

# The Status of Donkey Slaughter in Kenya and its Implications on Community Livelihoods

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# THE STATUS OF DONKEY SLAUGHTER IN KENYA AND ITS IMPLICATION ON COMMUNITY LIVELIHOODS

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*The views expressed in this publication are those of the author(s) and the contents of this report reflect information obtained during the study.*

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## Abbreviations and Acronyms

APSK – Animal Production Society of Kenya

Brooke EA – Brooke East Africa

CDVS – County Director of Veterinary Services

DLP – Director of Livestock Production

DVS – Directorate of Veterinary Services

FGDs – Focus Group Discussions

GoK – Government of Kenya

IFAD – International Fund for Agricultural Development

KALRO – Kenya Agricultural and Livestock Research Organization

KII – Key Informant Interview

KNBS – Kenya National Bureau of Statistics

KSPCA – Kenya Society for Protection and Care of Animals

KVA – Kenya Veterinary Association

KVB – Kenya Veterinary Board

Ltd – Limited Company

MoA – Ministry of Agriculture

OIE – World Animal Health

TOR – Terms of Reference

TWG – Technical Working Group

USIU – United States International University



# Executive Summary

This report presents the status of donkey slaughter in Kenya and its implication on donkey population and community livelihoods. A cross sectional descriptive survey was conducted in Turkana, Nakuru, Machakos, Baringo, Narok, Kajiado and Kirinyaga. Data was collected from four donkey slaughterhouses, eight groups of donkey keepers, 14 groups of donkey user's / donkey users associations, seven groups of donkey traders, 5 county livestock production officers, 14 county and subcounty veterinary officers, 5 police stations, 7 chiefs and village elders, the Kenya Revenue Authority, Kenya National Bureau of Statistics and the Kenya Society for the Protection and Care of Animals (KSPCA). Data on slaughter of donkeys for the export market, donkey theft and illegal slaughter, the value of the donkey to communities and community livelihoods was collected. The data was analyzed in aggregate form and presented as descriptive statistics including means and frequencies. The findings of the study were disseminated to stakeholders along the donkey value chain in a feedback workshop, where majority of the participants validated the findings of the study and indicated that the results corroborated with general observation and findings of donkey studies conducted previously. The stakeholders jointly made recommendations for sustainability of the donkey value chain.

Among other results, the study revealed that the donkey was ranked as the most important livestock compared to chicken, goats, sheep, cows and ducks. This was based on its use in transportation while enhancing accessibility to hard-to-reach areas such as foot paths, marshy areas and during rainy seasons. The donkey was a source of livelihoods for the community generating a mean income of KES. 11,390.00 per month. Income from donkeys was used in meeting households' financial needs such as paying school fees, purchasing food, paying house rent, purchasing clothing, making contributions in savings and credit associations and purchasing farm inputs such as fertilizer and seed.

A total of 301,977 donkeys, which represented 15% of the donkey population were slaughtered in four export slaughterhouses within the period April 2016 – December 2018. Projection of donkey slaughter and

population revealed that by the year 2022, all donkeys will have been slaughtered, holding all factors constant. However, this projection was based on secondary data on donkey population which could not be determined due to the limited scope of the study. The forthcoming (2019) National Housing and Population Census is therefore timely and will provide information on the actual donkey population.

The annual mean rate (5.1%) of donkeys slaughtered was five times higher than the annual donkey population growth rate (1.04%). A projection on the number of donkeys slaughtered implied that by the year 2023 (in 3 years'), the donkey population will be depleted holding all factors constant. Taking cognizance of the magnitude of investments made in establishment and operationalization of the slaughterhouses, and the period required by the investors to recoup their initial investment and get a positive return on investment, it is paramount to regulate donkey slaughter. Measures to curb depletive slaughter are required while also considering the plight of investors who were licensed by the government. Some countries like Pakistan report that they will breed donkeys to supply to china. China itself reports that soon it will supply significant demand of donkey skin to its industries. Donkey breeding research may be an option to increase the population and produce larger-sized breeds, and development of guidelines on management practices for enhanced reproduction. Higher producing donkey breeds may serve donkey milk producers better in Kenya.

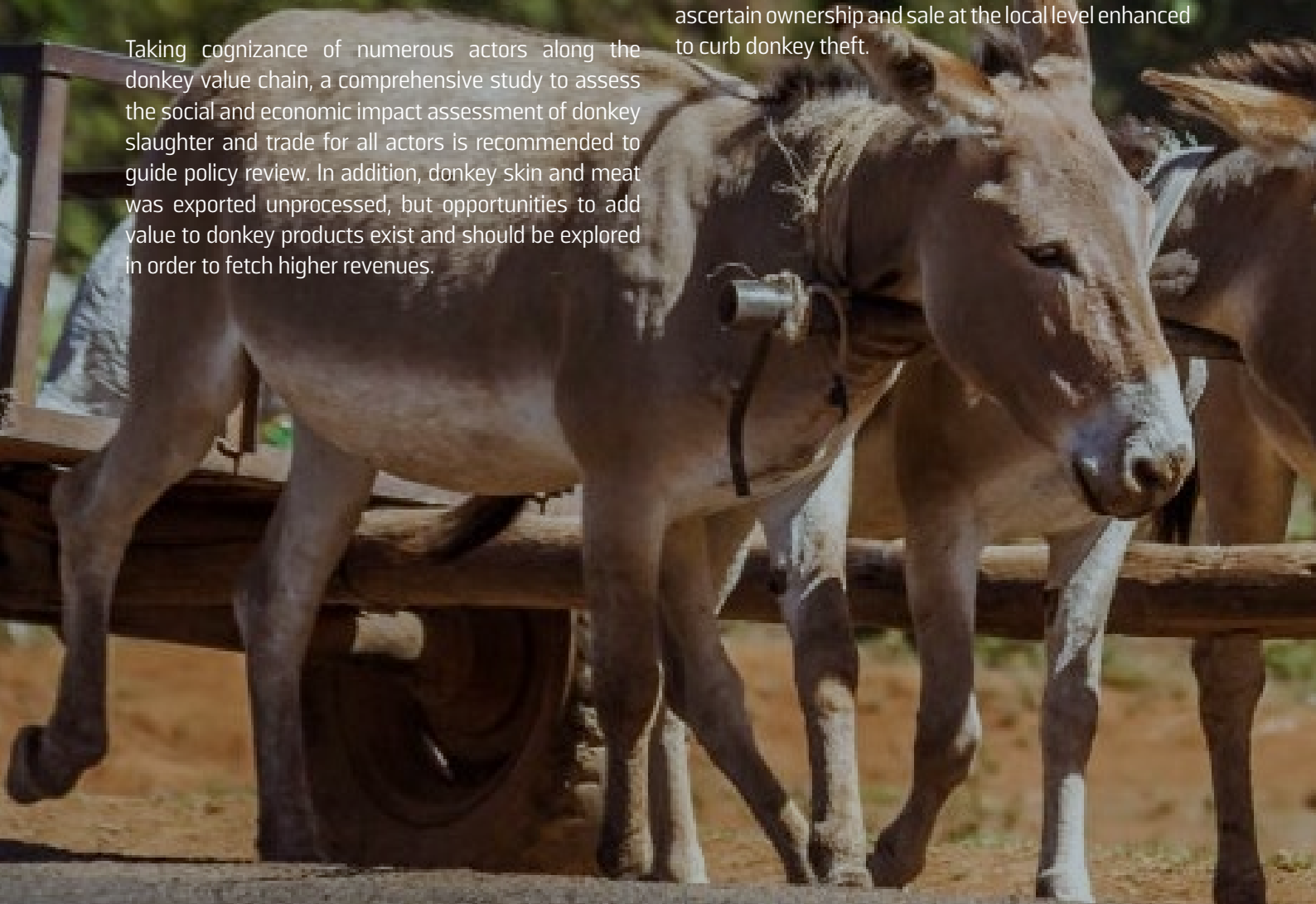
Difficulties in getting adequate numbers of donkeys to slaughter was cited as one of the major constraints limiting operations of the export slaughterhouses. However, an increasing trend in the number of donkeys slaughtered in subsequent years was reported. While the local community further expressed concern on the variation of fur colors of donkeys slaughtered in the export slaughterhouses, pointing to a possibility of importation of donkeys from neighboring countries, ascertaining this claim was beyond the scope of this study. Enforcement of laws on importation of animals is recommended and a study to ascertain the cross border smuggling of donkeys into Kenya for hide trade is recommended to minimize risks of transboundary diseases.

Making an assumption that 25% (75,494) of the donkeys slaughtered were working donkeys, and would otherwise have been used to generate the mean monthly income of KES 11,390, the income foregone was valued at KES 28.3 billion during the reference period (April 2016 – December 2019). While the gross revenues from export of donkey meat and skin was KES 1.82 billion during the same reference period, a comparison of the income foregone by donkey owners and users was 15 times more than the gross revenue generated from export of donkey meat and skin. While this finding negates achievement of the expected outcome of donkey slaughter and trade, it is limited to financial costs and benefits at exporters and donkey owners/users level only.

Taking cognizance of numerous actors along the donkey value chain, a comprehensive study to assess the social and economic impact assessment of donkey slaughter and trade for all actors is recommended to guide policy review. In addition, donkey skin and meat was exported unprocessed, but opportunities to add value to donkey products exist and should be explored in order to fetch higher revenues.

Stunning methods used before slaughter of donkeys included electrical procedures at Silzha while Goldox, Fuhai and Star Brilliant used stunning guns and bullets. Analysis of the number of stunning bullets purchased from KSPCA revealed a discrepancy of 27.7% – 100% donkeys slaughtered in three abattoirs not accounted for. An audit of slaughterhouses to ascertain compliance to animal welfare standards is recommended.

According to the study, donkey theft was rampant in 2017 but theft cases have reduced, perhaps due to population decline and extra care on donkeys by their owners. A total of 883 donkeys were reported stolen in 2018 by the study participants. Laws on animal movement should be enforced and mechanisms to ascertain ownership and sale at the local level enhanced to curb donkey theft.





Donkey slaughter in the export abattoirs provided employment for 657 laborers who earned a mean daily wage of KES 423 (KES 8460 per month). Households giving up donkeys through sale or theft would incur KES 1,581 daily to meet the household's transportation costs. While establishing the number of donkey keeping households in the country was beyond the scope of this study, it is envisaged to be higher than the number of employees (657) in the slaughter houses. Thus, use of donkeys had a higher value compared to provision of labor at the slaughterhouses.

Donkey keepers and users whose livelihoods depended on the donkey earned an average of KES. 11,390.00 per month from providing transportation services, while laborers in the donkey abattoirs earned a mean of KES. 423.00 per day, translating to KES. 8,460 per month. Further reduction in the donkey population is likely to lead to additional loss of livelihoods not only for donkey owners or users but their entire households and additional extended family members who depend on them.

Community sensitization on impacts of donkey slaughter on their livelihoods should be recommended. In addition, laws on animal movement should be enforced and mechanisms to ascertain ownership and sale at the local level enhanced to curb donkey theft.

The study further revealed indiscriminate slaughter including pregnant donkeys. This is likely to contribute to the declining trend in donkey population through disruption of the reproduction rate. A ban on slaughter of pregnant donkeys is recommended and development and/or adoption of penicillin pregnancy diagnostic kits for use prior to purchase or admission of donkeys into the slaughterhouses made a mandatory procedure.



