



CLIMATE-INDUCED VULNERABILITY AND PASTORALIST LIVESTOCK MARKETING CHAINS IN SOUTHERN ETHIOPIA AND NORTHEASTERN KENYA (CHAINS): First Year Report

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Field Research Report 1

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Preface

This is the first in a series of field research reports from the new “Climate-Induced Vulnerability and Pastoralist Livestock Marketing Chains in southern Ethiopia and northeastern Kenya (CHAINS)” project, which is part of the Adapting Livestock Systems to Climate Change (LCC), Collaborative Research Support Program based at Colorado State University and supported by AID Grant No. EEM-A-00-10-0001. It represents the first six months of field research by Dr. Waktole Tiki, a project post-doctoral associate on the project who is based in Ethiopia. The CHAINS project works with several partners in Ethiopia, including the Institute of Development Studies, Addis Ababa University and the International Livestock Research Institute (ILRI), and in Kenya, including Pwani College/Kenyatta University and ILRI. Its objectives are to: (1) understand the ways in which climate variability and change affect livestock marketing chains in southern Ethiopia and northeastern Kenya; (2) assess which social groups (for example, low-income pastoralists and small- and large-scale traders) benefit the most from different market chains and climate risk scenarios; (3) examine the effects of increased market commercialization and climate variability on pastoral livelihoods and land use; and (4) recommend policy-based solutions to improve livestock markets and the benefits that low-income pastoralists and traders derive from them.

As part of the CHAINS project, Dr. Waktole has been involved with a study of livestock traders and market institutions involved with animal trade in Ethiopia. This field report highlights both the successes and challenges that he has faced in the field and provides some of the unedited excerpts from his detailed ethnographic interviews with traders. Rather than wait several months or even years until these materials are published in a formal format or journal, we are making the materials available in a field research report series with only light editing. Enjoy!

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Preamble

This draft report presents preliminary findings from the work done between 1st July and 31st October, 2012. The report is written based on qualitative information from field works in Borana, Adama, Modjo, Sululta, and Addis Ababa livestock market. The interviews were conducted with Adama feedlot operators, Sululta hay traders, Addis Ababa livestock traders, Borana livestock traders, Modjo and Bishoftu export abattoirs, government officials, Ethiopian live animal exporters association and other stakeholders.

Introduction

Pastoralism is a livelihood for millions of people occupying the drylands of Eastern and Horn of Africa. It is also the best adapted production system for the ecology compared to sedentary agriculture, the latter which is promoted by many national governments. In recent years, the pastoral areas have become one of the important sectors generating foreign currency from export of chilled meat and live animals in the region. Ethiopia is one of the countries where live animal and chilled meat export is growing fast, with many Arab states now relaxing their import ban on chilled meat and live animals from Ethiopia. Currently, the highest proportion of the animals for Ethiopian exports originates from Borana, southern Ethiopia.

Borana is arid and semi-arid region in southern Ethiopia. The region is devoid of permanent sources of surface water and prone to climatic variability with erratic and unpredictable rainfall. The rain is temporally and spatially variable. The people in the region depend on mobile pastoralism, along with opportunistic farming and other marginal livelihood activities, such as petty trade. The Borana rainfall is bimodal, whereby 60% of the rain is expected during the long rains from March to May (*ganna*), and the short rains during September to November (*Hagaya*). The period from June to August (*adolessa*) is characterized by heavy cloud cover, fog, mist (*soraa*), and occasional small shower. The main dry season (*bona*) is from December to mid-March. Each of the seasons has its own negative and positive impacts on livestock marketing, shifting benefits in favor of one or the other season.

Climate variability and livestock marketing

The quality and quantity of livestock available for marketing is dependent on the availability of water and pasture resources. However, the pastoral production in the African arid and semi-arid rangelands that supply most export animals from the region experience erratic and unpredictable rainfall with high spatial and temporal variability. Livelihood activities in this region are directly affected by the availability, pattern and amount of rainfall in the year. Mbowe *et al*, (2008) describes rainfall as a main factor influencing the quantity and quality of natural resources (water and pasture).

