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# KARAMOJA LIVESTOCK MARKET ASSESSMENT REPORT

**January 2016**

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USAID Contract number: 623-TO-14-00007
USAID/East Africa Resilience Learning Project

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The views expressed in this report do not necessarily reflect the views of the United States Agency for International Development or the United States Government.

**Preface**

This report presents an analysis of livestock marketing in the Karamoja region of north-east Uganda. The USAID East Africa Resilience Learning Project (RLP) was requested to conduct the analysis, and a team of consultants was recruited for this purpose. The following report is based almost entirely on a draft report prepared by the consultant assessment team, and includes recommendations to support livestock marketing, production and health, value chain development, and policy support. However, following review by the RLP and the USAID/Uganda Karamoja Resilience Support Project (KRSU), three of the recommendations in the draft report and the associated text in the main body of the report were amended as follows:

1. The draft report included a recommendation to support the design of a livestock market information system (LMIS) in Karamoja. The RLP has amended this recommendation in the light of the existing monthly data collection on markets in Karamoja as part of food security monitoring, supported by WFP and UNICEF. There are clear opportunities to modify this system to include more comprehensive data on livestock markets, rather than establish a parallel LMIS focusing solely on livestock markets. Given the very limited success and sustainability of LMIS in pastoralist areas over many years, there is a need to document the reasons for repeated failures of LMIS to perform as expected.

2. The draft report recommended that livestock markets be transferred from public sector to private sector management. Although in theory this could improve market management, any support to this activity should be based on analysis of the incentives for national and/or local government actors to retain management control, and the direct control of related tax or other revenues, against the incentives of handing over management to the private sector. In this final report, the RLP proposes that government actors in Uganda be exposed to experiences in other countries in the region with public-private partnerships for managing livestock facilities.

3. The draft report recommended support for a livestock census in Karamoja, on the assumption that livestock production or the performance/impact of livestock or livelihood resilience activities can only be measured if valid livestock population data is available. However, this recommendation overlooks the various methodologies which are available to measure livestock production, health and project impacts in pastoralist areas, and which do not rely on population data. These methodologies are well established, have been widely described in peer-reviewed scientific journals, and fit the operational and resource realities of pastoralist areas. In common with other pastoralist areas, the design and evaluation of effectiveness livestock programs need not rely on population figures. Therefore, the RLP has omitted the recommendation that a livestock census should be supported.

In addition, the RLP has added footnotes to the report to provide further detail or explanation where needed.

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**List of acronyms**

| | |
|---|---|
| BDS | Business Development Services |
| CAHW | Community Animal Health Worker |
| CBPP | Contagious bovine pleuropnemonia |
| DVO | District Veterinary Officer |
| EU | European Union |
| FAO | Food and Agriculture Organization of the United Nations |
| FMD | Foot and mouth disease |
| FtF | Feed the Future |
| GHG | Growth, Health, Governance Project |
| GOU | Government of Uganda |
| ILRI | International Livestock Research Institute |
| KALIP | Karamoja Livelihoods Program |
| KIDP | Karamoja Integrated Development Plan |
| KG | Kilogram |
| LMIS | Livestock Market Information System |
| MAAIF | Ministry of Agriculture, Animal Industries, and Fisheries |
| NaLRRI | National Livestock Resources Research Institute |
| NGO | Non-governmental Organization |
| MT | Metric Ton |
| OIE | World Organisation for Animal Health |
| OPM | Office of the Prime Minister |
| PPR | Pest des petits ruminants (goat plague) |
| RWANU | Resilience through Wealth, Agriculture and Nutrition Project |
| SOW | Scope of Work |
| UBOS | Uganda Bureau of Statistics |
| UGS | Ugandan Shillings |
| US | United States |
| USAID | United States Agency for International Development |
| WFP | World Food Programme |

Note:
A *manyatta* is a physical grouping of households in a sedentary location. A *kraal* is a mobile grazing unit.

## EXECUTIVE SUMMARY

Indices of poverty and malnutrition in the Karamoja region are among the highest in Uganda. Livestock production is the primary economic activity for thousands of Karamajong households, and underpins both household and community resilience. Traditional mobility-based grazing management has long provided the Karamajong with the ability to maintain and form new households in the face of an environment characterized by erratic rainfall and competition between tribal groups for grazing rights.

Rapidly growing urban centers in the Horn of Africa and a rising urbanized middle class are driving increased domestic demand for meat. The question is whether these trends represent an opportunity for Karamoja, and if so how? And, to what extent are the Karamajong competitive in livestock production and marketing, and what changes in husbandry practices and marketing are likely to occur in the future?

The objective of this livestock and livestock product value chain end market assessment was to provide information needed to assess strategies and options to help pastoral households become more competitive in live cattle, sheep and goat markets. This assessment is focused on output markets, complemented by the collection and analysis of information regarding the extent to which the use of improved technology and services may impact the market competitiveness of Karamajong live animals. Study results and recommendations are expected to contribute to the design of high-impact medium- and longer-term investment activities in the Karamoja livestock sector. The assessment also looked into other apparent livestock products and opportunities.

Pastoralist Livestock Production and Marketing Practices

Reports and documents available on Karamoja reflect some basic misconceptions on pastoralist livestock production and marketing practices. However, Karamojong livestock production and marketing practices are very similar to those of other pastoralist groups in the region (Ethiopia, Kenya, Somalia, South Sudan, and Tanzania), as well as to those found in extensive livestock operations throughout the world. The basic principle informing these practices is that at household level, the primary objective of the livestock business is capital formation.[1]

In contrast to most agricultural production enterprises, pastoralists do not respond to market prices by increasing or decreasing production. Rather, they manage their herds/flocks more like an investment portfolio. The primary management objective is to increase the value of their portfolio. Income is generated in the form of capital gains, not from the sale of livestock. When pastoralists sell animals they are simply monetizing capital gains for two principal reasons:

- ***To meet immediate cash needs***. Animals are commonly sold to obtain cash for such things as the purchase of staple grains, the payment of school fees, family obligations, and unanticipated expenditures such as medical expenses. The animals selected and sold for this purpose (sheep, goats, surplus male cattle, cull cows) are basically under-performing low value assets with limited future growth prospects whose removal from the portfolio has the least impact on total portfolio value.
- ***To "trade up".*** This behavior seems not to be described in documents and reports on Karamoja, but was readily observable in the market. Pastoralists take advantage of

[1] RLP note – pastoralists rear livestock for capital growth as clearly explained in the text, but also, for the direct consumption of livestock products – especially milk – at the household and community levels (see Stites and Mitchard, 2011). This direct consumption is critical to household food security, especially for children. There are at least two management objectives: to build capital while also ensuring food security – and herds are managed to achieve these two objectives. It follows that throughout this report, while pastoralists in Karamoja are "producers", they are also very much "direct consumers".

opportunities to sell high value assets with low growth potential (slaughter bulls), and use the proceeds to purchase high value assets with high growth potential (heifers). This investment increases the future growth potential of their livestock portfolio.

The Karamojong share common cultural aspirations: to own livestock; and to accumulate more livestock. Chickens are valued, sheep and goats are valued more, and cattle are the most highly valued livestock of all. Karamojong talk about their livestock with great interest and understanding, but speak of their cattle with open affection. This leads to cattle being more highly valued than cash. This behavior is distinct from that of sedentary agricultural households, who tend to manage livestock more as a source of household income and a savings account to be tapped when needed to meet cash needs.

This combination of objectives and cultural aspirations leads to understandable and predictable Karamojong livestock marketing behavior. The amount of money needed, not price, is the primary consideration when animals are being sold to meet cash needs. When the price is high, fewer animals are sold. And when the price is low, more animals are sold. In other words, the supply of animals being sold to meet cash needs is price inelastic.

However, when the objective is to "trade up" price is a prime consideration. In this case pastoralists take advantage of high livestock prices to sell slaughter bulls (high value/low potential growth assets) and buy heifers (high potential growth assets). This is most apparent at the end of the rainy season, when slaughter bulls are in excellent condition and command relatively high prices. In summary, Karamojong livestock marketing practices, including decisions on which animals to sell and when, represents fully rational economic behavior.

Livestock Traders

Animals in Karamoja livestock markets are sold individually (one-by-one-by-one) at a price directly negotiated between buyer and seller. The sale of family livestock (except chickens) is almost exclusively handled by men, who take pride in their negotiating ability. Karamoja livestock markets are remarkable for the absence of brokers (intermediaries) when compared with livestock markets in Ethiopia, Kenya, Somalia, Sudan and Tanzania. The Karamojong prefer direct, face-to-face negotiation, meaning that a large number of individuals are directly involved in the trade. The relatively large (and growing) number of Karamojong livestock traders fuels the active and extremely dynamic livestock markets in the region.

Karamojong livestock producers may start trading animals when they have enough cash in hand to purchase an animal or two at the *kraal*, trekking it to the nearest primary market for resale. If successful, they may gradually accumulate the cash to become small producer/traders. A producer/trader complements livestock production with income from the purchase and sale of livestock. They have the flexibility to hold animals in their herd/flock, letting them gain maturity and condition before resale. They may also decide to keep certain animals (heifers) rather than selling them.

As a Karamojong producer/trader increases livestock and cash holdings, they may reach the point where livestock trade is more important in terms of household income than livestock production. These individuals have enough cash to buy larger numbers of animals in primary markets, and move them to secondary markets for sale. However, they still retain the ability to hold animals, incorporating them into their existing herds/flocks to mature and gain and condition before resale. These traders will purchase all ages and sexes of livestock, as long as the price is right. They may even buy and sell the same animals in the same market on the same day if they can make a profit. As these traders accumulate cash and increase the scale of trading operations they may establish links with external traders and markets, buying animals to transport out of the region for sale. These individuals appear to have adapted

pastoralist behavior to livestock marketing, actively accumulating cash resources as well as increasing livestock holdings.

## Conclusions and Recommendations

### 1. Livestock Marketing

The livestock sector is the heart of the regional economy, and the livestock market system in Karamoja is complex and dynamic. The system is formed by a network of interconnected marketing points which link producers and traders to end markets. The system appears to be working very well, with no major issues at present. However, some investments are warranted to fortify the system, improve efficiency, facilitate future market growth, and help it adapt to changing conditions. These include:

Livestock Market Organization and Operation

The purpose of live animal markets is to bring buyers and sellers together and facilitate trade – not to generate government revenue. The assessment team felt that the market system would benefit greatly from private oversight and operation (and ownership), which treats buyers and sellers as clients and insulates the market from political interference. This would require a collaborate process to enable private management and operation (and ownership) of markets, perhaps complemented by modest support for infrastructure. The team recommends facilitating/supporting the formation of local Livestock Market Associations, committees, or groups of investors to (at a minimum) oversee and manage the livestock market operation, and promote eventual private ownership. This might also be extended to slaughter facility operation and ownership, and requires engaging local governments in the process, as they are presently the owners and operators of the markets. While private management of markets is the preferred option, local and/or national government view livestock markets as a prime source of tax revenue and if so, want to retain direct control of this revenue. This raises the option of exposing local and national government agencies to experiences with public-private partnerships for the management of livestock markets in East Africa.[2]

Business Development Services

Live animal markets provide a potential setting for engaging a wide range of market actors (producers, traders, brokers, transporters, small businesses, etc.) in activities to improve their businesses. Providing increased access to business development services (BDS) for these individuals will help improve their technical and financial competence, and increase profitability. Live animal markets also provide a setting for providing producers with information and training on technologies and management practices. This could include approaches to encourage planned marketing: selling animals when they are ready for market in anticipation of predictable future cash needs. The assessment team recommends designing and implementing a program centered on live animal markets to increase access to BDS (especially training programs) for producers, traders, transporters, and micro-entrepreneurs.

Livestock Market Information

As explained in section 3.2.5b, project-based LMIS have a poor record of success in pastoralist areas. However, food security monitoring supported by WFP and UNICEF already collects monthly market information, raising the possibility of adding value to this existing

[2] RLP note – for example, see the review of public-private partnerships for managing livestock markets and abattoirs in Somaliland, Ethiopia and Djibouti supported by the USAID Agriculture Knowledge, Learning, Documentation and Policy (AKLDP) Project at http://www.agri-learning-ethiopia.org/wp-content/uploads/2014/09/MoA-MoT-Livestock-Public-Private-Partnerships-Report.pdf

system by offering technical support from the KRSU to WFP, UNICEF and government partners. For example, the system might be expanded to collect price information for cattle (by type) and sheep (by type), along with the goat prices which are already collected, as well as recording numbers of animals presented for sale and sold. Adding value to an existing system is likely to be more efficient and cost-effective relative to establishing a new, parallel system.

There is also a need to review the reasons for the limited success with LMIS in pastoralist areas and examine if the information provided by a conventional LMIS can be gathered in other ways. The USAID/East Africa Resilience Learning Project is well placed to support this process.

## 2. Livestock Production and Productivity

The livestock sector is the economic life blood of Karamoja. With a physical environment suited to livestock production, pastoral tradition, and a culture of livestock management, it provides a firm foundation for future economic growth and development. Improving livestock production and productivity will help grow the local economy, supply quality animals to the market, increasing regional income, and fueling the development of associated value chains and micro-enterprise development. The main constraints to increased livestock production and productivity are detailed below.

### Livestock Health

Effective disease prevention and control is essential to maintain and increase the contribution of the livestock sector to the local economy. But the present system, relying upon government and NGOs to support prevention and control, is not working. The assessment team proposes that a private approach to delivering effective clinical animal health services in response to producer demand is critical. But enabling effective private delivery of animal health services is complex, and requires a comprehensive, unified systems approach Support should be given for a collaborative exercise that engages donors, government and NGOs to comprehensively review and address the issues of animal health service delivery in Karamoja. We suggest that the Karamoja Development Partners Group undertake this exercise, using a value chain approach to map the system, identify issues, and recommend/implement solutions to enable the expansion of private animal health services delivery, including the import and sale of vaccines.[3]

Looking specifically at trans-boundary animal disease control in Karamoja, current control strategies have limited impact and tend to constrain livelihoods. Alternative strategies need to be evidence-based, which requires epidemiological and economic assessments, and comparative analysis of control options. This is a major undertaking at sub-national, national and regional levels, and would be best supported via a regional program, or at least analysis of the Karamoja situation which includes analysis of cross border issues with South Sudan and Kenya. The USAID/EA Resilience Learning Project could have a role here.

### Livestock Water Development

The availability of livestock water is the primary factor in deciding when and where to move the herds/flocks. The future growth of the livestock sector in Karamoja partly depends on developing more broadly accessible livestock water sources for expanding herds and flocks.

[3] RLP note - the privatization of veterinary services in Uganda and the required policy and institutional reforms, is a national issue. A review of options for private sector provision of clinical veterinary services in Karamoja would need to take stock of the various national and Karamoja-specific programs dating back to the 1990s. For example, see experiences from Karamoja in http://sites.tufts.edu/capeipst/files/2011/03/AU-IBAR-Nakuru.pdf, p.41-43.

The assessment team recommends supporting a collaborative process to develop a strategy for livestock water development in Karamoja, identifying alternatives for private and public investment in infrastructure, financing and management approaches. As suggested by Mugerwa et al.[4] this will require water developers to address three fundamental issues: (a) an understanding of the rangeland context for effective planning; (b) rehabilitation and development of water sources with sensitivity to rangeland dynamics and pastoralists needs; and (c) an emphasis on securing access through capacity-building, user contributions and strengthen and use customary institutions and practices.

Land Tenure

Livestock development in Karamoja depends on access to productive rangeland, and therefore, securing land tenure rights is critical for pastoralists. The expansion of cultivation, the award of mineral exploration concessions, the gazetting of conservancy areas, and the allocation of tenure rights to individuals are already alienating grazing land from the traditional mobile pastoral production units *(kraals)*. If continued, this will progressively decrease access to land, forage and water resources, generate conflict, and compromise the livestock sector productivity. Secure land tenure is an essential pre-condition to private investments in livestock and livestock value chain production and productivity. The assessment team advocates formal recognition and allocation of tenure rights to the pastoralists who have long been the users and managers of the land, enabling them to invest in and operate improved production systems in the future. The team recommends supporting policies and identifying steps to formally recognize pastoralist land tenure rights, including demarcating and certifying land for pastoral use and strengthening the system for communal management.

## 3. Associated Value Chain Development

The live animal trade is a high value business conducted almost exclusively in cash. The large amount of cash circulating in the live animal value chain generates significant opportunities for developing associated value chains and micro-enterprises. These have the added benefit of fortifying the livestock sector, while enabling the adoption of new technologies and practices.

The assessment team recommends investments to develop: (a) the forage value chain as an alternative livelihoods strategy for agriculturalists, a source of improved feed and nutrition for milking animals, and eventually the foundation of the feed industry; (b) the poultry value chain as a path to improved child nutrition, improved household livelihoods, and the gateway to livestock production enterprises; and (c) the milk and milk products value chain to generate additional household income, and improve the diet and livelihoods of poor families.