# Introduction

Donkeys play an important role in Kenya's agricultural economy (The Brooke, 2019), the lives of donkey keepers and users with a potential to contribute to poverty reduction through income generation. Donkeys have mainly been perceived as a source of draft power for domestic and commercial purposes hence popularly referred to as 'the beast of burden'. In the recent past, recognition of the potential contribution of the donkey in improving livelihoods has resulted in initiatives to promote the donkey sub-sector. Most initiatives focus on donkey welfare in particular their health and general management. In Kenya, the donkey was gazetted as a food animal in the year 1999 (GoK, 1999) with the aim of curbing backyard slaughter, improving food safety and stimulating donkey production in response to market availability. An increase in global demand for donkey meat and skin led to establishment and licensing of donkey slaughterhouses. To this end, four export donkey slaughterhouses were established, licensed and operationalized within the period 2016 – 2018, namely: Goldox Kenya Ltd in Baringo County, Star Brilliant Donkey Abattoir in Nakuru County, Silzha Ltd in Turkana County and Fuhai Machakos Trading Co. Ltd in Kithyoko, Machakos County. Licensing of the slaughterhouses was envisaged as a potential avenue to increase the commercial value of the donkey and create job opportunities thus contributing to improved livelihoods. It was understood that full operations of the four slaughterhouses required a steady flow of donkeys, beyond the current population. While there is no policy on donkey breeding or law preventing slaughter of pregnant donkeys, the owners of donkey slaughterhouses, upon licensing, were advised to establish breeding farms and avoid slaughtering pregnant ones as a good practice and to sustain their slaughterhouses, but this has not been done. However, some slaughterhouses place the detected pregnant donkeys aside until they give birth and wean their young. But it is difficult to detect early pregnancies and this may be the problem. Some countries like Pakistan report that they will breed donkeys to supply to China. China itself reports that soon it will supply significant demand of donkey skin to its industries. There are no programs on donkey breeding in order to harness their perceived potential and this presents a research opportunity to breed and multiply large sized donkeys, as well develop guidelines on management practices for enhanced reproduction. Higher producing donkey breeds may serve donkey milk producers better in Kenya.

According to 2009 Kenya Population and Housing Census, the donkey population was 1.8 million (KNBS, 2010). The number of donkeys slaughtered each day in the export slaughterhouses and in the bush has been estimated at 1,000, but it is not clear whether this information is a reflection of the actual situation due to lack of comprehensive empirical studies. Taking cognizance of a 1.04% annual increase in the donkey population reported between 2009 and 2016, (KNBS 2010; MoA, 2016) and lack of interventions to increase the donkey population, there is a concern that the donkey population may fall below effective reproductive numbers in the near future. Donkeys have not been traditionally reared for the food industry in Kenya. An increase in commercialization of the donkey and donkey products without structured interventions to upgrade the value chain is likely to disrupt livelihoods of communities that depend on the donkey. The current status of donkey slaughter and its implication on donkey population is not well documented. In addition, there is also a dearth of information on the implication of donkey slaughter on community livelihoods. In an effort to fill this information gap, Kenya Agricultural and Livestock Research Organization (KALRO) taking a lead in research conducted by a consortium of partners undertook a survey to establish the status of donkey slaughter in the country and its implication on community livelihoods. The aim of the study was to provide empirical evidence to guide decision-making and policy review because lack of empirical evidence to guide policy makers is likely to lead to patchy and ineffective attempts to upgrade the donkey value chain.

# Review on the Current Status of Donkey Slaughter and Trade

## Donkey Slaughter in Kenya

Donkey meat and milk has been consumed over the years by some communities in Kenya, with the donkey primarily slaughtered in the bush. This led to gazettment of the donkey (asses) alongside quails, ostriches, rabbits, horses, mules and hinnies as food animals in the year 1999, in order to promote food safety (GoK,1999). Consequently, under the Meat Control (export slaughterhouse) Regulations 1973 (GoK, 2012), four export slaughterhouses were licensed and established in two of the regions leading in donkey population within the period 2016 – 2018 as shown in Table 1.

Table 1: Donkey slaughterhouses established between 2016 and 2018

	Region	Donkey Slaughterhouse	Location and County	Date of Establishment
1	Rift Valley	Goldox Kenya Ltd	Mogotio, Baringo County	April 2016
2	Rift Valley	Star Brilliant Ltd	Naivasha, Nakuru County	September 2016
3	Rift Valley	Silzha Ltd	Lodwar, Turkana County	March 2017
4	Eastern	Fuhai Machakos Trading Co. Ltd	Kithyoko, Machakos County	November 2018

The rationale behind establishment of the slaughterhouses in these areas was the high donkey population. According to the 2009 Kenya Population and Housing Census, Rift Valley region led with the highest donkey population of 988,647 donkeys, Northeastern ranked second (2nd) with a total of 382,345 donkeys and Eastern region ranked third (3rd) with 304,249 donkeys (KNBS, 2010).



Donkey slaughter underway in Silzha Slaughterhouse in Turkana County

In Kenya, a slaughterhouse is established and licensed upon declaration by the Minister through a notice in the Kenya Gazette, upon fulfilment of conditions stipulated in the Meat Control (Slaughterhouse) Regulations 1973 Act (GoK, 2012). These conditions focus on the facility, sanitation, inspection, disposal of condemned carcasses and parts, food additives and injurious substances, canning, marking and labelling of meat and meat containers, export stamps, certificates and records as spelt out in the Act. The Act further provides the Director of Veterinary Services (DVS) with the mandate to order closure of any slaughterhouse upon failure to comply with any provision of the regulations.

Donkey products from the four slaughterhouses are exclusively destined for the export market, and donkeys are inspected by a government meat inspector during slaughter in each of the slaughterhouses. According to the Meat Control (Inspection Fees) Regulations 1974 Act, export slaughterhouses are mandated to pay inspection fees in respect of inspection of animals slaughtered and inspected (GoK, 2012).

## Donkey Theft and Bush Slaughter



Operationalization of donkey slaughterhouses coincided with an increasing trend in reports on donkey theft. This was commonly reported by households in donkey keeping areas to area chiefs, the police as well as covered through media reports across the country. Most stolen donkeys were allegedly ferried out of the counties of origin alive or slaughtered in the bush, deboned and their skin and meat taken away, or skinned and the carcasses abandoned. Meat from donkeys slaughtered in the bush was suspected to end up in local butcheries while the skin suspected to be exported to foreign markets where the demand was high. The local community further alleged that the meat after deboning was taken to the export slaughterhouses. Such high demand particularly by the Chinese market as well as high prices offered for donkey skin are undoubtedly fueling global reports of poor donkey welfare, theft and a sudden increase in the purchase price of donkeys (The East African, 2017). One such case is the rise in price of the donkey from USD 40 to 130.

Donkey theft led to protests in some parts of the country including Embu, Kirinyaga and Narok (Business Daily, 2018) while in some instances, local communities protested against establishment of donkey slaughter facilities in their counties (Agence France-Press, 2017). Donkey theft reports were commonly published in the local dailies/newspapers as well as aired through audiovisual information outlets. Such publications include the Daily Nation® newspaper which reported monthly losses of about 35 donkeys while the Standard® newspaper reported loss of 120 donkeys in one month in Narok. Ten of them were reported as slaughtered in the bush with the skin, ears, tails and other organs taken away (Standard Digital, 2017). Similar reports were found in the Daily Nation newspaper which estimated that donkey theft had risen from 5 - 35 donkeys per month in Nakuru County following the establishment of Star Brilliant Slaughterhouse (Daily Nation, 2017)

*In Turkana, the donkey is not a beast of burden but a valued domestic animal. With the introduction of "a good market" for donkey skins, there emerged several threats to existence and the future of the donkeys in the county. Where issues of theft, inhuman slaughter of donkeys for the purpose of only getting the skin and leaving the carcass as an environmental nuisance were reported. There had been several complaints from pastoralists over insecurities and donkey theft. The complaints cut across all 7 sub-counties of Turkana County.*

Besides the other functions of the donkey, Turkana locals also slaughtered donkeys for consumption. A report by the Livestock Department in Lodwar indicated that about 204 donkeys were slaughtered monthly for human consumption. It is important to note that all this is done informally in the backyard and the meat is not inspected (Department of veterinary services Turkana County, 2018). This is because they do not use a licensed slaughter slab hence the informal setting limits the local community from requesting for inspection services from meat inspectors.



*One of the stalls where informal donkey slaughter takes place in Turkana. Meat from donkeys slaughtered is sold from the stall to consumers and middlemen who hawk the meat.*

## Donkey Welfare in the Slaughterhouses

Animal welfare is a concern in food supply chains with attention from consumers on animal products. Animal welfare means the physical and mental state of an animal in relation to how it lives and dies (OIE, 2017). Animals should live and die in dignity. Therefore, the principles of humane slaughter have been included in the animal welfare policies in many countries to ensure animals used for food are slaughtered in a humane way so that they do not suffer pain or distress in death. The stunning of animals is the most humane way of ensuring humane slaughter. Methods of stunning include the use of mechanical, chemical and electrical procedures that render the animal unconscious until death from slaughter. The method used must render the animal unconscious such that if it is not slaughtered on time, it regains consciousness.



*Donkeys in a holding ground*



*The process of skinning of donkeys during slaughter.  
The skin is entirely destined to the export market*

The World Organization for Animal health (OIE) has made recommendations on how domestic animals should be stunned ready for slaughter (OIE, 2017). In Kenya, stun guns and electrical methods are recommended for use (Cap 356, 2012). Stun guns and ammunitions are issued to the slaughterhouses under the Firearms Act (Cap 114, 2012). They are stored under 'lock-and-key' to avoid misuse by unauthorized persons. Stunners are maintained and operated in an appropriate manner and routinely inspected by authorized officers from Kenya Society for Protection and Care of Animals (KSPCA). It is recommended that animals should not be stunned when slaughter is likely to be delayed. The donkey slaughterhouses are inspected and licensed to operate stunners and ammunitions to ensure humane slaughter. The stunners and ammunition are compulsory equipment of a slaughterhouse without which no license is issued. KSPCA is the main supplier of stunners and ammunitions for humane slaughter of animals in Kenya. However, it is not clear if there is another supplier of stunning bullets in the country.

The export of donkey products is driven mainly by the demand from China to meet a burgeoning market for donkey skin, from which a traditional medicine ejiao is made. Ejiao is made using gelatin extracted from boiled donkey hide. It is alleged that ejiao supplements lost blood, delays ageing, increases libido, treats side effects of chemotherapy, prevents infertility, miscarriage and menstrual irregularity (Daily Nation, 2019).

## Donkey meat and skin export

The demand for donkey products in the international market has led to the ban of donkey slaughter in some African countries due to the rising cases of donkey theft and slaughter in the bush. While countries such as Botswana, Burkina Faso, Mali, Niger, Senegal, Ethiopia and Tanzania have in the recent past banned slaughter of donkeys, Kenya, in contrast has licensed donkey slaughterhouses to meet the growing demand of donkey products. As a result, the donkey population is envisaged to have declined in Kenya, and donkey traders are alleged to source for donkeys from neighboring countries, albeit informally. However, it is not well documented whether the allegations are a reflection of the empirical situation. The forthcoming National Population and Housing Census is therefore timely and will provide information on the actual donkey population. The export of donkey products (meat and skin) started in earnest in 2016 and is growing each year (Quartz Africa, 2016) but is tax exempt. Kenya exported a total of 16,544 tonnes of donkey meat valued at KES. 1.72 billion in the period 2016 to 2018 (KNBS, 2019). However, it is envisaged that this information is inadequate and does not match the loud outcry voiced by donkey keepers and users, hence justifying empirical studies.

