *kraals* in the dry seasons. They also noted that years of erratic rain were characterized by reduced milk production, reduced weight gain, and poorer conception rates.

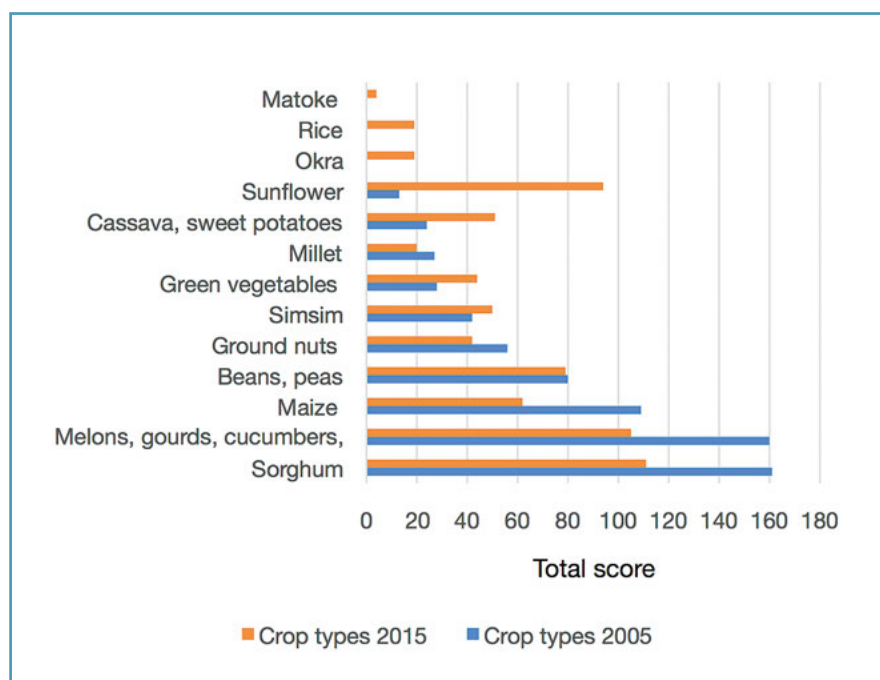
Of particular interest, groups in both the agro-pastoral and agricultural zones expressed the view that weather-related changes were more problematic for households that were wholly dependent on cropping, as “livestock can follow the rains, while fields cannot.” They noted that milk production had not yet returned to previous levels and that households have to engage in cropping to be food secure. This reference to the complementarity between livestock and cropping resonates well with the traditional Jie invocation mentioned earlier.

2) Crops sub-sector

Key question 1 (crops): What are the key arable cropping sub-sector trends since the mid-1990s?

Information on cropping patterns and trends was collected from women's groups in the agro-pastoral and agricultural zones, using PRA techniques. As it was learned that changes in crop farming have been more linear than changes in the livestock systems, it was possible to compare and contrast production systems in 2005 and 2015, i.e., before and after the “protected *kraals*.” Changes in the choice and importance of different crop types in the two livelihood zones are presented in Figures 6 and 7.

¹⁶³ Several men's groups also noted that when wildfires were driven by particularly windy days, settlements could quickly become engulfed. In the weeks immediately preceding the field work, 94 homes were lost to a wildfire in Iriri sub-county.

Figure 6. Trend in planting by crop type, agro-pastoral zone, 2005 to 2015

Note- data derived from proportional piling with 7 groups of women.

As can be seen, there have been quite profound changes in the choice of crops in the agro-pastoral zone, with sharp reductions in the importance of: sorghum;¹⁶⁴ melons, gourds, cucumbers, and pumpkins; maize; and, to a lesser extent, groundnuts. There has also been a corresponding increase in the importance of sunflower¹⁶⁵ and cassava/sweet potato. New crops, including okra, rice, and matoke, have been introduced. Similarly, there have been changes in the choice of crops grown in the agricultural zone, with sharp reductions in the importance of sorghum and maize and, to a lesser extent, millet and groundnuts, matched by an increase in the importance of: melons, gourds, cucumbers, and pumpkins;¹⁶⁶ beans and peas; sunflower; green vegetables; and cassava/sweet potatoes. Rice¹⁶⁷ and okra have also been added as new crops. Millet is historically grown in Kaabong.

As can be seen, cropping is more diversified now than a decade ago. Furthermore, with increased production of sunflower, beans and peas, and green vegetables, households are producing a better balance of crops to meet their nutritional needs. It appears that these changes are the result of a number of factors: households have reduced access to milk and are therefore planting more nutritionally dense foods; government, development partners, and markets are providing a wider range of seeds; the sales value of some of the new crops are higher than sorghum and maize; growing a diversity of crops helps control pests and diseases; and growing a diversity of crops also protects and builds soil fertility.

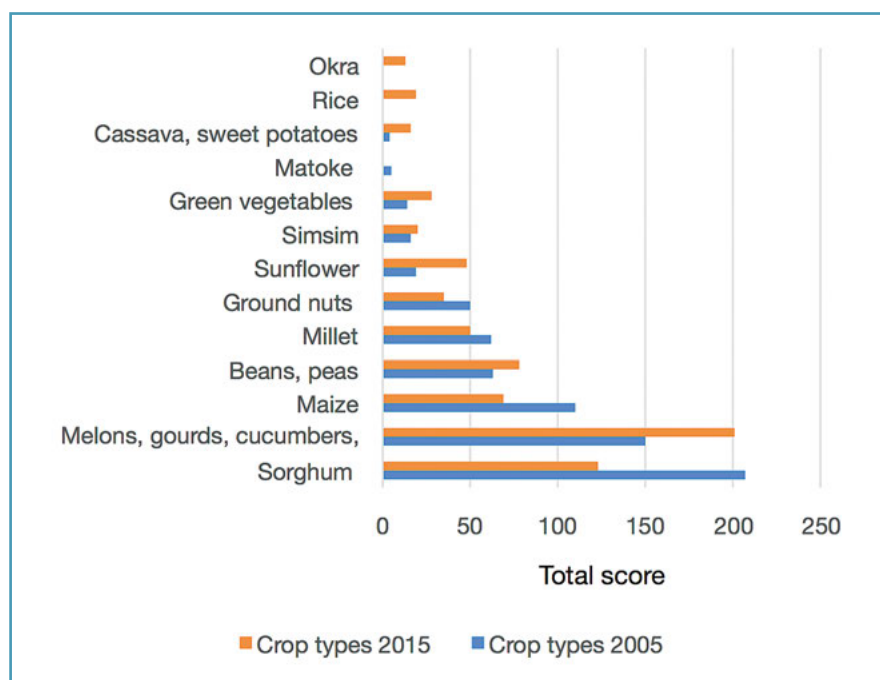
¹⁶⁴ Despite the changes, sorghum remains the most important crop. Women also mentioned that as there are many varieties, sorghum could be planted and harvested early, or later and produce a heavier crop. Plantings could therefore be phased through the growing season and take into account taste, storage, and a range of other important factors.

¹⁶⁵ The face of the sunflower was thought to be able to curse people, but this belief has now been dispelled.

¹⁶⁶ The reduction of melons, gourds, cucumbers, and pumpkins in the agro-pastoral areas was attributed to the reduction in milk availability, as these crops are used for milk processing and storage, eaten with milk, and used for ceremonies. The increased importance in agriculture areas reflects more milk availability, the increasing importance again of traditional ceremonies, and increasing sales opportunities to households in neighboring districts.

¹⁶⁷ Rice is an increasingly important crop in southern Karamoja. Typically, it is grown by the neighboring Bugishu people, who rent wetland areas for planting. While rice farming is helping to increase production in the sub-region, several key informants suggest that much more has to be done to ensure the sustainable management of wetlands for future generations.

Figure 7. Trend in planting by crop type, agricultural zone, 2005 to 2015



Note- data derived from proportional piling with 7 groups of women.

The review team also asked the women's groups to provide information on: the choice of field sites; cultivation methods; area planted; source of seeds; use of fertilizer;

labor profiles; yields and associated contribution to food security; storage; and use. See Table 5; responses in blue italics were identified by four or more groups.

Table 5. Trends in cropping practices

Trends	2005	2015
Location—choice of field site	<ul style="list-style-type: none"> - <i>Gardens near to homesteads</i> - A few gardens farther away from homesteads 	<ul style="list-style-type: none"> - <i>Gardens around the homestead</i> - <i>Security permits cultivation of more fertile fields farther from the homesteads</i> - Soils in the APZ are becoming exhausted¹⁶⁸ - More households are migrating to the AZ - Land scandals—the sale of land to investors—are increasingly common in the AZ
Cultivation method	<ul style="list-style-type: none"> - <i>Poorer households used “akutai” or hand hoes</i> - <i>Richer households had ox ploughs</i> - <i>The wealthy hired tractors</i> 	<ul style="list-style-type: none"> - <i>Half of all households use hand hoes</i> - <i>Some households hire oxen</i> - <i>Richer households have their own oxen, perhaps several teams</i> - More wealthier households hire tractors

Continued on next page

¹⁶⁸ The importance of soil health is increasingly recognized. A senior UN official recently stated that generating just three centimeters of topsoil can take 1,000 years and if current rates of degradation continue—an estimated third of the world's soils are already degraded—then the majority of the world's topsoil could be lost within 60 years.

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Trends	2005	2015
Area planted	<ul style="list-style-type: none"> - Area varied according to access to oxen and tractors: <ul style="list-style-type: none"> • Hand hoes: 1–2 acres • Oxen: 5–10 acres • Tractors: > 10 acres¹⁶⁹ 	<ul style="list-style-type: none"> - <i>People are trying to cultivate bigger acreages, but some households are actually cultivating smaller plots, as they do not have access to plough oxen</i> - The better-off households are hiring tractors
Source of seeds	<ul style="list-style-type: none"> - <i>Saved from previous harvests</i> - Small amounts borrowed from relatives and friends - People used to do casual work to earn money to buy seed - Some purchased in local markets 	<ul style="list-style-type: none"> - <i>Purchased from local markets/input suppliers</i> - <i>Saved from previous harvests</i> - Fewer people have the knowledge to preserve seeds well - Seeds/planting materials distributed by government and NGOs through vouchers and related schemes
Use of fertilizer	<ul style="list-style-type: none"> - <i>Little or no use of fertilizers</i> - Stalks burned as a potash fertilizer and spread on the fields 	<ul style="list-style-type: none"> - <i>Stalks burned and ash spread on the field</i> - Use of animal manure—when available—in kitchen gardens but not in the fields as difficult to transport
Labor profiles	<ul style="list-style-type: none"> - <i>Women responsible for the gardens</i> - Men involved in ox ploughing only - Children—boys and girls—assisted in the gardens, as well as some older men 	<ul style="list-style-type: none"> - <i>Women's independence and decision-making on cropping increasingly threatened by men</i> - <i>More men and women involved in casual labor on other farms and less able to manage their own plots</i> - <i>Women do the winnowing</i> - Traditional labor profiles are replaced with increased engagement of men/youth in cropping, including on their own plots
Weeds and pests	<ul style="list-style-type: none"> - <i>Traditionally one of the hardest tasks in the cropping year, as food stocks from the previous year are exhausted</i> 	<ul style="list-style-type: none"> - <i>New weeds including striga are having a very detrimental effect on yields (Mention was also made of FAW. This had a devastating impact on yields in 2017.)</i>

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¹⁶⁹ Interestingly, several key informants expressed concern that development agencies typically supported the “slightly better-off” and that too few focused on the poor and very poor. One key informant suggested that agencies involved in crop farming should work only with those who use hand tools and much less with those who have or can afford to hire plough oxen, as they typically cultivate smaller plots and have few, if any, livestock. If through assistance these households can achieve food security, then it becomes possible for all.