## 4. Meat Value Chain

The Uganda meat value chain desperately needs to modernize industry practices and standards**.** In the peri-urban and urban areas meat sold by licensed butcher shops must be slaughtered where it can be inspected. However, the slaughter facilities in major towns are generally outdated and dilapidated, complemented by a network of local slaughter slabs. Sanitation is rudimentary at best, and standards non-existent. In terms of efforts to develop demand for quality meat, and to ensure public health and safety, they are simply inadequate.

The assessment team recommends considering support to promote and facilitate private investment in the Uganda meat value chain. This would include establishing modern

[4] Mugerwa et al., (2014). Status of Livestock Water Sources in Karamoja Sub-Region, Uganda. *Resources and Environment* 4(1), 58-66.

standards, and improving the operation of slaughter facilities, meat distribution, and butcher shops. However, this is a national issue and addressing health and sanitation issues will require facilitating large-scale private investment in the industry. The benefits of such investment would far transcend the Karamoja region. Support in this area should be based on analysis of previous aid projects, supported by various donors and programs, which have aimed to improve the meat value chain in Uganda but with limited progress.

## 5. Policy Framework

The assessment conducted a preliminary review of selected policy documents, rather than a comprehensive policy review. At the level of the African Union and regional bodies such as the Intergovernmental Authority on Development (IGAD), in recent years there has been a distinct move towards recognizing the economic and cultural contributions of pastoralists, with policies supporting livestock development based on mobile production systems. However, national policies in AU and IGAD Member States are lagging behind and for example, tend to emphasize agriculture and settlement over pastoralism. The Karamoja Integrated Development Programme (KIDP) reflects this situation rather than recognizing pastoralism as a vital part of the solution to poverty and enhanced resilience.

More specifically, policies for livestock development in East Africa are in general, still based on disease control, marketing and other strategies which have been tried for many years, but with limited success. The assessment team recommends reviewing and updating the existing policy framework as it relates to Karamoja in general, and the specific livestock development, disease control, marketing and other policies and strategies, with a view to improving livestock sector competitiveness as a means of poverty alleviation and building resilience. More general policies also need to address diversified livelihoods, including livelihoods as a complement and supplement to the livestock sector (pastoralism), while also recognizing that as populations grow, alternative livelihoods also need policy support. Therefore, the challenge of policy reform is partly a question of balancing policy support to pastoralism, diversified livelihoods and alternative livelihoods. Further information on policy issues is provided in section 3.2.5e.

## 6. Knowledge Management

There are a multitude of assessments, studies and reports available on Karamoja, but the team found it difficult to obtain the most recent reports and relevant documents. The absence of a common information and database on the region makes it difficult to establish the foundation for informed collaboration and cooperation. Therefore, the team recommends a cooperative donor effort to establish a library/resource center to collect, house and make available for public consumption statistical information, assessments, studies and reports on Karamoja. This may include setting up a regional website, updated quarterly to provide information on current events and initiatives, with a portal to access electronic copies of documents.

Knowledge management includes the review and analysis of aid programs, gathering evidence of impacts, and sharing information on good practices. Some specific approaches that can easily undermine private sector activity or disrupt markets include: the free distribution of livestock pharmaceuticals,[5] externally-funded vaccination campaigns delivered by the government[6], and restocking programs.[7] "Genetic improvement" programs and the

[5] RLP note -the Livestock Emergency Guidelines and Standards (LEGS) cautions against the free provision of clinical veterinary care during emergencies, and recommends provision of services via the private sector e.g. by using voucher schemes http://www.livestock-emergency.net/wp-content/uploads/2012/01/LEGS-2nd-edition-reprint-October-2015-reduced-locked.pdf

[6] RLP note – a distinction between disease control that is a public good and disease control that is a private good is needed – it depends on the disease. Where effective vaccines are available and affordable for the latter, private sector provision of vaccine can be an option. For diseases for which control is a public good, government is required set the control strategy and

introduction of exotic breeds or species have a poor record of success in pastoralist areas, and approaches such as mechanization will be handled by the private sector if the enabling environment is supportive.

either implement the strategy directly, or contract-out specific tasks to the private sector. A common constraint is that governments in East Africa tend to categorize all diseases for which vaccines are available, as public goods.

[7] RLP note - LEGS advises that restocking projects are difficult to design and implement well, and that cash transfers may be a more useful approach.

# 1. INTRODUCTION

## 1.1 Background to the Assessment

Indices of poverty and malnutrition in the Karamoja region are among the highest in Uganda. Livestock production is the primary economic activity for thousands of Karamajong households, and underpins both household and community resiliency. Livestock holdings are reportedly in decline for poorer households, but it is not clear whether this represents an overall decrease in the livestock population or a redistribution of animals from poorer to wealthier households.

Traditional mobility-based grazing management has long provided the Karamajong with the ability to maintain and form new households in the face of an environment characterized by erratic rainfall and competition between tribal groups for grazing rights. Many of these tribal groups share ethnic origins with counterparts across borders in South Sudan and Kenya.

Violent conflict has torn apart the social, cultural and political fabric of Karamoja since colonial times. The long-engrained practice of inter-tribal and cross-border cattle raiding as a means to accumulate assets and form new households was transformed to more lethal conflict from the late 1970s, in part due to easier access to modern weapons. A distinct increase in violence in the late 1990s led to renewed efforts by the Government of Uganda (GOU) in the early 2000s to disarm the Karamajong. A heavy-handed approach which included the deployment of security forces and disarming of the population led to the return of peace to the region. However, violence and conflict remained central to how Karamoja was perceived by central government leaders. This prompted the adoption of policies favoring the transition of Karamajong households to more sedentary agriculture and livestock activities rather than continuing traditional livestock mobility over large areas of the regional landscape. Total cattle numbers were reportedly in decline as livestock were forced into "protected *kraals*" overnight, resulting in increased mortality due to disease and declining productivity and environmental degradation due to over-grazing of the areas around the protected *kraals*.

<u>The Context for Livestock Production in Karamoja</u>

Donors have made substantial investments in Karamoja in recent years. These include the USAID Food for Peace Office's Development Food Assistance Programs – GHG (Mercy Corps-led) in the northern districts and RWANU (ACDI-VOCA-led) in the southern districts – and the recently-completed OPM Karamoja Livelihoods Program (KALIP) funded by the EU. FAO and a number of bilateral development agencies, international NGOs and faith-based organizations have implemented numerous small-scale livestock-related programs in Karamoja with variable outcomes and impacts.

With increasing peace and stability in Karamoja, and with renewed recognition of the importance of livestock, the potential to support livestock market value chains needs careful analysis. This consideration recognizes the changes taking place in Karamoja, such as changes in attitude among some policy makers. Furthermore, the experience of international and local NGOs in implementing community-level development assistance programs over the last five years has confirmed the importance of livestock to food security and resiliency among Karamajong households and communities. Donors are willing to coordinate their collaborative investments with the GOU to effectively increase the sustainability and productivity of the livestock sector in Karamoja as a driver of household food security and regional economic growth and resiliency.

## The Need for an Updated Assessment

There is a substantial knowledge base on livestock management and marketing practices in Karamoja among the many stakeholders that live and work in the region, and the leaders and field staff of past and current development projects. A number of useful reports are available that characterize regional livestock management systems and related resources in the region.

There are several important livestock markets in the region, including Amudat, Kaabong, Kangole, Kotido, Moroto, Nakapiripirit, Namalu, and in and around Teso. Many different types of animals are sold in these markets, with supply varying by season. However, information on current marketing practices is limited, and the present terminal markets for Karamoja livestock are not well described. Up-to-date descriptions and analyses of these and other markets is needed to help identify opportunities for strengthening livestock marketing in the region.

Demand for live animals is also growing in the Horn of Africa. New abattoirs, many of them certified for export, are coming on line. And rapidly growing urban centers in the region, and a rising urbanized middle class, are driving increased domestic demand for meat. The question is whether these trends represent an opportunity for Karamoja, and if so how? A related question is the extent to which the Karamajong are competitive in livestock production and marketing, and what changes in husbandry practices and marketing are likely to occur in the future?

Current or potential domestic and regional market channels need to be characterized to inform answers to these questions. This work needs to include detailed information (as possible) on actors, geographic staging (primary, secondary and end markets), prices paid and partitioning of benefits along the supply chain. This information will complement a review of available studies and reports and gathering of knowledge from experts engaged directly or indirectly in livestock sector development, including traders and end market buyers, input and service providers, local government officials, researchers, development experts and community leaders.

The assessment will focus primarily on output markets, complemented by the collection and analysis of information on the extent to which the use of improved technology and services may impact the market competitiveness of Karamajong live animals. For instance, are the right vaccination services and vaccines readily available to allow live animals from Karamoja to easily cross regional boundaries?

## Assessment Objective and Key Questions

The objective of the livestock and livestock product value chain end market assessment is to provide information needed to assess strategies and options to help pastoral households become more competitive in live cattle, sheep and goat markets. Study results and recommendations are expected to contribute to the design of high-impact medium- and longer-term investment activities in the Karamoja livestock sector. The assessment team was also advised to investigate other livestock products and opportunities as they become apparent.

## Key Questions

The following is a presentation of the key questions posed in the Scope of Work (see Annex 7) for the assessment. The team carefully reviewed and clarified these questions, and incorporated the means of responding to them into the assessment methodology. That

methodology includes thorough review of relevant documents and reports, complemented by information gathered during site visits and interviews with government officials, donor agencies, international and local NGOs, stakeholders and informed observers.

1. Producer Behavior and Practice: Why do Karamajong herders sell livestock and to what extent is their objective to convert livestock capital to financial capital through markets? Are these attitudes changing, and if so, how and among which wealth groups? Specifically:
   a. What is a regarded as good operational balance for a household in terms of the number of cattle vs. sheep vs. goats?
   b. What are the main constraints to livestock production?
   c. What are the differences between sheep and goats in terms of production and income?
   d. To what extent does the risk of drought, and the need to acquire sufficient animals to survive drought, influence management practices?
   e. What influences the decision of a household to sell different livestock types, e.g. grown steers, grown bulls, heifers, sheep, goats?
   f. When are prices highest for different categories of livestock?
   g. What do pastoralists think buyers are looking for, and at what times of the year?
   h. Do the linkages between producers, traders and markets need to be strengthened? If so how, and with what support?
2. Current Live Animal Markets: What are the types, numbers (as best possible), prices and quality of live animals sold in primary and secondary markets in, and adjacent to, Karamoja? Specifically:
   a. Where are live animal markets (cattle, sheep, and goats) located geographically?
   b. How are live animal markets operated (who are the main supply chain actors)?
   c. What is the end-market for animals sold in these markets?
   d. How do supply, sales and prices vary by season?
   e. What are end prices and how are those prices partitioned among the various supply chain actors?
   f. What are the historic trends in live animal sales during the last 20 years or so?
3. Buyers and Their Perspectives: Are livestock sourced in Karamoja competitive in terms of health, quality of carcass, price, etc.? Specifically:
   a. Who are the buyers?
   b. How do buyers in different markets view the Karamoja supply of live animals?
   c. How do buyers and traders signal to livestock keeping families that they are going to buy cattle and/or shoats?
   d. What is the destination of the different types of animals?
   e. What are the challenges of acquiring sufficient live animals?
   f. Can transaction costs be reduced through producer organization?
4. Hides and skins: Is there scope for investment at the production end of the value chain to drive increased competitiveness of Uganda's hides and skins and finished leather? What benefits would accrue to Karamoja livestock keepers? Specifically:
   a. What role do Karamoja-sourced livestock play in Uganda's hides and skins trade and leather industries?
   b. Are Karamoja hides and skins recognized as having value? Why or why not?

5. Future options and issues: What is the demand in markets domestically and outside of Uganda? What types, numbers of live animals are sought? What prices are paid? How do supply chains to these markets operate (main actors)? How can live animals from Karamoja be more competitive? Specifically:
   a. What is the feasibility of fattening Karamoja males and cull cows? Where is cattle fattening currently done in Uganda? What is the source of animals for those operations, and is used for feed?
   b. What are the limitations, if any, in the available data on livestock populations, sales in Karamoja primary and secondary markets, and related issues? Is enhanced data acquisition and analysis needed, and if so, how might this be supported?
   c. In terms of wealth groups and livestock holdings, which groups are most likely to respond to and benefit from livestock marketing initiatives?
   d. Are there specific livestock marketing opportunities for women in Karamoja and if so, what are these opportunities? Specifically, what potentials and feasibility are there for increasing milk production, and for small-scale processing?
   e. Are enabling policies in place to increase the competitiveness of Karamoja livestock in domestic, regional and international markets? What policies need to be reformed or instituted to increase competitiveness? Is the capacity in place to monitor and report animal disease, especially OIE List A trans-boundary diseases? What are the investment costs to build the needed capacity?

## 2. ASSESSMENT DESIGN AND METHODOLOGY

The assessment team collected and reviewed a large number of reports and documents dealing with Karamoja in general, and the Karamoja livestock sector in particular. They verified and complemented information from the review of the literature with interviews and site visits in Kampala, and Karamoja and the surrounding area. Informants included officers and staff from the Ministry of Agriculture, Animal Industry and Fisheries (MAAIF), the Uganda Bureau of Statistics (UBOS), international donors, and NGOs in Kampala and Karamoja; district agricultural production and veterinary officers, agricultural researchers, meat inspectors, livestock professionals, and individuals engaged in the implementation of livestock activities, were all interviewed.

The team visited and observed Karamoja regional livestock markets at Moroto, Kotido, Amudat, and Kangole, as well as the market at Otuboi (near Soroti). They also visited abattoirs in Kampala, Mbale and Moroto, and a number of project sites in the Karamoja region. During those visits a wide range of pastoralists, agro-pastoralists, farmers, rural women, community animal health workers (CAHWs), drug shop owner/operators, small-scale local traders, large-scale local traders, external traders, transporters and business owners were interviewed, as well as district agricultural production and veterinary staff and traders in the surrounding area (Soroti, Mbale, Tororo and Busia).

The information from the literature and interviews was complemented by data collected on livestock markets in neighboring regions of Kenya (Turkana) and in South Sudan. This information proved extremely valuable in triangulating and verifying the information on the livestock trade in Karamoja and the surrounding area. The preliminary findings and recommendations were shared with a select group of livestock professionals in the region, incorporating their comments and suggestions into the draft report.

In summary, the assessment team interviewed over 200 individuals in Uganda, Kenya and South Sudan. A list of individuals interviewed, their contact details, and their institutional affiliation (if any) is included in Annex 2.

# 3. ASSESSMENT FINDINGS

## 3.1 General Findings on Pastoralism and Livestock Marketing in Karamoja

### 3.1.1 Pastoralist Livestock Production and Marketing Practices

Recent reports and documents available on the Karamoja region, and pastoralist households, reflect some basic misconceptions regarding livestock production and marketing practices. This is especially true when observed pastoralist behavior does not seem to make sense when compared to more conventional agricultural production and marketing practices and behaviors. However, the production and marketing practices of Karamojong pastoralists are very similar to those of other pastoralist groups in the region (Ethiopia, Kenya, Somalia, South Sudan, and Tanzania) and to those in extensive livestock operations throughout the world.

This section describes general livestock production and marketing practices and behaviors in Karamoja in economic terms to provide a foundation for understanding: pastoralist decision-making; and our answers to the questions posed in the SOW. To begin with, the primary objective of the livestock business is capital formation.[8] Extensive livestock operations generally do not respond to market prices by increasing or decreasing production. Increasing or decreasing the production of individual crops in response to changing price is completely rational for most annual agricultural production enterprises. However, it does not really apply to extensive livestock operations, except over very long time periods. In this respect livestock is similar to plantation agriculture (coffee, tea, etc.).

Karamojong (and other pastoralist) households do not tend to manage their herds/flocks to maximize productivity[9] and profit. Rather, they tend to manage them like an investment portfolio with a variety of assets. As stated above, their primary objective is to increase the value of the portfolio (in this case, the herd/flock). The income received from the portfolio is in the form of capital gains: a combination of increased asset values, and dividend income. Essentially, Karamojong pastoralists do not derive income from the sale of animals. Instead, the sale of animals merely monetizes their income, converting capital gains into cash for one of two principal reasons:

- ***To meet immediate cash needs.*** Karamojong pastoralists sell animals to obtain cash for the purchase of staple grains, the payment of school fees, family obligations, and unanticipated expenditures such as medical expenses. This behavior is well described in the literature. But it does not describe what is really happening. Livestock sold to meet immediate cash needs are generally surplus males and cull females (assets with limited future growth potential) whose sale has the least impact on the total value of the portfolio.[10]

[8] See footnote 1. There are usually two main objectives of livestock rearing in pastoralist systems viz. to build herds for capital growth, and build herds for the direct consumption of livestock products, especially milk, for household nutrition.
[9] RLP note – many pastoralist groups aim to maximize milk production due to the important role of milk in the diet. They will selectively breed from females with a history of good milk production, and manage offspring and dams to balance milk off-take for household use and milk for offspring.
[10] RLP note – this behavior and its impact on herd structure is well described in the literature. Note that this sale of surplus males and cull females also relates to developing a herd for milk production.