## Implications of donkey slaughter and skin trade to community livelihoods

Donkey populations are at risk of depletion in view of increased demand for their products in various countries including China. This is partly attributed to donkey skin that is used for purposes of producing snacks, beauty products, sex stimulating products, anti-aging properties, curing anemia, and boosting energy and traditional Chinese medicine known as ejiao (Eli, 2010; Jackson, 2017; Nkala, 2018; Brooke, 2019). Similarly, donkey meat is consumed in many parts of China as it is believed to be more nutritious compared to beef, while hoofs are sought for the gelatin (Eli, 2010; Leithead, 2017). This notwithstanding, China does not have enough donkeys to meet the increased demand, resulting in an increase in importation of donkey skin from all over the world (Brooke, 2019). The evolving relationship between Africa and China has also contributed to the trade in donkey skin which however, has impacted negatively on the livelihoods of poor households who eke a living by using donkeys to generate income and also facilitate in performing domestic chores (Brooke, 2019).

The continued demand is envisaged to have led to a reduction in the population of donkeys albeit not well documented, which has contributed to an increase in the price of donkeys. In the process, this has had negative ripple effects to poor households in their endeavor to replenish their donkeys which are either stolen or sold (Jackson, 2017; Nkala, 2018). Donkey trade on the other hand has resulted in an increase in the perceived value of the donkey contributing to an increase in the number of theft cases for purposes of making easy money through the sale of skin (Valette, 2015). The demand for donkey skin creates severe problems for the world's poorest and marginalized communities, who are heavily dependent on donkeys as working animals (Köhle, 2018). The rise in the market price of donkeys has largely been the cause of heartbreaking reports of farmers and villages waking up to find the skinned remains of their donkeys in a nearby field, after poachers strike in the night. With high unemployment rates and an increase in poverty levels, many households especially in rural areas feel the negative multiplier effects given their over-reliance on the animals. In rural areas, donkeys are crucial due to the services that they provide to the local people in their daily activities. Jackson (2017) estimates that the income earned through one animal can support 5-20 family members as is the case in a number of families in Kenya.

The loss emanating from theft or sale of donkeys render the owners jobless as they are robbed of the most important "tool" necessary for income generation. Some communities use the donkeys as a source of income, asset savings, transport, agricultural traction, agricultural diversification and sustainable agricultural production, family and community employment, ritual purposes and social status (Moyo and Swanepoel, 2010). In the end, this does not only present a benefit to the communities as it also presents a deep problem in terms of financial ruin with children dropping out of school, and they can no longer easily fetch drinking water or transport firewood (Köhle, 2018). One key aspect to smallholder competitiveness is its ability to capture non-market benefits, however not well measured to date. For instance, in a report by The Donkey Sanctuary (2017), it was observed that the value of a working donkey cannot be solely reflected in its monetary value since donkeys play a key role in their communities by empowering women, providing freedom for children to study and develop, and as a mechanism for poor communities to save and to self-manage risks.

In West Africa, it was reported that the high demand of donkey skin in China has led to thousands of donkeys being slaughtered despite their use in agriculture. In one private company in Ghana owned by a Chinese citizen, 140 to 150 donkeys are slaughtered every day (Suuk, 2018). In Tanzania, members of the Maasai community who are mostly herders have been affected since trade in donkey products begun. Their donkeys which are loosely tied at night in unsecure pens have been a target by donkey thieves who supply them to donkey slaughterhouses in Kenya. Cases have been reported where thieves move around in rural areas stealing donkeys and loading them on their trucks headed to the Kenya-Tanzania border in Namanga (Nkala, 2018). This notwithstanding, the dependency on donkeys for farm labor, transport, movement of goods and supplies including water for livestock herders has affected women and children the most. In the absence of donkeys, women and children work in the place of donkeys due to lack of better options. The lucky few whose donkeys have not yet been stolen or sold are now forced to adapt by tethering their donkeys nearer to their houses, sleeping with the donkeys in their sheds and introducing dogs to guard them (Nkala, 2018).

On a positive note, however, donkey skin and meat trade has presented the local communities with a source of livelihood, a product that was considered as lacking in value, now generating income and other gains in the international market (Leach and Wilson, 2009). This is because donkey meat and skin generate significant incomes in the international market. The production and marketing of donkey meat and skin has also provided opportunities to support and sustain livelihoods especially in rural communities (Leach and Wilson, 2009) through job creation. Apart from being highly sought in the Chinese market for the purpose of preparing Chinese traditional medicine, donkey skin has the potential for making leather, garments, shoes, handbags and other leather goods (The Donkey Sanctuary, 2017).

Following the licensing of donkey slaughterhouses in Kenya in 2016, various opportunities have been created in the neighboring communities including creation of job opportunities (Ngugi, 2016). Similarly, the place of the donkey among other livestock is changing as it is considered more valuable and expectations are high that both herders and the slaughterhouses will benefit widely through trade in donkeys and their products. In the end, this is expected to improve the livelihood of the communities especially those who rear donkeys. Donkey owners now have a market where they can sell their animals for purposes of raising income to meet needs as they arise (The Donkey Sanctuary, 2017). In the foregoing discussion, there are indications that the slaughter of donkeys has both positive and negative gains to the affected households. On a positive front, the slaughter of donkeys has created employment to the locals, market for those who have donkeys, foreign exchange and revenue to the government. The positive effects notwithstanding, this has impacted the locals negatively in terms of security, loss of working animals at household level as well income for those who used donkeys to earn a living.



## The Place of a Donkey Among Other Livestock in Donkey Keeping Communities

The ability to rear livestock has enabled the development of human societies and cultures, fostered commerce and international trade, and provided a steady source of food, labor, and other products for people. Livestock refers to any breed or population of animal kept by humans for a useful and commercial purpose, such as domestic or captive animals. The Internal Revenue Service of the Department of the Treasury in the US defines livestock as including conventional food producing animals and equines, but excludes birds which are a popular food source in many parts of the world. The donkey is a herbivore domesticated from the wild African ass in the year 4000 BC in Egypt. Its current commercial use is mount, pack animal, draft, meat and dairy. Prior to steam power, livestock were the only available source of non-human labor. As "beasts of burden" and companions, donkeys have worked together with humans for millennia. To date these animals, offer labor in form of farm ploughing, transport services and military functions. Indeed, equines are used for mechanical energy.

Eastern Africa Livestock strategy (2012) recognizes the donkey as providing transportation labor for hay or silage to supplement food producing animals. The draft national livestock policy (2019) identifies the donkey among the non-conventional or emerging livestock that have recently been recognized in the country as an alternative farming activity. The donkey which is commonly used for draft power has received inadequate attention in terms of research and development. Indeed, the donkey is ignored or totally missing in national and regional livestock planning and policy framing (Brooke, 2018). Kenya National Bureau of Statistics (KNBS) 2017 data indicates that Kenya had 2,182,193 (5%) donkeys compared to 40,938,684 cattle, sheep, goats and camels. Half of these donkeys are found in Turkana and Garissa Counties, and the rest are distributed in all other counties but predominantly found in the drier Counties of Kenya. Their sole purpose is provision of labor in transport and farming, playing a key role in Kenya's agricultural economy.

There are various charity groups addressing donkey welfare in view of its vital contribution to rural livelihoods. In Mandera County, it is estimated that about 2,000 households derive up to 50% of their income from transport operations involving donkeys (Practical Action, 2018).

In extreme drought, all other livestock die and the donkey survives and provides income hence improving a family's livelihood and resilience (IFAD, 2004). This notwithstanding, the donkey suffers from poor feeding and watering, lack of appropriate and affordable harnessing systems that cause misery due to negative cultural beliefs and animal mistreatment like whipping. This means they also receive less health care and indeed 75% of all the donkeys covered reached by practical action in Mandera had some sort of disease or infection. There is therefore need to recognize and institutionalize the donkey in national development plans and enhance their productivity to support national economies.

From the foregoing, the government of Kenya authorized massive utilization of the donkey for its skin and meat for the export market. However, no follow up data has been collected to monitor the sustainability of this level of utilization as well as its implication on donkey welfare and the livelihoods of donkey keepers. In an attempt to fill this knowledge gap, a study to determine the status of donkey slaughter and its implication on community livelihoods was undertaken by a consortium of stakeholders comprising researchers and relevant government departments.



*Donkey users (Donkey Transporters Association) in Kajiado County pose for a photo during the survey*



*In extreme drought, all other livestock die and the donkey survives and provides income hence improving a family's livelihood and resilience (IFAD, 2004).*

# Methodology and Approach

The study was multi-faceted with a participatory and consultative process. Consultative meetings were held with stakeholders that led to formation of a consortium comprising of researchers from Kenya Agricultural and Livestock Research Organization (KALRO), Directorate of Veterinary Services (DVS), United States International University (USIU) and Kenya National Bureau of Statistics (KNBS) to undertake the study, with KALRO taking the lead. Through engagement with stakeholders in an inception workshop, the consortium refined the study design and data collection tools.

## Study design

A cross sectional descriptive survey was conducted which entailed describing, recording, analyzing and interpreting conditions that exist (Fraenkel and Wallen, 2008). A descriptive survey was deemed appropriate because of its ability to elicit diverse information, minimize bias and maximize reliability.

## The study area

The study was conducted in seven counties as shown in Fig. 1. The Counties were purposively selected the criteria being the presence of a donkey slaughterhouse or high populations of donkeys. Turkana, Nakuru, Machakos and Baringo Counties have donkey slaughterhouses while Narok, Kajiado and Kirinyaga have high populations of working donkeys.

