



Economic contribution of the pastoral meat trade in Isiolo County, Kenya

Findings from Oldonyiro and Garbatulla Towns

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This report is one of a series of reports synthesising the findings of field research conducted by masters' and doctoral degree students at the University of Nairobi, who investigated the contribution of pastoral production to the local economy. The students developed the research to complement their degree studies, with support from the International Institute for Environment and Development.

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Glossary

- cess** A tax on the movement of agricultural produce raised by local authorities in Kenya. The tax applies to all farm agricultural produce, livestock and products marketed in all outlets managed by local authorities and on transit by road within the country. The rate at which and how it is administered is arbitrary, and it changes from time to time at the discretion of the respective local authority in question.¹
- KSh** Kenyan shillings. Exchange rate US\$1= KSh85 (April 2014).² This rate can be applied to all costs mentioned in this report.
- miraa** a herbal product, also known as *khat*
- shoats** sheep and goats

¹ www.businessadvocacy.org/issue009a.html

² www.oanda.com

Executive summary

Pastoralism is a major contributor to the economies of countries in the Horn of Africa. According to current statistics, the livestock and meat trade contributes nearly US\$1 billion. In Kenya, the pastoral sector is worth over US\$800 million, and provides more than 80 per cent of the meat consumed in country. But despite its enormous economic contribution, pastoralism has to compete for public investment with other land use activities including crop agriculture, wildlife conservation and other emerging practices in the drylands. This is mostly down to a lack of evidence-based decision making, a lack of information on pastoralism's true contribution to the local and national economies in the region and the widespread underestimation of the value of pastoralism.

Our study was designed to improve the available information on the value of pastoralism in Isiolo County, northern Kenya. According to government estimates, the pastoral sector contributes over 70 per cent of the county's household income and employs more than 75 per cent of its working population. To understand the additional value of meat trading, we used the total economic valuation approach to investigate the trade's contribution in two townships in Isiolo County. The methodology involved a comprehensive literature review, focus group discussions, semi-structured and key informant interviews with livestock traders, butchers and food kiosk owners in the towns of Oldonyiro and Garbatulla.

Our findings indicate that the meat trade contributes immensely to the economies of both towns. Many residents earn their living directly from the livestock and meat trade, supporting a large number of dependants. The county government also earns revenue from the livestock and meat trade in these towns, collecting more than half a million Kenyan shillings through medical certificates, business permits and other fees and licenses from meat shops, butchereries and offal dealers. But despite what should be a promising trade, traders face a number of challenges – insecurity, poor infrastructure, corruption and poor pricing.

The government and policymakers have always battled with insufficient – or insufficiently disaggregated – data and information to make informed decisions, especially when it comes to development. This has resulted in the unfair distribution of resources to pastoral areas, which has left them lagging behind in terms of development. Our study findings provide an evidence base that could justify public interventions geared at addressing the constraints in the pastoral meat sector. Improvements in security, infrastructure and market pricing – including road improvements and upgrading abattoirs and livestock holding grounds – will be crucial in enhancing benefits from the livestock sector in pastoral areas.

Introduction



Pastoralism is a major contributor to the economies of countries in the Horn of Africa: current statistics indicate that the pastoral livestock and meat trade contributes about US\$1 billion (Catley and Aklilu 2012). Kenya's pastoral sector is worth over US\$800 million, and provides more than 80 per cent of the meat consumed in the country (Behnke and Muthami 2011).

But despite this enormous economic contribution, the pastoral system has long been disregarded and left to compete with other land use activities and development projects, such as crop agriculture and wildlife conservation. This is a result of too little available knowledge on pastoralism's true contribution to both local and national economies (Davies 2007).

The government and policymakers have always battled with insufficient – or insufficiently disaggregated – data and information to make informed decisions, especially when it comes to development. As a result, policymakers across Africa and the Middle East have tended to view pastoralists as backward and resistant to development. They have failed to understand the contribution pastoralists make to national and regional economies, despite their role in supplying livestock and livestock products.

Isiolo County is predominantly arid and semi-arid, and largely inhabited by pastoral communities who mainly depend on cattle, sheep and goats (shoats) for their livelihood. The pastoral sector is estimated to contribute over 70 per cent of household income in the county and employ more than 75 per cent of the working population (Government of Kenya 2005). According to the 2009 livestock census, there were 152,164 sheep, 166,549 goats, 101,525 cattle, 11,874 donkeys and 9,957 camels in Isiolo County (Government of Kenya 2009).