- ***To "trade up".*** Although not described in the literature, this is readily observable in the market. Karamojong pastoralists take advantage of opportunities to sell assets with low growth potential (slaughter bulls), and use the proceeds to purchase assets with high growth potential (heifers). This investment behavior increases the overall growth potential of their livestock portfolio.

This behavior tends to hold across all wealth groups (see Annex 4) because the Karamojong share two common cultural aspirations: to own livestock; and to accumulate more livestock. These aspirations are especially clear in "trading up". For example, to begin with a household aspires to own chickens. Once a basic flock size is obtained, the household actively seeks to "trade up", selling assets to acquire sheep/goats. The aspiration to accumulate more livestock continues to influence behavior, and when the opportunity presents itself households will seek to "trade up" by selling assets to acquire cattle. The Karamojong talk knowledgeably about all of their livestock, but are most interested in cattle. Chickens are valued, sheep and goats are valued more, and cattle are the most highly valued of all. In fact, cattle are traditionally more highly valued than cash by the Karamojong – perhaps because cash has so little use in the *kraals*. This behavior is distinct from the aspirations of sedentary agricultural households, where livestock are managed as a source of income, and as a savings account to be tapped when there is need.

This combination of objectives and cultural aspirations leads to understandable and predictable Karamojong livestock marketing behavior. The amount of money needed, not price, is the primary consideration when animals are being sold to meet cash needs. When the price is high, fewer animals are sold; when the price is low, more animals are sold. In other words, the supply of animals being sold to meet cash needs is price inelastic.
However, when the objective is to "trade up" price is a prime consideration. In this case Karamojong pastoralists take advantage of high livestock prices to sell slaughter bulls (high value/low potential growth assets) and buy heifers (high value/high potential growth assets). This is most apparent at the end of the rainy season, when slaughter bulls are in excellent condition and command relatively high prices. In summary, Karamojong livestock marketing practices, including decisions on which animals to sell and when, represents fully rational economic behavior.

### 3.1.2 A Region of Livestock Traders

Animals in Karamoja livestock markets are sold individually (one-by-one-by-one) at a price directly negotiated between buyer and seller. Men (in particular) are very interested in the livestock trade, often visiting the market simply to observe marketing behavior and prices. This practice of obtaining information on current conditions is their reference when they enter the market as sellers and buyers.

The sale of family livestock (except chickens) is almost exclusively handled by men, who take pride in their negotiating ability. Karamoja livestock markets are remarkable for the absence of brokers (intermediaries) when compared with livestock markets in Ethiopia, Kenya, Somalia, Sudan and Tanzania. The Karamojong prefer direct, face-to-face negotiation, meaning that a large number of individuals are directly involved in the trade. And apparently almost everyone is looking to trade under the right circumstances. The end result is a relatively large (and growing) number of Karamojong livestock traders fueling the very dynamic livestock trade in the region's markets.

Livestock producers may start trading animals when they have enough cash in hand to purchase an animal or two at the *kraal*, trekking it to the nearest primary market for resale. If successful, they may gradually accumulate the cash to become small producer/traders. A producer/trader complements livestock production with income from the purchase and sale of livestock. They have the flexibility to hold animals in their herd/flock, letting them gain maturity and condition before resale. They may also decide to keep certain animals (heifers) rather than selling them.

As a producer/trader increases livestock and cash holdings, they may reach the point where livestock trade is more important in terms of household income than livestock production. These individuals have enough cash to buy larger numbers of animals in primary markets, and move them to secondary markets for sale. However, they still retain the ability to hold animals, incorporating them into their existing herds/flocks to mature and gain condition before resale.

Producer/traders will purchase all ages and sexes of livestock, as long as the price is right. They may even buy and sell the same animals in the same market on the same day if they can make a profit. As these traders accumulate cash and increase the scale of trading operations they may establish links with external traders and markets in the surrounding areas, buying animals to transport out of the region for sale. These individuals seem to have adapted pastoralist marketing behavior to the livestock trade, valuing and actively accumulating cash resources in addition to increasing livestock holdings.

External traders come from outside Karamoja, seeking alliances with local traders. Their primary interest is in slaughter animals, which they actively buy for transport to terminal markets in Uganda, Kenya and Sudan. Most such animals are moved by truck, but Kenyan traders also have the facility to move them out of Uganda by trekking.

## 3.2 Specific Findings

### 3.2.1 Producer Behavior and Practice

*SOW questions: Why do Karamajong herders sell livestock and to what extent is their objective to convert livestock capital to financial capital through markets? Are these attitudes changing, and if so, how and among which wealth groups?*

Karamojong livestock management and marketing behavior is based on their application of traditional practices to herd/flock management at the *manyatta* and *kraal* levels. They very clearly seek to increase herd/flock size (numbers) and capital (value) through careful breeding.

The Karamajong manage their herds/flocks more like an investment portfolio than a productive enterprise, with a primary objective of increasing portfolio value (see 1.5 above).[11] The portfolio grows in value by generating income in the form of capital gains. Livestock sales monetize that income, and take place for two reasons: to meet immediate cash needs; and to buy more livestock. Marketing decisions are consistent with the objective of capital formation, and there is little or no incentive to convert livestock capital to financial capital (cash) for any wealth group.

[11] RLP note – again, but also with milk production and household food security in mind.

The Karamojong are generally not interested in converting livestock capital into cash for deposit in a bank. From their perspective it simply doesn't make sense to sell assets and bank the money, foregoing the opportunity for portfolio growth. It is far better to use cash sales to grow the portfolio by purchasing productive animals (such as heifers) to increase herd size. These animals appreciate in value and in number over time. Access to range of sufficient quality does not seem to be an issue – there is more than enough pasture available to feed the present livestock population. The availability of water is a much more limiting factor (see later).

Karamojong pastoralists are expert livestock breeders. Their herds/flocks are dominated by females, with high levels of fertility. Indeed, they expect most cows to calf every year. Age at first calving does not extend beyond 3 years. Herders purposefully select bulls and cows within and between herds for breeding. The parameters which influence breeding decisions are observed milk yield, physical performance, maturity, and the calving interval of mature cows; and the same for the mothers (dams) of young bulls and heifers. The Karamojong do not keep formal breeding records, but are close to their livestock and culturally attuned to individual animal and herd/flock performance. Bull calves kept for breeding are selected based on dam performance and overall pedigree history. Non-selected male calves are castrated (emasculated). A minimum of 4-5 selected breeding bulls are maintained in a herd of 200 breeding females, although in practice the number seems to be 7-8. The very best breeding bulls are accompanied by "followers" (younger, growing bulls), to ensure breeding presence while the cows are cycling.

The animals sold to meet cash needs are generally surplus males and (rarely) cull females. More animals may be sold if there is a compelling need for the money. The Karamojong traditionally value animals (especially cattle) more than cash, but that attitude appears to be changing. Consumption, particularly for those with larger numbers of livestock (20-30 cows, 25-30 shoats) appears to be expanding beyond cereal purchase to include costs such as school fees, health care, clothing, mobile phones and other consumer goods. The Karamojong are also adopting practices (the use of animal health products and services) that improve livestock performance, and are increasingly willing to pay for them.[12]

There is also a trend among the growing number of active livestock traders to accumulate cash to finance their trading activities. This may represent the beginning of a shift toward managing cash as investment capital, with a philosophy similar to that used for managing livestock.

### a. Herd structures

*SOW questions: What is a regarded as good operational balance for a household in terms of the number of cattle vs. sheep vs. goats?*

Based on livelihood profiles[13], observation and interviews once a household reaches moderately well-off status (20-30 cattle and 25-30 shoats) the ratio of cattle to shoats is roughly 1:1.4. This seems to represent a good operational balance for sustaining the herd/flock growth while providing enough animals to sell to meet immediate cash needs. It is also a good mix for handling the challenges of extended dry periods. Traditional pastoralist practices have evolved over time to be resilient, and this balance seems to contribute to that resilience. Comparative Karamoja household wealth groups by livelihood type are included in Annex 4.

[12] RLP note – pastoralists in Karamoja have been paying for veterinary services since the early 1990s, and probably before.
[13] FAO (2010).

But this is not a static relationship. It seems that for very poor households the entry point for livestock ownership is poultry keeping. If the poultry prosper, the next step is to acquire sheep and goats. And if that prospers the household will eventually seek to acquire cattle.

To summarize, it appears that as total livestock holdings increase the ratio of cattle to shoats tends to increase. And with fewer animals the ratio of cattle to shoats tends to decrease. Across all wealth groups the ratio of cattle to sheep and goats seems to hold in the range of 1:1.4.

### b. Constraints to livestock production?

The number one constraint to livestock production cited by everyone interviewed was animal health. Recurrent outbreaks and high levels of endemic diseases represent a serious constraint to increased livestock production and productivity. The principal livestock diseases reported in Karamoja were foot and mouth disease (FMD), contagious bovine pleuroneumonia (CBPP), peste des petit ruminants (PPR), trypanosomiasis and Newcastle disease (for poultry).[14]

With the exception of trypanosomiasis, vaccines exist for all these diseases. With the exception of Newcastle disease, the administration of vaccines is treated as government responsibility. Vaccines for FMD, CBPP and PPR cannot be imported, or administered, privately. But the government system of surveillance, movement restrictions and vaccination is simply not working. An unknown number of animals in the region are being lost to preventable disease, at what can only be assumed is considerable cost to the local economy.[15]

The number two constraint to livestock production is water availability. Livestock water availability (Figure 1) is the primary determinant on when and where to move livestock during the dry season.

According to recent research, there are about only 30 permanent livestock water sources (dams) in the region, with varying capacities.[16] Excluding Abim, Amudat and Kaabong there are only 26 dams in the region, of which only two hold reliably sufficient water. The remaining dams during the study consisted of three that had dried up, 11 of which were almost dry, and 10 dams with insufficient supply. Most of the dams are located in Moroto district (42%), with others in Kotido (31%), Nakapiriprit (15%) and Napak (12%) respectively. Only the Nakicument dam in Napak has controlled access (watering troughs); all the others have direct livestock access for watering. With the onset of the dry season livestock begin moving toward and concentrating near these water sources. During long and severe dry seasons, livestock begin moving out of the region toward the green belt. There is actually more than enough forage available for the current livestock population, but limited water supplies make it impossible to make use of it.

The number three constraint cited was feed availability, particularly with regard to the livestock kept at the *manyattas*. Ready availability of enough feed for these animals is a serious issue, especially during the height of the dry season. But feed is not a serious issue with the *kraals* as long as there is access to water and mobility is not constrained.

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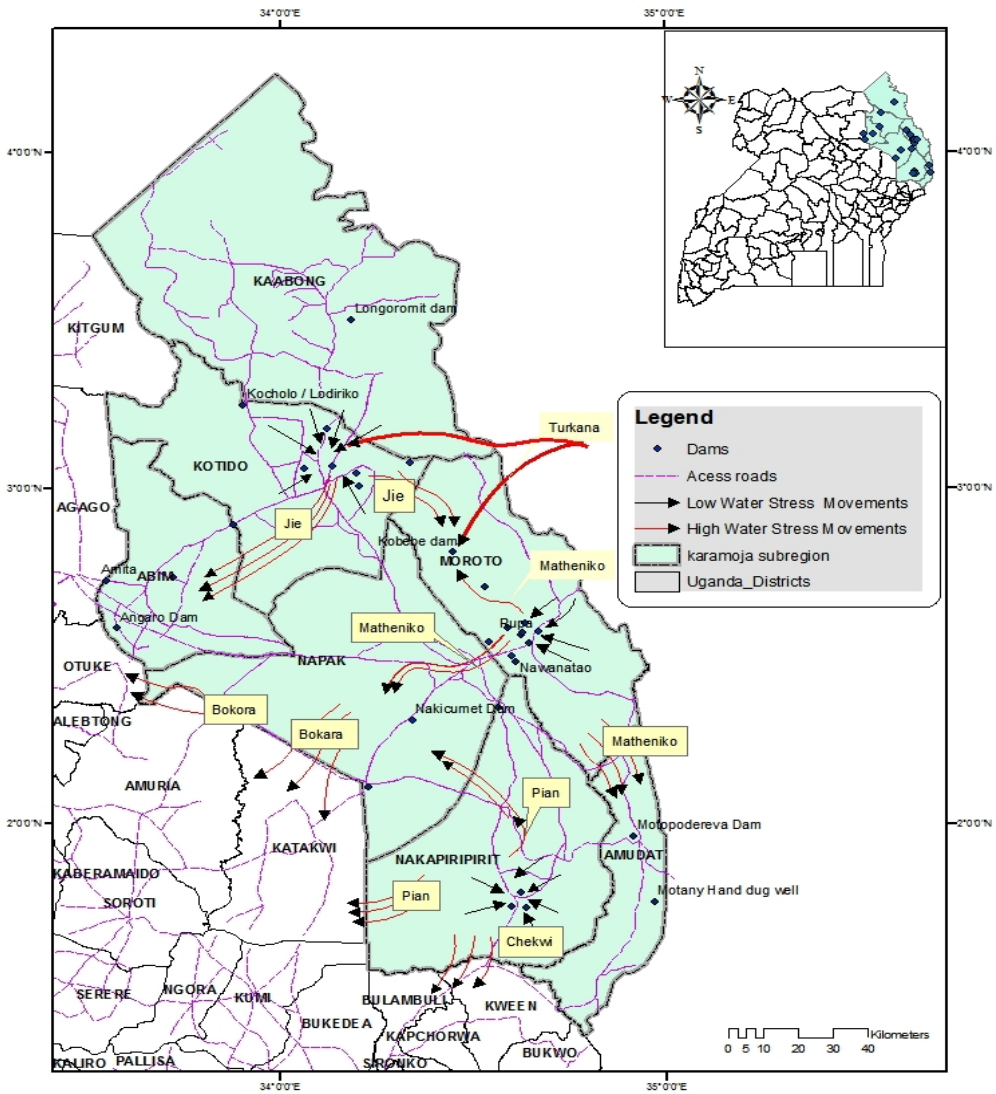
[14] RLP note – the livestock disease situation in Karamoja is complex and involves a wide range of viral, bacterial, protozoal and parasitic diseases, with varying economic and livelihoods impacts. Some research points to a growing importance of tick-borne diseases such as East Coast fever in some areas e.g. Byaruhanga et al. (2015), *Preventive Veterinary Medicine* 122, 287-297.

[15] RLP note – this finding is consistent with losses due to disease in other pastoralist areas of East Africa, with annual losses of between around 10 to 15 per cent associated with disease; many of these losses are preventable using relatively inexpensive vaccines or medicines.

[16] Mugerwa et al. (2014), ibid.

**Figure 1: Livestock Water Sources in Karamoja**[17]




## c. What are the differences between sheep and goats in terms of production and income?

As discussed earlier, Karamojong pastoralists do not think in terms of production and income. Simply put, there is an advantage to having a mix of cattle, sheep and goats in their livestock portfolio. There is also a definite hierarchy – cattle are preferred to goats, and goats to sheep. Pastoralists prefer selling sheep and goats to selling cattle – especially when cash needs are not large. In some ways sheep and goats act much like a petty cash account for the portfolio.

As to production, goats and sheep complement cattle in grazing management. Karamojong households tend to keep more goats than sheep because goats are hardier and tolerate dry conditions better than sheep. Goats also have an advantage because they are browsers, consuming forage resources which cattle do not use. Sheep, on the other hand, graze pasture

[17] From Mugerwa et al. (2014), ibid.

left behind by cattle. Goats also tend to be preferred to sheep because of their twin kidding ability, and because they produce more milk.[18] Finally, the semi-arid environment of Karamoja lends itself to keeping more goats than sheep.

As to income, we observed that goats tend to fetch higher prices than sheep. Sheep that weigh more than goats may actually have less market value. This is influenced by the vibrant market for goats in South Sudan. Sheep are traded into Kenya in exchange for slaughter goats, but the terms of the exchange in terms of the relative value of sheep and goats is not clear.

### c. Drought and herd growth

*SOW question: To what extent does the risk of drought, and the need to acquire sufficient animals to survive drought, influence management practices?*

Concerns regarding the potential impact of drought on livestock producers are, in our opinion, overstated. Livestock producers rarely mention drought. They expect prolonged dry periods, and traditional grazing patterns have evolved to deal with that eventuality. Seasonal movement in the dry season from Turkana into Karamoja is common, as is the seasonal movement of livestock within the region to where there is access to water.

