

Livestock in Karamoja, Uganda

The Economic Value of Agropastoral and Pastoral Systems



Introduction

Across the East Africa region livestock are an important asset for rural households, and livestock products contribute to human nutrition, and to local, national and regional economies. However, in some countries there has been a longstanding issue of under-investment in the livestock sector, and this problem has been associated with official underestimates of livestock's contribution to national economies. For example, the method for calculating livestock gross domestic product (GDP) by countries in East Africa is the “production approach”, whereby the value of production is estimated by applying production coefficients by species and product to livestock population data, assigning a monetary value to the products using price surveys, and then deducting input costs. Typically, East African countries focus on meat and milk production, and according to international standards for GDP accounting, do not consider processed products.

In response to this deficit, from 2009 the Intergovernmental Authority on Development (IGAD) commissioned a series of country studies and developed a more comprehensive approach for measuring livestock GDP that took account of a wider range of products as well as livestock-derived savings and financial services. This led to estimates of livestock GDP for Ethiopiaⁱ, Kenyaⁱⁱ, Sudanⁱⁱⁱ (north and south) and Uganda^{iv} that were far higher than official estimates.

Within the limited understanding livestock economic contributions at national levels has been under-recognition of pastoralism and agro-pastoralism, and policy narratives that often describe these mobile herding systems as unproductive, low potential or unresponsive to market demands. In contrast, there is substantial evidence to show that these systems are often the main suppliers of livestock to domestic, regional and international markets^v, and in 2009 the value of the regional pastoralist livestock trade in the Horn of Africa was valued at more than US\$1 billion.^{vi}

Situated in northeast Uganda, the Karamoja sub-region supports agro-pastoralist and pastoralist livestock systems which in recent years have supplied animals to a dynamic and growing local and cross-border trade.^{vii} However, the full economic value of livestock in Karamoja had never been assessed and so from 2018, the Karamoja Resilience Support Unit conducted a study to calculate the “direct use” value of livestock in the sub-region.

Assessing livestock economic value in Karamoja

The concept of direct use value pulls together under one heading all the various economic benefits derived from livestock. These include products such as milk, blood and meat; physical services such as the cultivation by animal traction of arable fields; and financial services such as livestock-based credit, insurance and risk management.^{viii} In these calculations, goods and services that are not marketed are assigned monetary values that reflect their potential commercial value. This approach was used to generate a comprehensive estimate of the economic benefits derived from livestock by livestock owners in Karamoja and provides an evidence-based assessment of the value of the sub-region's livestock to the Ugandan national economy.^{ix}



For the study, data was collected from 1,237 livestock owners in five districts of Karamoja: Abim, Kotido, Kaabong, Moroto and Amudat. Standardized interviewing took place between March and June of 2019 and inquired about the previous year, as defined by Karamoja livestock keepers - March 2018 to February 2019.

Some of the main findings from the study were:

- Livestock in Karamoja produce three main products - milk, live and dead animal offtake, and blood. Livestock also provide physical services, primarily the ploughing of agricultural fields by cattle. In 2018–19, the total imputed monetary value of Karamoja livestock products and ploughing services was **Ugandan shilling (UGX) 1,161,660 million or United States dollar (USD) 323 million**.
- Karamoja livestock also directly benefit their owners by providing financially related livelihood services, including the provision of credit, asset-based insurance, and the pooling of risk through the sharing of live animals, livestock products and services. In 2018–19, the total value of the financially derived benefits from cattle, goats and sheep was **UGX 437,409 million or USD 122 million**.
- Combining physical outputs and financial services, in 2018–19 Karamoja cattle, goats and sheep provided their owners with benefits valued at **UGX 1,599,069 million or USD 444 million** (Table 1).

Table 1. Economic value of livestock production in Karamoja sub-region, 2018-19^x

Product or service	Value	
	Million UGX	Million USD
Cattle offtake	521,591	
Goat offtake	55,526	
Sheep offtake	51,437	
<i>Subtotal animal offtake</i>	<i>628,554</i>	<i>174.5</i>
Cattle dairy	428,733	
Goat dairy	11,234	
Sheep dairy	6,624	
<i>Subtotal dairy</i>	<i>446,591</i>	<i>124.0</i>
Cattle blood	43,191	
Goat blood	1,926	
Sheep blood	1,844	
<i>Subtotal blood</i>	<i>46,961</i>	<i>13.0</i>
Ploughing	39,554	
<i>Subtotal animal power</i>	<i>39,554</i>	<i>10.9</i>
Livestock-based credit	62,855	
Self-insurance	216,523	
Risk pooling	158,031	
<i>Subtotal financial services</i>	<i>437,409</i>	<i>121.5</i>
Total Direct Use Value	1,599,069	444.0

The findings from the Karamoja study also enable a selected analysis of the sub-region's livestock economic value to Uganda's national livestock values. For example, Uganda's national livestock economic values were estimated in 2009 by IGAD and the Uganda Bureau of Statistics, and included values of cattle, goat and sheep offtakes, and cow and goat milk.^{xi} The corresponding values for 2019 can then be estimated using consumer price index data between 2009 and 2019^{xii}, enabling a comparison with the Karamoja study.

The results show that Karamoja makes very substantial economic contributions to Uganda's national livestock economy, and accounts for 39% of national cow milk value, 28% of national goat milk value, 37% of national sheep offtake value and 27% of national cattle offtake value (Table 2).