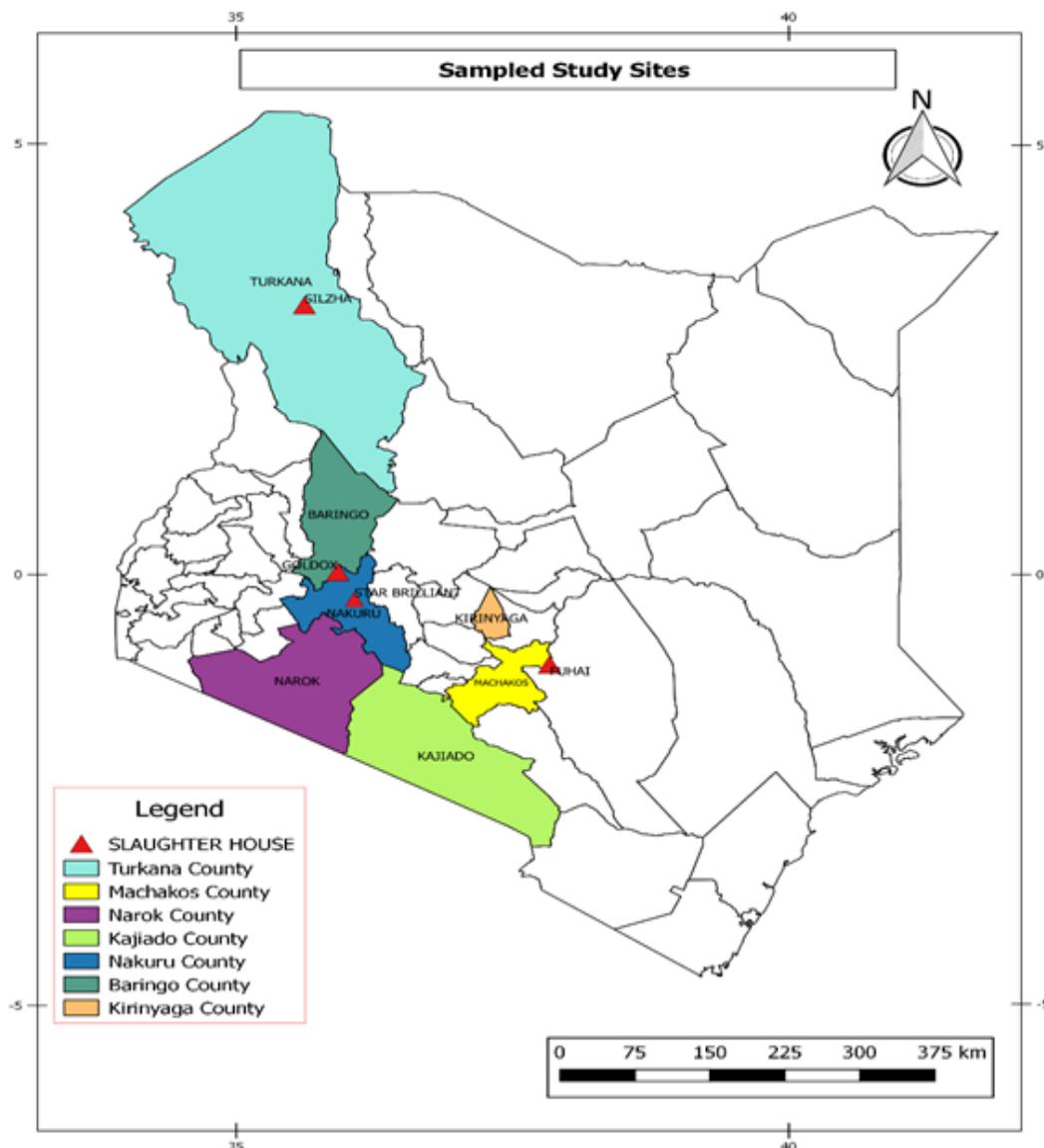


Figure 1: Map showing the study counties

## Data collection procedures

Given the nature of the survey objectives, both primary and secondary data that was qualitative and quantitative in nature were collected by adopting pragmatism approach. Key tools used to collect primary data included questionnaires, key informant interview guides and focus group discussions checklists. Secondary data was collected using document analysis. In addition, a feedback and validation workshop with key stakeholders was conducted. A brief description of the study tools is provided in the following sub-section.

### Questionnaire

This was the main tool for collecting primary data that was both qualitative and quantitative in nature. The choice was informed by the fact that the instrument offers objective means of collecting information whether qualitative or quantitative (Boynton and Greenhalgh, 2004). Besides, being an instrument that can collect a lot of data, questionnaires are considered easier to administer, analyze and economical to use in terms of time and money (Kothari, 2009; Miller and Salkind, 2002). This is because the tool can be used to collect a lot of information from respondents over a short period and that the tool is also free from the bias of the researcher. The questionnaire contained a set of questions designed to collect data mostly in the slaughterhouses on various issues as indicated in the objectives.



*A questionnaire administration session at Silzha Slaughterhouse in Turkana County with the meat inspector and the management*

## Key Informant Interview (KII)

A structured interview schedule was used to collect supplementary data to complement data collected using the questionnaire. This tool allowed for flexibility and probing as an opportunity to obtain additional data that was used to fill in the gaps that may not be filled using the questionnaire data. The KII targeted key informants along the donkey slaughter value chain including opinion leaders, police officers, area chiefs, among others. This was aimed at obtaining data that was used to verify and add meaning to the data collected using questionnaires.



*CDVS Baringo County gives insights on donkey slaughter and theft in the county as a key informant*

## Focus Group Discussions Checklist

The FGDs comprised of a predetermined semi-structured interview moderated by the social scientist and consortium members. A group of respondents that exhibit similar characteristics were targeted to provide necessary information that facilitated the triangulation of data collected using the questionnaire, KII and document analysis. Donkey owners, users and traders were interviewed using these checklists to gather data on the donkey as a livelihood source as well as a source of social stability. Key outcomes of these discussions enabled the generation of information on the economic and social importance of donkey keeping, use and trade on community livelihoods.



*An FGD underway with women donkey keepers and a male translator in Turkana County*



*An FGD underway with male donkey keepers in Turkana County*

## Document Analysis

This entails the use of data which has already been collected and analyzed by someone else (Kothari, 2009). In this survey, comprehensive desk review was conducted to enrich information and data collected thus filling gaps identified after collection of primary data. Data was obtained from reports and records from Kenya Revenue Authority (KRA), Kenya National Bureau of Statistics (KNBS), Kenya Society for the Protection and Care of Animals (KSPCA), County Livestock Production offices and County/Sub county veterinary offices, among others. Content analysis of these reports was done to pick documented evidence based on the survey objectives.

## Study participants

The study utilized primary and secondary data. Primary data was collected between March – April 2019 from different stakeholders in the donkey value chain as shown in Table 2

Table 2: Sources of data

	Source of data	Sampled study participants
1	Donkey slaughterhouses	4
2	Donkey keepers	8 groups
3	Donkey users / donkey users' associations	14 groups
4	Donkey traders	7 groups
5	County Livestock Production Officers	5
6	County and Sub-county Veterinary Officers	14
7	The Kenya Police	5
8	Local administration – Chiefs and Village Elders	7
9	Kenya Revenue Authority (KRA)	1
10	Kenya National Bureau of Statistics (KNBS)	1
11	Kenya Society for the Protection and Care of Animals (KSPCA)	1

## Data Management

Data collected was cleaned to identify errors and omissions while documents were read through to determine the data that would be chunked into smaller meaningful parts. Similarly, coding was done by developing a code book where numerals were assigned to ensure that data is put into a limited number of categories or classes. Various statistical analyses were conducted. Given the large volume of qualitative data collected, classification was done grouping the data along homogeneous themes to facilitate interpretation. Descriptive statistics including means, frequencies and cross-tabulations were generated and used to characterize donkey slaughter and its implication on community livelihoods.

## Stakeholders' Feedback and Validation Workshop

A workshop to disseminate the findings of the study to stakeholders along the donkey value chain was held bringing together Kenya Agricultural and Livestock Research Organization (KALRO), The Brooke East Africa (BEA), Kenya Veterinary Association (KVA), OIE, State Department for Livestock officials, County Directors of Veterinary Services, Directorate of Veterinary Services (DVS), Kenya National Bureau of Statistics (KNBS), Gardenvet, World Animal Protection (WAP), Council of Governors (CoG), Kenya Veterinary Board (KVB), The Donkey Sanctuary, United States International University (USIU), University of Nairobi (UoN), Farming Systems Kenya (FSK), KSPCA management of donkey slaughterhouses, donkey keepers, users and traders. The objective of the workshop was to share the study findings with key stakeholders. The workshop provided a validation platform of the study findings and culminated in recommendations made jointly by stakeholders based on the study findings and plenary discussions. Stakeholders charted a way forward to contribute to sustainability of the donkey subsector.

A policy brief on the status of donkey slaughter in the country and its implications on community livelihoods was also developed based on the study findings and stakeholders' input during the feedback and validation workshop for use in sensitizing policy makers.

## Results and Discussions

### The place of a donkey among other livestock in donkey keeping communities

This study sought to establish how donkey keeping communities valued their donkeys in view of other domestic animals (cattle, sheep, goats and poultry). Opinions obtained related to labor and income obtained by the donkey owners. Results indicate that donkeys were highly placed among the domestic animals in the study areas. In Narok North Sub County, a women's group ranked donkey first among, cattle, chicken, sheep and goats. The high ranking of the donkey was attributed to their friendly nature and serving their owners faithfully. Another women's group in lower Melili location of Narok North Sub County referred to the donkey as a co-wife because of the assistance they provide in fetching water and provide them with income. In Narok South Sub County, Ololulung'a ward, a group of men who are donkey users ranked donkeys above all other domesticated animals because, the income generated from donkeys supports everything in the family including purchasing other livestock, income to the family and paying dowry.

A similar observation was made in Nakuru County, Njoro Sub County, Rare Ward in Naishi village where a group of women said they valued donkeys above the other domestic animals because the income obtained helps in purchasing other domestic animals. A group of men in the same Sub County also ranked donkey above other domestic animals because of the income obtained which enables them purchase feed all the other animals including their families.

The situation was not different in Machakos County, Kangundo Sub-County, where residents of Kamulu who keep donkeys and employees place the donkey way ahead of other domestic animals because they generate income. A group of men and women in Kithimani, Matungulu Sub-County, and Machakos County also stated that they value the donkey above other domestic animals because of the income they fetch.

In Turkana County, donkeys were not highly valued as a means of transport but regarded highly as a source of meat for invalids, fat from the meat used as 'oral and topical medicine', skin used as part of beddings, milk for nutrient for children, the elderly and invalids. Goats were the most valued among a group of women, citing the ability to keep many goats and sell them to meet emergency cash needs. According to women, the donkey was previously valued due to its use in ferrying water but since boreholes are now close by, donkeys are no longer used to fetch and ferry water. Donkeys are also sold for money and used as bride price.



A donkey cart awaiting to ferry construction materials; in the absence of donkeys, cars are used but the cost of using cars is relatively high



A donkey cart loaded with jerrycans of water for transport in rural parts of Central Kenya

Table 3: The rank placed on donkeys among other livestock

	County	Group	Ranking	Other Livestock
1	Narok	Women	1	Chicken, goat, sheep and cow
		Men*	1	Chicken, goat, sheep and cow, dog and cat
2	Nakuru	Men	1	Chicken
		Women*	1	Chicken, dairy goat, sheep and cow and Duck
3	Turkana	Women	2	Goat, Cattle
		Men	7	Chicken, goat, sheep, cow, camels and Duck
4	Kajiado	Women	1	Chicken, goat, and cow
		Men	1	Chicken, goat, and cow
5	Kirinyaga	Men	1	Cattle, goats, pigs and chicken

**\*Exclusive donkey users**



In summary, all the study counties except Turkana ranked the donkey as the most important animal. Reasons for the high ranking included use of donkeys in transport provision for the household, income generation from provision of transportation services (for example fetching and ferrying water for sale) and leasing the donkeys. Some terminologies used to describe the donkeys included: highly friendly, faithful servants, co-wife and bank account. For this category of rural folk, income from donkeys meets a household's financial needs and supports other farm enterprises. However, Turkana County assigned a lower value to the donkey in favor of the goat because it was no longer used in ferrying water due to availability of boreholes within close proximity. It is worth noting that male respondents were exclusive donkey users and mostly immigrants from other counties. As such, donkey users who depended on the donkey as a main source of income valued it highly compared to donkey keepers who depended on it to meet household transport needs only. Reports from Narok indicated that Maasai men were involved in theft and sale of donkeys belonging to women as a result of availability of a ready market (the slaughterhouses) which presented an opportunity to generate quick income.

Study participants who ranked the donkey as the most valued domesticated animal cited diverse reasons which included:

- a) Donkeys enhance accessibility to hard-to-reach areas – the donkey was used in transportation of farm produce from farms to homes to the market, livestock feed and fodder, construction materials, water and household items such as furniture. They indicated the ease in use of the donkey in accessing earth roads during rainy seasons, foot paths and marshy areas which could not be accessed using other means of transport such as cars and motorbikes.
- b) Donkeys are a cheaper means of transport – donkeys were considered a cheaper means of transport compared to vehicle 'pick-ups' and had capacity to ferry a considerable quantity of goods.
- c) Income generation – donkeys were the major source of income for donkey owners and users who provided transportation services. During drought, transportation of water for household use or in commercial establishments was the major activity. Donkey users reported a mean income of KES. 11,390.00 per month which they spent to meet households' financial needs such as paying school fees, purchasing food, paying house rent, purchasing clothing, making contributions in savings and credit associations, purchasing inputs such as fertilizer and seed.
- d) Transportation of the elderly, the sick and children – as pastoralists moved from one area to another, members of their households who were elderly, sick or young children were transported using donkeys.
- e) Donkey business as a main occupation – donkey keepers and users indicated their reliance on donkeys as a source of income all-year-round. Comparing donkeys to oxen which generate income during the land ploughing period or crop produce that would be sold once harvesting is done, they indicated their preference for donkeys whose income is not seasonal.
- f) Donkeys may be used for relatively longer hours compared to other animal sources of draught power such as oxen.
- g) Ferrying water – donkeys were the most preferred means of transportation of water due to their ability to access water points that could not be accessed through other means of transport.
- h) Moving household items – donkeys were used in transportation of household items such as furniture when a family moved from one house to another

## The Donkey as a Source of Livelihoods for the Community

The average number of donkeys kept by households in the sampled study areas was 2 which was the minimum preferred number to pull a cart. The study revealed donkey use and slaughter as the two main avenues providing livelihood opportunities for different categories of people in the community.