Pastoralists manage their herds in the dry season using a combination of: mobility (moving animals to where there is water and forage); and keeping more cattle than shoats. About 5-15% of the animals in the herd/flock remain in the *manyatta* during the dry season, with the remaining 85-95% held in *kraals* (See Table 1 below). During extended dry seasons the proportion of the herd/flock held in the *manyatta* tends to decrease, increasing the proportion in the *kraal*.

Barriers which block or limit animal movement impact pastoralists much more than dry conditions. For example, crop production is expanding into the rangelands of the Karamoja region, pushing livestock to more marginal areas. This expansion will sooner or later impact traditional pasture-based grazing systems through the feeding of crop residues. Growing crops which are not complementary to livestock are likely to make pastoralists less resilient.

Large areas are also being set aside for national parks, wildlife conservation, forest reserves and mineral exploration. This changes and reduces access to pasture, water, and markets by blocking traditional livestock movement routes – with a corresponding impact on livestock health and productivity. In particular, setting aside large areas requires careful consideration of traditional livestock movement routes and marketing corridors based on discussion and negotiation with elders and leaders in the *manyatta* and *kraal*. However, this could be mitigated by improving access to livestock water to reduce the need to move while forage is still available.

In summary, practices which limit animal mobility and access to permanent water have a much greater impact on pastoralists than dry conditions. In fact, both sedentary and mobile livestock populations are more resilient than crops to dry conditions and erratic rainfall patterns.

[18] RLP note – again, there are household food security benefits to keeping goats because of this milk production, and the direct consumption of milk at household level. In other words, a distinct difference between sheep and goats is that goats are favored in part, due to their direct contribution to household diets. Goat milk is a particularly good food for young children.

**Table 1: Livestock Movement in Karamoja**

| Districts | Ethnic Groups | Dams | Movement during high moisture stress season |
|---|---|---|---|
| Kaabong | Dodoth | 1 | Pastoralists in Kaabong stay in the district most time, but some from the southern and western areas may move to the nearby dam in Kotido. |
| Kotido | Jie | 8 | Pastoralists in Kotido have better access to water, but also move out of the district to Abim during the high moisture stress season as Turkana from Kenya move into Kotido . |
| Moroto | Matheniko<br><br>Tepeth | 11 | Pastoralists in Moroto have better access, but still move to Napak and Amudat as the Turkana move to Moroto during high moisture stress seasons. Tepeth stay around Mount Moroto. Tepeth need to agree with Matheniko to use lower grazing areas of Moroto. Metheniko from Moroto and Bokora from Napak stay in both districts as necessary, which is as part of their traditional graining system. |
| Napak | Bokora | 3 | Pastoralists in Napak have very limited access to water, but more pasture lands They move outside Karamoja to the western and southwestern part of the neighboring region during moisture stress season. Bokora from Napak and Metheniko from Moroto stay in both districts as necessary |
| Nakapiripirit | Pian | 4 | Pastoralists in Nakapiripirit leave the region and move to the western and southern part of the neighboring region |
| Amudat | Pokot | 2 | Pastoralists in Amudat are the most mobile. They stay in the eastern part of the region grazing areas but during high moisture seasons they move as close as Pian and Matheniko grazing areas in Napak and Moroto districts and across the border to grazing areas in Kenya. |
| Abim | - | 2 | Farmers in Abim practice sedentary farming, and have few livestock. Grazing land is used often by Jie pastoralists from Kotido. |

### d. Decision on livestock sales

*SOW question: What influences the decision of a household to sell different livestock types, e.g. grown steers, grown bulls, heifers, sheep, goats?*

The primary factors influencing the decision on which animal(s) to sell are the amount of cash needed, and the animals whose sale will least impact future portfolio growth. Pastoralists tend to sell male sheep and goats when small amounts of cash are needed. When larger amounts of cash are needed they sell surplus male cattle, and cull ewes and does. The Karamojong only reluctantly sell cull cows, and they virtually never sell heifers. Selling breeding age female cattle is almost equivalent to bankruptcy[19] – liquidating productive assets because you must, with little prospect of replacing them.

However, pastoralists will sell high value assets (slaughter males) in order to purchase breeding females when the opportunity presents itself. We have labeled this behavior "trading up".

### e. When are prices highest for different categories of livestock?

The price of slaughter males (rams, bucks, bulls) depends upon end market demand for meat, and tends to be highest during festive seasons (December/January, Ramadan/Id). More of

[19] RLP note – and also threatens household food security as milk supply for direct consumption will be compromised.

these high value animals are sold at the end of the wet season, when they are in good to excellent condition, and less during the wet season when animals are gaining condition.

The price of breeding age female cattle (mostly heifers, rarely cows) tends to track this same dynamic, since slaughter bulls are most commonly sold to purchase breeding age females. The same appears to be true for breeding goats and sheep. The price of young animals, which need to mature and gain weight, tends to be highest at the beginning of the dry season when cash is more readily available, but is very sensitive to changes in forage conditions. Prices tend to fall during the dry season, and start trending upward with the onset of the rainy season.

For livestock products (milk, butter, chickens and eggs) the price is higher during the dry season when livestock are away from the *manyatta* and supplies are reduced. Product prices are lower during the rainy season when production is higher, and livestock are closer to the *manyatta*.

### f. Seller's alignment with buyer preferences

*SOW question: What do pastoralists think buyers are looking for, and at what times of the year?*

Pastoralists in Karamoja appear largely indifferent to the nuances of changing buyer practices. They know that external traders are always looking for slaughter animals, and will pay top prices for them. They also expect local traders and producers to purchase the rest. As previously stated, they tend to sell surplus males to meet cash needs, and high value animals to buy breeding females. Their decision-making takes into account, but is not based, on buyer practices. The greatest factors are the amount of cash needed, and the opportunity to trade up.

To summarize, pastoralists sell all types of livestock of varying age and condition for which there are always buyers at some price. Informal information on market conditions in the region give sellers an idea of what they can expect animals to be worth. Based on that information, and whether they are selling to meet cash needs or to reinvest in more animals, they actively negotiate price (and may decide not to sell if their expectations are not met).

### g. Linkages between actors

*SOW question: Do the linkages between producers, traders and markets need to be strengthened? If so how, and with what support?*

Live animal markets appear to be working very well, with no major issues. However, there are some things that could be done to facilitate future market growth and efficiency. The greatest benefit would come from a Livestock Market Information System (LMIS) to provide buyers and sellers with current market information and facilitate price discovery.[20] This would particularly benefit sellers, who are always at a disadvantage in negotiating with buyers. To a lesser extent, careful activities could be implemented to encourage private oversight, operation and perhaps ownership of markets. The dynamics of the current system, and the competition for Karamoja animals, suggest that linkages between producers, traders and markets are not really an issue.

Apart from live animal markets, the productivity of the value chain is compromised when value chain actors work in isolation. A value chain activity to stimulate linkages between *manyatta*-based enterprises and private livestock business development service (BDS) providers could build capacity and encourage the development of enterprises which support

[20] RLP note – clearly, a livestock market information system already exists, but is informal and positioned in the private sector. Any moves to formalizing the system would need to first understand in some detail how sellers are already getting information on prices e.g. via mobile phones, and the value for money of a different, more formal system.

the live animal value chain. Improved linkages between pastoralists and animal health service providers, and improvements in animal nutrition, would help make Karamoja livestock enterprises even more productive than they currently are.

There are also opportunities to reinforce the livestock value chain by developing associated livestock product value chains, such as linking women at the *manyatta* with markets for chickens, eggs, and milk products. The demand for these products is increasing in Moroto and other towns as populations grow and purchasing power increases. In particular, investments in hotel construction, restaurants, health care facilities, offices, homes, stores, schools and marketing centers are already creating opportunities for small scale goat and sheep fattening, poultry farming, dairy production, forage development, and hay making.

### 3.2.2 Current Live Animal Markets

*SOW questions: What are the types, numbers (as best possible), prices and quality of live animals sold in primary and secondary markets in, and adjacent to, Karamoja?*

The live animal market in Karamoja is more complex and much more dynamic than described in background reports and documents. An overall quantitative assessment of the regional livestock market system was not possible because there is no reliable and comparable market information, especially with regard to the number of animals offered for sale. We were also unable to verify the volume and prices of animals purchased/traded at the *kraals* and livestock camps.

It is clear that live animals are the major commodity traded in the region, particularly in terms of value, and that the livestock trade (especially cattle) is the major contributor to the economy of the region. Narratives of a failing pastoral livestock production system are simply not supported by the reality we observed on the ground.

We collected information on the number of livestock offered for sale, and price estimates, in the markets we visited. But these only provide a snapshot of what is happening, and are insufficient to inform assessments or analysis. There are likely significant seasonal variations in the numbers of animals sold, although these could not be definitively described from available information.[21] We believe that variations in the number of animals offered for sale are based, not on expected or actual prices, but by changes in pastoralist cash needs and expenditure patterns, and the desire to purchase breeding females (trading up).

The overall livestock population in the region appears relatively low, still in the process of recovering from the impacts of the protected *kraal* system. However, the vibrant market for breeding females and young stock indicates that the process of rebuilding herds and flocks is well underway – primarily financed by the sale of slaughter males. However, in the absence of reliable statistical data these are only educated guesses.[22]

In terms of price, the existing information is rudimentary, fragmented, and insufficient to inform buyers and sellers on market conditions or support quantitative analysis of the regional market system; there was a lack of comparable, time series data on markets.[23] Information on markets in the region, and brief reports on the markets visited, is provided in

[21] RLP note – methods such as seasonal calendars could be used in future to describe seasonal variations in sales and prices, and triangulated against key informant interviews.
[22] RLP note – established epidemiological methods such as proportional piling can be used to quantify trends in herd structures and herd growth in pastoralist areas.
[23] RLP note – systematic retrospective analysis of market performance is possible in the absence of a formal LMIS or time series data, but requires methods and time inputs which were outside the scope of the assessment SOW.

Annex 3. Tables 2 and 3 (below) provide a summary of the types of animals being traded, price ranges and end markets based upon the information we were able to obtain/collect.

**Table 2: Cattle Types and Prices**

| Type | Description | Price Range | End Market/Buyer |
|---|---|---|---|
| Slaughter bulls, medium to large frame | 400 kg – 500 kg Good to excellent condition. | UGS 800,000 – 1,700,000 *Destined for slaughter* | Local slaughter or transport to Soroti, Mbale, Tororo, Busia, Kampala, Kenya |
| Young bulls | 100 kg – 400 kg Fair to excellent condition | UGS 500,000 – 900,000 *Sold locally for use as oxen, or for conditioning* | Local producers/traders |
| Bull calves | < 100 kg | UGS 250,000 – 400,000 *Sold locally for conditioning.* | Local producers/traders |
| Slaughter cows *Very few in number* | 250 kg – 400 kg Fair to excellent condition | UGS 750,000 – 1,000,000 *Mostly sold locally for slaughter* | Local slaughter |
| Heifers | 100 kg – 250 kg Good to excellent condition | UGS 400,000 – 700,000 *Sold locally for breeding, or taken to Turkana for barter exchange* | Local producers/traders |
| Heifer calves | < 100 kg | UGS 200,000 – 400,000 *Sold locally* | Local producers/traders |

**Table 3: Sheep and Goat Types and Prices**

| Type | Description | Price Range | End Market/Buyer |
|---|---|---|---|
| Slaughter males | 25 kg – 50 kg Good to excellent condition. | UGS 80,000 – 200,000 *Destined for slaughter* | To Juba via Lira and Gulu, to Kampala, some for local slaughter |
| Young males | < 25 kg Fair to excellent condition | UGS 40,000 – 90,000 *Sold locally for conditioning* | Local producers/traders |
| Breeding females | < 15 kg – 25 kg | UGS 60,000 – 90,000 *Sold locally* | Local producers/traders |
| Young females | < 15 kg | UGS 20,000 – 60,000 *Sold locally for conditioning.* | Local producers/traders |

Slaughter Bulls: Medium to large-framed bulls in good to excellent condition. Includes animals sourced in Turkana and traded into Karamoja, as well as those sold in *kraals* and livestock camps, or at small primary markets. Purchased by producer/traders for resale at larger secondary markets to external traders. Shipped to end markets in Kampala/Entebbe, Soroti, Mbale, Tororo, or Busia. Some are trekked into Kenya from Amudat; many animals transported to Tororo and Busia will be walked across the border into Kenya. There is strong

demand for Karamoja animals based on expected carcass size and meat quality. Negotiated prices depend upon individual animal age, size, condition and location (*kraal*, primary or secondary market).

Young Bulls: Medium to large framed young bulls in fair to excellent condition, needing additional time to mature and reach slaughter age and weight. Sold to farmers as oxen, or to producer/traders to be incorporated into the *kraals* until reaching slaughter size. Negotiated prices depend upon individual animal age, size, condition and location.

Bull Calves: Young males less than one year old. usually sold to meet immediate cash needs. Purchased by producers and local traders to be incorporated into the *kraals* to mature until ready for resale. Negotiated prices depend upon individual animal age, size, condition, and location.

Cows: Very few cows on offer, mostly dry cows and culls (old). Slaughter cows usually purchased by local traders/butchers. Strong prejudice against selling females for almost any reason. Negotiated prices depending upon individual animal size and condition.

Heifers: Breeding age and younger females originating outside Karamoja (Soroti), transported into the region by traders to sell and/or exchange for slaughter bulls. High local demand for heifers to build herds, as well as for barter/exchange for slaughter bulls in Turkana. Eventually purchased by producers and incorporated into *kraals*. Strong demand for heifers keeps prices high. Negotiated prices depending upon maturity, size, condition, location and season.

Slaughter Goats: Largest volume of animals currently available in regional markets. Medium and large-framed slaughter goats (male) sold mainly to external traders for export to Sudan. Most large-framed slaughter goats originate in Turkana. Karamoja has a reputation for not having many goats. Negotiated prices depending upon size, condition and location.

Young Goats: Young males purchased mainly by local producers for further conditioning. Many of these also originate in Turkana. Negotiated prices depending upon size, condition, location, and season.

Female Goats: Breeding females are relatively few in number, and are generally purchased locally by producers for incorporation into the *kraals* as breeding stock. Negotiated prices depending upon size, condition, and season.

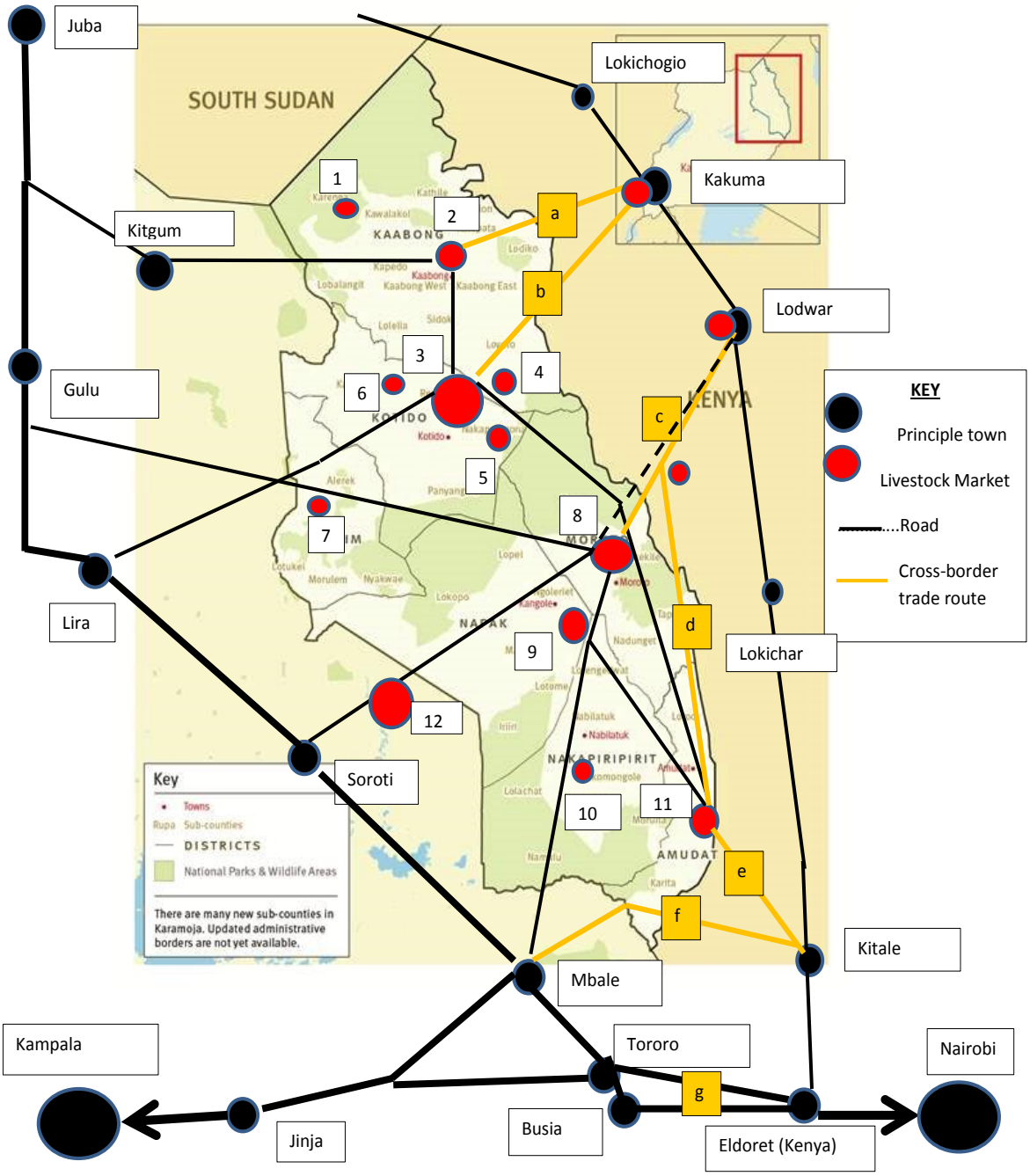
Sheep: Sheep are purchased by local producers/traders primarily to trade into Turkana for slaughter goats. Some males are slaughtered locally, and females are incorporated into the *kraals* for breeding or conditioning. Negotiated prices depending upon size and condition.