Climatic variability- particularly drought--directly impacts pasture and water availability which livestock directly depends. Scarcity or shortage of either or both resources means livestock production is directly affected. One of the many abnormalities caused by drought is increased supply of female and young cattle to the market, which are critical to pastoral production

systems. Since the requirement from importing countries exclude females, and Ethiopian government export rule exclude exports of young and female animals, traders will not buy these types of animals. In such situations, the market is so selective and demand for other livestock types becomes uncertain, pushing market and climatic risks—especially related to drought—on to producers. This reduces risks for the traders because they operate with relatively predictable demand from destination markets whereas herders confront multiple uncertainties and risks. However, these groups of animals make the greater proportion of the animals in the market during abnormal seasons, such as droughts. This means pastoralists owning high numbers of these categories of animals are disproportionately affected by the drought. During drought, there are more sellers and fewer buyers in the market, than during normal periods. Deaths of animals during the transportation frustrate buyers and would force them to reduce the number of animals they buy during or immediately after drought. LB, an informant explains the challenge as:

Since pastoralists increase their supply at the late stage of the drought, there are many problems constraining the marketing activities: the deteriorated body condition, presence of few traders in the market, financial limitation, fear of the risk of buying weak animals, lack of transport either to move the animals or transport feed to where the animals etc.

The behavior of pastoralists towards livestock marketing also may be influenced by good/bad weather events-either to sell or move the animals. This depends on the severity and stage of the drought-when the pastoralists seem desperate and decide to sell, by the time which the quality has already deteriorated. Unlike the previous decades, there is a demand for livestock emaciated by drought, provided that they are healthy, can move, and are able to eat. Of course, this demand is not for all livestock categories, but mainly for the bulls required for Adama feedlot. The traders there can then feed them which allow them to recover from the drought. Despite a heavy investment, this is an opportunity for traders, especially big traders who buy large number of animals, to earn high profits as long as the majority of animals will survive. These big traders have the capacity to transport forage very long distances and feed the animals until they recover from the impact of drought. This strategy enables them to make high profit, despite the increased feed, medication, and management costs.

Some traders are aware of the long term impact of drought on their business. Despite the short term benefit they experience during drought, there is a sustained long term impact of drought on livestock marketing in the region. Drought affects the future reproductive and productive potential of the animals and sustainability of the supply since it kills reproductive females and creates scarcity.

Many of the traders interviewed do not prefer extreme weather conditions. However, individual traders respond from the point of view of their past experiences. Those who encounter feed problem and loss during the last drought favor wet season (good season), while those who profited from the last drought obviously prefer droughts. Traders acknowledge the dramatic drop in the price and possible profit during droughts, but also the possibility for high profits. Furthermore, management cost of the feedlot is relatively cheaper during dry season. Benefiting from drought also depends on the level of severity. If the drought is very severe, it affects the chance of recovery and results in a loss-loss situation for both traders and pastoralists. Therefore, assessing who the actual beneficiary is during some droughts is difficult. The extent to which traders are linked to pastoralism also may determine their response. Many of the traders who in

one way or another are linked to pastoralism do not openly express their preference of drought period for improvement of their business.

On the other hand, the benefits a trader reaps from drought periods may depend on the volume of purchase determined by the level of acceptable risk, feedlot capacity, and the number of stock they have prior to the onset of drought. For instance, many feedlot operators interviewed did not benefit from the 2011 drought because either their feedlots were full prior to the drought or they lacked the financial capacity to purchase more animals. The constraints regarding the feedlots (space, facilities, credit supply etc.) directly impact the number of animals they can buy and hence the number of animals the pastoralists can sell prior to or during drought, affecting the food security of the pastoral households. If the financial capacity of feedlot operators is limited, they buy limited number of animals, leaving more animals susceptible to drought.