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Trends	2005	2015
Yields and contribution to food security	<ul style="list-style-type: none"> - <i>Adequate harvests in a good year were able to support a household for a year</i> - Yields vary to year. In a good year 0.5–1 metric ton/acre, less in a poor year, the result of inadequate or erratic rain, pests, and diseases or weeds - Other crops grown either as inter-cropping or in the field margins 	<ul style="list-style-type: none"> - <i>Good harvests do not maintain poorer household for a year,¹⁷⁰ as they sell more to pay off debts and to meet household needs—medical/school fees and purchase of livestock</i> - Yields similar, unless crops planted earlier - Households with the means plant and harvest more - More inter-cropping - Erratic rains, weeds, pests, and floods have affected harvests in recent years¹⁷¹
Storage	<ul style="list-style-type: none"> - “Edula” (traditional granaries), typically 3–5 in each household. Sizes varied with local production levels 	<ul style="list-style-type: none"> - A mixture of traditional granaries, sacks, and silos - Sacks used when the yields are small
Use	<ul style="list-style-type: none"> - Home use - Shared with family and close friends - Traditional ceremonies - Bartered for livestock 	<ul style="list-style-type: none"> - Home consumption - Sales increasingly important as a source of cash - Some used for brewing and hence income generation

Note – data derived from 14 focus group discussion with women; responses in blue italics were identified by four or more groups.

Key points identified by the women included that improved security had enabled household members to travel farther to areas of better soils to plant seasonal crops. They also added that all households now recognize the importance of planting larger fields but that poorer households are unable to plant large areas, as they are dependent on hand tools. In contrast, richer households typically use oxen for ploughing, while very rich households use a combination of oxen and tractors. The women continued that richer households therefore have a better chance of achieving household food security than poorer households. They also said that many richer households own and cultivate a number of different gardens, with some used for food crops and others for sales. They also noted that few households use fertilizer or

manure, as the former is too expensive and the latter difficult to transport to the fields.

As has been mentioned, the government, development partners, and markets offer a wider variety of seeds; this is reflected in the planting of a wider diversity of crops. The women’s groups however confirmed that seed saving remains important, in particular for more traditional crops and varieties that are less widely available in the markets. The women also noted that traditional labor profiles are increasingly blurred, with men taking on an increasing range of work in the cropping calendar, including cultivating, planting, weeding, and harvesting.¹⁷² A number of women’s groups mentioned that they feel less responsible for crop farming than in the past, and several

¹⁷⁰ Without access to plough oxen, households are unable to cultivate more than 1.5 acres and therefore are unlikely to achieve household food security. Furthermore, poorer households inevitably focus on cereal production (sorghum and maize) for calories as opposed to protein-rich legume crops that produce smaller yields per acre. This tends to compound under-nutrition in children.

¹⁷¹ Both 2016 and 2017 were average-to-poor years, 2016 due to erratic rainfall and 2017 because FAW devastated the maize crop for many, in particular poorer households that tend to plant later.

¹⁷² This is particularly true for the true Karimojong but less true for the Dodoth, Nyakwai, and Tepeth, whose men have a longer history of engagement in cropping.

individual women mentioned that there is as a result more conflict around decision-making, including who does what, where, and when in the fields. The women also observed that as poorer households have fewer livestock, that they are forced to sell crops—including from the fields when prices are low¹⁷³—in order to pay off debts and to meet other household needs. Crops that are harvested for home consumption are typically harvested and stored in “*edula*,” traditional granaries, and in improved silos and storage bags that have been provided—for free or at subsidized costs—by development partners.

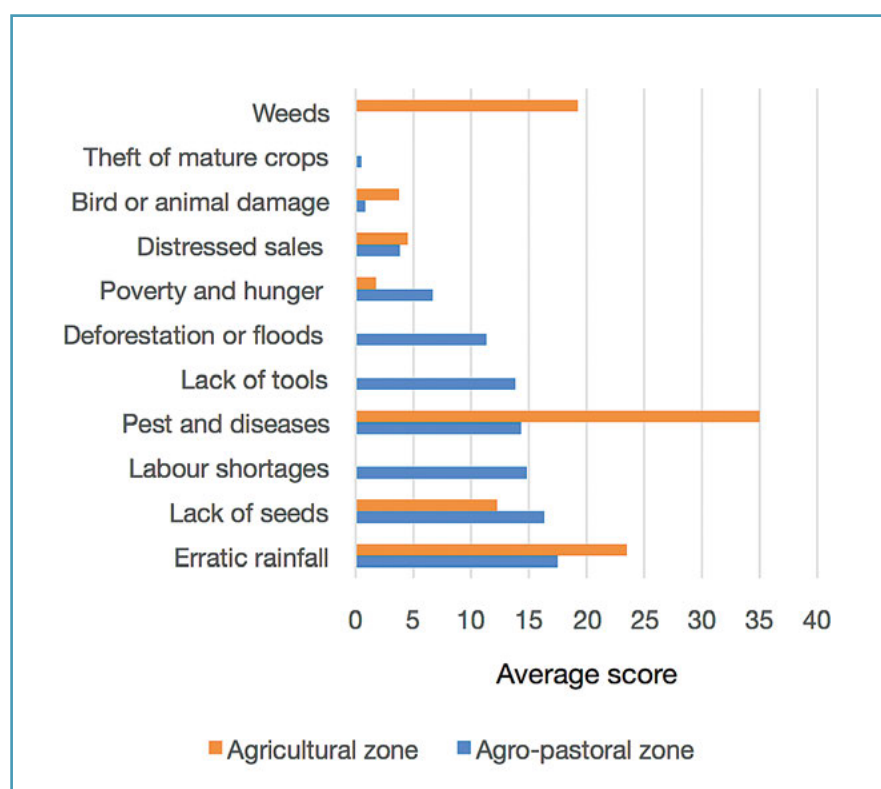
Finally, the women said that there are few differences in yields and that any differences typically reflect rainfall/soil moisture and associated pests and diseases and weeds in that year. They also noted that yield losses to weeds also reflected household labor availability. The women confirmed what was learned through the policy review, that year-by-year household food security remains an impossible challenge for many, in particular poorer

households that cultivate modest plots. The women therefore confirmed the view that has been expressed by policy analysts and key informants that crop farming is not a tried-and-tested escape route from poverty for the very poor.

Key question 2 (crops): What are the main crop production constraints and what are the main technical innovations and developments that are supporting improved production?

The women’s groups were asked to provide information on major production constraints and associated, useful indigenous coping strategies and development interventions that have helped them to overcome production constraints. For this, use was made of the proportional piling method, and the findings are presented in Figure 8 and Table 6 below. In Table 6, responses that are presented in blue italics were cited by more than four groups.

Figure 8. Crop production constraints by zone



Note – average scores derived from proportional piling with 4 women’s groups in the agricultural zone, and 6 women’s groups in the agro-pastoral zone.

¹⁷³ Key informants provided useful information on food prices, confirming that in some years poor households sold sorghum from the fields for as little as Ush5–800/kg, only to buy back later in the same dry season for Ush1,300–2,500/kg and in some years even Ush3,200/kg. One Agricultural Officer suggested that in order to be successful, households were increasingly required to plant between 3–5 acres and also to manage separate commercial and household food security gardens. The informant noted that this was beyond the capacity of most poor families.

The responses provided by women in the agro-pastoral and agricultural zones were rather different. For example, the women in the agro-pastoral zones identified erratic rainfall, lack of seeds, labor shortages, pests and diseases, and lack of tools as the most important production constraints. Other less important constraints included floods as a result of deforestation, and poverty and hunger—which if combined with labor shortages would have been the most significant constraint—distress sales, bird and animal damage, and theft. Rather disturbingly, the group in Rupa sub-county, Moroto District reported six years of erratic rains and either poor or failed harvests.¹⁷⁴ Specific mention was also made by a number of groups of the devastation caused by FAW in 2017, in particular among households that planted rather later in the season, when infestations had built up. A number of groups also complained that OWC and some NGOs provided the “wrong seed at the wrong time.”

In contrast, in the agricultural zone, the priority constraints were listed as pests and diseases—including the FAW outbreak in 2017 that had such devastating impact on yields—erratic rainfall, weeds, lack of seeds, distress sales, bird and animal damage, and poverty and hunger. It is worthwhile noting that because of the increased rainfall in the wetter “green belt,” weeding requires considerably more labor, and this is a limiting production factor for poorer households, in particular for those that are unable to purchase adequate food. A number of women’s groups noted that some people seek to manage hunger, in particular during the cropping season, through the increased use of *waragi*. They however went on to note that individuals who are heavily dependent on *waragi* are less able to manage their gardens, as they are only able to work for a few hours each day. Their gardens typically suffer reduced yields as a result of weed infestation. Finally, several groups noted that striga is a new and pernicious weed that is affecting yields. They said that this weed is very deep-rooted and hard to eradicate.

Table 6. Production constraints, local innovations, and development interventions

Constraints	Local innovations	Development interventions
Erratic rain and drought	<ul style="list-style-type: none"> - <i>Traditional rituals and invocations for rains</i> - Digging channels to bring rainwater runoff on to the fields 	<ul style="list-style-type: none"> - <i>Distribution of watering cans for kitchen gardens near water points</i> - EWS information - Planting of trees - Training on demonstration farms encourages good husbandry, such as planting in straight lines for easy weeding, soil and water conservation, and weeding - Silos reduce pest damage and increase availability of seed
Pests and diseases	<ul style="list-style-type: none"> - <i>Smoking with local bitter herbs</i> - Selection of resistant seeds for the next year 	<ul style="list-style-type: none"> - <i>Government has distributed pesticides, including for FAW</i>
Lack of seed	<ul style="list-style-type: none"> - <i>Saving seed from year to year</i> - <i>Seed sharing</i> - <i>Purchase in the markets</i> - Working in neighbor’s fields for seed 	<ul style="list-style-type: none"> - <i>Purchase in the markets</i> - <i>Distributions from government and NGOs</i>
Floods	<ul style="list-style-type: none"> - <i>Digging cut-off drains to take water away from the fields</i> 	
Birds and animals	<ul style="list-style-type: none"> - <i>Bird scaring from platforms</i> - Hunting and trapping 	

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¹⁷⁴ This was confirmed by a number of key informants.