For the county to make informed decisions on resource allocation and prioritise development interventions, decision makers need up-to-date information on pastoralism and its contribution to economic growth. Despite being the main source of livelihoods in the county, this information is currently lacking. As a result, decision makers have disregarded the sector and failed to give it the support they have given to others, such as tourism, horticulture and wildlife conservancies.

1.1 Problem statement and justification of the study

Available aggregate statistics on the livestock value chain in Kenya (AU-IBAR and NEPDP 2006), are out of date and downscaled data disaggregated by species are largely non-existent. There is no in-depth analysis of the meat trade to reveal information on the total value of the trade and main actors in the value chain, nor any site-specific studies to determine the meat trade's contribution to the economies of pastoral areas of origin. Although Isiolo County supplies a significant number of livestock to Nairobi and other urban markets (AU-IBAR and NEPDP 2006), there is a lack of empirical evidence on the livestock trade's contribution to the county economy or the marketing channels and actors involved in the value chain.

1.2 Broad objective

Our study's overall objective is to provide empirical evidence about the economic contribution of the pastoral meat trade to Isiolo County. We hope this information can guide the new county government on decisions concerning resource allocation to livestock production and associated development interventions in the county.

1.3 Specific objectives

This study specifically focused on:

- characterising the pastoral meat marketing channels in Oldonyiro and Garbatulla Towns
- determining the pastoral meat trade's contribution to the employment and income of all actors and their dependants in Oldonyiro and Garbatulla Towns, and
- assessing the pastoral meat trade's contribution to the revenue raised in Oldonyiro and Garbatulla Towns.

Methodology



Our study methodology involved a literature review to understand the socioeconomics of Oldonyiro and Garbatulla Towns. We made planned visits to Isiolo County offices to collect secondary data and get a clear picture of the livestock trade in the county and its towns. We made site visits to Garbatulla and Oldonyiro Town slaughter slabs/houses to interview the managers and staff and discuss their business environment, challenges and successes. We also visited livestock markets in Eskot, Duse and Oldonyiro to identify and show the links between activities, animal sources/origin and the actors involved in the chain.

In order to map the livestock value chain in the study sites, we administered questionnaires to the livestock traders to obtain information, including on the source of animals offered for sale at the market, destination of the livestock and county taxes paid. We also surveyed meat businesses – bars, restaurants, hotels, abattoirs, butcheries and meat shops – in Garbatulla and Oldonyiro to establish their number and gather information on incomes generated from the businesses, the number of people they support, the taxes they pay and the challenges they face.

We targeted pastoralist communities in the study areas of Oldonyiro and Garbatulla, using the definition of pastoralist as any livestock keeper who derives at least 50 per cent of their gross household revenue from livestock or livestock-related activities (Odhiambo 2013). Our study mainly focused on the livestock markets of Oldonyiro and Garbatulla subcounties and their respective town centres to map the pastoral meat trade. Oldonyiro livestock market connects the county to other livestock markets in Samburu and Marsabit counties, while Garbatulla acts as a hub for all livestock coming into the county from Garissa, Meru and other adjacent areas.

We used semi-structured questionnaires and key informant interviews to collect data at livestock markets, slaughter slabs, butcheries and food kiosks dealing in the meat trade. We administered questionnaires to pastoralists who came to the markets to sell their animals and the buyers who either slaughter the stock and sell the meat or sell the livestock on in distant markets or to hotels, food kiosks and restaurants in nearby towns. We also used key informant interviews to collect data from government and nongovernmental organisations, livestock officials and other relevant players in the county's livestock trade.

We collated and summarised quantitative data to develop a map of the main actors in the pastoral meat chain and the linkages between these towns and other markets in the county. We used value chain mapping to describe the actors in the livestock trade and flow charts to outline the linkages between markets.

To determine the pastoral meat trade's economic contribution to Garbatulla and Oldonyiro Towns, we traced the revenue contribution from taxes, fees, licenses and permits accruing from businesses dealing in the meat trade and obtained records from the market revenue offices and the county revenue office in Isiolo Town, where we also obtained a list of businesses submitting their taxes, fees and permits.