One of the big traders interviewed, who owns 48 ha of land for grazing¹, is not concerned much about drought for his business. He also owns 60 ha farm land, the crop residue being the main input for feeding his pastoral herd and livestock purchased for marketing. Regarding scarcity of feed, the trader says that he stores the hay as well as crop residue from his commercial farm at his private grazing plot. He did not buy hay during 2011 drought, but he says that he saved many female animals during the 2011 drought. According to this informant, the cows he purchased would have died without his own feed and grazing plot, because the Adama feedlot operators do not buy female cattle. This trader was lucky to buy as many selected Borana breed as he could. After recovery, he sold many of his less productive family herd and replaced them by the newly purchased one. This informant used the opportunity to build his family herd with relatively pure Borana breed he bought from distress sales. So the benefit of 2011 drought to this informant was threefold. He profited from the transaction, built the family herd with a better breed, and increased his family herd size.

Small traders who lack the financial capacity and a private holding ground prefer the wet season when animals are in good shape. They profit from buying and selling livestock in good body condition. Many of these small traders may keep animals with them for only hours or a few days. In the worst condition, they may be forced to sell the animal on credit to avoid further feeding cost or loss of animals. This may lead to partial or total loss of money. Traders' preference of the season also depend on what type of animal they buy and sell and how those animals respond to each season(dry or wet).

For small stock traders in Yabello, the wet season is not favored. This is because they claim that the goats lose body stature and weight during the rainy season. In the dry season, goats can survive on meager feed and gain weight as long as they are able to access water. Therefore, all small stock traders in Yabello who buy to supply export abattoirs favor dry season. One of the main complaints of traders trucking the animals to export abattoirs is the reduced size of the animal while transporting and consequent loss of weight and hence loss for the traders. Some/A few of them have already abandoned this business and shifted to cattle trade. Traders say that average expected weight loss after transporting is 1.5 kg per goat.

¹The ranch is located at Dhadim, 27 km from Yabello and south west of Haro bakke market.

On the other hand, traders of small stock who supply local abattoirs and the Moyale market prefer the wet season. This is because the buying and selling activities are based on visual judgments rather than weighing, for purchases old goats of both sexes.²

How climate variability is explained/perceived by pastoralists?

Pastoralists perceive of climatic variability as one of the main challenges they face in the region. There are two extreme and undesirable weather events for the Borana. The first is the frequently occurring drought, killing hundreds of thousands of cattle every time it occurs. During the very recent drought (2011), the Borana lost more than 300000 heads of cattle, amounting to about US \$90 million). Loss of cattle for the Borana pastoralists affect all sorts of life, as cattle are the basis of social relations, political and cultural activities, and means of livelihoods.

Pastoralists explain the recent climate changes not only in terms of death of animals but also its practical implication on the environment and the people. As Borana have been predominantly dependent on ground water sources for many years, they can easily measure changes in the water table using their knowledge from experience. The Borana pastoralists mainly explain the increased desiccation using the water table of deep *tula* wells, which they have used for more than 550 years. The water table is measured using the number of people making lines in the well shaft to lift water to the watering trough, from 5-7 men. Accordingly, the water table of deep *tula* wells are said to have dropped since the 1960s, but the most dramatic change occurred since 1980. They were forced to dig down, increasing the number of people making the human chain to lift the water. In the 1980s and 1990s, the Borana encountered chronic water shortages because of the wells drying up. With the assistance of NGOs, Southern Rangelands Development Unit (SORDU) and clan contributions, many wells were rehabilitated by increasing their depth, hence increasing the number of men making the line (*to'a*) by at least 3 people.

The other indicator of climate change used by the pastoralists is range land productivity and increased bush encroachment. They are aware that the less resilient vegetation species can easily eliminated when there is less water. The pastoralists say that they have seen a complete disappearance of palatable species in their lifetime. Short and unevenly distributed rains also result in increased flooding. often collapsing the walls of the *tula* and thus the key water resource for pastoralists. Pastoralists identify several contributing factors to well collapse: absence of vegetation to check the run-off and changing rain patterns. Rather than spatially and temporally distributed rain, it rains heavily for a few weeks, causing flooding. The cost of such flooding is high, requiring the sale of more than 50 bulls to re-excavate a single collapsed well.