Other: Smaller numbers of donkeys and camels are present in some of the markets. Donkeys are purchased for use as pack animals by local producers, or by traders to exchange in Turkana for slaughter goats. Camels are mostly destined for slaughter and sale in Kampala. Overall, the market for Karamoja animals is vibrant, with traders actively competing for slaughter bulls. The general quality of animals at present is good to excellent. However, animals tend to lose condition during the dry season, and those sold to meet immediate cash needs are often in only poor to fair condition. Pastoralists generally do not bring poor quality animals to the market, knowing that the expected price is low. But they prefer selling poorer quality animals to meet immediate cash needs, reserving high value animals for sale and reinvestment.

### a. Where are live animal markets located geographically?

The live animal trade in Karamoja is highly integrated into a wider trading network spanning a vast area which includes Juba (South Sudan), Lodwar (Northern Kenya), Nairobi (Central Kenya) and Kampala. Organized live animal markets are geographically dispersed throughout the region (see Figure 2 below).

**Figure 2: Main Livestock Markets in Karamoja**




There are a total of 23 organized markets in Karamoja, of which 20 function mostly as primary markets feeding into the three major secondary markets at Kotido, Moroto and Amudat. These in turn feed into end markets outside the region.

There is considerable movement of livestock across administrative and international borders. Significant numbers of animals are reportedly exchanged in Turkana livestock camps, or purchased in the *kraals,* prior to entering the organized market system. In the formal market system animals (primarily heifers) are also purchased in Bukedea, Soroti and Otuboi for trade into Karamoja and Turkana. Detailed time data on the volumes of trade passing through these markets and seasonal variations is not available.

The presence of multiple primary, secondary and end markets is a decided advantage for Karamoja. Animals move from the *kraals* and livestock camps into the formal market, and often between markets before being sold for transport to end markets. Multiple end markets compete for livestock from the region, with the trade in slaughter bulls particularly vibrant. This, combined with robust demand in the end markets, makes the market very resilient to shocks from the sudden closing of any single end market.

### b. How are live animal markets operated and who are the main supply chain actors?

Formal organization and operation in the markets we observed appears rudimentary. Live animal markets in the region take place on a once-a-week basis, with market day depending upon location, and are in theory operated by local town councils. Both primary and secondary markets are usually located in an open area adjacent to the town market. The exceptions are Kotido, where the market is located a couple kilometers out of town, and Moroto where the market is located just outside of town on the main road.

Infrastructure is in generally poor condition or totally absent. However, the lack of physical infrastructure does not seem to present significant obstacles.[24] Market areas are usually organized into sections for different categories of stock (e.g. slaughter bulls, young cattle, shoats, donkeys) although mixed groups of animals are also commonplace. The placid nature of Karamojong livestock permits the presentation of hundreds of animals within a relatively small area without the need for pens to separate the animals.

Market fees are collected by town council representatives, with payment often made to individuals without any corresponding documentation.[25] Local Veterinary Officers perform simple clinical checks on the animals being sold, and issue health papers for animals being transported. The only place we visited where revenue agents were obviously present was Amudat, where they were collecting fees for livestock purchased from Kenyan cattle buyers.

A large number of individual producers and local traders are active in the markets. Producers sell animals to small traders at the *kraal* or livestock camp who then bring them to market, or bring them to the market themselves. Livestock traders move freely throughout the market, buying individual animals based on directly negotiated prices. Larger local traders buy all types and sizes of animals in primary markets, moving some of them to secondary markets for resale to even larger local traders or external traders. Animals may change hands more than once during the market day. Karamoja markets are notable for the absence of brokers in the market – buyers and sellers negotiate directly with one another.

[24] RLP note – this is consistent with experiences elsewhere e.g. in Ethiopia, investments in new market infrastructure in pastoralist areas had limited impact on market performance; further details are available here.

[25] RLP note – this an important constraint to both a formal LMIS, and the handover of market management to the private sector. As long as local government officials have the option of misappropriating market fees (assuming that this actually happens), they will likely resist a LMIS (which could be used to cross-check revenues) or private sector management (which may give the task of fee collection to private sector workers).

An area of the market is occupied by trucks of various sizes which transport cattle and goats to end markets outside the region, and in some cases between markets in the region. Markets also attract poultry sellers, and a large number of local vendors of food, drink, animal health products and consumer items (cell phones, shoes, etc.).[26]

In summary, market actors range from external traders to numerous local producer/traders. Local producer/traders have a competitive advantage because they are able to buy animals and incorporate them into the *kraals* for a time; or trek them from primary to secondary markets at much lower prices than trucking.

### c. What is the end-market for animals sold in these markets?

There is no single end-market for live animals. External and local traders actively compete to purchase available animals based on their knowledge of conditions in alternate end markets. However, there are general patterns of livestock movement and trade, as described below.

Slaughter Cattle Movement

Slaughter cattle movement in the Karamoja region is illustrated in Figure 3 below. Slaughter bulls from Turkana are being sold into Karamoja, but since the exchange takes place in the livestock camps the number cannot be determined. Some slaughter bulls may be exported to South Sudan, but is appears that most are currently being trucked south to one of several end markets. The busiest route at present involves the Soroti – Mbale – Tororo – Busia – Eldoret – Nairobi axis. However, the extent to which animals travel all the way to end markets in Nairobi, or enter end markets in other Kenyan cities, was beyond the scope of the assessment.

Animals from Karamoja also enter the Kampala market. There seems to be a growing demand in Kampala which is drawing animals away from export to Kenya. We talked to traders in Karamoja who said they were buying for shipment to Kampala and/or Entebbe. But the relative numbers going to slaughter in Soroti/Mbale/Busia, into Kenya, or Kampala are constantly shifting depending on demand, relative prices, and exchange rates.

Sheep and Goat Movement

Sheep and goats move into and out of Karamoja region as illustrated in Figure 4 below. Some sheep are slaughtered locally, but most are either bought locally for incorporation into existing flocks, or traded into Turkana in exchange for slaughter goats. Young and breeding age goats are purchased locally for integration into existing flocks. The demand for medium and large- framed slaughter goats (male) is particularly dynamic, with the predominant end market being South Sudan. Some slaughter goats are also traded westward towards Kampala.

Breeding Heifer Movement

Breeding heifers appear to originate in Otuboi-Soroti-Bukedea, and are traded into Karamoja and exchanged for slaughter bulls from as far away as Turkana. We believe this is a recurring and normal seasonal practice in response to the demand for breeding stock, and "trading up" – the sale/exchange of small ruminants, surplus males, and cull cows for reproducing age females.

[26] RLP note – the sale of cell phones in livestock markets supports the notion that cell phones are an important part of the informal livestock market information system.

**Figure 3: Movement of Slaughter Bulls**

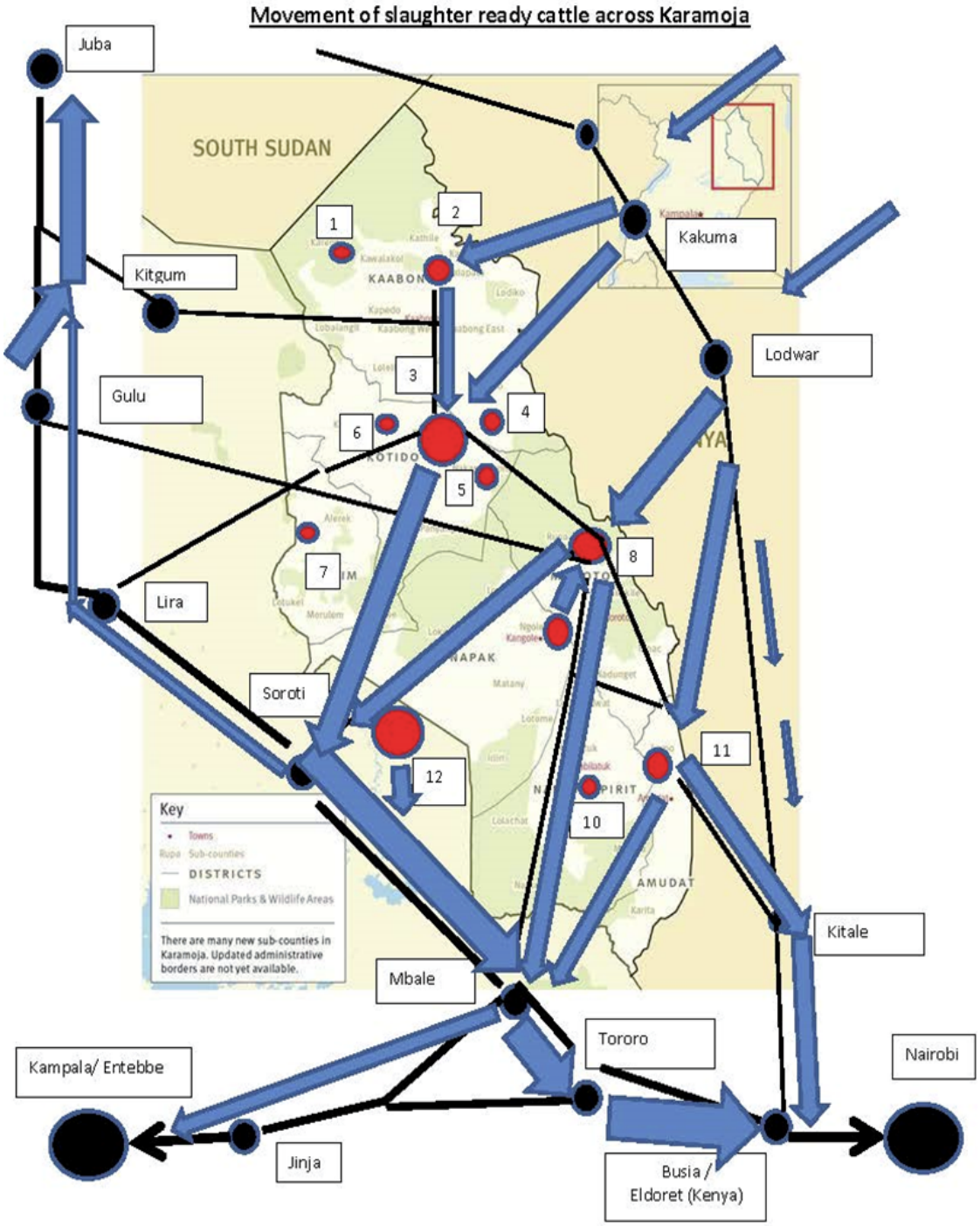
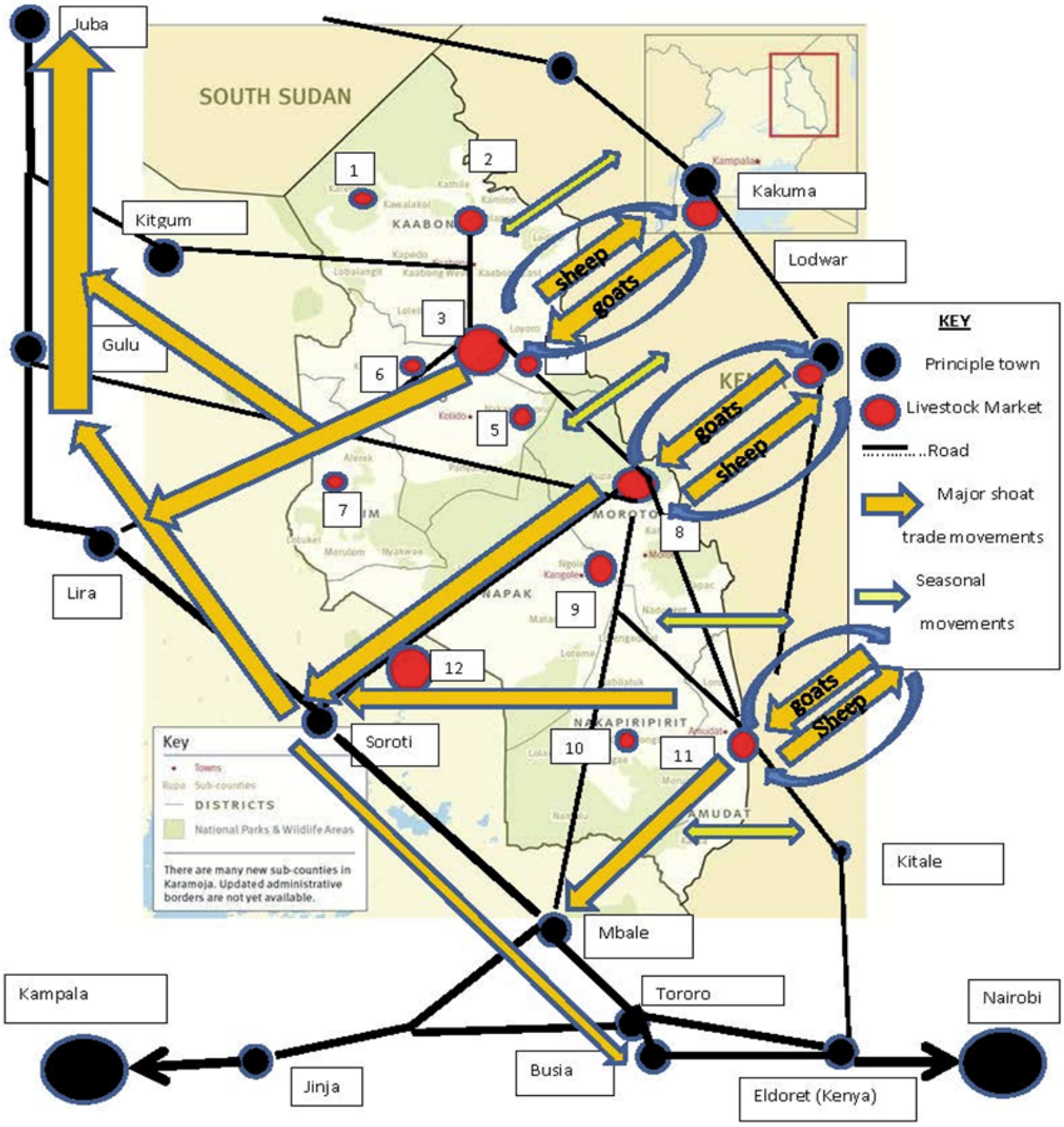


**Figure 4: Sheep and Goat Movement**




Immature (feeder) Cattle Movement

There is no single end market for the young cattle and calves which need further maturity and conditioning before being ready to slaughter. There does not appear to be any organized movement of immature cattle out of the region – all the cattle we observed being transported by truck were slaughter ready. From what we observed and were told, we believe that younger animals are sold to local producers, who integrate them into their own herds to mature and gain weight before being resold. This is not a readily visible practice because animals are not leaving the region, and are not being held in confinement for feeding. Instead, they are simply changing hands and being incorporated into existing *kraals* to mature and gain condition.

### d. How do supply, sales and prices vary by season?

We could not determine seasonal supply and sales trends because information on market volumes is not being methodically measured or recorded.[27] Table 4 below lists the livestock markets in the region, and provides a snapshot of recent information on market volumes.