Results

3

3.1 Pastoral meat marketing channels

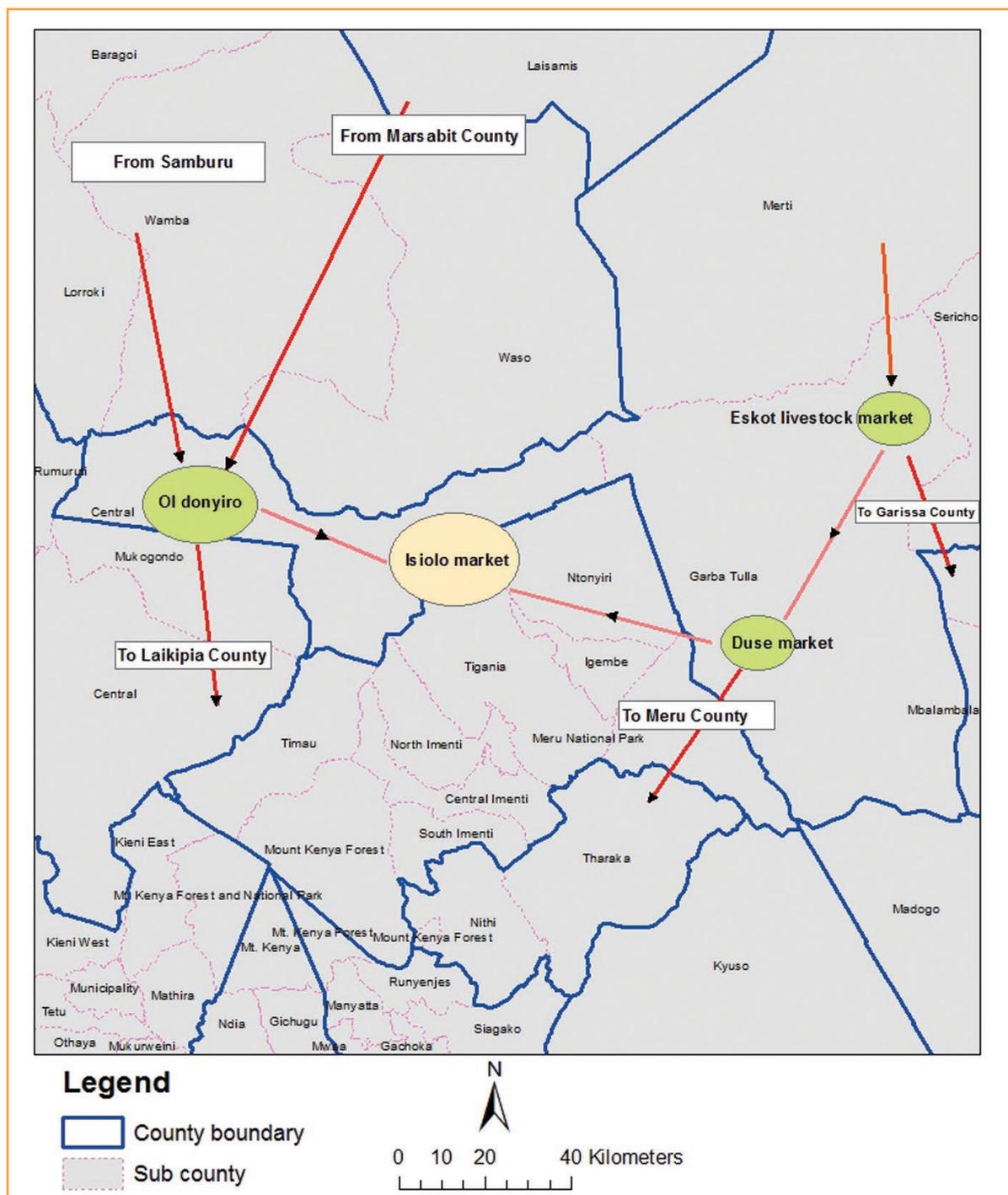
3.1.1 Livestock markets in Oldonyiro and Garbatulla

Figure 1 shows the how the livestock movement routes link Isiolo market with other markets within and outside the county.

Eskot: Established in 2002, Eskot livestock market is on the border of Isiolo and Garissa counties. Categorized as a bush market with no market infrastructure, it operates every Saturday, attracting traders from Danyere, Libaalo, Stele, Skit, Korbasa, Rapsu and Qone and even as far as Garissa County.

Duse: Approximately 32km from Garbatulla Town, between Kinna and Garbatulla Towns, Duse market is famous for the large herds of camels that are traded

Figure 1. Livestock movement routes in Isiolo County and surrounding areas



here every Tuesday. It mainly targets traders from the nearby towns of Kinna, Meru and Kangeta.

Oldonyiro: The largest in the county, Oldonyiro livestock market takes place every other Tuesday. The local community and county council have successfully co-managed the market with respect to revenue collection and other roles since its inception, enjoying a 50/50 share of revenue collected. Traders include young men and women from as far as Samburu and Marsabit Counties, and Nanyuki, Meru and Isiolo Towns. Other traders attending the market include people selling *miraa* (a herbal product), foodstuffs and beads.