### a) Donkey use

- i) Donkey owners earned an average income of KES. 11,390 per month from providing transportation services at a fee. The donkey owner or a family member guided/led the donkey while providing the service.
- ii) Hired laborers charged with the responsibility of searching for clients in need of transportation services and guiding/leading the donkey earned a third of the income generated through provision of transportation services using the donkey, while the employer (donkey owner) earned two-thirds of the income.
- iii) Donkey hire was also reported as a source of income for donkey users. Those who hired donkeys (long term hire) shared 50% of the income generated with the donkey owner.

### b) Donkey slaughter

- i) Backyard slaughter-table owners generated income by offering the slaughter facility at a fee. This was common in Turkana where consumption of donkey meat was a socially acceptable practice with donkey meat (and milk) highly regarded as medicinal delicacies.
- ii) Income generated from sale of donkey meat was reported in Turkana, where donkey owners slaughtered donkeys and sold meat to middlemen and consumers. During sale, donkey meat was advertised as 'dawa' because of its perceived medicinal value.
- iii) Donkey traders who bought donkeys and sold them to donkey owners and/or slaughterhouses as their main occupation
- iv) Laborers engaged in the export slaughterhouses earned wages and salaries from the slaughterhouses.

## Donkey Slaughter in Export Abattoirs

Using records obtained from the four donkey slaughterhouses, the number of donkeys slaughtered within the period April 2016 – December 2018 was estimated. The study revealed an increasing trend in the number of donkeys slaughtered with time with the highest number of donkeys slaughtered in 2018 as shown in Table 4.

Table 4: Number of Donkeys being slaughtered (2016 - 2018)

YEAR	Donkeys Slaughtered	Percentage of the Population (%)
2016	20,768	1.1
2017	121,578	6.2
2018	159,631	8.1
<b>TOTAL</b>	<b>301,977</b>	<b>15.4</b>



*Freshly slaughtered donkey carcasses in Silzha slaughter house, Turkana County*

A total of 301,977 donkeys were slaughtered in three years by four slaughterhouses with an average of 100,659 donkeys slaughtered annually. The total number of donkeys slaughtered in the three years was equivalent to 15.4% of the donkey population reported in 2016. The annual mean number of donkeys slaughtered comprises 5.1% of the donkey population slaughtered annually based on the country's donkey population of 1,965,632 reported in 2016 (MoA, 2016). The annual mean rate (5.1%) of donkeys slaughtered is five times higher than the annual donkey population growth rate (1.04%).

Despite the increase in number of donkeys slaughtered in subsequent years, respondents from the export slaughterhouses reported difficulties in getting adequate numbers of donkeys to slaughter. The local community further expressed concern on the variation of skin colors of donkeys slaughtered in the export slaughterhouses, pointing to a possibility of importation of donkeys from neighboring countries. However, the research team was not able to ascertain the claims, because of the limited scope of the study. Trans-border donkey trade is a possibility but requires further research to ascertain that it happens and enforce measures that would minimize risks of transboundary diseases.

## Number of donkeys slaughtered in each abattoir

An analysis of the number of donkeys slaughtered disaggregated by slaughterhouse revealed that Goldox Kenya Ltd had slaughtered the highest number of donkeys within the period 2016 – 2018 as shown in Fig. 2



*A meat inspector inspects meat destined for the export market at an export slaughterhouse*



*Donkeys awaiting slaughter at an export slaughterhouse. All donkeys are slaughtered including pregnant females.*

## Number of Donkey Slaughtered (2016–2018)

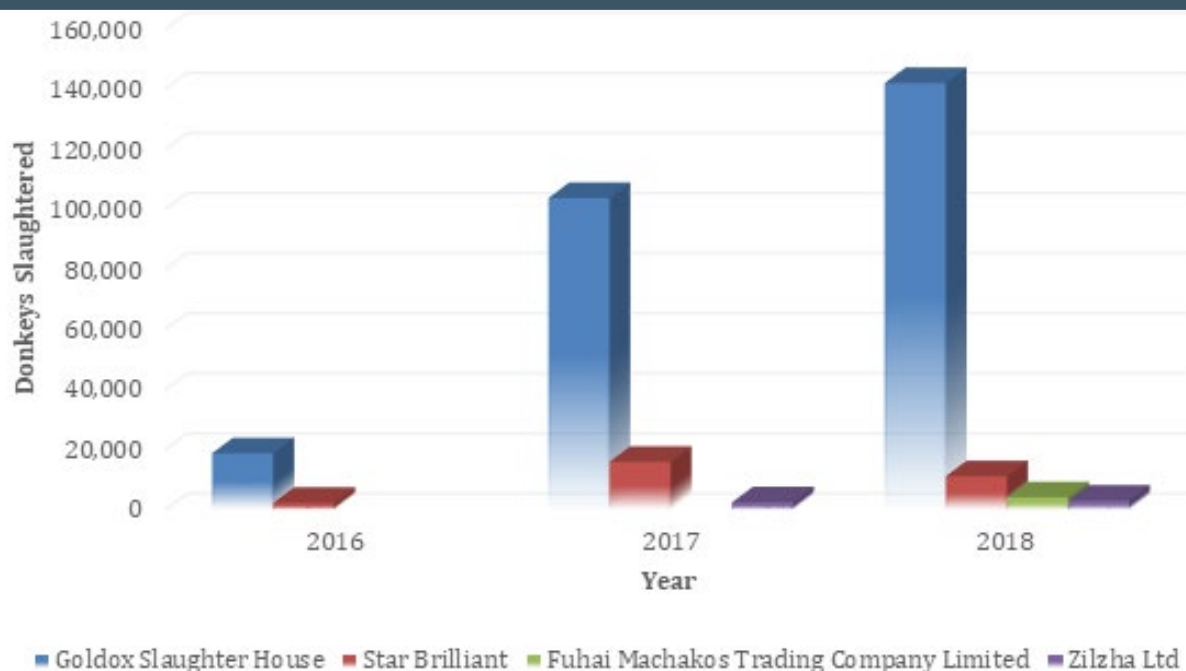


Figure 2: The number of donkeys slaughtered annually by four donkey abattoirs

The percentage distribution of the number of donkeys slaughtered within the period 2016 to 2018 in the four slaughterhouses was: 87.39% (263,890) in Goldox Slaughter House, 9.58% (28,935) in Star Brilliant in Nakuru County, 1.71% (5,161) in Silzha Ltd in Turkana County and 1.31% (3,991) in Fuhai Machakos Trading Company Limited in Machakos County (Fig 2). Goldox Kenya Ltd which was established first in April, 2016 recorded the highest number of donkeys slaughtered each year.



Goldox slaughterhouse, the first donkey meat export slaughterhouse in Kenya.

## Projection of Donkey Slaughter and Population

Using the current trends in donkey slaughter rate and donkey population growth rate, a projection of the future status of donkey population and slaughter was done. From 2016 to 2018 the number of donkeys slaughtered rose steadily from 1.1% of the population in 2016 to 8.1% in 2018. This pointed to a significant reduction in donkey population. To understand the impact of this on overall donkey population, projections on population increase as a result of reproduction among other factors was calculated, tabulated as shown in Table 5 and presented in Figure 3. This was based on donkey population growth over a seven-year period from 2009 (KNBS, 2010) to 2016 (MoA, 2016). The annual rate of population growth was computed using the formula below:

## Determining donkey population growth rate

Annual donkey population growth rate was computed using the formula below:

$$\frac{((DP\ 2016 - DP\ 2009) / DP\ 2009) \times 100}{7\ \text{years}}$$

where

DP 2016 = Donkey population in 2016 which was 1,965,632 donkeys (KNBS, 2010)

DP 2009 = Donkey population in 2009 which was 1,832,519 donkeys (MoA, 2016)

The annual donkey population growth rate = 1.04%

## Determining donkey population reduction rate attributed to slaughter for export

Data on donkeys slaughtered in the four slaughterhouses within the period 2016 to 2018 was used to compute the annual donkey slaughter rate using the formula below:

To determine the annual decrease in population due to slaughter, data collected for the three years was used to project annual rates of donkey slaughter as per the formula below

### Formula showing decrease in population due to slaughter

The annual increase in donkey being slaughtered =  $\frac{(\text{donkey slaughtered in 2018} - \text{donkey slaughtered in 2016})}{\text{donkey slaughtered in 2016}} \times 100\%$

Decrease rate = 31%

### Assumptions

- i. Rates of slaughter of donkeys remain the same
- ii. Rates of increase in donkey population remain the same
- iii. There are no donkey deaths due to disease outbreaks or other causes
- iv. There are no imported donkeys from the neighboring countries during the period

With the determined rates, projections were made on the rise in donkey population. This suggested that without slaughter, the donkey population would increase marginally to 2,091,236 by the year 2022 while slaughter will have increased to 474,423 donkeys by the same year. Cumulatively, 1,622,520 will have been slaughtered by the year 2022 and the donkey population will be less than 500,000



Table 5: Donkey population dynamics between (2016 and 2022)

YEAR	Donkey Population without Slaughter	Donkey being Slaughtered	Cumulative numbers of donkeys slaughtered	Donkey Population with Slaughter
2016	1,965,632	20,768	20,768	1,944,864
2017	1,986,029	121,578	142,346	1,843,683
2018	2,006,639	159,631	301,977	1,704,662
2019	2,027,462	209,594	511,571	1,515,891
2020	2,048,501	275,196	786,767	1,261,734
2021	2,069,758	361,330	1,148,097	921,661
2022	2,091,236	474,423	1,622,520	468,716