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Constraints	Local innovations	Development interventions
Shortage of tools	- <i>Purchase of tools from local craftsmen and markets</i>	- Government and some organizations have provided oxen and chains for ox ploughing
Shortage of labor for weeding	- Hiring communal labor - Charcoal production for cash to buy food for casual labor - Mulching	- Hiring casual labor
Poverty and distress sales	- Charcoal making for income generation	- Food/cash for work can help households hire labor and prevent distress sales

Note – responses from 4 women’s groups in the agricultural zone, and 6 women’s groups in the agro-pastoral zone; responses in blue italics were mentioned by 4 or more groups.

As indicated in the Table 6 above, the main local innovations include: traditional rituals and ceremonies to address drought and erratic rainfall; the use of locally available bitter herbs to “smoke” the crops and control pests; saving seed, seed sharing, and purchasing seed in local markets to address seed needs; digging cut-off drains in the upper parts of fields to reduce flood damage and waterlogging; building platform to scare birds; and the purchase of tools from local craftsmen and in markets. Particularly valued development interventions include the distribution of watering cans and pesticides, and the opportunities to purchase seed in local markets or to benefit from government and NGO seed distributions. The relatively modest number of listed development interventions would suggest there are real opportunities for innovations that address productivity constraints, in particular if the learning involves women.

Key question 3 (crops): To what extent are weather-related changes impacting on household crop production?

The women’s groups were asked to offer their insights on weather-related changes, and how, if at all, change had impacted on household crop production. The women’s groups were unanimous that there has been profound weather-related change in the last two decades, including in the onset and reliability of the rains. For example, some groups suggested the rains started a full month later, while others suggested that while the rains started on time, they were less reliable, in particular in the first half of the

season. Many groups said they particularly feared a break in the rains shortly after planting, as the young seedlings had not developed a robust root system and were therefore particularly vulnerable to moisture stress. The women also noted that the rains were more reliable in the second half of the season, and that in some years second plantings were more successful than in the past. It was also stated that it was more difficult to know when exactly was the best time to plant.¹⁷⁵

Women’s groups in both zones also reported that very heavy rain and flood damage was much more common than it was 20 years ago. Damage that was listed included increased rainwater runoff resulting in sheet erosion—including the washing away of seeds and young seedlings—and the onset of gully erosion in some areas. Gully erosion was also linked to increased deforestation. It was also mentioned that there is an increasing number of flood events on the banks of rivers—which are valued planting sites, as the soils are fertile—that are the result of heavy rain storms and increased runoff, increasingly including runoff from towns and roads.

Based on the information collected and collated from men’s and women’s groups in both the agro-pastoral and agricultural zones, the review team has developed a simple, scenario-based climate change adaptation guide. This is presented in Table 7.

As can be seen, both the erratic and lower rainfall and the unchanged scenario share the same “climate-smart

¹⁷⁵ Key informants were also unanimous that climate change has affected weather patterns, citing the increasingly erratic delayed onset of the wet season in some areas and the early or delayed withdrawal in others. One LC representative also spoke of six consecutive years of erratic and poor rainfall in Rupa sub-county as evidence of climate change. A number of informants also suggested that it would be increasingly necessary for households, in the APZ in particular, to embrace climate-smart agriculture practices if they are to continue to invest in seasonal cropping. Several other informants also made the point that more had to be done to protect soil and arrest and reverse soil degradation if progress was to be made in increasing productivity.

Table 7. Climate change adaptation model

Scenarios	Climate-smart response
Erratic and lower rainfall scenario	<ul style="list-style-type: none"> - Dryland farming systems - Transhumance livestock production systems - Alternative livelihoods - Drought risk management
Unchanged scenario	<ul style="list-style-type: none"> - Dryland farming systems - Transhumance livestock production systems - Alternative livelihoods - Disaster risk management
Consistent and heavier rainfall scenario	<ul style="list-style-type: none"> - Commercial crop farming - Commercial dairy farming - Alternative livelihoods

responses,” including dryland farming, transhumance livestock production, alternative livelihoods, and drought/disaster risk management. Only in the third scenario of consistent and heavier rainfall is commercial crop farming and commercial dairy farming, together with alternative livelihoods, regarded as an appropriate climate-smart response. Moving to commercial crop farming and dairy farming therefore potentially increases the risk for poorer households in the sub-region, in particular in the agro-pastoral zones but also in the less-fertile areas of the wetter “green belt,” in particular if pests and diseases in both crop farming and livestock production are not better controlled than they are at present.

Key question 4 (livestock and crops): To what extent are livelihood changes reflected in household income, expenditure, and household food consumption?

Information on dry-season household food consumption¹⁷⁶ was collected from three women’s groups in the agro-pastoral zone and six women’s groups in the agricultural zone, while information on dry-season income and expenditure patterns was collected from four men’s groups in each of the two zones. For each, comparative information was collected from 2005 and 2015 to better understand trends. The information on food types is presented in Figure 9, and the information on income and expenditure is presented in Figure 10.

In relation to dry-season household food consumption, it is interesting to note that there have been significant changes

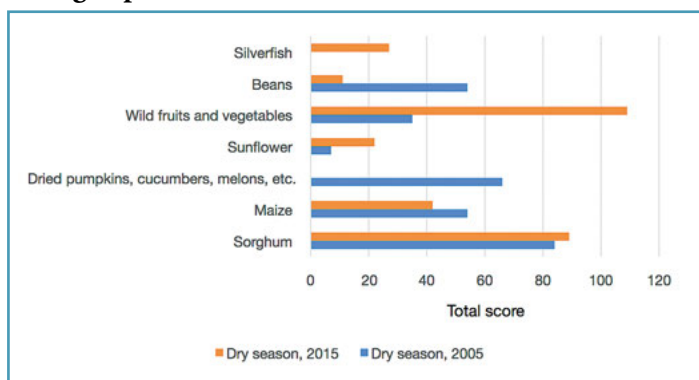
even within the last decade. For example, in the agro-pastoral zones, household now consume little or no dried pumpkins, cucumbers, or melons in the dry season, which is consistent with a reduction in the area planted with these crops as presented in Figure 6 above. The women also report a reduction in the dry-season consumption of beans. In contrast, they report a substantial increase in the consumption of wild fruits and vegetables, sunflower, and silverfish. Similarly, in the agricultural zone, the women report decreases in the dry-season consumption of sorghum flour, beans and peas, maize, and relief food, and corresponding increases in the consumption of cucumbers and pumpkins, cassava flour, and sunflower. These dietary shifts appear to reflect two influences, the first the need to find replacement sources of proteins for the decline in the availability in milk, and second the increased variety of seeds in markets and from government and development partner interventions.

It is worthwhile noting that with the exception of silverfish—imported from neighboring sub-regions—and some wild meat, the Karimojong now appear to consume very little animal protein in the dry season. It is perhaps little wonder that large numbers of children in the sub-region are under-nourished. This and related trend information on household food choices can perhaps help inform agriculture extension messaging, in particular so that poorer households are encouraged and supported to inter-crop with beans and peas. Also, more agencies might be encouraged to support restocking with goats, including the Galla cross-breed that milks well.

¹⁷⁶ Time did not allow the collection of information on both the wet and dry season. It was therefore decided to opt for collecting information on the dry season, as it is when household food and income needs are the highest. At this time, in addition to other needs, households typically must buy food, as very few households in Karamoja are food self-sufficient. The review team recognizes that more work could be done therefore to better understand food consumption and income and expenditure patterns.

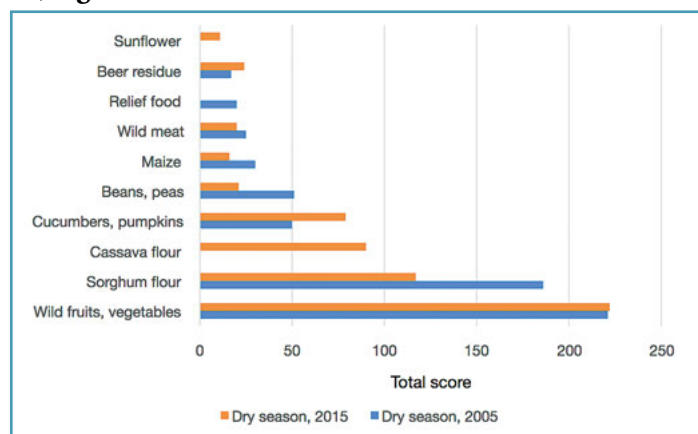
Figure 9. Trend in dry season household food sources, 2005 and 2015

A) Agro-pastoral zone



Note – total scores derived from proportional piling with 3 women's groups.

B) Agricultural zone

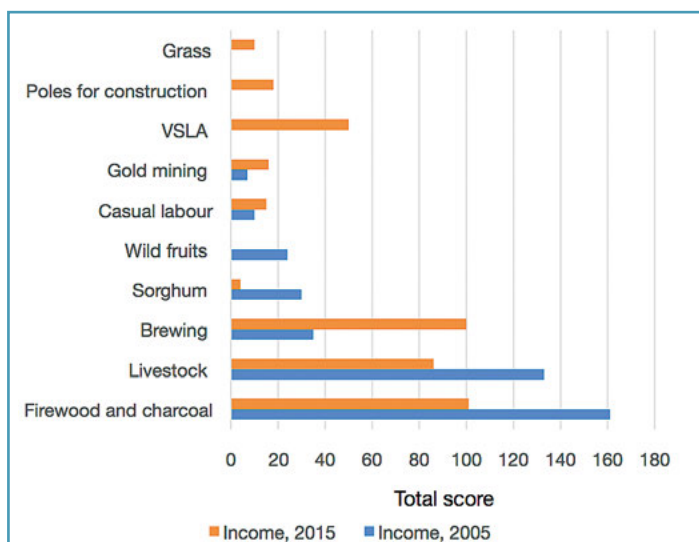


Note – total scores derived from proportional piling with 6 women's groups.