Livestock from Oldonyiro market find their way to markets in Laikipia, Samburu, Marsabit and Meru counties and Athi River and Kiamaiko in Nairobi, among others. The main towns linked to Isiolo Town in terms of the livestock trade are Nanyuki, Maralal and Meru.

3.1.2 Actors in Garbatulla and Oldonyiro markets

Our study identified the following main players in the livestock marketing chain.

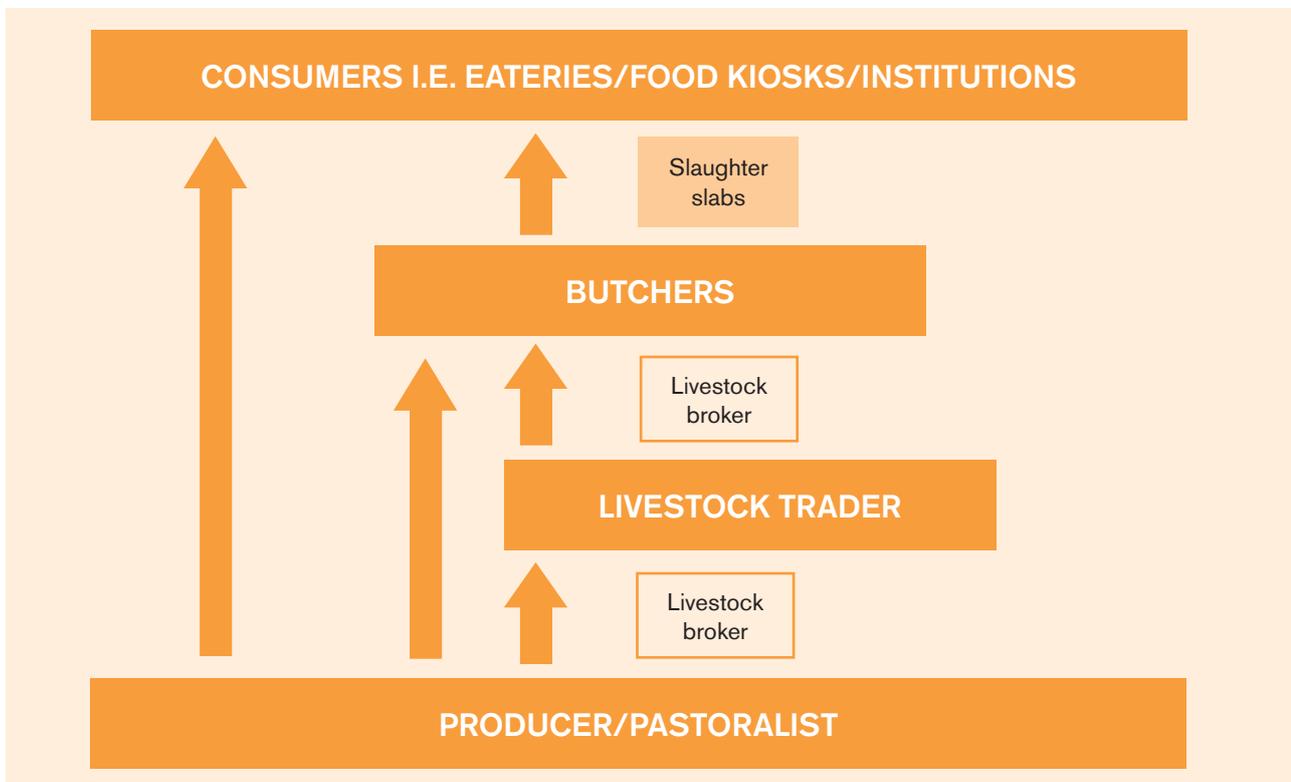
- **Producers:** pastoralists who offer their livestock for sale at the market.

- **Brokers:** act as an intermediary between producers and potential buyers or traders. They are conversant with prices at the market and negotiate prices on behalf of the sellers and buyers.
- **Livestock traders:** come to the market to buy stock from pastoralists or brokers.
- **Butchery owners:** buy livestock from the market and slaughter them to sell to consumers.
- **Slaughter slab owners:** most of the meat sold in butcheries in the two towns is from livestock slaughtered by a licensed officer from the public health department.
- **Consumers:** individuals or institutions buying meat for consumption at home or in institutions such as schools, hotels and restaurants.