# Donkey Population Projection

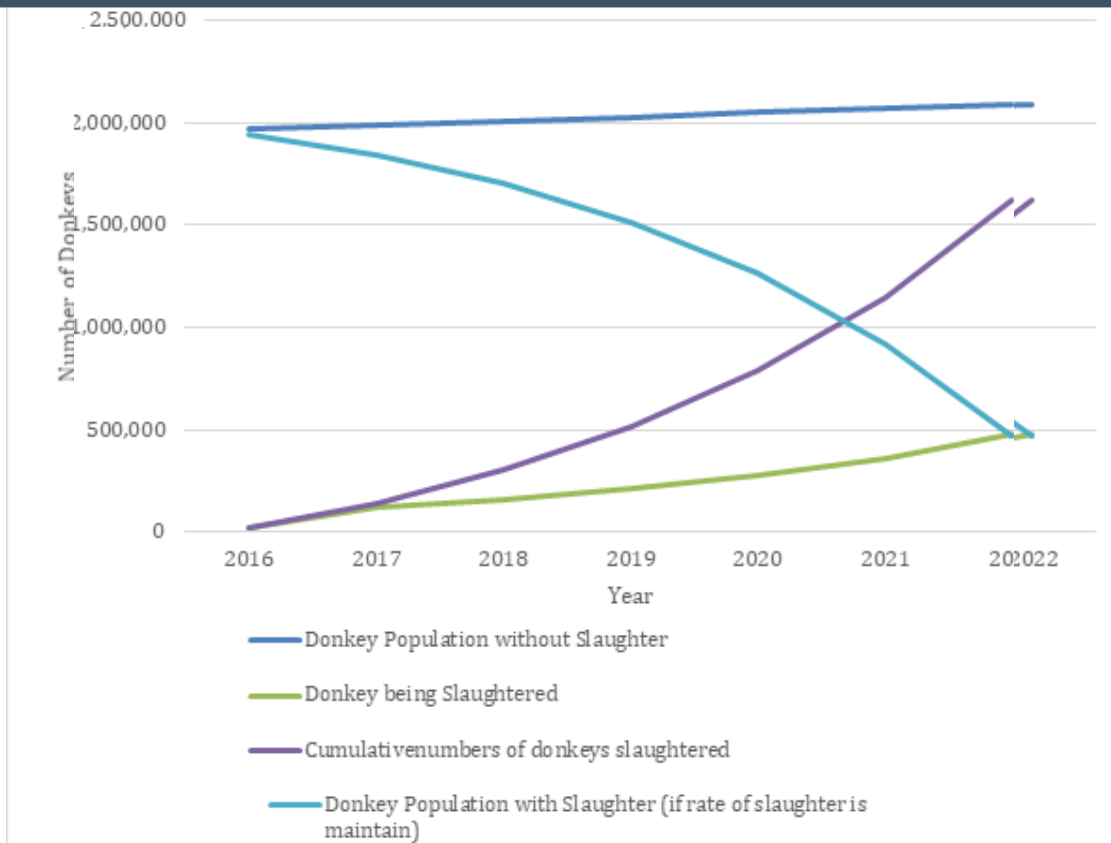
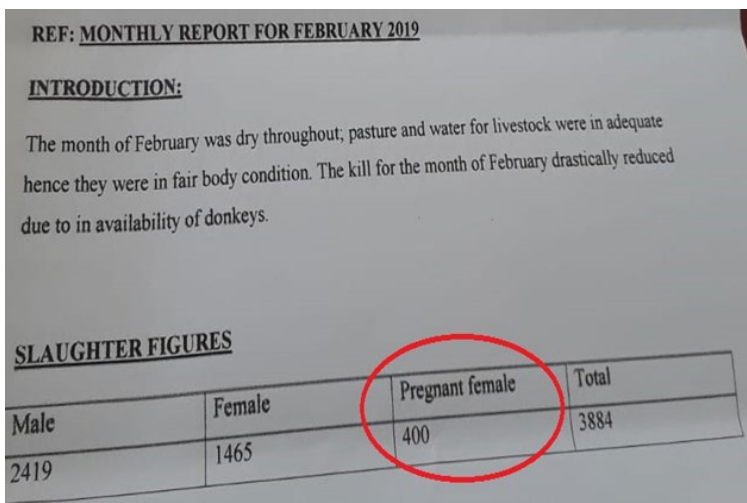


Figure 3: Projections on future donkey population dynamics

The analysis points to the possibility of depleting the donkey population if interventions to rapidly increase the donkey population, or reduce attrition rate, are not urgently operationalized. Within the next 2 years, the donkey population will have decreased by half and by 2022; all donkeys in Kenya will have been slaughtered for meat and skin export as shown in table 6. The intersection point between the numbers of donkeys slaughtered and the decrease in population attributed to donkey slaughter denotes the point when numbers of donkeys slaughtered equals the numbers available and no more donkeys will be available for further slaughter.



This situation is likely to be worse because the study relied on secondary data to determine the current population of donkeys due to its limited scope, while the reproduction rate has been disrupted by indiscriminate slaughter including pregnant females as observed in some slaughterhouse documents as shown below, where 10% of the donkeys slaughtered were pregnant.

A report showing the indiscriminate slaughter of donkeys including pregnant females.

## Quantities of donkey products exported

All the four slaughterhouses were in operation at the time of this study. Data on donkeys slaughtered across them was examined, collated and reported. All the four entities export donkey meat as deboned meat assorted into packages of different body parts since the various body parts attract different prices in the target market. The four slaughterhouses reported to have exported a total of 15,849.6 tonnes of donkey meat while they still had unverifiable quantities in their storage awaiting export since it is not economical to ship quantities that do not fill one transportation container.

This data was compared with data sourced from KRA on monthly food exports. All exported donkey meat was exported in frozen form. Data from KRA indicated that during the period covered by this study, a total of 16,543.6 tonnes of donkey meat was exported. It was not clear why there was a discrepancy of 694 tonnes in the quantities recorded by KNBS compared to total quantities reported by all slaughterhouses at the time of the study. Taking cognizance of an average of 33 kgs of deboned meat obtained from each donkey slaughtered as reported by the slaughterhouses, the discrepancy translates to 21,030 donkeys slaughtered. Whether the discrepancy is as a result of underreporting on the number of donkeys slaughtered at the abattoirs, or receiving meat from donkeys slaughtered outside the abattoirs, or existence of another exporter of donkey products in addition to the four licensed abattoirs remains an empirical question. Further research is recommended to fill this information gap.

## Donkey Meat Production

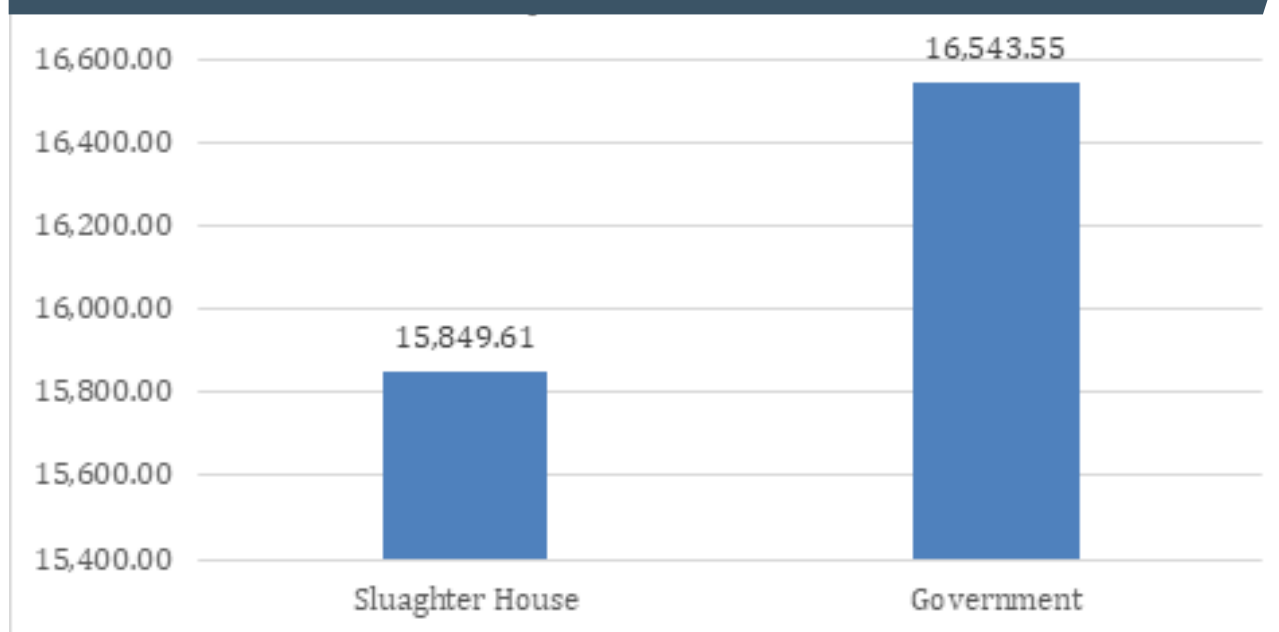


Figure 4: Comparison of quantities of donkey meat as recorded at the slaughterhouse versus KNBS records



## Revenue to the Government of Kenya from Donkey Abattoirs

All the four licensed slaughterhouses pay various levies to government in the form of revenues. There are three forms of revenues paid. These include meat inspection fees to both county and national governments as well fees paid to various government agencies (NEMA, County among others) for permits, licenses and certificates in order to operate in adherence to laws that regulate slaughterhouses and meat export. The meat inspection fees charged per donkey slaughtered to either National Government or County Governments ranged between KES. 100 – 200 depending on slaughterhouse.

Goldox paid the highest revenues to government amounting to KES. 66.7 million while Star Brilliant, Silzha and Fuhai have paid KES. 9.1, 2.7 and 1.4 million in revenue respectively (Table 6 and Fig 6). It was noted that Fuhai slaughterhouse does not remit any revenues to national government having argued payment of the same levy to the two levels of government is double taxation. The revenue shares again align to duration of operation of the slaughterhouses. The oldest slaughterhouse has paid the highest while the newest has paid the least revenue.

Table 6: Revenues paid to National, county and other government agencies by the four slaughterhouses between 2016 and 2018 in Millions

YEAR	Slaughterhouse	Revenue to National Government	Revenue to County Government	Revenue to other government agencies	TOTAL
2016	Goldox	1.9	2.8	0.2	4.9
2017	Goldox	10.4	15.5	0.2	26.1
2018	Goldox	14.2	21.3	0.2	35.7
2016	Star Brilliant	0.3	0.6	0.2	1.1
2017	Star Brilliant	1.8	2.4	0.2	4.4
2018	Star Brilliant	1.6	1.8	0.2	3.6
2016	Fuhai	-	-	-	0
2017	Fuhai	-	-	-	0
2018	Fuhai	1.2	1.3	0.2	2.7
2016	Silzha	-	-	0.2	0.2
2017	Silzha	-	0.5	0.2	0.7
2018	Silzha	-	0.5	0.2	0.7
	<b>TOTAL</b>	<b>31.4</b>	<b>46.7</b>	<b>1.8</b>	<b>79.9</b>

## Revenue to Government in Kshs. Millions

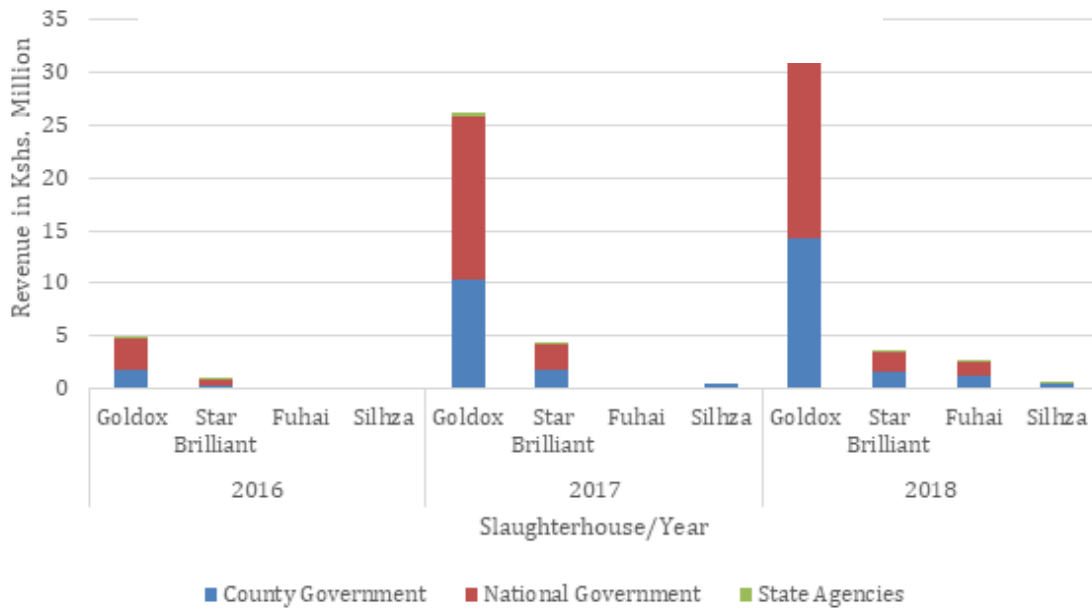


Figure 6: Income generated by government and state agencies from revenues paid by abattoirs

## Export earnings from donkey slaughter

The slaughterhouses have cumulatively exported 1052, 6560 and 8931 tonnes of donkey meat in 2016, 2017 and 2018 respectively. This indicates a steady rise in quantities exported and an associated steady rise in incomes from meat export. The total value of donkey meat exported over the study reference period of 32 months was KES. 1.72 Billion with the highest income being 901.5 million in 2018 and the lowest being 128 million in 2016 accounting for 52 and 8 per cent respectively. While the slaughterhouses reported purchasing live donkeys at an average cost of KES.9,000.00 per live donkey, it is worth noting that the average revenues from imported donkey meat by the slaughterhouses was declared as KES. 109.50 per kilogram of donkey meat to government agencies at upon export.