Table 2. Contribution of Karamoja sub-region livestock production to Uganda national livestock production, 2019

Product	Uganda national 2019 economic value (UGX million) ^{xiii}	Karamoja sub-region 2019 economic value (UGX million) ^{xiv}	Karamoja sub-region as proportion of national value (2019)
Cow milk	1,091,592	428,733	39.3%
Goat milk	40,465	11,234	27.8%
Cattle offtake	1,955,826	521,591	26.7%
Goat offtake	567,104	55,526	9.8%
Sheep offtake	110,297	51,437	46.6%

Conclusions

- For the first time, statistics are now available on the economic value of livestock in Karamoja. These statistics show the very high value of livestock products and services in the sub-region both in absolute terms, and in terms of contributing to Uganda's national livestock economic value.
- For policy makers, a key question is how to protect and develop Karamoja's livestock resources. Critical issues include the need to recognize the value of agropastoralist and pastoralist systems, the need to secure access to productive rangeland and water for mobile herds, and the need to develop effective disease control strategies that limit disease-related economic losses.
- The data provided by the Karamoja livestock economics study has multiple uses. One important use is for comparative benefit-cost analyses to enable the potential economic benefits of different livestock policies and programs to be evaluated.

Further information

For further information about this Evidence Brief or the Karamoja Resilience Support Unit (KRSU) please visit www.karamojaresilience.org or contact Mesfin Ayele, email: Mesfin.Molla@tufts.edu. The KRSU is implemented by the Feinstein International Center at Tufts University.

Disclaimer

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

Endnotes

ⁱ Behnke, R. (2010). The Contribution of Livestock to GDP in the IGAD Member States. Study Findings, Application of the Methodology in Ethiopia and Recommendations for Extension of the Programme. IGAD LPI Working Paper No. 02-10. Intergovernmental Authority on Development – Livestock Policy Initiative, Djibouti

ⁱⁱ Behnke, R. and Muthami, D. (2011). The Contribution of Livestock to the Kenyan Economy. IGAD Livestock Policy Initiative (LPI) Working Paper No. 03-11, Intergovernmental Authority on Development, Djibouti

ⁱⁱⁱ Behnke, R. and Osman, H. M. (2012). The Contribution of Livestock to the Sudanese Economy. IGAD Livestock Policy Initiative (LPI) Working Paper No. 01-12, Intergovernmental Authority on Development, Djibouti

^{iv} Behnke, R. and Nakirya, M. (2012). The Contribution of Livestock to the Ugandan Economy. IGAD Livestock Policy Initiative (LPI) Working Paper No. 02-12, Intergovernmental Authority on Development, Djibouti <https://www.future-agricultures.org/wp-content/uploads/pdf-archive/IGAD%20LPI%20WP%2002-12%20The%20Contribution%20of%20Livestock%20to%20the%20Ugandan%20EconomyFinal.pdf>

^v Aklilu, Y., Irungu, P. and Alemayu, R. (2002). An Audit of the Livestock Marketing Status in Kenya, Ethiopia and Sudan (volume I). African Union/Interafrican Bureau for Animal Resources, Nairobi

^{vi} Catley, A., Lind, J. and Scoones, I. (2013). Development at the Margins: Pastoralism in the Horn of Africa. In: Catley, A., Lind, J. and Scoones, I. (eds.). *Pastoralism and Development in Africa: Dynamic Change at the Margins*. Routledge, Abingdon and New York

^{vii} Aklilu, Y. (2017). Livestock Trade in Karamoja, Uganda: An Update of Market Dynamics and Trends. Karamoja Resilience Support Unit, USAID/Uganda, Kampala <https://karamojaresilience.org/publications/item/livestock-trade-in-karamoja-uganda-an-update-of-market-dynamics-and-trends>

^{viii} **Livestock as credit:** Credit or financing benefits of livestock involves the of livestock as a source or a collateral for credit. This is typical of rural areas such as Karamoja where livestock owners are not able to obtain loans from formal financial institutions. Alternatively, livestock owners access money without the need to borrow from a formal financial institution by obtaining loans from community-based self-help groups/associations and they sell livestock to repay the cash loans. Most groups charge an interest rate on loans of 10%, with repayments over 1-2 months. This interest rate is used to calculate the value of livestock credit or the credit benefits derived from Karamoja livestock – calculated as 10% of the value of the livestock off-take.

Asset-based self-insurance: Livestock owners in Karamoja have no access to formal health insurance of any kind to cover emergencies such as medical care. Instead, they sell their own herds (livestock assets) in an emergency. The level of asset-based (livestock-based) self-insurance available to an individual livestock owner depends on the value of that individual's assets, and the livestock ownership functions. In the absence of relevant insurance premium and drawing from similar contexts, it can be assumed that insurance in rural Karamoja would cost 10% of the value of livestock as capital in herds. The value of livestock as capital in herds can be estimated as 75% of their sale price.

Risk pooling (management): As a form of insurance, livestock owners call upon assistance from fellow stock owners in time of need. This form of communal insurance scheme is based on gifting and loaning within rural communities of live animals and livestock products and services such as ploughing that is done for others without payment. The value of benefit derived from these exchanges is the approximate value of risk pooling (insurance).

^{ix} Behnke, R.H. and Lotira, R.L. (2019). The Productivity and Economic Value of Livestock in Karamoja Sub-region, Uganda. Karamoja Resilience Support Unit, USAID/Uganda, Irish Aid and UKaid, Kampala

<https://karamojaresilience.org/publications/item/the-productivity-and-economic-value-of-livestock-in-karamoja-sub-region-uganda>

^x Behnke and Lotira *ibid*.

^{xi} Behnke and Nakirya, *ibid*

^{xii} Uganda Consumer Price Index data from:

<https://data.worldbank.org/indicator/FP.CPI.TOTL.ZG?end=2019&locations=UG&start=2009&view=chart>

^{xiii} Behnke and Nakirya, *ibid*.

^{xiv} Behnke and Lotira, *ibid*.