3.1.3 Livestock marketing in Oldonyiro and Garbatulla markets

The supply chain can be traced as far as the producers who offer their livestock for sale at the markets (Figure 2). The producer, who is normally the pastoralist, brings livestock to sell in the market to earn money for food, beads and cloths. Producers normally sell their stock with the aid of a broker, who plays a critical role

Figure 2. Actors in the livestock and meat businesses in Oldonyiro and Garbatulla markets



linking sellers and buyers in the chain, negotiating their fee once the deal is sealed. Brokers are normally aware of current market prices and any interested buyers on a specific market day. Livestock traders buy stock in bulk to sell at another market within or outside the county. Traders also buy stock to slaughter or sell to butchers in town; some own a butchery and a shop where they sell the meat.

3.2 Contribution to employment, income and dependants

The livestock trade makes a huge contribution to the income and livelihoods of employers, employees and their dependants. Sixty six per cent of our study respondents were employed in the live animal trade, and 17 per cent in eateries or food kiosks (see Table 1). The livestock traders we interviewed said they directly support 470 people (immediate family) – almost a quarter of the towns' population. A further 30 per cent of the population are extended family members who

also depend on the traders. It is evident that a large percentage of the residents of these towns depend on the livestock trade; a significant number in towns with an average of population of 2,000 (Government of Kenya 2009).

3.3 Economic contribution to town and county revenue

Sources of revenue for Isiolo County Council from pastoral meat businesses include:

- livestock transport permits as the livestock are trekked or trucked to markets within and outside the county
- charges levied on livestock sellers and buyers
- slaughter fees charged at the slaughter houses/slabs
- meat inspection fees for services rendered by the public health officers, and
- medical certificate fees for all meat handlers in butcheries and meat shops.

Table 1. Pastoral meat trade workers, dependants and incomes in Oldonyiro and Garbatulla Towns

Category of actor	N	Numbers employed	Direct dependants*	Indirect dependants**	Annual contribution from pastoral livestock/meat trade	
					Annual contribution to employees' income (KSh)	Annual contribution to employers' income (KSh)
Livestock traders	91	84	470	588	4,447,000	2,094,000
Brokers	22	–	156	–	–	–
Food kiosks/eateries	9	22	30	80	1,566,000	668,400
Butcheries and meat shops	9	17	56	89	389,760	304,800
Offal traders	7	5	34	48	157,440	–
Total	138	127	746	805		

* Immediate family members

** Relatives or extended family members

Source: Own survey – semi-structured interviews with pastoral livestock and meat traders 2014

3.3.1 Market cess collection

In both markets, buyers and sellers contribute an equal amount to the cess collection officials as soon as the stock is either sold or bought in the market (Table 2). The total amount of revenue collected depends on the number and type of livestock presented for sale.

Revenue data from the county revenue office (Table 4) shows that in 2012 Oldonyiro market contributed KSh722,400 (around US\$8,500) in cess, which was shared between the revenue office and the community managing the market. The revenue generated is thereafter split between the two entities managing the market. Splitting the revenue in this way and involving the community in the co-management of the market

ensures that the livestock market is sustainably run while also providing funds for other development projects.

3.3.2 Revenue from Oldonyiro slaughter slab

Some of the livestock are slaughtered immediately after leaving the market at the slaughter slabs in the two towns (see Table 5 for data from Oldonyiro). The rest are herded awaiting slaughter or trucked to other markets within and outside Isiolo County.

Slaughter slabs in Oldonyiro and Garbatulla Towns employ an average of 3–5 people to help in the slaughtering and skinning of livestock. The county council charges KSh100 for camels or cattle slaughtered and KSh30–50 for shoats.

Table 2. Typical livestock market charges

LIVESTOCK SPECIES	SELLER'S CONTRIBUTION PER ANIMAL SOLD (KSH)	BUYER'S CONTRIBUTION PER ANIMAL BOUGHT (KSH)	TOTAL CESS PER ANIMAL (KSH)
Shoat	30	30	60
Cattle	100	100	200

Source: Own survey, key informant interview with sellers and buyers 2014

Table 3. Number of livestock presented for sale at Oldonyiro market, 2012

LIVESTOCK SPECIES	NUMBER OFFERED FOR SALE	NUMBER SOLD	NUMBER UNSOLD	VOLUMES TRADED (%)
Shoats	1,715	810	905	47
Bulls and cows	32	14	18	44
Heifers and bullocks	115	44	71	38