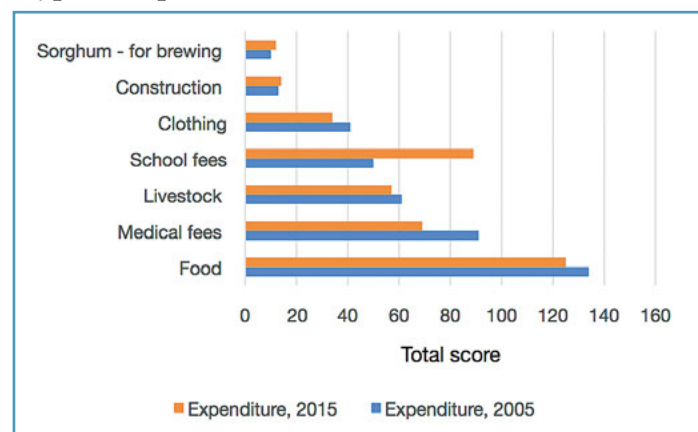
Figure 10. Trend in dry season household income and expenditure by zone, 2005 and 2015

A) Agro-pastoral zone

Sources of income

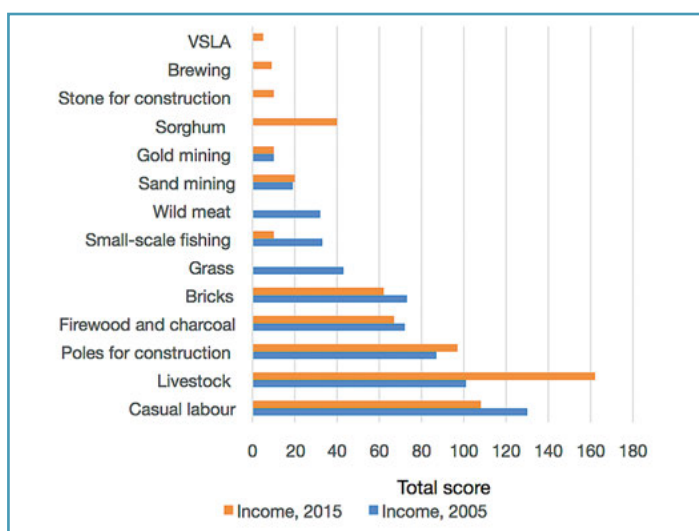


Types of expenditure

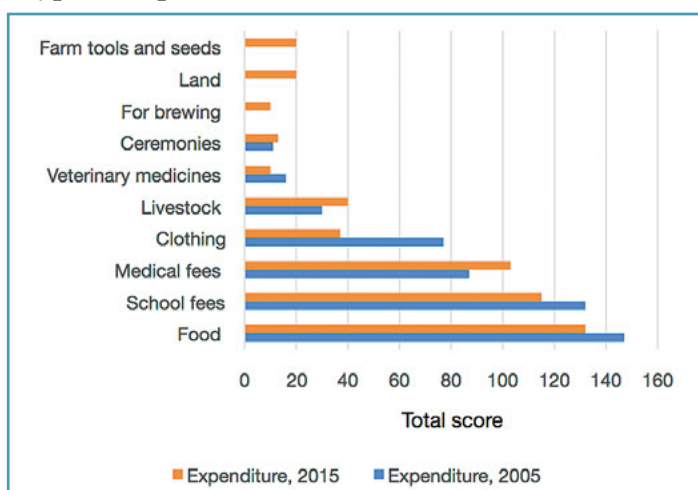


B) Agricultural zone

Sources of income



Types of expenditure



Note – total scores derived from proportional piling with 4 men's groups in each zone.

As a result of time pressures, the discussions on household income and expenditure patterns were curtailed and limited to dry-season trends only. Despite this, the discussions revealed useful findings. For example, it was learned that within the agro-pastoral zone, there have been sharp declines in income from the sale of charcoal, livestock, sorghum, and wild fruits and an increase in income derived from the sale of locally brewed beer, loans from village savings and loans association (VSLA) groups, the sale of poles and grass for construction, and casual labor, including gold mining. In contrast, there are fewer trend differences of major income sources in agricultural zones, with the exception of the increased sales of livestock,¹⁷⁷ which appears to undermine the increasing importance of livestock in all livelihood zones. There have been some changes in minor income sources, including discontinuity or reduced importance in the sale of grass for thatching, small-scale fishing, and hunting of wild meat and new sources of income, including the sale of sorghum, the sale of stone for construction, brewing, and VSLAs.

Turning to expenditure, there are strong similarities between expenditure on food, school and medical fees, livestock, veterinary medicines, and ceremonies within the agro-pastoral zone between 2005 and 2015. In contrast, there has been a significant reduction in expenditure on clothing. There have also been increases in expenditure on brewing, and on the purchase of land, farm tools, and seeds. In the agricultural zone, expenditure patterns are broadly consistent, with the exception of school fees. These appear to have increased significantly, which suggests that education is regarded as of increasing importance.

This “snapshot” of dry-season household income and expenditure trends appears to confirm that, within a relatively short period of just one decade, local labor markets are responding to new income opportunities, although the bulk of these opportunities are poorly paid, casual in nature, and “extractive” of locally available natural resources. Sadly, they are unlikely to transform lives and livelihoods, which appears to underline the importance of a further expansion in the provision of education and skills training. Only in this way will the Karimojong be able to compete successfully for the better jobs that are on offer within and beyond the sub-region.

Encouragingly, the snapshot expenditure review appears to confirm that the importance of education is already well understood in the sub-region and that households are investing accordingly. Importantly however, all groups noted the significant increase in school fees and expressed

their frustration with the additional demands that education made on all households, but in particular on poor and very poor households. This was confirmed by all key informants, several of whom noted that fees in the best schools in the sub-region are simply beyond the capacity of most households,¹⁷⁸ especially in years of poor harvests and other shocks. Recognizing that Karamoja is the poorest sub-region in Uganda, it might be appropriate for development partners to take this matter up with government as a policy issue.

Finally, in this section and more positively, it appears that NGOs that have pioneered VSLAs are beginning to have a positive impact. This should be a source of encouragement to all involved and should perhaps help to guide development investment decisions. Speaking about their experiences with VSLAs, several men also noted that, recognizing that women were better money managers than men, they had delegated all money-related issues to their wives.

¹⁷⁷ Livestock are typically sold by poorer households in the dry season in order to meet other household needs, including food. The increase in sales should therefore not be perceived as a straightforward “development.”

¹⁷⁸ Indeed, the team met a number of children who had either been withdrawn or had failed to return to school, as they were unable to secure the school fees.

RECOMMENDATIONS

The recommendations are divided into three categories: a single generic recommendation, followed by recommendations for the livestock and crop farming sub-sectors.

Karamoja is Uganda's poorest sub-region and has a unique agro-ecology and a unique development history. These aggregated differences suggest it is highly unlikely that carefully tailored agriculture strategies and thinking appropriate for other regions in Uganda will be either relevant or transferable to Karamoja. Rather, it would seem that Karamoja will require specialist dryland strategic and technical support in order to make best possible use of its crop farming and transhumance livestock production opportunities and ensure synergies between the two.

As part of this recommendation, it is recommended that coordinated, evidence-based learning should be supported, including more investment in robust and external impact assessment, technical working groups, and ex-post evaluation of pilot projects. Wealth- and gender-differentiated impacts are central to understanding project performance.

RECOMMENDATIONS FOR THE LIVESTOCK SUB-SECTOR

- Good local development requires collective effort and a common vision that inspires stakeholders and coordinates and harmonizes the individual contributions of individual organizations. It is recommended that government, donors, and implementing partners use the opportunity afforded by the KIDP 2015–2020 and future iterations to develop a shared long-term vision for crop farming and transhumance livestock management systems that are secure, productive, and equitable. It is recommended too that this vision be informed by participatory and inclusive policy processes that include agro-pastoral and farming communities.
- Communities in the agro-pastoral and agricultural zones share a common aspiration to maximize herd growth, ensure sufficient milk for household consumption, and facilitate the sale of animals when cash is needed for food and non-food items, e.g., school fees, health costs, and veterinary medicine. It is therefore recommended that livestock projects establish a dialogue with livestock owners that will help accelerate progress towards these outcomes. These are expected to include: continued support for peace-building and

good governance; strengthening animal health services to combine vaccination, treatment, and quality control of veterinary medicines; and enhanced mobility for improved rangeland management. Consideration may also be given to the Livestock Emergency Guidelines and Standards (LEGS) for improved emergency drought preparedness.

- It is increasingly recognized in industrialized and developing countries that sustainable livestock systems can use “traditional” or indigenous breeds, which are often well adapted to local conditions. It is therefore recommended that NabuZARDI take advantage of the increasing flows of development resources to establish breeding herds of indigenous cattle, goats, sheep, and camels and through careful breeding produce more productive animals. Sires and dams can subsequently be shared with local herders for upgrading their herds and flocks.

RECOMMENDATIONS FOR THE CROP FARMING SUB-SECTOR

- Karamoja can be sub-divided into pastoral, agro-pastoral, and cropping zones. These three zones are closely connected socially, culturally, and economically. Knowledge, skills, and practices have been shared over generations. It is recommended that development partners that engage in cropping support these connections and information flows, and that innovation is not siloed in one area or sector at the expense of the others. It is therefore recommended that donors support a Karamoja dryland farming learning group to facilitate the sharing of evidence-based good practice that addresses current productivity constraints; this group could comprise government experts, researchers, donors, NGOs and community and private sector actors. It is expected that the work of the group would include: safeguarding and improving soils and water sources; protecting and expanding seeds of choice, including indigenous germ-plasm; consolidating and scaling up integrated pest management; improving agricultural engineering tool design e.g. to address the limitations of disc ploughs in Karamoja; and advances in post-harvest technologies that combine indigenous and new knowledge. It is also strongly recommended that such a learning group focus increasing attention on poorer rather than the richer households, and

that increased efforts are made to create and maintain a dialogue with farmers that addresses local priorities rather than meeting donor requirements.

- Future seasonal cropping will be increasingly determined by global climate change as it impacts upon localized changes in weather patterns, including the onset and duration of the rains. Retaining soil moisture will therefore become increasingly important as a climate adaptation strategy. It is therefore recommended that efforts are made now to connect with and learn from other innovative and adaptive practices in sub-Saharan Africa, including re-greening in West Africa and conservation agriculture in Southern Africa, as well as work in Uganda supported by the National Cooperative Business Association CLUSA International. Perhaps development partners might consider prioritizing a program of exchange visits to other dryland regions, to include researchers, production officers, and technical staff of donors and implementing partners, visits that might result in a stimulus to local innovation and practice in dryland farming systems. If such an initiative were to gain ground, it is suggested that NabuZARDI be invited to play a facilitative role to help assess and document impact and outcomes of promising innovations that can be shared with agriculture sector stakeholders.

As part of this recommendation, it is proposed that a review be made of the impact of tractor-mounted disc and ox-drawn mouldboard ploughs on soil organic matter and therefore its water retention properties and ways found to mitigate negative outcomes. As part of this trial, it would also be useful to trial keyline and ripper technologies as alternatives to ploughing. This type of work has not been done before in Karamoja.

- Karamoja's agro-ecology is unique in Uganda, as it is the only semi-arid sub-region. Despite the vagaries of the agro-ecology, the Karimojong have been successful in developing an integrated crop farming and transhumance livestock production system over more than 200 years. It is strongly recommended that development partners take a wider view of agricultural inputs support in the sub-region, in particular seed, and support locally appropriate alternatives such as seed sharing, seed fairs, and other community-based seed initiatives that involve rather than marginalize women. As part of this recommendation, the mapping of traditional sorghum landraces should be extended

beyond Moroto and Napak districts, to show yields, characteristics, and susceptibilities, and the findings documented and widely disseminated.

- Crop pests continue to be an important production constraint in Karamoja, and women in both the agro-pastoral and agricultural zones recognized the impact of pests and diseases, including Fall armyworm (FAW). It is recommended that researchers, together with the technical staff of government and implementing partners, collate and produce a compendium of evidence-based integrated pest management that includes local indigenous knowledge.
- The main report describes how crop sales direct from fields are distress sales that result in poor and indebted households selling today what they need to buy back tomorrow at higher prices. It is recommended that efforts be made to end sales direct from fields. There have been some positive experiences with community-level cereal banks in Karamoja, and this and similar approaches might be scaled-up, but only after careful evaluation and a review of lessons learned from other areas of Uganda.