The highest price declared was KES. 153/kg in 2017, while the lowest was KES. 72/kg in 2018. The times when donkey meat fetched the highest price coincided with the period when high numbers of donkey theft cases were reported in Kenya, which may partly explain why there was an increase in theft cases.

Despite the export value being about 1.72 billion over the same period, this figure does not make business sense. This is because a live donkey bought by the abattoir at an average price of KES. 9000 produced an average of 33kgs deboned meat. With each kilogram sold at KES. 109.50 to the export market, each donkey would only be valued at KES. 3,613 which is way below the buying price. This serves to explain that the price declared at export point is grossly understated leading to underestimation of incomes to investors from donkey meat export. This makes the business appear less profitable and limits the income that comes to Kenya as part of food export incomes.

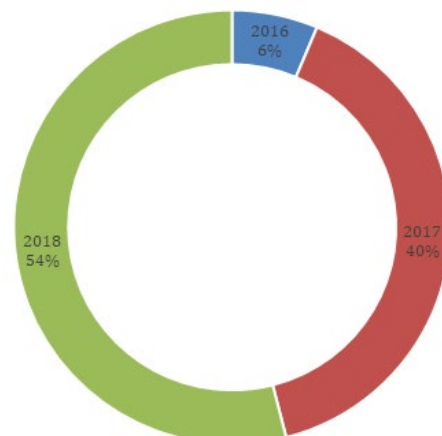


Figure 7: Percentage Distribution of Donkey Meat Exported by Quantity (Kg) and Year

## Export Earnings from Skin Trade

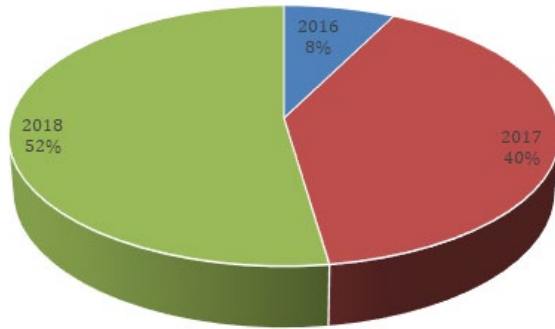


Figure 8: Percentage Distribution of Donkey Meat Exported by Value (KES.) and Year

The skin is a key product in donkey trade and all the skins produced by these establishments are for export as salted skins. No further processing is done to the skins before packaging and export. The quantity of donkey skin exported during the study period is 140, 989 and 1,080 tonnes in 2016, 2017 and 2018 respectively. The proportion of skin quantities exported in 2016 comprised 6%, rising to 45% in 2017 and 49% in 2018. The quantity of skins sold has steadily risen in tandem with number of donkeys slaughtered. Income to investors has also risen steadily totaling to 108.85 million in less than three years. There were no tax levies on skins exported.

Just like the meat, the average cost per kilogram of donkey skin exported was declared as KES. 49/kg. The highest cost declared was KES.160/kg in 2016 while the lowest was KES 15/kg in 2018. The highest price also coincided with timing of highest cases of illegal slaughter and skinning of donkeys in the bushes. This high price presumably fueled theft of donkeys across the country to satisfy the huge demand coupled with good returns to donkey traders (sellers). At an average cost of KES. 49 per kg, a full donkey skin would cost KES. 343 considering the average weight of a dry donkey skin is 7 kgs. This fact underscores the gross undervaluation of donkey skins at the ports of exit thereby denying the country value in terms of taxes and foreign exchange.

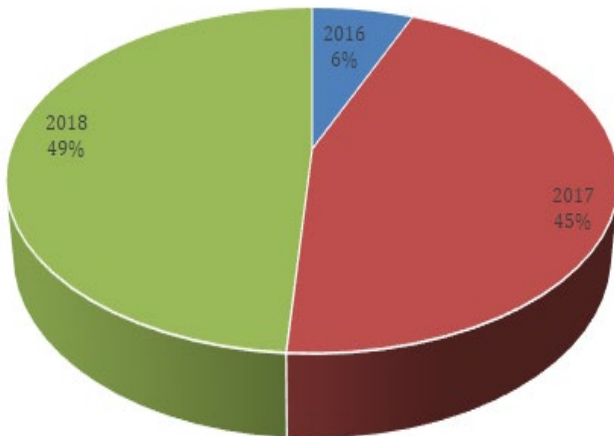


Figure 9: Percentage Distribution of Donkey skin exported by Quantity (Kg) and Year

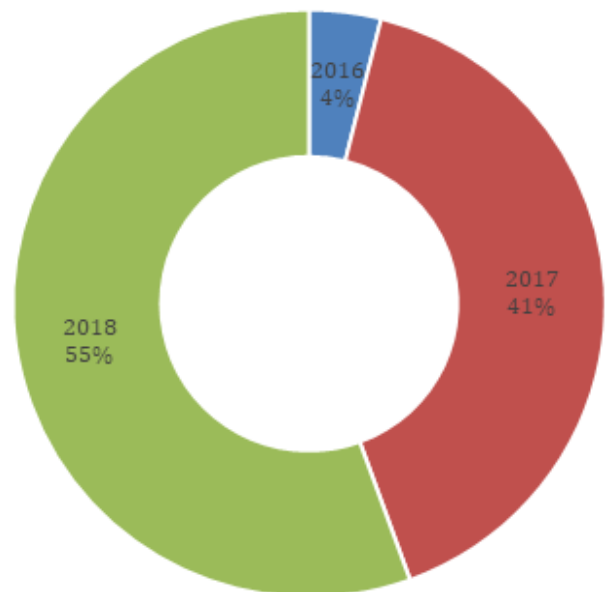


Figure 10: Percentage Distribution of Donkey Meat exported by Value (KES.) and Year

## Stunning of Donkeys at the Abattoirs

The study revealed use of different stunning methods in the slaughterhouses. Electric stunning was reported as the main stunning method used in Silzha prior to slaughtering donkeys while Fuhai, Goldox and Star Brilliant used stunning guns and bullets. As part of humane handling of donkeys, it is recommended that one stunning bullet is used for one donkey. Fuhai, Goldox and Star Brilliant slaughterhouses indicated

that their source of stunning bullets was KSPCA. In triangulating this information, data on the number of bullets supplied to each slaughterhouse was obtained from KSPCA. An analysis of the number of bullets supplied within the study reference period (2016 – 2018) and the number of donkeys slaughtered within the same period is presented in Table 7.

Table 7: Proportion of discrepancy in number of donkeys slaughtered and stunning bullets purchased from KSPCA between 2016 and 2018

Slaughterhouse	Bullets procured from KSPCA	Donkeys slaughtered	Unaccounted proportion of donkey stunning
Goldox	49,000	263890	81.4%
Star Brilliant	21,500	28935	27.7%
Fuhai	0	3991	100
Silzha	0	5161	*

An analysis of the number of donkeys slaughtered and stunning bullets purchased from KSPCA revealed a discrepancy, with the stunning of 27.7% - 100% of donkeys slaughtered not accounted for in 3 slaughterhouses. It was not clear why there was a discrepancy in the number of bullets purchased from KSPCA by Fuhai and Star Brilliant slaughterhouses and the number of donkeys slaughtered. Further research to establish whether the two slaughterhouses obtained stunning bullets from other sources, slaughtered some donkeys in an inhumane manner without stunning or stunned donkeys using a different method from what they reported during the study is recommended.

## Donkey Theft and Illegal Slaughter



The study revealed that cases of donkey theft were reported to local chiefs, police stations, donkey users associations, while other donkey keepers and users did not report when their donkeys were stolen. Thus, data on the estimated number of donkeys stolen was obtained from primary and secondary sources, with 883 donkeys reported stolen in 2018 by the survey participants as shown in Table 8. This estimate is likely to be lower than the actual number of donkeys stolen due to the limited scope of this study. In addition, most of the numbers of donkeys reported as stolen by survey participants was based on the number of donkeys they had lost, or those stolen from their family members, friends, neighbors and community members. This study was limited in the geographical scope covered hence a limited number of survey participants.

Table 8: Donkeys reported stolen or illegally slaughtered in the study counties from January 2016 - December, 2018

County	Donkeys stolen (Secondary data)			Donkeys stolen (primary data)	TOTALS
	2016	2017	2018	2018	
Narok	-	258	133	276	667
Nakuru	432	236	42	180	890
Kajiado	-	239	456	414	1109
Machakos	20	24	7	7	58
Baringo	-	72	36	-	98
Turkana	-	-	3	-	3
Kirinyaga	24	8	34	-	66
<b>Total</b>	<b>476</b>	<b>1800</b>	<b>711</b>	<b>883</b>	<b>3870</b>

Data from secondary sources revealed an estimated 2987 donkeys were stolen within the period 2016 – 2018, with 60% stolen in 2017. Study participants attributed the increase in theft cases in 2017 to an increase in demand for donkey skin. Kajiado County had the highest cases of donkey theft. Survey participants reported that donkeys were mainly stolen at night from their sheds, homestead or loitering close to homesteads while feeding. The stolen donkeys were suspected to have been ferried out of the county or slaughtered in the bush within the county for skin and meat. Survey participants claimed that the meat was obtained by deboning the donkey carcass and transported to donkey slaughterhouses or local butcheries. However, the survey team was not able to ascertain these claims. It was also not possible to estimate the number of donkeys slaughtered illegally in most of the sampled counties because there was no structured reporting on those cases. Similar sentiments on the donkey trade, theft and illegal slaughter were observed by Garden veterinary services Ltd (2017) in Narok County.

In Turkana County, consumption of donkey meat was a socially acceptable and common practice. Slaughter tables were established in selected homesteads, where an association comprising approximately 20 members would slaughter donkeys and sell the meat. A study conducted by Rono et al., (2018) estimated the number of donkeys slaughtered within Lodwar at 204 each month, translating to 2,448 donkeys per annum. While cases of donkey theft had reduced in Turkana, survey participants reported that most of the donkey losses were attributed to death as a result of consuming leaves from a tree shrub called 'Mathenge'.

## Implications of donkey slaughter and skin trade to community livelihoods

The implications of donkey slaughter for export of meat and skin were two-fold; provision of livelihoods for those involved in the slaughter and trade activities and loss of livelihoods for those who sold donkeys or lost donkeys to theft.

## Employment in the donkey slaughterhouses

At the time of the study, the four slaughterhouses had generated 657 employment opportunities for the local communities. There are more men working in the slaughterhouses than women. The total number of men employed is 456 while there are 201 women employed by the four slaughterhouses. Goldox in Baringo has the highest number of employees with Fuhai having the lowest number of employees as shown in figure 11. Employees in all the four slaughterhouses are basically hired to do manual job of slaughter with a few individuals hired for technical or management positions. The job description being manual favors males than females leading to the skewed nature and lack of gender balance at the slaughterhouses.