Source: Livestock marketing annual report 2012

Table 4. Revenue collected from Oldonyiro market in 2012 and 2013

YEAR	MONTHLY REVENUE (KSH)	ANNUAL REVENUE (KSH)	TOTAL ANNUAL REVENUE SUBMITTED TO COUNTY (KSH)
2012	60,200	722,400	361,200
2013	69,988	839,856	419,928

Source: Own survey, key informant interviews 2014 and livestock marketing annual report 2012

3.3.3 Revenue from medical certificates, business permits and other fees and licenses

Oldonyiro and Garbatulla are small townships with a few food kiosks and butcheries that sell meat from the local slaughter slabs. As well as rent, electricity and water bills, these businesses also have to pay medical and business fees. It is a public health department requirement that all food handlers acquire medical certificates at a fee. Typically, businesses dealing with meat pay KSH 600–800 in medical fees for each

employee and KSh1,500–3,000 for a business permit from the county revenue office. Medical certificates and businesses permits in Garbatulla and Oldonyiro Towns contribute more than KSh100,000 a year to the Isiolo County revenue office.

Eateries (food kiosks) contribute immensely to these towns' economies and employ a significant proportion of their residents. Food kiosks and hotels in the two towns contribute 53 per cent of the county's revenue from permits, meat shops contribute almost 37 per cent and businesses selling offal almost 10 per cent.

Table 5. Number of animals slaughtered in Oldonyiro town in 2011–2013

SUB COUNTY	YEAR	CATTLE	GOATS	SHEEP	CAMELS	TOTAL KILL
Oldonyiro	2011	–	399	–	–	399
Oldonyiro	2012	39	131	5	–	175

Source: Livestock marketing annual reports for 2011–2012

Table 6. Slaughter slab revenue collection from shoats in Oldonyiro, 2011–2012

YEAR	NUMBER SLAUGHTERED (CATTLE AND SHOATS)	ANNUAL REVENUE
2011	399	19,950
2012	175	10,700

Source: Own survey, key informant interviews 2014

Table 7. Revenue from medical certificates and business permits in Oldonyiro and Garbatulla Towns

BUSINESSES	NUMBER OF BUSINESSES	NUMBER OF EMPLOYEES	CONTRIBUTION FROM MEDICAL CERTIFICATES	CONTRIBUTION FROM BUSINESS PERMITS
Butcheries	9	17	13,600	22,500
Eateries	9	38	30,400	22,500
Offal businesses	7	9	5,600	14,000
Slaughter slabs	2	12	9,600	5,000
Total		76	59,200	64,000