**Table 4: Karamoja Livestock Markets**

| District | Sub-county | Mercy Corps 2014 | USAID Oct 2015 |
|---|---|---|---|
| | | | |
| Nakapiripirit | Namalu | | |
| | Lonegae | | |
| | Lolachat | | |
| | | | |
| Amudat | Loor | | |
| | Karita | | |
| | Amudat T/C | | 300 cattle, 500 shoats |
| | | | |
| Moroto | Nadunget | 100 cattle | 300 cattle, 400 shoats |
| | | | |
| Kotido | Nakapelimoru S/C H/Q | 40 cattle | |
| | Panyangara | | |
| | Kanawat | 120 cattle | 800 cattle, 1,500 shoats |
| | Rengen S/C H/Q | | |
| | Lokomoebu, Kotido S/C | | |
| | Kokoria, Kacheri S/C H/Q | 40 cattle | |
| | Napumpum, Panyangara | | |
| | | | |
| Kaabong | Monageet/ Komuria | 80 cattle | 120-140 cattle, 120 shoats |
| | Karenga S/C H/Q | 20 cattle | |
| | | | |
| Abim | Orwamuge S/C H/Q | 50 cattle | |
| | Alerek S/C H/Q | | |
| | Maklatin S/C H/Q | 10 cattle | |
| | | | |
| Napak | Matany | | |
| | Iriiri | | |
| | Kangole | | |
| | Lutome | | |
| | | | |

Note: Highlighted sub-counties are the major livestock markets in each district.

Livestock prices are being collected in various markets by various organizations on an irregular basis. But the methodology is simplistic, and without information on the total

[27] RLP note – as previously mentioned, future analysis could include the use of seasonal calendars to gather this information from key informants.

number of animals available for sale the price information means almost nothing.[28] Some market volume information has been collected by Mercy Corps for Komuria, the principal market in Kaabong district. Limited information from June 2013 to September 2014 shows a weekly average of approximately 40 cattle (range 8-72) and 30 goats (range 15-58) being sold, but we believe this does not include animals purchased by local producer/traders. In addition, these numbers cannot be extrapolated into the region as a whole. Current market information collection is simply not comprehensive, and is focused on individual markets rather than the regional market network.

There are, however, generally acknowledged tendencies in the market. As previously described, producers sell to meet immediate cash needs, or when they wish to "trade up". The number of animals offered for sale varies according to need. As a result, the supply of livestock for sale tends to be price inelastic. When prices are low, volumes tend to be higher – and when prices are high volumes tend to be lower. Prices are also linked to condition. When cattle are in excellent condition, prices tend to be higher – such as after the end of the rainy season). As pastures mature and cattle begin to lose condition, prices tend to drop because animal condition starts to decrease – not because of any decrease in demand. But these are only general factors.

### e. End prices and partitioning among the various supply chain actors

There are no fixed prices in the live animal market. Animals are sold individually at prices directly negotiated between buyers and sellers. As illustrated in Tables 1 and 2, there is a considerable range of prices for individual animals based on age, sex, condition, and location (*kraal*, primary or secondary market). Prices may also vary during the course of the day depending upon supply and competition for available animals. For example, an external trader who has hired a truck to transport slaughter bulls to an end market may offer higher prices later in the day just to fill the truck.

**Table 5: Illustrative Slaughter Bull Cash Transaction Costs (UGS)**

| Item | Producer | Local Trader | Ext. Trader | Abat. Trader | Butcher |
|---|---|---|---|---|---|
| **Sale Price** | **1,200,000** | **1,400,000** | **1,600,000** | **1,800,000** | **1,980,000** |
| | | | | | |
| **Costs** | | | | | |
| Purchase Price | 0 | 1,200,000 | 1,400,000 | 1,600,000 | 1,800,000 |
| Trade License | 0 | 3,000 | 5,000 | 5,000 | 5,000 |
| Health Inspection | 1,000 | 5,000 | 5,000 | 0 | 0 |
| Trekking | 0 | 10,000 | 0 | 0 | 0 |
| Loading | 0 | 0 | 2,000 | 0 | 0 |
| Transport | 0 | 0 | 50,000 | 5,000 | 10,000 |
| Market fee | 0 | 5,000 | 5,000 | 0 | 0 |
| Slaughter Cost | 0 | 0 | 0 | 15,000 | 0 |
| Meat Inspection | 0 | 0 | 3,000 | 5,000 | 0 |
| Retail Costs | 0 | 0 | 0 | 0 | 37,000 |
| | | | | | |
| **Total cash costs** | 1,000 | 1,223,000 | 1,470,000 | 1,630,000 | 1,852,000 |
| | | | | | |
| **Net Cash Income** | **1,190,000** | **177,000** | **130,000** | **170,000** | **128,000** |
| | | | | | |

Note: Excellent condition slaughter bull weighing 450 kg, yielding a 180 kg carcass. Consumer price assumes a retail price of UGS 11,000/kg, bone in.

[28] RLP note – this depends on how the price information is interpreted and used.

As best as we can determine based on available price information, the margins in the livestock trade are substantial. Without more information on detailed costs, and on market risks inherent in cash trade, it is difficult to say whether they are excessive.

**Table 6: Illustrative Slaughter Goat Cash Transaction Costs (UGS)**

| Item | Producer | Local Trader | Large Trader | Juba Exporter |
|---|---|---|---|---|
| **Sale Price** | **120,000** | **150,000** | **180,000** | **275,000** |
| **Costs** | | | | |
| Purchase Price | 0 | 120,000 | 150,000 | 180,000 |
| Trade License | 0 | 1,000 | 2,000 | 5,000 |
| Health Inspection | 0 | 1,000 | 1,000 | 0 |
| Trekking | 0 | 1,000 | 0 | 0 |
| Loading | 0 | 0 | 500 | 0 |
| Transport | 0 | 0 | 5,000 | 5,000 |
| Market fee | 0 | 1,000 | 1,000 | 0 |
| Customs – Uganda | 0 | 0 | 0 | 4,500 |
| Customs – S Sudan | 0 | 0 | 0 | 30,000 |
| Market Charges | 0 | 0 | 0 | 15,000 |
| **Total cash costs** | 0 | 124,000 | 159,500 | 239,500 |
| **Net Cash Income** | **120,000** | **26,000** | **21,000** | **25,500** |

***Note:*** More detailed information on the South Sudan market is found in Annex 6.

What is certain is that the number of times an animal changes hands in the Karamoja regional live animal trade seems fewer than those encountered elsewhere in the region. The absence of brokers also seems to make the trade more competitive. Table 5 above provides an illustrative example of the relationship of actors along the value chain, and the relative transaction costs for slaughter bulls. Table 6 above provides an illustrative example for slaughter goats exported to South Sudan. As previously mentioned, prices are very dynamic. For example, end market prices for bone-in beef in Kampala City Abattoir ranged from 7,000 – 8,000 UGS/kg in mid-October, but have since risen to 9,000 – 10,000 UGS/kg. The price of meat in small retail kiosks was 10,000 UGS/kg in mid-October, which has since increased to 12,000 UGS/kg for better quality meat. And, the profitability of exporting slaughter goats to South Sudan depends largely upon the effective exchange rate between the South Sudan Pound and the Uganda Shilling.

### f. Historic trends in live animal sales

It is impossible to accurately describe historic trends. Historical records on live animal sales are essentially non-existent for the Karamoja Region, and for Uganda as a whole. Even if they were, the dynamics of the continually shifting live animal trade would make them of little use. The 2008 livestock census is the only complete source of information on Uganda's livestock sector, and provides a reasonable estimate of Uganda's livestock population. But it does not include information on production, productivity, or sales. There is no national livestock market information system, and where information is being gathered (i.e. Karamoja Region) it does not include sales volumes. Abattoirs keep track of the number of animals slaughtered, but those numbers are not being systematically reported. However, the two abattoirs we visited – Kampala City Abattoir, Mbale City Abattoir – both reported that the number of animals being killed has almost doubled over the last few years. This is consistent with information on demand for livestock products reported in 2012:[29]

[29] Agriterra (2012). https://www.agriterra.org/assets/uploads/15820/Livestock%20market%20study.pdf

> "The per capita consumption of beef in Uganda is currently estimated at 6 kg/person/year, much lower than in Kenya and South Africa at 12 and 14 kg/person/year respectively. The actual demand level for meat products is currently unknown, and current estimates rely on records of the number of animals slaughtered. That said, there is a general consensus that demand exceeds current levels of supply. Growth in demand is explained as a result of: (i) population growth; (ii) increasing urbanization; (iii) increased purchasing power; and (iv) changes in consumption habits. The slower growth in supply relative to demand is exacerbated by the current beef production systems. Hence, there is an increasing possibility that Ugandan livestock producers will be unable to satisfy the growing demand for beef without investments to increase production and productivity. The traditional meat value chain is typically based on the principle of one-off transactions, rather than on-going relationships. The 2008 livestock census recorded a cattle population of about 13 million. However less than a quarter of this number was put up for sale meaning that the supply of beef is and will continue to be erratic."

In summary, there is no reliable information available on the volume of live animal sales in Uganda. The best information available is based on the number of animals slaughtered (not including carcass weight), which is incomplete and does not capture sales of breeding and feeder animals. However, it is clear that the national and regional demand for meat and livestock opportunities is growing faster than supply, providing significant opportunities for investment in livestock production.

### 3.2.3 Buyers and Their Perspectives

*SOW question: Are livestock sourced in Karamoja competitive in terms of health, quality of carcass, price, etc.?*

Karamoja's competitiveness in the live animal trade is not an issue. At present livestock traders and end markets are actively and aggressively competing for Karamoja slaughter bulls. This robust demand for animals from the region makes it a seller's market. Slaughter animals from Karamoja can be moved to any of several end markets, depending upon where the prices are most favorable, further fueling demand. Note that livestock for sale will always find a buyer at some price, and prime animals in good to excellent condition never lack buyers.

The market for meat in Uganda, and the region, is primarily based on price. Consumer demand for high quality meat is growing, but is still only a small portion of the total market. There are no objective standards for quality, only observation. However, livestock traders clearly recognize the identifiable characteristics of high quality animals – type, age, conformation, and body condition – which will yield greater carcass size and better quality. Karamoja-type animals are clearly recognized for these characteristics, and command premium prices.

Livestock producers in Karamoja, as noted previously, manage their herds/flocks more like investment portfolios, maximizing portfolio growth and monetizing capital gains to meet cash needs and finance investments. That means that the number of animals sold is relatively consistent in proportion to the overall livestock population. In other words, as the livestock population increases, the number of animals sold increases.[30] Changes in end market prices

[30] RLP note – however, the relationship is not linear. In general, among pastoralists in the Horn of Africa the numbers of animals sold is partly determined by household wealth. Wealthier households with larger herds supply relatively more animals to markets because they tend to have larger families and so higher domestic costs, and, because they tend to

work their way back down the value chain, eventually impacting prices paid to producers. But since livestock sales tend to be price inelastic, changes in price do not provoke an immediate supply response. Increased prices do not draw more animals into the market, and may even increase producer demand for breeding stock to fuel portfolio growth. This growth will eventually result in more animals being marketed, not in response to price, but because the livestock population has increased.

### a. Who are the buyers?

The buyers of live animals vary depending on the type of animal being sold. For slaughter bulls the initial buyer is often a small-scale local producer/trader, who resells the animal in primary markets to traders who resell animals to larger scale local and external traders, who transport and sell animals in the end markets. At the end of this transaction chain animals often change hands at large abattoirs, with the last owner paying slaughter fees and selling the carcass to butchers. In smaller towns butchers often buy animals from traders and bring them to the local slaughter facility to be killed and inspected before taking the meat to their shop. Slaughter goats, primarily destined for export, are exchanged for sheep in the livestock camps and *kraals*, and sold to local traders who sell onward to external traders. Those traders then transport the animals to the end market. There tend to be a greater number of sellers and buyers participating in the live goat and sheep market, probably because it does not require as much cash to buy individual animals.

Both local and external traders are active buyers of animals which can be "traded" for slaughter bulls and goats. Heifers are particularly valued, and can be readily sold/exchanged for slaughter bulls. Sheep and donkeys are also readily sold/exchanged for slaughter goats from Turkana.

Immature animals (both cattle and shoats) in fair condition are usually purchased by local producers and producer/traders, and incorporated into their herds/flocks to mature and gain weight. The nature of the market is such that there is always a buyer for every animal at some price – even dead animals have some value. It just depends on whether the seller and buyer can agree. The feeding of immature animals is not a very visible activity – they are not confined, and they do not leave the region. They simply change owners. Males eventually come on the market as either oxen or slaughter bulls. Mature females (other than cull cows) are only rarely sold.

### b. Buyers views on the Karamoja supply of live animals?

The best indicator of how the Karamoja supply of live animals is viewed is the growing number of traders. The number of local traders is increasing, established local traders are expanding their activities, and the number of external traders is increasing because of end-market demand for high-quality slaughter animals. Karamoja animals are highly regarded for their carcass yield, condition, and quality of meat – most have been conditioned on relatively "hard" pasture, as compared to "washy" forage in other areas. The number of animals offered for sale is also reported to be growing, drawing even more buyers. As a result, slaughter bulls are the most dynamic part of the cattle market, and slaughter goats are the most dynamic part of the shoat market. External buyers tend to initially enter the market in a small way, partnering with other external traders or local traders to purchase animals. These alliances allow them to observe the type and quantity of animals are available, and plan for future activities based on their expectations and observed trends in condition, price and supply.

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diversify. Diversification often requires cash, and cash is derived from livestock sales. The growth of small towns in Karamoja may, at least in part, depend on livelihoods diversification by wealthier pastoralists.

### c. How do buyers and traders communicate their needs to producers?

The dynamics of the live animal trade are complex. Producers take animals to markets where they are confident there will be buyers. Buyers show up at markets where they believe there will be larger numbers of animals available. As the number of buyers increases in a market, more producers frequent that market when they wish to sell. It is not simply a matter of price – volume begets volume, and in vibrant markets increased volume tends to attract more buyers, generate increased competition, and may actually increase prices. The more vibrant the market, the more local traders and agents scour the countryside for animals, and the more animals there are in the market, the more buyers are attracted. This trend is especially evident with slaughter animals. External traders only buy slaughter animals, and the market appears to always be competitive.

Local producers and producer/traders tend to purchase the remaining animals, and in active markets there will always be buyers for animals at some price. We met and talked with a couple of traders who actually specialize in buying very weak and sick animals – which they take home and try to rescue.[31] The importance of their presence is that they provide a market clearing function – if a seller has to sell, someone is there to buy.

### d. What is the destination of the different types of animals?

As noted earlier, the live animal trade is complex and dynamic. For example:

- traders in various markets were buying slaughter bulls for transport and sale in Lira, Soroti, Mbale, Tororo, Busia, Kamapala/Entebbe, and Kenya (as far as Nairobi);
- the few slaughter cows are transported to Soroti and Mbale, or killed locally;
- heifers are traded into the region from Otuboi, Soroti, and Bukedea – and sold to local producers for incorporation into their herds, or to producer/traders who barter/exchange them in Turkana for slaughter bulls (almost no local heifers are offered for sale);
- younger bulls, and calves (feeder cattle) of both sexes, are purchased by local producers and producer/traders and incorporated into their herds to mature and gain weight before being resold;
- slaughter goats move into and across the region from Turkana, mix with local goats, and are sold primarily for export to Sudan, whereas smaller goats are slaughtered locally;
- breeding and young goats are sold to local producers or producer/traders and incorporated into their existing flocks;
- slaughter sheep are killed locally;
- breeding and young sheep are sold to local producers and incorporated into their flocks, or to producer/traders who trade them for Turkana slaughter goats.

In this mixed set of transactions animals may change hands several times, sometimes being resold in the same market on the same day, before eventually reaching their destination. Figures 3 and 4 above illustrate movement dynamics and destinations for various types of animals.

### e. What are the challenges of acquiring sufficient live animals?

The biggest challenges faced by traders are competition and price. Livestock traders know there is always a market for live animals at some price, and based on that knowledge are always looking for animals which can be bought and sold for a profit. When fewer traders are present in the market prices tend to be lower. And lower prices tend to reduce the number of

[31] RLP note – this behavior is fairly widely reported across the Horn of Africa, with some buyers recognizing that the conditioning of weak or drought-affected livestock can be profitable.

animals offered for sale in the market over time. When more traders are present prices tend to increase, increasing the number of animals for sale over time. The challenge for individual traders is to balance these factors, paying enough to encourage increased supply, but not so much that they fail to make a profit. Local traders have a distinct competitive advantage. They are able to purchase and hold animals in their own herds/flocks, or move them to other markets by trekking. External traders on the other hand need to transport animals out of the region, and must therefore acquire enough animals to fill a truck in order to maintain profit margins. Therefore, if there are more traders present than expected, or fewer animals than expected, it can be difficult to obtain enough animals to fill a truck.

In summary, the challenges for traders revolve around being able to purchase animals at a price, and in sufficient quantity, to make a profit. Issues of scale (capital limitations) are not really significant, and are usually handled by transactional partnerships (sharing the costs of a truck).