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ANNEX I. TERMS OF REFERENCE

The USAID/Uganda Karamoja Resilience Support Unit (KRSU) provides programming, policy, and coordination support to donors, government, and NGOs in Karamoja, with a focus on evidence-based analysis and learning. Specifically, the KRSU focuses on:

- Assisting USAID/Uganda to strengthen its resilience programs and policy support in Karamoja
- Providing strategic, programmatic, and logistical support to the multi-donor Karamoja Development Partners Group (KDPG)
- Providing capacity-building support to the government of Uganda (GoU) for their policies and programs in Karamoja
- Generating an evidence base and ensuring analytical support using reviews, studies, and evaluations and similar activities.

Further information about the KRSU is available at www.karamojaresilience.org.

KRSU, through a series of consultative process with donors, multilateral agencies, and the Office of the Prime Minister (OPM) identified and prioritized specific topics/thematic areas for analyses, studies, and applied research. One of the topics identified includes “understanding the trends in agriculture-based livelihoods and the impact on household and community resilience in Karamoja.”

In most parts of Karamoja, extensive livestock production coupled with opportunistic crop farming has long been a way of life. However, due to many factors, including raids, insecurity, forced disarmament, drought, and livestock diseases, many poor households today have few or no livestock. Hence, many households are forced to rely on crop production, often with environmentally maladaptive practices such as firewood collection and sales, or charcoal production and sales. Wage labor is also important, but with wages consistently low in the unskilled job market.

Recent food security and nutrition assessment (FSNA) reports revealed that there are increasing number of households who are engaged in farming activities as their primary livelihood due to the loss of their animals and their inability to regain/rebuild herds.

While traditional pastoral livelihoods are well adapted to Karamoja’s dry and unpredictable climate, the growing dependence on agriculture can make communities more

vulnerable to rainfall variability and dry spells. Both urban and rural households also experience pressures associated with price shocks, which result from poor regional harvests and market fragmentation (as evident from the significant price disparities across areas of Karamoja), flood impacts on poor road infrastructure, and possible price manipulation by traders.

Agriculture is seen by government, and some development partners, as a pathway to resilience for Karamoja, and agriculture has a higher policy profile relative to livestock production. Various agriculture projects and programs are underway, as is a forthcoming DFAP with a focus in agricultural areas.

Review purpose and specific activities

The purpose of the review is two-fold:

- A policy-level review to assess the technical and social feasibility of agriculture-led development policy in Karamoja as a region-wide policy, vs. livestock development, while taking account of location-specific agro-ecological differences, and possible synergies between agriculture and livestock development
- A programming-level review of the main agricultural development strategies and interventions used in Karamoja, to assess the strengths and weaknesses of the different approaches.

Specific activities

Policy review:

1. Review the formal policies of the GoU on development in Karamoja, and the strategies of the main aid donors and implementing agencies.
2. Supplement the review of documents with individual interviews with key stakeholders, e.g., in government at central and local levels; community members; donor and NGO staff; researchers and academics.

Programming strategies:

1. Review the agricultural and related marketing strategies of government and aid agencies, as described in relevant project proposals, design documents, and similar literature; analyze the

causal logic of each of the main strategies or types of intervention against agro-ecological, social, and other factors in Karamoja.

2. Review evaluations or impact assessments of agriculture projects in Karamoja and assess the extent to which different approaches are achieving the expected impacts on livelihoods, food security, poverty, and nutrition.
3. Complement programming activities 1 and 2 above with field visits, direct observation of agriculture projects, and local interviews with community members and key informants.

Deliverables

The consultant will prepare:

- A draft report and a verbal briefing to USAID/KDPG on the draft report, and seek feedback
- A final comprehensive review report
- A policy brief on agriculture and resilience in Karamoja.

The structure of the report should follow the structure of the TOR, with specific sections on agriculture policy and agricultural programming. The report should include the following.

Under the policy review:

- An overview of current trends of off-herd/non-livestock-based livelihood strategies and outcomes with emphasis on the expansion of agriculture/crop production-based livelihoods
- An analysis of current contexts and related risks and vulnerability associated with the increasing trend towards agriculture and off-herd/non-livestock-based livelihood options, as well as potential opportunities
- An analysis of the policy environment in Karamoja, and the technical and social rationale for agricultural development vs. other livelihoods
- Policy-level recommendations related to agricultural development, including processes of policy reform, policy dialogue, and evidence gathering.

Under the programming review:

- A brief historical overview of agriculture programming in Karamoja and its impacts
- A description of the recent and ongoing agriculture production and marketing projects in Karamoja, including the main implementation strategies, and analyses of the causal logic of each of the main approaches
- A description and analysis of recent/current projects in terms of impacts and sustainability; for smaller projects, provide commentary on scaling-up potential and constraints
- Programming-level recommendations, including related evidence gathering and learning needs.

Timeframe: A 40-day input is required.

Location: Kampala and Karamoja.

The consultant will employ a combination of methods, including a desk review of available agriculture programs and policy documents, and FGDs and KIIs with development actors and community members.

Skills and experience:

- At least 15 years' professional experience of development programs in the pastoralist areas of EA
- At least 10 years' working knowledge of policy research and program evaluations
- At least 10 years' experience of USAID programs and projects in East Africa.

ANNEX 2. ITINERARY

Date	Venue	Activity
February 2	Birmingham International Airport to Entebbe Entebbe to Kampala	Travel
February 3	Feinstein office	Literature review
February 5	Feinstein office Centre for Basic Research (CBR)	Briefing meetings with KRSU staff Finalization of methodology Preparation for inception meeting Meeting with Frank Emmanuel Muhereza
February 6	FAO office Kampala	Meetings: <ul style="list-style-type: none"> - Abdul Jawad, Food Security and Water Management Specialist - Johannes Rumohr, Head of Water Resource Management, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) - Sean Granville-Ross, Regional Director, Mercy Corps
February 7	Feinstein office Kampala	Inception meeting with Karamoja Donors Group Meetings: <ul style="list-style-type: none"> - Amodoi Peter, OPM, Ministry of Karamoja Affairs - Researchers, NARO-Nabuin - Martin Fowler, Agricultural Advisor, USAID
February 8	Feinstein office Kampala	Literature review Meeting with Alastair Taylor, Technical Adviser, former Karamoja resident
February 9	Travel to Karamoja Moroto District	Meetings: <ul style="list-style-type: none"> - Amodoi Peter, OPM - Lemukol Jimmy, Private Sector Chair, Moroto District
February 11	Moroto District	Meetings: <ul style="list-style-type: none"> - Abura Vincent, Chair of Board, KADP - Loumo Charles, Inspector of Schools, Napak District and Canon in Church of Uganda
February 12	Moroto District	Visit Naitakwae market Induction training: Charles Hopkins with the research team Meetings: <ul style="list-style-type: none"> - Dr. Robert Mwadime, Chief of Party (COP), Apolou Activity, Mercy Corps - Maggie McLough, Deputy Chief of Party (DCOP) - Emmi Moorhouse, Gender Officer

February 13	Moroto District	<p>Pre-test of the research methodology, Atedoi village, Rupa sub-county</p> <p>Transect drive to Lokisile Dam</p> <p>Debrief with research team and refinement of methodology</p> <p>Meeting with Akot Christine, LCV Vice Chair</p> <p>Courtesy call, Resident District Commissioner's Office</p> <p>Meetings:</p> <ul style="list-style-type: none"> - Marco Stefan, Justice and Peace Department, Caritas - Dr. Rosinico, Health Department, Caritas
February 14	Moroto District	<p>FGDs:</p> <ul style="list-style-type: none"> - Lokaal, Looarengak Parish, Rupa sub-county - Arecek, Nadunget sub-county
February 15	Napak District	<p>FGDs:</p> <ul style="list-style-type: none"> - Kodike, Nabwal sub-county, Nabwal Pariah - Kobulin, Lorengchora Town Council <p>Meeting: Rose Locham, Former Women's MP, Moroto District</p> <p>Visit Aracek Dam</p> <p>Meeting: John Lotee, LCV Councillor, Katikekile sub-county</p>
	Moroto District	
February 16	Nakapiripirit District	<p>FGDs: Kamaturu, Kamaturu Parish, Lorengedwat sub-county</p> <p>Data management</p> <p>Meeting: Margaret Lotee, LCV Councillor, Katikekile sub-county</p>
	Moroto District	
February 17	Moroto District	<p>Data management</p> <p>Meetings:</p> <ul style="list-style-type: none"> - Stephen Abura, Executive Director, KADP - Abura Vincent (see above), Michael Kuskus, Jaka Robert, Aleper Paul (KADP former staff) - Dr. Rebecca Tapscott, Graduate Institute, Geneva
February 18	Moroto District	<p>Meeting: Mathew Bitagata, private veterinary practitioner</p>
	Travel to Nakapiripirit District	
February 19	Nakapiripirit District	<p>FGDs: Lokoreto, Namalu</p> <p>Meeting: Juliano Consoli, commercial farmer</p> <p>FGDs: Lokibuyo, Loreng Parish, Loregai sub-county</p> <p>Meetings:</p> <ul style="list-style-type: none"> - Anyakun Paul Jovic, Sub-county Chief - Erot Michael, Agriculture Officer - Sara Anyakorit, Assistant Program Manager and Kaleb Okech, Senior Field Officer, ACTED

February 20	Nakapiripirit District	<p>Visit Nambole market, Lolochat sub-county</p> <p>FGDs: Nathinyonoit A, Lotaruk Parish</p> <p>Meetings:</p> <ul style="list-style-type: none"> - Helen Alinga, Agriculture Officer, Lolochat sub-county - Sylvester Onyang, commercial farmer, Namalu
February 21	Travel to Amudat, Tapac and to Moroto	Meeting: Fr. Hans Pfeiffer, Tapac Mission
February 22	Moroto District	<p>FGDs: Musas, Katikekile sub-county</p> <p>Data management</p>
February 23	Moroto District	<p>Courtesy calls:</p> <ul style="list-style-type: none"> - Ariko Angela Barbara, International Rescue Committee (IRC) - Richard Omoding, Riamiriam - Olive Lomukol, Eco-Christian Organisation (ECO) <p>Meetings:</p> <ul style="list-style-type: none"> - Amber Dierckx, Vétérinaires Sans Frontières (VSF) Belgium - Dirk Ullerich, Welthungerhilfe - Titus Masaba, Ateneo (Acting Officer in Charge) and Nachan Elizabeth, WFP
February 24	Moroto District	Transcriptions of FGDs
February 26	Abim District	<p>FGDs:</p> <ul style="list-style-type: none"> - Koya village, Koya Parish, Koya sub-county - Alimochan village, Loyoit Parish, Alerek sub-county
February 27	Kotido District	<p>FGDs:</p> <ul style="list-style-type: none"> - Nadome village, Lorikite Parish, Panyangara sub-county - Nayese, Losilang Parish, Kotido District <p>Visit NUSAFIII road construction</p> <p>Meetings:</p> <ul style="list-style-type: none"> - David Modo, RDC Kotido District - Kay Clumphy, Mercy Crops <ul style="list-style-type: none"> • Moses Opio, Livestock • Osrema Achila, Markets • Kotol Emmanuel, Livestock - Okuda Robert Kennedy, Acting District Production Officer
February 28	<p>Research team to Kaabong District</p> <p>Team leader in Moroto</p>	<p>Research team, FGD: Napeichokei village, Kalapata sub-county</p> <p>Transcriptions</p>

March 1	Moroto	Meetings: <ul style="list-style-type: none"> - Barbara Garber, PhD researcher - Mercy Crops <ul style="list-style-type: none"> • Fredrick Mpaat, Markets • Sylvia Alaso, Agriculture • Poinciana Akumu, Livestock - Stephen Abura, KADP - Abonyo Sara, Land and Equity Movement in Uganda
March 2	Moroto	Validation of findings meeting, KALIP Meeting Hall Meeting: <ul style="list-style-type: none"> - David Gatere, COP, Security, Peace and Promoting Peace, Mercy Corps - Becky Faith Nachuge, SightSavers
March 3	Travel to Kampala	
March 5	Kampala	Feinstein office: Analysis of findings with research team
March 6	Kampala	Analysis of findings with research team
March 7	Kampala	Debriefing of preliminary findings meeting with donors and implementing partners
	Travel to the UK	

ANNEX 3. CONTACTS AND KEY STAKEHOLDERS

The list of contacts and key stakeholders is presented in chronological order of the meetings.