Source: Authors' calculation 2014

Challenges facing the livestock and meat trade in Oldonyiro and Garbatulla Towns



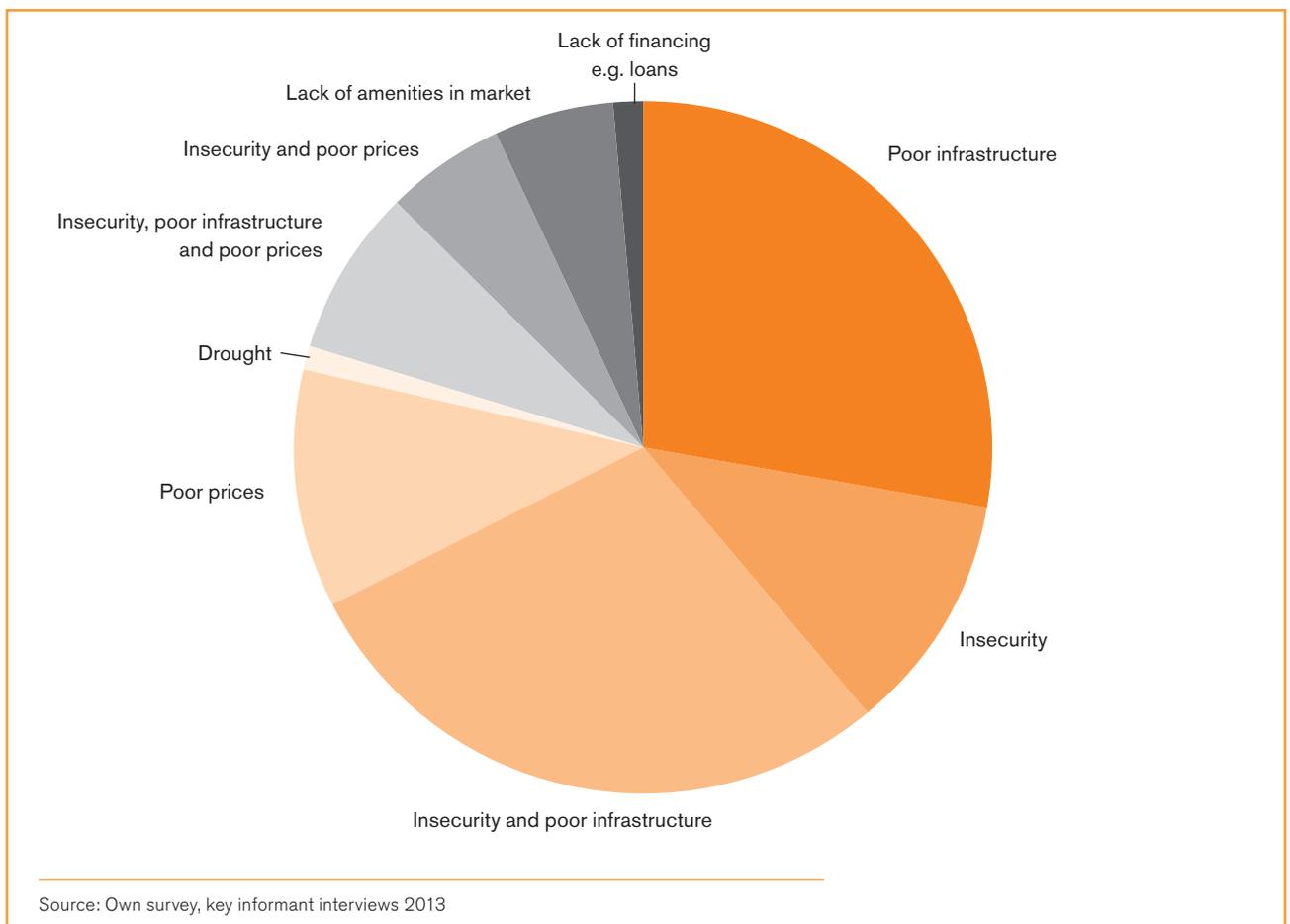
Our study revealed that the pastoral meat trade is a vibrant trade comprising various actors of all ages. Oldonyiro and Garbatulla markets play a pivotal role in connecting the main Isiolo Town livestock market to those in neighbouring counties and towns, serving as conduits of livestock from the east and northeast, which converge at Isiolo before heading to other towns in Kenya (AU-IBAR and NEPDP 2006). Garbatulla, Duse and Eskot markets serve mobile pastoralists from the north or south of the county, depending on the availability of pasture and water.

Our study confirms previous findings that the livestock trade contributes significantly to the livelihoods of the residents in these towns (Elliott and Fowler 2012) and that pastoralism is a major livelihood system in eastern Africa (Odhiambo 2006). The trade contributes significantly to the incomes of business operators and their employees, supporting their families and other indirect dependants. Many actors in the chain are either self-employed (producers, brokers, ofal business operators) or employed in the pastoral meat trade in the towns, during trucking or trekking of livestock to the markets in or outside the county.

Our study focused on the meat trade alone and did not include the multiplier effect of the meat trade on other related businesses. Linkages with other businesses, such as the *mira* trade, foodstuff traders who offer goods and services at livestock markets were beyond the scope of this study. Most livestock products are efficiently used and little is wasted – for example, ofal traders use animal blood and intestines to make traditional sausages known locally as *mitura*, which is a source of income to many middle-earning families.

Revenue records for the surveyed markets indicate that the movement permits, cess and market charges generate more than KSh1 million. In Oldonyiro livestock market, this revenue is split between the livestock management association and the county revenue office, helping boost trade and contributing to the efficient management of markets in the county. The town slaughter slabs provide jobs and generate revenue for the county from meat inspection and slaughter charges. Medical certificates and business permit charges also add to the county revenue.

Figure 3. Challenges facing the livestock trade



Despite these contributions, the livestock sector in Isiolo faces many challenges (see Figure 3). The traders we interviewed complained of insecurity in the county, especially when trekking or trucking livestock. Bandits take advantage of the poor state of the roads to attack trucks or people trekking animals to market, escalating the insecurity problem. These findings corroborate earlier studies (Tura *et al.* 2010, COMESA-CAADP 2009).

Respondents also mentioned corruption on the roads and markets, with corrupt officials manning road blocks to harass livestock owners, asking for bribes or delaying livestock in transit, even when they have the necessary documents and livestock movement permits.

Conclusions

5

This study shows that the pastoral meat sector makes a significant contribution to the economies of Oldonyiro and Garbatulla Towns. The pastoral meat trade is a concerted effort by a wide array of actors who contribute in various ways. Our findings illustrate that the pastoral meat value chain is an efficient one and has minimal wastage.