**f. Can transaction costs be reduced through producer organization?**
There are no obvious economies of scale in the current Karamoja livestock trade. Animals are not bought and sold in groups, but rather one-by-one-by-one. Traders pay cash for animals, assemble truckload lots for shipment, and accept the risk of ownership in anticipation of profit. But even in end markets animals are sold one-by-one-by-one, with no premium price for volume, and no apparent economies of scale. Marketing costs might be reduced by disseminating livestock market information to facilitate price discovery, and improved market organization and operation. But there is no readily apparent scope for producer organizations in the current market structure. More widely, other than dairy operations, there are few examples of effective producer organizations operating in the live animal trade anywhere in the world.

### 3.2.4 Hides and Skins

*SOW questions: Is there scope for investment at the production end of the value chain to drive increased competitiveness of Uganda's hides and skins and finished leather? What benefits would accrue to Karamoja livestock keepers?*

There is really no scope for investment at the production end of the value chain to drive the increased competitiveness of Uganda hides, skins and finished leather. Hide and skin purchases take place at the point of slaughter – usually the abattoir – and at that point they are an undifferentiated by-product whose value is inconsequential to purchase price. Animals may change hands several times on the way to slaughter, but only the final owner is paid for the hide/skin. Therefore, there is no practical way to provide incentives for producers to change practices which reduce the value of hides and skins.

**a. Role of hides and skins from Karamoja in Uganda**
It is impossible to determine the role of Karamoja-sourced livestock in Uganda's leather industry. As stated above, hides and skins are a by-product of slaughter. Karamoja animals are combined and mixed with other livestock all along the value chain on the way to the end market. While abattoir traders recognize and value Karamoja-type cattle for meat quality and yield, prices are not influenced by the anticipated value of the hide. The hide from a slaughter bull sold for UGS 1,500,000 may only bring UGS 30,000 from the hide trader. Sheep and goat skins are worth UGS 1,000–3,000 for an animal trading for UGS 100,000–200,000. In summary their source – and their value – is basically irrelevant to the transaction.

**b. Value of Karamoja hides and skins**

Karamoja hides and skins have value only to the extent that all hides and skins have some value (horns, hooves and heads also have "value" at point of slaughter). In fact, because of the practice of branding animals, Karamoja hides and skins are somewhat less valuable than those for unbranded animals. But the difference is inconsequential.

### 3.2.5 Future Options and Issues

*SOW questions: What is the demand in markets domestically and outside of Uganda? What types, numbers of live animals are sought? What prices are paid? How do supply chains to these markets operate (main actors)? How can live animals from Karamoja be more competitive?*

These questions cannot be answered with much certainty in terms of future demands. However, as noted in 2012, "The per capita consumption of beef in Uganda is currently estimated at 6kg/person/year, much lower than in Kenya and South Africa at 12 and 14kg/person/year respectively. The actual demand level for meat products is unknown, and current estimates rely on records of the number of animals slaughtered. That said, there is a general consensus that demand exceeds current levels of supply." [32]

Second, consider Kenya. According to a September 2014 study of the Kenya livestock and meat market commissioned by the Kenya Markets Trust, "Estimated average annual consumption of beef, goat and sheep is 13.63 kg per capita (of which 12.0 kg is beef). By 2019, total supply of beef is anticipated to reach 612,124 MT with an estimated CAGR (2012-2019) of 5.85%. The supply of goat and sheep meat is estimated to amount to 84,074 MT, with respective CAGRs (2012-2019) of 4.42% and 12.61%. Kenya will struggle to meet this demand, based on current value chain dynamics and inefficiencies."[33]
In summary, current supplies of beef in Uganda and Kenya are insufficient to meet current market demand. This continues to put upward pressure on cattle prices. In addition, increasing Ugandan consumption to 9kg/person/year alone would require dramatic increases in local production. In summary, the long-term market prospects for Ugandan and Kenyan livestock producers is excellent.

The demand for quality meat is also growing in Kenya and Uganda, but the vast majority of beef consumed in both countries is basically "just plain beef". At present the highest demand for live animals is for well-conditioned cattle with good conformation, which yield the largest carcasses. These are exactly the type of cattle produced in Karamoja, which command premium prices.

Prices paid in end markets work their way back along the value chain from the consumer to the producer. Increasing demand for beef is putting upward pressure on prices at the consumer level, from a range of UGS 8,000-10,000/kg to a range of UGS 10,000-12,000/kg (depending on quality). That will put upward pressure on the price of carcasses, which will put pressure on the price of slaughter animals, and so on. As previously noted, meat is not sold in quantity. Animals are sold one-by-one-by-one all along the value chain based on negotiations between buyer and seller, and carcass beef is sold the same way to the butcher.

[32] Agriterra (2012), ibid.

[33] Kenya Markets Trust (2014). RLP note - it is widely recognized that Kenya is a net importer of live animals, with substantial imports of cattle from southern Somalia and northern Tanzania. At times, southern Ethiopia also supplies livestock to the Kenya market.

With increasing competition for quality, one can expect the prices paid for high-quality slaughter animals to increase as the consumer price of meat increases.

As stated earlier, competitiveness in the live animal trade is not really an issue. Changes in end market prices work their way back down the value chain, eventually impacting prices paid to producers. But since livestock sales tend to be price inelastic, increased prices do not tend to produce a supply response. The fact is that livestock for sale will always find a buyer at some price, and animals in good to excellent condition command premium prices. Slaughter bulls originating from Karamoja can go to any of several end markets depending upon price. As a result, end markets are competing for quality livestock rather than livestock competing in end markets.

### a. Conditioning of Karamoja cattle

The feasibility of conditioning Karamoja male cattle is not clear. Weight gain is a function of both genetics and feed quality, and the profitability of feeding Karamoja cattle needs to be researched. We do know is that slaughter animals from Karamoja go directly to end markets, and that animals which are not ready for slaughter are not leaving the region. Rather, they are purchased by local producers and trader/producers and absorbed into the existing herds and flocks – either kept in the *manyattas* or grazed in the *kraals* until ready to sell.

There is no doubt that young males are already being conditioned on grass in the *kraals* at relatively low cost. The practice is just not as visible as feedlots. And we were unable to locate any large scale fattening operations in the region, or in the adjacent areas.

Regarding cull cows, conditioning is a waste of time and resources. First of all, there are simply not enough of them available in the market to warrant trying to condition them. Second, those that are available are usually in good condition and tend to go directly to slaughter. Third, fattening cull cows by anything other than grazing is not practiced (to our knowledge) anywhere in the world. It is simply not profitable.

With ample forage resources and sufficient financing it may be feasible to profitably condition male Karamoja cattle and/or goats in confined conditions, and the development of forage resources and hay making may eventually lead in that direction. At present, the most practical and rational use of currently available feed resources would be for milking animals, and small-scale goat conditioning.

### b. Livestock statistics

*SOW questions: What are the limitations, if any, in the available data on livestock populations, sales in Karamoja primary and secondary markets, and related issues? Is enhanced data acquisition and analysis needed, and if so, how might this be supported?*

There is no reliable information on livestock populations in Karamoja. The only statistics on livestock numbers in the region is the 2008 Livestock Census. However, the general opinion of livestock professionals we consulted was that the figures for Karamoja are inadequate. More recent estimates of the current livestock population appear to be rough estimates and anecdotal, without a reliable methodology, and impossible to verify. This situation is typical of pastoralist areas in Africa, where various methodological and operational issues prevent the accurate counting of livestock. For example, pastoralists will purposively avoid providing information on the numbers of livestock owned to outsiders if questionnaire-type surveys are used, and in general, will not tolerate direct counting of animals by data collectors. Plus, herds are often split and grazed in different areas, including across national borders. Even a very basic question such as, “Do you own livestock?” with a “yes” or “no” answer can be

very unreliable. In Karamoja, the proportion of households owning livestock by district was reported in the WFP Karamoja Food Security Assessment report of March 2014 (p.32)[34] and again in the WFP/UNICEF Food Security and Nutrition Assessment report of June 2014 (p.20).[35] Other than for Amudat, where there is some consistency between the figures in the two reports, figures for the other six districts were very inconsistent. For example, for Nakapiripirit between around 50 to 68% of households own animals according to the WFP report in March, whereas only 33% own animals in the WFP/UNICEF report of June the same year. A WFP/UNICEF report of June 2015[36] also reports the proportions of households owning livestock by district, but again, with substantial differences in the figures relative to either of the 2014 reports. Although a detailed examination of these anomalies is beyond the scope of this assessment, the indication is that current survey methods are not accurately measuring the most basic question on livestock ownership (i.e. whether a household has animals or not), never mind the far more difficult question of the numbers of animals owned by species. In a context of long-term aid, which encourages informants to understate their assets, and long-term mistrust between the Karamojong and outsiders, the accurate estimation of livestock populations will remain very problematic in Karamoja, as it does in other pastoralist areas.

Reliable data is also limited on aspects of livestock productivity, such as herd fertility, mortality, off-take and other variables. However, far more information is available on livestock diseases, including peer-reviewed journal papers with sound methodologies. Notably, these include the systematic use of participatory methods in combination with conventional diagnostic methods[37], or "participatory epidemiology" (PE).

Regarding livestock market data, markets in the region form a network of interconnected selling points, connected to trade routes and markets internally in Uganda, but also to South Sudan and Kenya. Typically, food security surveys and early warning systems in pastoralist areas collect information from livestock markets, such as trends in prices and sales. This information is used in various ways, but an important output is the trend in the terms of trade between livestock and cereals. In Karamoja, WFP is collecting this type of information and for example, produced monthly market reports throughout 2015[38], and from March to December 2014.[39] These reports include trends in goat prices, and the terms of trade between goats and maize; there is no or very limited information on cattle or sheep prices.

In terms of enhancing data acquisition and analysis, the following options apply:

Livestock census – although livestock population data is good to have, it is not essential for designing or evaluating livestock systems, or for the design and evaluation of livestock projects and programs in pastoralist areas.

Livestock production and health – more detailed information on livestock production would be very useful, including herd structures, herd dynamics, milk production, fertility and so on. In the context of Karamoja, this information can be collected using participatory epidemiology to produce both quantitative and qualitative data. This is a well-established sub-discipline of veterinary epidemiology, with some peer-reviewed studies already

[34] WFP (2014) https://www.wfp.org/content/uganda-karamoja-food-security-assessment-march-2014
[35] WFP and UNICEF (2014) https://www.wfp.org/content/uganda-karamoja-wfp-and-unicef-food-security-and-nutrition-assessment-june-2014
[36] WFP (2015) http://reliefweb.int/sites/reliefweb.int/files/resources/wfp277395.pdf
[37] e.g. Byaruhanga et al. (2015), ibid.
[38] http://www.wfp.org/content/uganda-monthly-market-monitor-2015
[39] http://www.wfp.org/content/uganda-monthly-market-monitor-2014

conducted in Karamoja using the approach. Further studies on livestock diseases are needed, particularly to provide the evidence base for revising control strategies for trans-boundary animal diseases (see section e. below) The USAID/Uganda Karamoja Resilience Support Unit (KRSU) is well placed to support this process.

Livestock markets - the textbook approach to measuring market performance would be a formal Livestock Market Information System (LMIS) covering all the primary and secondary markets in Karamoja, plus end markets outside the region, and combined with information dissemination to inform market actors, and enable more efficient price discovery. However, pastoralist areas of the Horn of Africa are littered with failed LMIS efforts dating back over 40 years. With this in mind, two options are:

- offer technical support from the KRSU to WFP, UNICEF and government partners to strengthen the monthly market data which is already being collected and reported in relation to food security monitoring e.g. by also collecting price information for cattle and sheep (by type), and numbers of animals presented for sale and sold. Adding value to an existing system is likely to be more efficient and cost-effective relative to establishing a new, parallel system.

- review the reasons for the limited success with LMIS and examine if the information provided by a conventional LMIS can be gathered in other ways. The USAID/East Africa Resilience Learning Project is well placed to support this process.

Project impact assessment - for the impact assessment of projects and programs, the most important questions relate not to market performance, but the impact of changing market engagement (if any) on people's livelihoods. Well-established methods are available for measuring these changes, which do not depend on population data. The USAID/East Africa Resilience Learning Project is developing a guideline for assessing the impact of market support.

Finally, the wealth of documents and information generated on the Karamoja region is fragmented and difficult to access. Again, the KRSU should play a role in collating and disseminating this information.

### c. Who benefits from livestock markets?

*SOW questions: In terms of wealth groups and livestock holdings, which groups are most likely to respond to and benefit from livestock marketing initiatives?*

In strict monetary terms the wealth groups most likely to directly respond to and benefit from livestock marketing initiatives are the middle and better-off households characterized in the FAO Karamoja Livelihood Profiles[40] (also see Annex 4). These households have the resources to take risks, are becoming more active in the cash economy as both consumers and traders, and are the most likely to adopt new ways of doing things (such as planned marketing strategies and investing in improved livestock health and nutrition). According to the FAO livelihood profiles (Annex 4), these groups constitute around 29% (middle wealth) and 13% (better-off) of households, and are already the most active participants in the market. Note that the poor and very poor also sell livestock and benefit from markets. However, there are grey areas in the statistics if the FAO livelihood profiles are compared with the WFP food security assessments. The former implies that all wealth groups/all households own livestock in Karamoja, with even the "very poor" owning some animals. In contrast, WFP assessments

[40] FAO (2010) http://www.fao.org/fileadmin/user_upload/drought/docs/Baseline%20Household%20Economy%20Profiles_Karamoja.pdf

report as few as 44% of households in Karamoja owning livestock.[41] If the WFP figure for livestock ownership is applied to the FAO livelihood profiles, the proportion of middle-wealth and better-off households, who will benefit most from market improvements, falls to around 13% and 6% of total households respectively.

### d. Opportunities for women

*SOW questions: Are there specific livestock and livestock product marketing opportunities for women in Karamoja and if so, what are these opportunities? Specifically, what potentials and feasibility are there for increasing milk production, and for small-scale processing?*

Live animal markets in Karamoja are dynamic, energetic, vibrant places. The high value livestock trade is characterized by cash transactions, which means there are always large amounts of cash circulating in the market. This abundance of cash creates a wide range of income opportunities for women (and youth), such as: buying and selling chickens and eggs; selling food and drink; selling consumer goods (cell phones, airtime, shoes, clothing, etc.); selling animal health products; and working as helpers, assistants, interpreters, herders, and handlers. These activities already take place in and around livestock markets.

Karamojong women and men play different roles in livestock management. Women are mostly responsible for livestock products (milk, butter, ghee, meat). Poultry, and goats in some households, are managed by women. Women are responsible for skinning shoats, and cutting and preserving meat. Men are responsible for larger animals, especially cattle. Sheep and goats are handled by men, but women participate in milking and taking care of the animals during their stay around the *manyatta*. Income collected from the sale of cattle, goats and sheep is totally managed by men.[42] Men also manage herd/flock migration, and handle livestock in *kraals* during dry season. Table 7 below provides a summary of women's participation.

**Table 7: Observed Participation of Women**

| Location | # Women | Participation |
|---|---|---|
| Moroto market | 1 | Trader (cattle) |
| Kotido market | 3 | Traders (1 cattle, 2 goat) |
| " | 5 | Selling grass for roofing and animal feed |
| Amudat | 4 | Goat traders |
| Kangole | 27 | Selling sour milk |
| " | 5 | Selling fresh milk |
| " | 7 | Selling butter |
| " | 18 | Selling grass for roofing and animal feed |
| Otuboi | 8 | Traders (1 cattle, 7 goat) |
| " | 20 | Selling fresh milk |
| All markets | *** | Selling eggs and chickens |

The expanding market for live animals is also creating opportunities for women to directly engage in the livestock trade. Selling chickens and eggs is almost entirely handled by women. But women are also becoming active in the livestock trade. While there is still cultural resistance to women handling cattle, we observed women traders actively buying and selling animals (especially sheep and goats) in the markets we visited. When we asked about it, we were told this is a recent development – that you would not have seen it a year earlier.

[41] WFP (2015), ibid.

[42] RLP note – it is unclear whether the control of this income resides with men in female-headed households, in which the woman household head may own and sell animals.

In addition, there are value chains linked to the live animal value chain which have great potential opportunities for women's involvement. These include: the traditional milk and milk product value chain; the poultry value chain (gateway to livestock ownership; and the forage value chain (production of cut and carry fodder and hay for animals at the *manyatta*).

These opportunities emerge from the different roles men and women play in their communities and in livestock management. Women are traditionally empowered and allowed to participate in community meetings organized around *manyattas* and in *kraals* by elders. However, they make their voices heard through their husbands. Women are generally reluctant to express themselves in public. Rather, they discuss and share their thoughts and opinions with their husband, who represents the family in meetings.[43]

Women are generally responsible for handling livestock products (milk, butter and ghee) for home consumption and sale. They also manage poultry, and sometimes goats and sheep. Skinning sheep and goats is also their responsibility, and they are the members of the household that know how to cut and preserve meat. In the market women are the ones selling chickens and eggs, and are starting to trade sheep, goats, and cattle.