Name of contact	Title and organizational affiliation
In Kampala:	
Frank Emmanuel Muhereza	Senior Resilience Fellow, CBR
Abdul Jawad	Food Security and Water Management Specialist, FAO
Johannes Rumohr	Head of Water Resources Management, GIZ
Sean Granville-Ross	Regional Director, East and Southern Africa, Mercy Corps
Peter Amodoi	Adviser, OPM, Ministry of Karamoja Affairs
Martin Fowler	Agricultural Advisor, USAID
Alastair Taylor	Technical Adviser, Sustainable Beef Meat Industry in Uganda, EU
In Karamoja:	
Simon Longoli	Director, KDF, Moroto
Peter Amodoi	Adviser, OPM, Ministry of Karamoja Affairs
Lemukol Jimmy	Private Sector Chair, Moroto District
Abura Vincent	Chairman of Board, KADP
Loumo Charles	Inspector of Schools, Napak District
Dr. Robert Mwadime	Chief of Party, Apolou Activity, Mercy Corps
Maggie McLoughlin	Deputy Chief of Party, Apolou Activity, Mercy Corps
Emmy Moorhouse	Senior Sexual and Gender-Based Violence Advisor, Mercy Corps
Akot Christine	LCV Vice Chairperson, Moroto District
Marco Stefan	Advisor, Justice and Peace Department, Caritas
Dr. Rossanigo Pierluigi	Technical Advisor, Health Department, Caritas
John Lotee	LCV Councillor, Katikekile (Tepeth) sub-county, Moroto District
Stephen Abura	Executive Director, KADP
Michael Kuskus	Program Manager, Tegla Loroupe Peace Foundation
Jaka Robert	Community Representative, Rupa sub-county
Aleper Paul	Community Representative, Rupa sub-county
Abura Margaret	Community Representative, Rupa sub-county
Matthew Bitagata	Private animal health technician
Dr. Rebecca Tapscott	Postgraduate Research Fellow, Graduate Institute, Geneva
David Gatere	Chief of Party, Security, Peace and Promoting Prosperity Project, Mercy Corps
Margaret Lotee	LCV Woman Councillor, Katikekile sub-county, Moroto District
Juliano Consoli	Commercial farmer, Namalu
Anyakun Paul	Sub-county Chief, Loregai sub-county, Nabilatuk District
Erot Michael	Agriculture Officer, Loregai sub-county, Nabilatuk District
Sara Anyakorit	Assistant Program Manager, ACTED
Kaleb Okech	Senior Field Officer, ACTED
Helen Alinga	Agricultural Officer, Lolochat sub-county, Nabilatuk District
Sylvester Onyang	Commercial farmer, Namalu
Fr. Hans Pfeiffer	Priest-in-Charge, Tapac Mission, Moroto District
Ariko Angela Barbara	Reproductive Health Officer, IRC, Moroto
Richard Omoding	Director, RiamRiam, Moroto
Olive Lomukol	Project Coordinator, Livelihoods, ECO, Moroto

Amber Dierckx	Junior Assistant, Monitoring and Evaluation (M&E), VSF Belgium, Moroto
Dirk Ullerich	Program Manager, Karamoja, Welthungerhilfe, Moroto
Titus Masaba	AiC, WFP, Moroto
Nachan Elizabeth	Field Monitoring Assistant, WFP, Moroto
David Modo	Resident District Commissioner, Kotido District
Kay Klumppan	Maternal Child Health and Nutrition (MCHN) Manager, Mercy Corps, Kotido District
Moses Opio	Livestock Manager, Kotido, Mercy Corps
Osremmy Achilla	Market Systems Development Officer, Mercy Corps, Kotido District
Kotol Emmanuel	Livestock Officer, Mercy Corps, Kotido District
Okuda Robert Kennedy	Acting District Production Officer, Kotido District
Barbara Garber	PhD Researcher, Moroto
Fredrick Mpaata	Market Systems Development Manager, Apolou Activity, Mercy Corps, Moroto District
Sylvia Alaso	Agronomy Extension Manager, Apolou Activity, Mercy Corps, Moroto District
Dr. Poncianah Akumu	Senior Veterinarian, Apolou Activity, Mercy Corps, Moroto District
Sara Abonyo	Project Administrator, Land and Equity Movement in Uganda
Becky Faith Nachuge	Head of Office, Moroto, Sightsavers

ANNEX 4. PARTICIPANTS AT THE INCEPTION, VALIDATION, AND DEBRIEFING MEETINGS

1. Participants at the inception meeting on February 7, 2018 at the KRSU offices

No.	Name	Designation	Organization
1.	Mesfin Ayele	COP	KRSU-Feinstein
2.	Charles Hopkins	Senior Resilience Advisor	KRSU-Feinstein
3.	Gratian Naraabah	Programme Manager - Livelihoods	CRS
4.	Vewonyi Adravan	COP	CRS
5.	Eva Gimono	Researcher	NARO
6.	Leila Ndiema	Program Support Manager	Farm Africa
7.	Patricia Elotu	Senior Program Associate	UN-WFP-RLA
8.	Sean G. Ross	Regional Coordinator	Mercy Corps
9.	Kodet John Mark	FARM Manager	NARO-Nabuin
10.	Amodoi Peter	Program Officer	OPM
11.	Paul Okullo	Director NARO-Nabuin	NARO
12.	Frank E. Muhereza	Senior Resilience Fellow	CBR
13.	Martin Fowler	Agricultural Adviser	USAID
14.	Karen Apephia Kyampaire	FSS	USAID
15.	Juma Atidra	FSS	USAID
16.	Stephen Okello		KRSU
17.	Jarvice Sekajja		KRSU

2. Participants at the validation meeting on March 2, 2018 at the KALIP Meeting Hall, Moroto

No.	Name	Designation	Organization
1.	Eva Gimono	KRSU Researcher	NARO
2.	Judith Apio	KRSU Researcher	KDF
3.	Moru Judith	KRSU Researcher	KDF
4.	Loitakori Everest	KRSU Researcher	KDF
5.	Vallence Nsabiyera	KRSU Researcher	NARO/NABUIN
6.	Kodet John Mark	KRSU Researcher	NARO
7.	David Junior Achia	KRSU Researcher	KDF
8.	David Putan	Coordinator	DDG/DRC
9.	Charles Hopkins	Resilience Advisor	KRSU
10.	Abuku Mark	D/C Person	Kaabong
11.	Dirk Ullerich	WHH Moroto	WHH
12.	Loli Mark	DAO	Moroto DLG
13.	Tebanyang Emmanuel	P.A.	KDF Moroto
14.	Dr. Mulondo Henry	DVO	Kotido DLG
15.	Michael Lomakol	P.A.	GIZ
16.	Okuda Robert Kennedy	DPO	Kotido DLG

17.	Jena Waebs	GIZ-CPS	Moroto
18.	Barbara Gaerber	GIZ-CPS	Moroto
19.	Abura Stephen	PM	Moroto
20.	Tengei Mario L.	DAO	Nakapiripirit
21.	Capt SA Aleper	DWE	Moroto
22.	Benedict Lokiru	Coordinator	DanChurch Aid
23.	Dr. Arionga S.P	DVO	Nakapiripirit
24.	Alinga Hellen	Agric. Officer	Nakapiripirit
25.	Ngoya John Bosco	Director	Garipas Moroto Diocese
26.	Raphael L. Arasio	Field Coordinator	KRSU

3. Participants at the validation meeting on March 7, 2018 at the KRSU offices

No.	Name	Designation	Organization
1.	Achia Junior	Researcher	KDF-Moroto
2.	Eva Gimono	Researcher	NARO (Nabuin Zardi)
3.	Moru Judith	Researcher	KDF
4.	R. Mwadime	COP/Apolou Activity	Mercy Corps
5.	Frank Muhereza	CBR	CBR
6.	Mary Namusoke	TA-IWRM	GIZ-ENWASS
7.	Charles Hopkins	Resilience Advisor	KRSU
8.	Francis Okori	Asst. Comm. Prog/OPM	OPM-MOKA
9.	Joel Okwir	Program Manager	CRS
10.	Dr. Paul Okullo	Director	NARO-Nabuin
11.	Amodoi Peter	PO-OPM	Karamoja Affairs
12.	Mesfin Molla Ayele	COP	KRSU

ANNEX 5. TRANSCRIPTS OF THE VALIDATION AND DEBRIEFING MEETINGS

1. Output from the group work at the validation meeting on March 2, 2018 in Moroto

Group 1	Group 2	Group 3
Question: What is working and can be taken to scale?	Question: What is working less well and can be phased out?	Question: What can be done differently and better?
<ul style="list-style-type: none"> - Tree planting - Cash for work (CfW) - Food for work - Livestock diversification - Honey production - Crop marketing - Promotion of post-harvest handling processes - Value chain development approaches—honey, crops, livestock, and agro-inputs development - Community asset building—user committees - Gender inclusivity in agriculture - Infrastructure development—roads, dams, and valley tanks - Promotion of traditional local varieties of crops and livestock - Promotion of food security crops, e.g., cassava - Community access to credit facilities, e.g., VSLAs - Conflict resolution - Promotion of integrated and sustainable land use, management, and ownership - Policy formation, development, and implementation in cropping and livestock sectors - Partnership development 	<ul style="list-style-type: none"> - Farming within small areas around homes - Untimely distribution of agro-technologies like seeds and tools - Top-down strategy of implementation of projects without inclusivity of the local people - Bush and charcoal burning - <i>Manyatta</i> (communal settlements) 	<ul style="list-style-type: none"> - Improve legislation, policies, and bye-laws to regulate charcoal production and sales per household - Advocate for implementation of policies and laws - Build capacity of local development structures to ensure sustainability of implemented projects - Introduce and strengthen alternative sources of livelihoods - Local seed multiplier—multiplying varieties that are resistant to pests/disease and local climatic conditions - Promote local seed varieties - Work with local institutions, e.g., NabuZARDI - Seed dressing within the region - Formation of farming cooperatives for better bargaining of prices of agricultural products - Value addition to agricultural products—post-harvest handling, packaging, processing, and storage - Improve climate information services - Breed improvement using artificial insemination (AI). Stop distribution of Friesian cows—they are not easy to maintain - Strengthen district veterinary services - Ensure prompt response to disease outbreaks - Inspect expiry date, use, and storage of livestock drugs - Increase number of dams—currently only Arecek and Kobebe - Recruit more extension staff—required ratio is 1:500 but currently the actual ratio is 1:1,800 - Increase vegetable and fruit production