It is clear that the pastoral meat trade contributes formally and informally to the local economies, yet little effort is made to strengthen or support the sector. The poor state of the roads, lack of modern abattoirs and livestock holding grounds shows that government and donors alike give this sector little attention. A policy push is needed to ensure this industry gets the support it deserves.

References

- AU-IBAR and NEPDP (2006) Kenya livestock sector study: an analysis of pastoralist livestock products market value chains and potential external markets for live animals and meat. USAID-African Union, Ahead Consortium.
- Behnke, R and Muthami, D (2011) The contribution of livestock to the Kenyan economy. IGAD LPI working paper No 03–11. Djibouti.
- Catley, A and Aklilu, Y (2012) Moving up or moving out: commercialisation, growth and destitution in pastoralist areas. In Catley *et al.* (eds) (2013) *Pastoral development in Africa: dynamic change at the margins*. Earthscan/Routledge. London.
- COMESA-CAADP (2009) Hidden value on the hoof: cross-border livestock trade in eastern Africa. Policy brief no 2.
- Davies, J (2007) Total economic valuation of Kenyan pastoralism. WISP-IUCN, Nairobi.
- Elliott, H and Fowler, B (2012) Markets and poverty in northern Kenya: towards a financial graduation model. FSD Kenya.
- Hesse, C and MacGregor, J (2006) Pastoralism: drylands' invisible asset? Developing a framework for assessing the value of pastoralism in east Africa. IIED issues paper 142, London.
- Government of Kenya (2005) Isiolo District vision and strategy: 2005–2015. Arid Lands Resource Management Programme, PricewaterhouseCoopers, Nairobi.
- Government of Kenya (2009) Population and housing census. Kenya National Bureau of Statistics, Nairobi. See www.knbs.or.ke
- Odhiambo M (2006) Review of the literature on pastoral economics and marketing: Kenya, Tanzania, Uganda and the Sudan. Report prepared for the World Initiative for Sustainable Pastoralism, IUCN EARO. RECONCILE, Kenya.
- Odhiambo, O (2013) The ASAL policy of Kenya: releasing the full potential of arid and semi-arid lands – an analytical review. *Nomadic Peoples* 17(1) 158–165.
- Tura I *et al.* (2010) Sheep and goat marketing in Marsabit County: a case study of North Horr, Kalacha, Turbi, Marsabit, Korr and Merille markets.

Related reading

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Elhadi, Y A and Wasonga, O V (2015) Economic and nutritional contribution of camel milk in northern Kenya: a field study in Isiolo County. Country Report. IIED, London. <http://pubs.iied.org/10125IIED.html>

Gebremedhin, G G and Tesfaye, Y (2015) Market chain analysis of live goats: Asaita district, Afar Regional State, Ethiopia. Country Report. IIED, London. <http://pubs.iied.org/10120IIED.html>

Gituku, B C, Wasonga, O V and Ngugi, R K (2015) Economic contribution of the pastoral meat trade in Isiolo Town, Kenya. Country Report. IIED, London. <http://pubs.iied.org/10124IIED.html>

Hesse, C and MacGregor, J (2006) Pastoralism: drylands' invisible asset? Developing a framework for assessing the value of pastoralism in East Africa. Dossier n. 142. IIED, London. <http://pubs.iied.org/12534IIED.html>

Kebede, S, Anmut, G and Zemedu, L (2015) Contribution of camel milk to pastoralist livelihoods in Ethiopia: an economic assessment in Somali Regional State. Country Report. IIED, London. <http://pubs.iied.org/10122IIED.html>

Krätli, S (2014) If not counted does not count? A programmatic reflection on methodology options and gaps in total economic valuation studies of pastoral systems. Issue paper. IIED, London. <http://pubs.iied.org/10082IIED.html>

Mwaura, M W, Wasonga, O V, Elhadi, Y A M and Ngugi, R K (2015) Economic contribution of the camel milk trade in Isiolo Town, Kenya. Country Report. IIED, London. <http://pubs.iied.org/10123IIED.html>

Wako, G (2015) Economic value of camel milk in pastoralist communities in Ethiopia: findings from Yabello district, Borana zone Country Report. IIED, London. <http://pubs.iied.org/10119IIED.html>

This report is one of a series of reports synthesising the findings of field research conducted by masters' and doctoral degree students at the University of Nairobi, who investigated the contribution of pastoral production to the local economy. The students developed the research to complement their degree studies, with support from the International Institute for Environment and Development.

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