### e. Policies for competitiveness and disease control

*SOW questions: Are enabling policies in place to increase the competitiveness of Karamoja livestock in domestic, regional and international markets? What policies need to be reformed or instituted to increase competitiveness? Is the capacity in place to monitor and report animal disease, especially OIE List A trans-boundary diseases? What are the investment costs to build the needed capacity?*

Karamoja livestock are already very competitive in domestic and regional markets – in spite of (not because of) government policy and regulation. The challenge is to build upon that competitive strength to grow the economy of the region.

Current policies are not enabling increased production and productivity, and more fundamentally tend to disadvantage the livestock sub-sector, reflecting anti-pastoralist bias, and lacking a poverty focus. The current policy framework appears to be increasing, rather than decreasing, pastoralist vulnerability.

The overarching policy framework and prevailing political and enabling environment works against pastoralism. An analysis of the policy framework for northern Uganda – including Karamoja – reveals a longstanding attempt to promote settlement and crop production, which is essentially an anti-pastoralism policy. Successive regional development programs in Karamoja have focused primarily on supporting crop production. Only an estimated 5% of the funding for the Karamoja Food Security Plan was invested in livestock related activities, a proportion transposed into the Karamoja Integrated Development Plan (KIDP) and the subsequent KIDP II.

The few livestock policies which are being promoted largely support settled livestock production, are not poverty focused and have not gained any traction with livestock producers, settled or pastoral. Promoting crop production in areas where rainfall is marginal and variable will likely increase vulnerability. Government policies relating to poverty alleviation, improved access to services, private sector-led agricultural development, building resilience etc. at the highest levels are relatively well aligned with those of pastoralist communities. However, the way policies are being implemented to achieve these goals remains misguided and ineffectual.

[43] RLP note – unclear how female-headed households, without husbands, participate.

A number of studies have recognized the weak or unfavorable policy environment. However, these critiques have not yet led to much needed changes in policy and strategy. A number of elements which contribute to the policy making environment may first need to change before the specific policies themselves can be revised:[44]

- the prevailing negative view of pastoralism must be changed to reflect a more positive reality, with pastoralism seen as a solution and not the problem;
- the political economy and policy formulation processes relating to Karamoja's development and livestock sector in particular needs to be reconsidered;
- policy development needs to take a livelihoods based approach with a focus on poverty alleviation and building resilience;
- emphasize diversifying livelihoods in ways that are complimentary and supplementary to the livestock sector rather than alternatives to it;
- effectively manage and expand public access to the existing informational and knowledge base related to Karamoja to ensure informed decision making based on available and accessible evidence;
- commit to consultative, stakeholder engagement in the policy development process to ensure transparency of the key strategies and policies.

In summary, government policies need to view Karamoja positively as an area of high economic potential based on the livestock sector, which is currently under-performing due to chronic under-investment and weak policy frameworks. Policies must be based on a solid understanding of the Karamojong pastoralist system and livelihoods. This can best be achieved by including traditional Karamojong leadership in the development of policies.

The key areas are those where revised policies would enable improved livestock productivity and fortify live animal marketing. The highest priority for immediate action is to apply policies on veterinary privatization to Karamoja, and work with government to contract out the control of public good diseases to the private sector. This will require working out the process and requirements for private importation and distribution of vaccines.

Animal Health and Disease

Recurrent outbreaks of trans-boundary animal diseases in Karamoja are a clear indication that current disease control strategies are having limited impact. At the level of domestic and regional trade, movements restrictions associated with these strategies have negative impacts on producers and traders, and yet contribute little to disease control in Karamoja or in neighboring countries. In this situation, there are disincentives for producers, traders or other actors to report disease outbreaks. In this situation and with very few public veterinarians, the surveillance system relies on Community Animal Health Workers (CAHWs) to provide information on disease outbreaks. However, disease intelligence is provided on a voluntary basis, and there are few incentives, supervision and support for CAHWs or reward for timely communication.[45] In addition, the lines of communication do not support rapid reporting and response since the flow of information to the central Veterinary Department is interrupted – District Veterinary Officers are required to report first to the Chief Administrative Officer in the District.

[44] Levine (2010) http://www.celep.info/wp-content/uploads/downloads/2011/07/what-to-do-about-Karamoja.pdf
[45] RLP note - CAHWs can play a major role in livestock disease surveillance in pastoralist areas, and can outperform conventional surveillance systems, but only if properly supported by government (Allport et al. 2005).

In situations where vaccination is organized in response to disease outbreaks, the delays in reporting contribute to delayed response. In diseases causing high mortality, many losses are likely to have occurred before the vaccination take place.[46] The alternative is to conduct well-designed preventive vaccination programs before periods of disease risk; many diseases outbreaks are seasonal.

Overall, there is a need to completely review control strategies for trans-boundary animal diseases in Karamoja, based on the epidemiology and economic impacts of each disease, and comparative assessment of different control options. Furthermore, a regional approach is needed which recognizes the logical movement of livestock across borders for grazing or trade. The SOW requests an estimate of "investment costs to build the needed capacity", but the first step is to develop evidence-based disease control strategies on a disease-by-disease basis, and with analyses of the benefit-cost of different control options. This type of analysis should also include an assessment of the main beneficiaries of disease control (by disease), and therefore, an understanding of who should pay for control.

A further consideration is that continued government implementation of certain veterinary activities undermines the private sector, and undermines the government's own veterinary privatization policies. For example, the private sector can be contracted to perform vaccination campaigns and will likely be more technically efficient and cost efficient than government implementation.[47] These contracts can be an important source of income for private veterinary workers in pastoralist areas.

# 4. CONCLUSIONS AND RECOMMENDATIONS

The following is a summary discussion of the findings and conclusions of the assessment team, the principal issues identified, and our recommendations for what might be done to address them.

## 4.1 Livestock Marketing

The live animal marketing system in Karamoja is extremely complex and much more dynamic than what is represented in documents and reports. It consists of a network of interconnected marketing points linked with one another, producers, traders, and end markets. In our opinion the system is working very well, providing a large and increasing number of active buyers and sellers with locations to conduct business. There are no major issues which need to be addressed at present, but some investments are warranted to fortify the system, improve efficiency, and facilitate market growth and adaptation to changing conditions.

### 4.1.1 Livestock Market Organization and Operation

The purpose of live animal markets is to bring buyers and sellers together and facilitate trade – not to generate government revenue. The assessment team felt that the market system would benefit greatly from private oversight and operation (and ownership), which treats

[46] RLP note – this delayed vaccination can give a false impression that the vaccination is effective. If vaccination takes place after peak mortality has already occurred, then mortality will be decreasing as the disease naturally wanes. Although veterinary workers may attribute this decrease to vaccination, it would have happened anyway due to the biology of the disease.

[47] RLP note – there are experiences and evaluations of contracting out vaccination campaigns to the private sector in Tanzania and Ethiopia.

buyers and sellers as clients and insulates the market from political interference. This would require a collaborate process to enable private management and operation (and ownership) of markets. The team recommends facilitating/supporting the formation of local Livestock Market Associations, committees, or groups of investors to (at a minimum) oversee and manage the livestock market operation, and promote eventual private ownership. This might also be extended to slaughter facility operation and ownership, and requires engaging local governments in the process, as they are presently the owners and operators of the markets. While private management of markets is the preferred option, local and/or national government view livestock markets as a prime source of tax revenue and if so, want to retain direct control of this revenue. This raises the option of exposing local and national government agencies to experiences with public-private partnerships for the management of livestock markets in East Africa.[48]

### 4.1.2 Business Development Services

Live animal markets provide a potential setting for engaging a wide range of market actors (producers, traders, brokers, transporters, small businesses, etc.) in activities to improve their businesses. Providing increased access to business development services (BDS) for these individuals will help improve their technical and financial competence, and increase profitability. Live animal markets also provide a setting for providing producers with information and training on technologies and management practices. This could include approaches to encourage planned marketing: selling animals when they are ready for market in anticipation of predictable future cash needs. The assessment team recommends designing and implementing a program centered on live animal markets to increase access to BDS (especially training programs) for producers, traders, transporters, and micro-entrepreneurs.

### 4.1.3 Livestock Market Information

As explained in section 3.2.5b, project-based LMIS have a poor record of success in pastoralist areas. However, food security monitoring supported by WFP and UNICEF already collects monthly market information, raising the possibility of adding value to this existing system by offering technical support from the KRSU to WFP, UNICEF and government partners. For example, the system might be expanded to collect price information for cattle (by type) and sheep (by type), along with the goat prices which are already collected, as well as recording numbers of animals presented for sale and sold. Adding value to an existing system is likely to be more efficient and cost-effective relative to establishing a new, parallel system.

There is also a need to review the reasons for the limited success with LMIS in pastoralist areas and examine if the information provided by a conventional LMIS can be gathered in other ways. The USAID/East Africa Resilience Learning Project is well placed to support this process.

## 4.2 Livestock Production and Productivity

The livestock sector is the economic life blood of Karamoja. With a physical environment suited to livestock production, pastoral tradition, and a culture of livestock management, it

[48] RLP note – for example, see the review of public-private partnerships for managing livestock markets and abattoirs in Somaliland, Ethiopia and Djibouti supported by the USAID Agriculture Knowledge, Learning, Documentation and Policy (AKLDP) Project at http://www.agri-learning-ethiopia.org/wp-content/uploads/2014/09/MoA-MoT-Livestock-Public-Private-Partnerships-Report.pdf

provides a firm foundation for future economic growth and development. Improving livestock production and productivity will help grow the local economy, supplying a larger number of quality animals to the market, increasing regional income, and fueling the development of associated value chains and micro-enterprise development. The primary constraints to increased livestock production and productivity are detailed below.

### 4.2.1 Livestock Health

Effective disease prevention and control is essential to maintain and increase the contribution of the livestock sector to the local economy. But the present system, relying upon government and NGOs to support prevention and control, is not working. The assessment team proposes that a private approach to delivering effective clinical animal health services in response to producer demand is critical. But enabling effective private delivery of animal health services is complex, and requires a comprehensive, unified systems approach. Support should be given to a collaborative exercise that engages donors, government and NGOs to comprehensively review and address the issues of animal health services delivery in Karamoja. We suggest that the Karamoja Development Partners Group undertake this exercise, using a value chain approach to map the system, identify issues, and recommend/implement solutions to enable the expansion of private animal health services delivery, including the import and sale of vaccines.[49]

Looking specifically at trans-boundary animal disease control in Karamoja, current control strategies have limited impact and tend to constrain livelihoods. Alternative strategies need to be evidence-based, which requires epidemiological and economic assessments, and comparative analysis of control options. This is a major undertaking at sub-national, national and regional levels, and would be best supported via a regional program.

### 4.2.2 Livestock Water Development

The availability of livestock water is the primary factor in deciding when and where to move the herds/flocks. The future growth of the livestock sector in Karamoja partly depends on developing more broadly accessible livestock water sources for expanding herds and flocks.

The assessment team recommends supporting a collaborative process to develop a strategy for livestock water development in Karamoja, identifying alternatives for private and public investment in infrastructure, financing and management approaches. As suggested by Mugerwa et al.[50] this will require water developers to address three fundamental issues: (a) an understanding of the rangeland context for effective planning; (b) rehabilitation and development of water sources with sensitivity to rangeland dynamics and pastoralists needs; and (c) an emphasis on securing access through capacity-building, user contributions and strengthen and use customary institutions and practices.

[49] RLP note - the privatization of veterinary services in Uganda and the required policy and institutional reforms, is a national issue. A review of options for private sector provision of clinical veterinary services in Karamoja would need to take stock of the various national and Karamoja-specific programs dating back to the 1990s. For example, see experiences from Karamoja in http://sites.tufts.edu/capeipst/files/2011/03/AU-IBAR-Nakuru.pdf, p.41-43.

[50] Mugerwa et al., (2014). Status of Livestock Water Sources in Karamoja Sub-Region, Uganda. *Resources and Environment* 4(1), 58-66.

### 4.2.3 Land Tenure

Livestock development in Karamoja depends on access to productive rangeland, and therefore, securing land tenure rights is critical for pastoralists. The expansion of cultivation, the award of mineral exploration concessions, the gazetting of conservancy areas, and the allocation of tenure rights to individuals are already alienating grazing land from the traditional mobile pastoral production units *(kraals)*. If continued, this will progressively decrease access to land, forage and water resources, generate conflict, and compromise the livestock sector productivity. Secure land tenure is an essential pre-condition to private investments in livestock and livestock value chain production and productivity. The assessment team advocates formal recognition and allocation of tenure rights to the pastoralists who have long been the users and managers of the land, enabling them to invest in and operate improved production systems in the future. The team recommends supporting policies and identifying steps to formally recognize pastoralist land tenure rights, including demarcating and certifying land for pastoral use and strengthening the system for communal management.

## 4.3 Associated Value Chain Development

The live animal trade is a high value business conducted almost exclusively in cash. The large amount of cash circulating in the live animal value chain generates significant opportunities for developing associated value chains and micro-enterprises. These have the added benefit of fortifying the livestock sector, while enabling the adoption of new technologies and practices.

The assessment team recommends investments to develop: (a) the forage value chain as an alternative livelihoods strategy for agriculturalists, a source of improved feed and nutrition for milking animals, and eventually the foundation of the feed industry; (b) the poultry value chain as a path to improved child nutrition, improved household livelihoods, and the gateway to livestock production enterprises; and (c) the milk and milk products value chain to generate additional household income, and improve the diet and livelihoods of poor families.

## 4.4 Meat Value Chain

The Uganda meat value chain desperately needs to modernize industry practices and standards**.** In the peri-urban and urban areas meat sold by licensed butcher shops must be slaughtered where it can be inspected. However, the slaughter facilities in major towns are generally outdated and dilapidated, complemented by a network of local slaughter slabs. Sanitation is rudimentary at best, and standards non-existent. In terms of efforts to develop demand for quality meat, and to ensure public health and safety, they are simply inadequate.

The assessment team recommends considering support to promote and facilitate private investment in the Uganda meat value chain. This would include establishing modern standards, and improving the operation of slaughter facilities, meat distribution, and butcher shops. However, this is a national issue and addressing health and sanitation issues will require facilitating large-scale private investment in the industry. The benefits of such investment would far transcend the Karamoja region. Support in this area should be based on analysis of previous aid projects, supported by various donors and programs, which have aimed to improve the meat value chain in Uganda but with limited progress.

## 4.5 Policy Framework

The overarching Karamoja policy framework needs to be reviewed and revised to recognize pastoralism as a vital part of the solution to poverty and resilience. Policies must make practical sense in Karamoja, enable increased livestock sector competitiveness, recognize pastoralist issues, include a poverty focus, and decrease pastoral vulnerability.

The assessment team recommends reviewing and updating the existing policy framework as it relates to Karamoja to encompass improving livestock sector competitiveness as a means of poverty alleviation and building resilience. This review also needs to address diversified livelihoods as a complement and supplement to the livestock sector (pastoralism) rather than an alternative to it. The team also recommends a commitment to consultative, stakeholder engagement in the policy development process to ensure transparency of the key strategies and policies, and consideration of the practicalities of carrying them out.

## 4.5 Knowledge Management

There are a multitude of assessments, studies and reports available on Karamoja, but the team found it difficult to obtain the most recent reports and relevant documents. The absence of a common information and database on the region makes it difficult to establish the foundation for informed collaboration and cooperation. Therefore, the team recommends a cooperative donor effort to establish a library/resource center to collect, house and make available for public consumption statistical information, assessments, studies and reports on Karamoja. This may include setting up a regional website, updated quarterly to provide information on current events and initiatives, with a portal to access electronic copies of documents.

Knowledge management includes the review and analysis of aid programs, gathering evidence of impacts, and sharing information on good practices. Some specific approaches that can easily undermine private sector activity or disrupt markets include: the free distribution of livestock pharmaceuticals,[51] externally-funded vaccination campaigns delivered by the government[52], and restocking programs.[53] "Genetic improvement" programs and the introduction of exotic breeds or species have a poor record of success in pastoralist areas, and approaches such as mechanization will be handled by the private sector if the enabling environment is supportive.

[51] RLP note -the Livestock Emergency Guidelines and Standards (LEGS) cautions against the free provision of clinical veterinary care during emergencies, and recommends provision of services via the private sector e.g. by using voucher schemes http://www.livestock-emergency.net/wp-content/uploads/2012/01/LEGS-2nd-edition-reprint-October-2015-reduced-locked.pdf

[52] RLP note – a distinction between disease control that is a public good and disease control that is a private good is needed – it depends on the disease. Where effective vaccines are available and affordable for the latter, private sector provision of vaccine can be an option. For diseases for which control is a public good, government is required set the control strategy and either implement the strategy directly, or contract-out specific tasks to the private sector. A common constraint is that governments in East Africa tend to categorize all diseases for which vaccines are available, as public goods.

[53] RLP note - LEGS advises that restocking projects are difficult to design and implement well, and that cash transfers may be a more useful approach.