## Employment in Abattoir

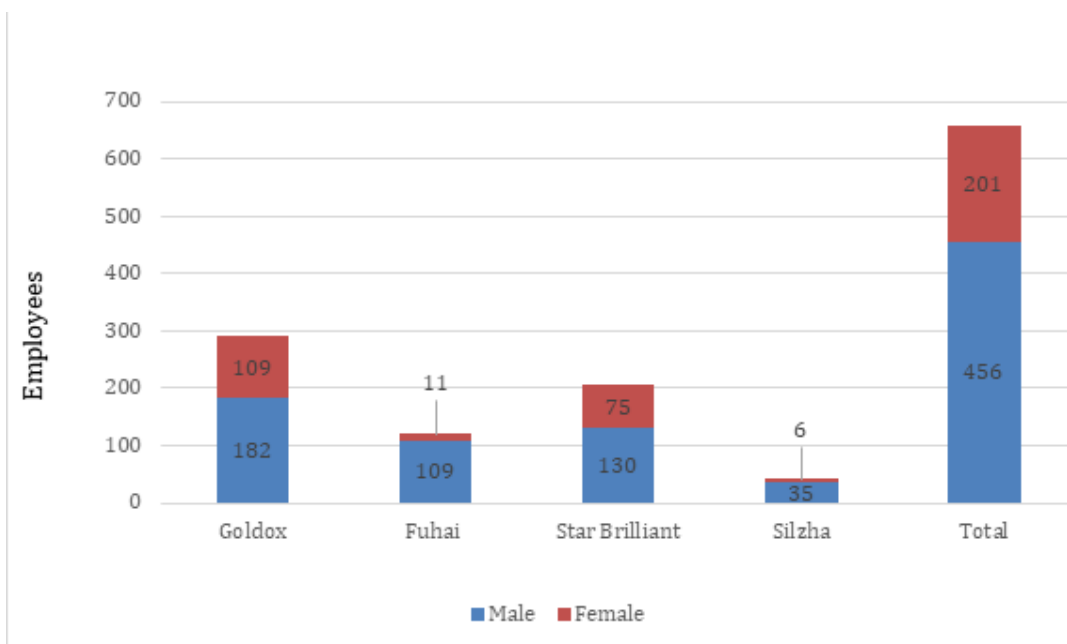


Figure 11: Employment in the Donkey Slaughterhouses

A comparison between a slaughterhouse employee and the opportunity cost of giving up donkeys was made. While a daily wage of KES 423 would be earned by each of the 657 laborers in the export slaughterhouses, households giving up donkeys through sale or theft would incur KES 1,581 daily. While establishing the number of donkey keeping households in the country was beyond the scope of this study, it is envisaged to be higher than the number of employees (657) in the slaughter houses. In addition, the number of donkey users generating a mean income of KES 11,390 per month is envisaged to be higher as well. A consideration of daily income from various uses of donkeys across the counties was determined and a daily average computed while a slaughterhouse employee earns an average of KES 423 per day for an average of 5 days weekly. This translated to KES 8,460 as the monthly wage earned by each slaughterhouse employee. However, due to challenges in obtaining donkeys for slaughter, some of the slaughterhouses were not able to operate on all 5 days consistently.

Further comparison of the value of donkey meat exported within the period April 2016 – December 2018 and the income donkey users would have generated using the donkeys if they were not slaughtered was made. Out of 301,977 slaughtered within the reference period, it was assumed that 25% (75,494) of the donkeys were working donkeys which generated the mean monthly income of KES 11,390. Thus, the donkeys would have generated KES 28.3 billion during the reference period. Based on the revenues declared at the export points by exporters, the gross revenue generated from export of donkey meat and skin was KES 1.82 billion during the same reference period. The income lost was 15 times more than the gross revenue generated from donkey slaughter for export.

Donkey slaughter in the export slaughterhouses as well as donkey theft to meet the growing demand for donkey meat and skin for the export (Chinese) market has resulted in a reduction in donkey population in Kenya. The situation is further exacerbated by the slow rate of reproduction in donkeys which the survey participants attributed to the long gestation period of 12 months as well as the rare chance of conception in working donkeys subjected to intense work, free-ranging management system and long periods of nursing calves. In addition, donkeys were dying as a result of diseases (tetanus and diarrhoea), consumption of leaves from a shrub growing in arid areas such as Turkana known as 'mathenge' (*Prosopis juliflora*) and accidents where they drowned in rivers or hit by motorists.

The study further showed that dwindling donkey populations have resulted in:

- a) An estimated 50–100% increase in donkey prices. While this increase in donkey prices was expected to be an incentive for donkey owners to sell donkeys, the mean number of two donkeys kept by households was relatively small. Donkey keepers were not willing to sell their donkeys despite the increase in prices because purchasing replacement stock was difficult.
- b) A reduction in donkey users by an estimated 50% after loss of their donkeys and inability to raise capital to purchase replacement stock. This resulted in loss of income for donkey users whose livelihoods previously depended on the donkey as a means of transport.
- c) Donkey keepers incurring extra costs in providing security enhancement measures such as construction of donkey shelters to minimize the risk of theft. In addition, donkey keepers indicated that they are not able to sleep in peace because of the fear of waking up to find their source of livelihood stolen.
- d) Donkey keeping households which previously used donkeys to meet household transportation needs were incurring transport expenses after loss of their donkeys due to the inability to raise capital to purchase replacement stock.
- e) Women who used donkey to fetch water faced challenges in getting clean and adequate water which was available from areas that were far away.

The opportunity cost of using a donkey to meet household transportation needs was computed as shown in Table 9

Table 9: Opportunity cost of giving up donkey transportation

Use	Hours	Cost
General Transport	4.5	1,240
Fetching Water	5.25	1,860
Fetching Firewood	5.5	366.7
Market products	5.5	1,700
Farm Inputs	3	5,000
Moving houses	2	800
Hire out	8	100
<b>Average daily cost</b>		<b>1581</b>

The study revealed that households would incur an average daily cost of KES. 1,581 daily to meet household transportation needs in the absence of donkey draught power. Taking cognizance of the fact that donkey keeping is by relatively poor households, availability of KES. 1,581 each day to meet household transportation needs is likely to be impossible. Thus, in the absence of cash to meet transportation needs, household members particularly women and children would have to spend their time and energy performing activities such as fetching and ferrying water. Time that would otherwise have been spent on other productive roles.

- f) Reduction in the number of households keeping donkeys
- g) Previously, donkeys were always available for sale in local marketplaces, but potential buyers have to incur high transportation and search costs prior to identifying a suitable donkey to purchase, the high donkey prices notwithstanding.
- h) In order to raise capital to purchase replacement stock, households had to sell other livestock owned such as cattle

Further reduction in the donkey population is likely to lead to additional loss of livelihoods not only for donkey owners or users but their entire households and additional extended family members who depend on them. It is therefore paramount to regulate donkey slaughter and skin trade and urgently develop and operationalize an effective donkey reproduction program. Lack of an effective donkey reproduction program is likely to impoverish communities whose livelihoods depend mainly on the donkey. Following a similar trend, China was banned from buying donkey products from numerous countries including Uganda, Tanzania, Botswana, Niger, Burkina Faso, Mali and Senegal among others (Leithead, 2017).





## Conclusion and Recommendations

Dissemination of the findings of this study was done to stakeholders along the donkey value chain in a feedback workshop. Majority of the participants validated the findings as a reflection of observed trends with some indicating that the results corroborated with findings of donkey studies conducted previously. Based on the study findings, the stakeholders made the following recommendations:

The study revealed that a total of 301,977 donkeys were slaughtered since commissioning of export donkey abattoirs in Kenya with 6.9% slaughtered in 2016, 40.3% in 2017 and 52.8% in 2018. An analysis of data on exported donkey meat showed a discrepancy of 21,030 donkeys in comparison to the number of donkeys slaughtered as reported in the abattoirs. Whether the discrepancy was as a result of underreporting on the number of donkeys slaughtered at the abattoirs, or receiving meat from donkeys slaughtered outside the abattoirs, or existence of another exporter of donkey products in addition to the four licensed abattoirs remains an empirical question. An audit of actors along the donkey value chain to ascertain compliance to set rules and regulations including reporting is recommended.

Considering that the demand for donkeys far outweighs the supply, hence the reported thefts, regulation of donkey slaughter is required while also considering the plight of investors who were licensed by the government to recoup their return on investment. This can however be complicated depending on transparency of slaughterhouse operators and the disclosures they make. Investment in donkey breeding research may be an option to increase the population, produce larger-sized breeds, and develop guidelines on management practices for enhanced reproduction. Higher producing donkey breeds may serve donkey milk producers better in Kenya.

Difficulties in getting adequate numbers of donkeys to slaughter was cited as one of the major constraints limiting operations of the export slaughterhouses. However, an increasing trend in the number of donkeys slaughtered in subsequent years was reported. While the local community further expressed concern on the variation of fur colors of donkeys slaughtered in the export slaughterhouses, pointing to a possibility of importation of donkeys from neighboring countries, ascertaining this claim was beyond the scope of this study. Enforcement of laws on importation of animals is recommended and a study to ascertain the cross-border smuggling of donkeys into Kenya for hide trade is recommended to minimize risks of transboundary diseases.

Stunning methods used before slaughter of donkeys included electrical procedures at Silzha while Goldox, Fuhai and Star Brilliant used stunning guns and bullets. Analysis of the number of stunning bullets purchased from KSPCA revealed a discrepancy of 27.7% – 100% donkeys slaughtered in three abattoirs not accounted for. An audit of slaughterhouses to ascertain compliance to animal welfare standards is recommended.

Making an assumption that 25% (75,494) of the donkeys slaughtered were working donkeys, and would otherwise have been used to generate the mean monthly income of KES 11,390, the income foregone was valued at KES 28.3 billion during the reference period (April 2016 – December 2019).

While the gross revenues from export of donkey meat and skin was KES 1.82 billion during the same reference period, a comparison of the income foregone by donkey owners and users was 15 times more than the gross revenue generated from donkey slaughter for export. While this finding disapproves the expected outcome of donkey slaughter and trade, it is limited to financial costs and benefits at exporters and donkey owners/users level only. Taking cognizance of numerous actors along the donkey value chain, a comprehensive study to assess the social and economic impact assessment of donkey slaughter and trade for all actors is recommended to guide policy review.

Indiscriminate slaughter of donkeys in the slaughterhouses resulted in slaughter of pregnant donkeys thus disrupting the reproduction of donkeys. A ban on slaughter of pregnant donkeys is recommended and development and/or adoption of penside pregnancy diagnostic kits for use prior to purchase or admission of donkeys into the slaughterhouses made a mandatory procedure.

Donkey keepers and users whose livelihoods depended on the donkey earned an average of KES. 11,390.00 per month from providing transportation services, while laborers in the donkey abattoirs earned an average of KES.423 per day, translating to KES. 8,460 per month. Further reduction in the donkey population is likely to lead to additional loss of livelihoods not only for donkey owners or users but their entire households and additional extended family members who depend on them. Community sensitization on impacts of donkey slaughter on their livelihoods should be recommended. In addition, laws on animal movement should be enforced and mechanisms to ascertain ownership and sale at the local level enhanced to curb donkey theft.

At the time of the study, donkey skin and meat was exported unprocessed, but opportunities to add value to these products locally before export exist and should be explored in order to fetch higher revenues by actors along the donkey value chain.

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