2. Issues raised by participants in the validation meeting on March 2, 2018 in Moroto

Cropping sub-sector

- The government proactively supports the cropping sector.
- Cropping favors the rich, in particular commercial farmers.
- Government is trying to address the issue of food security through the introduction of perennial crops such as cassava, sweet potato, and pigeon peas.
- Rice farming is causing damage to the wetlands and needs more regulation.
- Agro-forestry and the protection of trees in farm land is important.
- Much more needs to be done to protect trees in Karamoja.
- GAM is 25% in Namalu. Is commercial farming helping families?
- People produce food, sell it, and buy back later. The “green belts” are not working.
- *Waragi* is a cause and symptom of poverty.
- If crops have failed nearly every year in Rupa for the last six years, what are people doing to survive, and what lessons can be learned?
- It was a mistake that the review did not include both men and women on crop-related questions, as men are increasingly involved in cropping.
- It is suggested that men are only now engaging in agriculture. This is wrong. They have since the ox plough arrived in Karamoja.
- What are the limits to cropping? How much food could be produced?
- How serious is land grabbing? Who is doing it and why?
- Why did leaders in Karamoja give land to the Teso?
- Before Karamoja can move to commercial agriculture, surely it has to achieve food security. Or do we accept under-nutrition?
- What of good cropping—agro-ecology/conservation agriculture? Where are the good farming practices that would help achieve sustainable production in drier years?
- Crop diversity is important for nutrition.
- It will get harder to grow maize with climate change and increasing temperatures.
- Some improved seed distributions have failed 100%. Seeds should be certified, and breeders held responsible for this. Seed distributions are often delayed.
- Policies are at odds with reality. We can't depend on cropping alone.
- Why don't more people plant quick-maturing crops?
- Is NARO really interested in local people's problems or is it developing ideas in isolation?
- Most projects are too short term. There is not enough people engagement.
- There are good ideas for Karamoja—re-greening, agro-forestry, cereals banks, local herbs for pest control—but the results of pilots are not shared and used.
- Are women benefiting from commercial agriculture? Does it matter?

Livestock sub-sector

- The government offers much less support to the cropping sector.
- The agriculture sector budget needs to be better managed in Karamoja to support cropping and livestock equally—veterinary services, quality veterinary medicines, water resource development, markets, restocking.
- Perennial crops cause more problems for livestock keepers, as cattle can't access the fields.
- Burning grass is good but not every year. Too many grasslands are being burned every year.
- Why is the government investing in exotic breeds when the potential of the local breeds is not known, and little or no work has been done to find out what they can produce if bred for better production? Trials suggest that a well-bred local animal can produce 14 ltrs/day with good management.
- Friesian cows are simply not appropriate and should not be part of any development project.
- Suggestions that the Karimojong keep fewer animals often come from outsiders rather than the Karimojong themselves.
- What is resilience in the context of Karamoja? What does capacity mean?
- What is a pastoralist? Aren't the Karimojong agro-pastoralists, and haven't they been involved in livestock keeping and cropping for generations? What is new about cropping?
- The report should use the same terms for resilience throughout for both the cropping and the livestock sectors.
- Successful farmers invest in livestock. Why is this not recognized?
- Israel teaches us that we either learn to live in the desert or it will beat us!
- How do we make valley dams really work sustainably without silting so quickly?
- Livestock are much more climate change resilient than crops.
- Why do we think transhumance mobility is a problem? Who is it a problem for? What can be done to modify transhumance to address the problems and make it more positive?
- It is time that Karamoja had an appropriate and well-informed livestock strategy that speaks to local realities, including transhumance livestock production or pastoralism.
- We need more research on charcoal production and the impact of the grasslands.
- Charcoal is sold for Ush12,000 locally and Ush80,000 in Kampala. Who is making all the money that could help improve local food security?

3. Key issues raised at the debriefing meeting held on March 7, 2018 in Kampala

Cropping sub-sector

- The Karimojong have been crop farming for generations, but commercial farming is new to the sub-region. Commercial farming in Karamoja is very difficult, as it requires inputs that people simply cannot afford. More support should be given to support the Karimojong to do subsistence farming better.
- People are migrating to the wetter “green belt” in large numbers. What’s happening in the agro-pastoral belt? Are the Turkana and Pokot moving into this area?
- There are high levels of malnutrition in the cropping zone, as dietary diversity is very poor and access to milk is limited. This needs to come out very clearly in the report.
- There are many kinds of sorghum, and perhaps these should be mapped by agro-ecology.
- The first harvest is typically tepary beans, followed by cowpeas and green grams.
- The new crops are cassava, sunflower, and sesame.
- Cultivation needs to be timely, so everyone has to have their own oxen. Group approaches are not useful for everything.
- Men work easily in the fields today.
- It is vitally important that we improve productivity per area, not just keep on farming more land.
- Farmers need access to better markets.
- Commercialization is alienating women, and this needs to be better researched.
- Pests and diseases are increasingly problematic, as there is ever more cropping, and the pests can multiply.
- People want better access to appropriate inputs, but the inputs that they want. OWC too often provides the wrong inputs at the wrong time.
- Lorries are shipping food out of the sub-region. Is this good for food security? Surely we need to achieve food security first and foremost.

Livestock sub-sector

- Successful farmers are investing in livestock.
- Livestock holdings support cropping and vice versa. Without access to oxen, few households are successful in cropping.
- With several teams of oxen, it is possible to cultivate 5–10 acres. Without oxen, it is not possible to cultivate more than 1.5 acres.
- Traditional marriage using cattle is now again commonplace. This will help in the redistribution of cattle.
- Which interventions are really helping to reduce livestock losses to disease and drought?
- Every organization is training CAHWs. What of alternatives?
- Poultry is very important for women, but losses to disease are very high.
- There is no conflict really between the UWA and livestock keepers, as the UWA is protecting the grasslands from cultivation. Where land is de-gazetted, it is typically cultivated.
- Disarmament has worked. Livestock numbers are increasing

Additional general comments:

- Trends are important, both increases and decreases.
- It will be important to make recommendations for the cropping and the agro-pastoral zone.
- There is a lot of duplication of investment in Karamoja. Everyone wants to invest in water and food security. There are however other important gaps that need to be addressed if development is to be holistic.
- How can projects build on local assets when the asset base is so poor? What is there to build on?
- VSLAs seem to work better for poorer communities.
- The report should articulate clearly what is working and what is not working in order that more investment can target what is working.
- Too many interventions lack an evidence base. Much is just wishful thinking or informed by calls for proposals issued by the donors.
- In addition to agriculture, we need to understand trends in natural resources and the impact of charcoal production.

ANNEX 6. A SUMMARY OF LIVELIHOOD STRATEGIES, TRENDS, AND OUTCOMES

Key outcomes	<ul style="list-style-type: none"> - Households dependent on a diversity of income sources typically relocate to peri-urban settlements, as there are more opportunities²⁰⁰ - Settlements fortified for protection against raiding and reprisal killings - Elders—responsible for customary law and management of communally held natural resources, conducting social events, providing spiritual leadership, mediating disputes, adjudicating crimes, overseeing reparations, and representing the community in diplomatic and peace-building efforts with outsiders—marginalized by proliferation of weapons¹⁷⁹ 	<ul style="list-style-type: none"> - Many Karimojong, including minors from Bokora, move to Katakwi, Soroti, Mbale, and Kampala²⁰¹ - Economic migrants forcibly returned²⁰² - Increased HIV/AIDS rates, from 1.7% in 2000 to an estimated 5.3% in 2011²⁰³ - Government estimates of livestock numbers: 2.3 million cattle—20% of national cattle population; 2 million goats—16% of national goat population; and 1.7 million sheep—49% of national sheep population¹⁸⁰ - Significant livestock losses, the result of reduced mobility and disease - Underemployment in youth/warrior class - Disarmament reduced the number of guns, but elders have been unable to reassert their authority completely¹⁸¹ 	<ul style="list-style-type: none"> - Negative coping strategies proliferate—semi-commercial firewood collection and charcoal making—resulting in increasingly damage to the environment - Reports of trafficking and exploitation of Karimojong women within and outside the sub-region²⁰⁴ - Occasional cattle thefts¹⁸² - 2008–2013: reductions in livestock numbers: 75% in cattle, 68% in goats, and 65% in sheep¹⁸³ - 2014: 40% own cattle and 49% sheep and goats¹⁸⁴ - More dispersed, traditional settlements and <i>kraals</i> - Herds start to recover and traditional marriage with cattle-based dowries reintroduced in 2014¹⁸⁵ - Easier to trek animals to markets and more markets result in a more buoyant livestock trade¹⁸⁶ - Increasing decision-making authority of the elders¹⁸⁷
Rainfed cropping	<ul style="list-style-type: none"> - Traditional cropping in the central agro-pastoral areas managed by the women¹⁸⁸ - Early settlements in wetter “green belt” attracted by increased yields, in particular poorer households that have suffered shocks—drought, disease, or raiding¹⁸⁹ 	<ul style="list-style-type: none"> - Accelerated settlement in the wetter “green belt” - More mixed gender responsibilities - New farming methods promoted—improved seeds, ox/tractor ploughing, pesticides—and crop diversification: groundnuts, sunflower, and cassava¹⁹⁰ 	<ul style="list-style-type: none"> - Government promotes agricultural settlements in the wetter “green belt” and improves services provision - Poor households cultivate with hand hoes—an average of 1.5 acres. Richer households with oxen/tractors cultivate much more land¹⁹¹

¹⁷⁹ Carlson et al., 2012.

¹⁸⁰ MAAIF and Uganda Bureau of Statistics, 2009.

¹⁸¹ Carlson et al., 2012.

¹⁸² Stities et al., 2016.

¹⁸³ FAO, 2014.

¹⁸⁴ UNDP, 2015.

¹⁸⁵ Stites et al., 2017.

¹⁸⁶ Ibid.

¹⁸⁷ Ibid.

Key outcomes	<ul style="list-style-type: none"> - Karimojong women afforded high levels of autonomy through cropping and most equitable access to land and justice in Uganda 	<ul style="list-style-type: none"> - Karamoja ranked third of 10 sub-regions for women's civil rights¹⁹² - The shift to cropping increases women's workload and negatively impacts breastfeeding¹⁹³ - A 2011 survey identified GAM of 10.9% and SAM of 2.5% in wetter "green belt" Moroto District¹⁹⁴ - Men engaged in cropping, including hand hoe cultivation, as livestock numbers are reduced 	<ul style="list-style-type: none"> - Cropping provides increased amounts of household food/income in good years, but malnutrition remains high in the wetter "green belt"¹⁹⁵ - Gender-based violence has soared, attributed to reduced herding opportunities for young men and therefore their increased engagement in cropping, historically the responsibility of women¹⁹⁶
Other livelihoods	<ul style="list-style-type: none"> - Few households engage in other forms of livelihoods - Alternative livelihood strategies include collection and sale of firewood, charcoal making, local brewing, and casual labor 	<ul style="list-style-type: none"> - Increasing numbers of households reliant on diversified livelihoods as a result of shocks—drought, diseases, raiding, or death of a family member 	<ul style="list-style-type: none"> - Increasing numbers of Karimojong employed in the seasonal field work in other sub-regions¹⁹⁷ and mining sector—marble, limestone, gold, and others¹⁹⁸ - Casual labor market typically has poor terms and conditions, including payment in kind¹⁹⁹ - Women engaged in petty trade, wage labor, and mining

¹⁸⁸ Following the introduction of ox ploughs in the late 1960s and early 1970s, men are increasingly involved in land preparation.

¹⁸⁹ Gomez, 2002.

¹⁹⁰ FEWS NET and FAO, 2013.

¹⁹¹ Ibid.

¹⁹² Organisation for Economic Co-operation and Development, 2015.

¹⁹³ Boucher Castel, 2016.

¹⁹⁴ Ibid.

¹⁹⁵ Ibid.

¹⁹⁶ UNDP, 2015.

¹⁹⁷ Sites et al., 2016.

¹⁹⁸ Hinton et al., 2011.

¹⁹⁹ Iyer et al., 2017.

²⁰⁰ Ibid.

²⁰¹ Czuba and Lee, 2014.

²⁰² Gomez, 2002.

²⁰³ Bukenya, 2016.

²⁰⁴ Czuba and Lee, 2014.

ANNEX 7. LISTED ACHIEVEMENTS FROM THE KARAMOJA LIVELIHOODS PROGRAMME

Result 1: Labor-intensive works and safety nets

- 203 water ponds, micro-dams, and rock catchment and sub-surface dams built
- 42 drip irrigation systems established
- 110 cattle troughs built
- 32,942 kg of improved seeds distributed
- 22 grain stores constructed
- 72 drying slabs constructed
- 67,148 tree seedlings planted
- 624 soil conservation units in form of micro-catchments and gabion cages established
- Ush2,156,652,725 paid out to over 140,000 labor-intensive works beneficiaries
- Ush253,381,400 saved in VSLA groups

Result 2: Agricultural production and productivity

- 240 APFSs established and 200 APFSs strengthened
- 480 oxen and ox ploughs distributed to the new APFSs
- 22,000 kg foundation seeds distributed to APFSs
- 415 CAHWs trained and equipped with kits
- 10 veterinary drug shops equipped and supplied with assorted animal medicines
- 420 improved goats distributed to APFS groups
- 2,970 Kuroiler poultry supplied to APFS groups
- 46 portable crushes for small ruminants constructed
- 28 drip irrigation systems provided to APFSs
- 435 Kenya top beehives supplied to APFSs
- 603,390 trees, fodder, fruit, and fencing tree seedlings distributed and planted
- 500 acres of degraded pasture lands revived
- Ush96,693,000 mobilized and saved by APFS groups²⁰⁵

²⁰⁵ OPM, 2015b.

ANNEX 8. IMPACT FINDINGS FROM THE GROWTH, HEALTH AND GOVERNANCE PROGRAM, MERCY CORPS

Activity area	Review assessment
Improved seed	A distribution of vouchers in 2015 resulted in the increased sale of improved seed. Redemption rates however fell to 20% in 2016 and 2017, as participants reported that they either planted small amounts of improved seeds or there was little difference in yield as a result of erratic rainfall.
Storage bags for harvest	Participants viewed the intervention positively, including as the bags were subsidized.
Water development	Implemented with Whave and the Kotido Hand Pump Mechanics Association, it was difficult to assess impact, as the work had only recently started. Participants expressed positive views, while little progress had been made to improve hygiene through behavior change.
Markets	An increase in the number of markets has reduced the distance livestock keepers have to travel to sell livestock. As a result of the peace, the range of services and commodities available at markets has increased. Despite these improvements, the study reported that markets are basic, lack appropriate infrastructure such as stalls and shade, and tend to benefit the better-off.
Animal health	The program supported the expansion of PVPs. It was found that the PVP operators were generally positive about relations with CAHWs and livestock keepers, although they noted communities had limited purchasing power, which resulted in supply chain problems.

ANNEX 9. HISTORICAL TIMELINES

Historical timeline: Nakapiripirit District, Namalu sub-county—10 elders

Year	Name in Nga'Karimojong	Translation	Classification —very good, good, average, poor, and very poor	Description
2000	Ekaru 'A Lomot	Year of the Pot	Very poor	Very poor harvest, crops lost in the fields due to floods, increased animal and human diseases.
2001	Ekaru' Anacan	Year of WFP	Poor	Floods continued, poor harvest, animals lost to pests and diseases, introduction of WFP relief food.
2002	Ekaru 'A Anacan	Year of WFP	Poor	Relief food distribution continued as little harvest.
2003	Ekaru 'A Ngiupe	Year of the Universal Primary Education (UPE)	Very poor	Massive raids from the Pokot people, animals and lives were lost in the attacks.
2004	Ekaru 'A Ngiupe	Year of the UPE	Very poor	Massive raids from the Pokot people continued.
2005	Ekaru 'A Museveni	Year of Museveni	Very poor	Start of disarmament, massive arrests of individuals with guns, imprisonment.
2006	Ekaru 'A Museveni	Year of Museveni	Very poor	Very poor rainfalls, poor harvest, arrest and detention of men and women with guns, destruction of <i>manyattas</i> by UPDF. Massive hunger.
2007	Ekaru 'A Museveni	Year of Museveni	Very poor	Floods destroyed crops in the field and poor harvests. High insecurity due to election. People living in panic and fear.
2008	Ekaru 'Ke Eberacks	Year of the Barracks	Poor	Poor harvest, animals started being kept in “protected <i>kraals</i> .” Many lost to animal diseases as livestock congested.
2009	Ekaru 'Ke Eberacks/Kagatta	Year of the Barracks/Kagatta	Poor	Poor harvest, animals still in the “protected <i>kraals</i> .” Many more losses. Over 2,000 head of cattle lost in the Kagatta “protected <i>kraals</i> ” when raided by the Pokot.
2010	Ekaru 'A Remo Angiupe	Year of the UPE	Poor	Continued raids by the Pokot and neighboring Bokora. Many people killed.

ANNEX 9. HISTORICAL TIMELINES

2011	Ekaru 'A Topuruye	Year of Smoke	Average	There was relative peace. To celebrate, everyone could cook and let smoke be seen again. Handouts from the election candidates.
2012	Ekaru 'Ka Onyang	Year of Onyang	Good	Continuing peace, and new fields and farms opened. Farm lands started to increase, and there was a good harvest.
2013	Ekaru 'A Palago	Year of Instability	Poor	A poor harvest due to prolonged drought and animal diseases that killed a lot of animals.
2014	Ekaru 'Ka Ekisil	Year of Peace	Good	There was good harvest, peace, and little livestock disease.
2015	Ekaru 'Ka Ekisil	Year of Peace	Good	There was a good harvest, stability in the district, no raids, and few animal diseases.
2016	Ekaru 'Ka Ekisil	Year of Peace	Good	Another good year.
2017	Ekaru 'A Prison	Year of Prison	Average	A lot of people were displaced from their lands by the Prisons Authority—massive land grabbing.

Historical timeline: Kotido—8 elders

Year	Name in Nga'Karimojong	Translation	Classification —very good, good, average, poor, and very poor	Description
2000	Ekaru 'A Kolong	Year of the Sun	Very poor	Prolonged drought period. Poor harvest and large livestock losses to diseases. Much insecurity.
2001	Ekaru 'A Nomere ngatomien	Year They Burnt Guns	Average	There was a fair harvest, and food was distributed by government.
2002	Ekaru 'A Logilia	Year of Logilia— World Vision	Very poor	Prolonged drought. Poor harvest, very many livestock lost to disease. Insecurity. The start of World Vision in Kotido.
2003	Ekaru 'A Logilia	Year of Logilia— World Vision	Very poor	As above.
2004	Ekaru 'A Nyedeke angatuk	Year of Cattle Diseases	Very poor	Extreme hunger in the district, rampant animal diseases, a lot of animals were lost. Very poor harvest.
2005	Ekaru 'A Nyakarere nyatom	Year of Returning Guns	Poor	Hunger due to poor harvest, livestock diseases increased, and insecurity/cattle raids.
2006	Ekaru 'A Lopuyo	Year of Lopuyo— a parish in Rengen sub-county	Poor	Bombing of Lopuyo Parish. Human lives and livestock were lost due to the bombings by UPDF. Farm fields were destroyed.
2007	Ekaru 'A Kolera	Year of Cholera	Very poor	Human lives were lost due to cholera attack. A lot of insecurity and losses in human and livestock lives. Poor harvest due to floods.
2008	Ekaru 'A Ekisil	Year of Peace	Very good	There was relative peace in the district, livestock disease reduced, there were enough rains and a good harvest.
2009	Ekaru 'A Talopoch	Year of Criminal Investigation Department (CID)/ Intelligence officers/ UPDF spies	Very good	There was relative peace in the district. Few livestock diseases. There were enough rains and a good harvest. Government CIDs arrested people they suspected to have guns. The forceful detainment of suspects.
2010	Ekaru 'A Talopoch	Year of CIDs/ Intelligence Officers	Good	There was good harvest, peace in the region but spying for people with guns. Suspects disappeared.

ANNEX 9. HISTORICAL TIMELINES

2011	Ekaru 'A Bokere Amaata— Kalopirabong	Year of Dam Construction— Kalopirabong	Average	Improved animal health, a fair harvest, and support from the government.
2012	Ekaru 'A Ngapomio	Year of Block Farms/ Wood Lots	Very good	There was a very good harvest as people planting large fields. There was a lot of support from World Vision. There was peace.
2013	Ekaru 'A Ngapomio	Year of Block Farms/ Wood Lots	Good	There was a fair harvest from the block farms, and peace and stability.
2014	Ekaru 'A Ngapomio	Year of Block Farms/ Wood Lots	Poor	Poor harvest from gardens and block farms. Livestock movement in search of water and pasture.
2015	Ekaru 'A Lobeli	Year of Lobeli	Average	There was fair harvest, peace in the region, and few animal diseases.
2016	Ekaru 'A Bildad Adome	Year of Bildad Adome	Good	Peace and jubilation in the region after the election results—a new Member of Parliament. There was relative peace.
2017	Ekaru 'E Chipichip angatur	Year of Cattle Vaccination	Average	Animal disease reduced due to government interventions. A fair harvest from the fields. But little water for animal consumption. A few conflicts with the neighboring Abim over grazing land.