A more disastrous consequence of such flooding is shortage of water in the following dry seasons. There are cases when the flood years were followed by drought or extended dry season before the wells were re-excavated. Such incidents can spell disaster as the main source of water during dry season was not functioning. When we visited wells in Dubuluq, many were flooded from the main rain in April to May, 2012. The short rain in September arrived before the wells were cleaned. If the next rain arrives before the wells are cleaned, this presents a real threat to the

² This refers to male and female goats consumed locally. Three things are important here: age, sex, and weight. It is male young goats and sheep less than 36 kg that export abattoirs need. Old goats and sheep (male and female), and regardless of the age that are over 35 kg also consumed locally. Local supplier are not concerned of weight loss.

continuity of the wells and hence to pastoral production. On the other hand, if the next rain fails, this may contribute to other disasters, because there may not be enough alternative sources of water. Both extreme weather conditions can cause huge losses to the Borana pastoralists; unfortunately, based on past weather patterns, it is very likely for the pastoralists to experience one or the other weather event every few years.

Current status of Borana Indigenous coping strategy to climate variability

Droughts and erratic rainfall patterns have been major issues throughout history in Borana lowlands. This is evident from oral sources that preserve the Borana social, environmental, political and economic history. Besides orally preserving the occurrences of climatic variability, the society developed coping strategies that enabled them to adapt to the droughts. Over centuries and generations, the Borana pastoralists developed range and herd management strategies that consider resource availability and climatic conditions, enabling them to expand or decrease the number of their animals depending on the situations, avoiding or minimizing overstocking and degradation of the rangeland. The coping strategies are embedded in communities' traditional social structures and resource management systems that focus on land use classification, herd splitting and mobility, and effective social structures that mobilized labor to utilize groundwater for hundreds of years. The core of the management strategy is herd mobility, requiring land use classification and splitting the herd. This enables the Borana to use the resource sustainably while managing risks. The land use classification makes the traditional deep wells a center of reference to classify the land as wet and dry-season grazing regions. In the past three decades the Borana rangeland use classification has been in decline, diminishing the resources available during dry season and exposing the livestock to feed shortages, resulting in deaths of hundreds of thousands of cattle every time the rainfall deviates from expected patterns (See Tiki *et al*, 2011). The Borana contend that *Bona dheera* (long dry season) has not historically been a drought time; the availability of dry season grazing regions has protected animals that are now vulnerable when the rain arrives late. Now, the classification of Bona Dheera no longer exists (Ibid) and no resources are available for the dry seasons. Moreover, the degradation of the grazing land, land use change (privatization, expansion of cultivation, grazing reserve, urbanization, expansion of settlement), and bush encroachment have dramatically reduced pasture availability. Some of the factors that limit local community adaptation are increases in environmental risks, reduction in livelihood opportunities, and stresses on existing social institutions. Shortage of pasture and hence deteriorated body conditions of the animals reduce pastoralists' bargaining power in the market, forcing them to accept whatever price they are offered by unsympathetic traders; their other option is animal loss from death.

Recent innovation

As part of climatic variability coping and increased competition in the livestock trade sector, there are certain innovations: transport of water and hay to feed the animals, increased reliance on mobile phones to get market and other important information, renting other's land (surrounding farm lands) to keep the animals for a few days or weeks, and paying pastoralists to keep the purchased animals on communal grazing lands for a couple of days. Keeping the animals on communal grazing land depends on traders' close relationships or social links to the

pastoralists, allowing the traders to pay for the pastoralists' labor while the traders' animals graze on pastoralist communal land free of charge.

Livestock market actors

There are different levels of transactions and different market places that the animals have to pass through before their final destination. At each place, many people are involved in addition to buyers and sellers. These include trekkers, brokers (*dalala*), truck drivers, truck owners, and 'combiners'-who travel on the back of the transport trucks and escort them to their destination, and truck driver assistants. Others involved are laborers; their responsibilities include: marking the animals with specific marks of the buyer, taking care of the animals purchased, herding for limited periods of time, loading and unloading the animals. At the government level, the customs and revenue authorities employ certain people who collect taxes, or collect livestock marketing data. When livestock marketing is affected due to unpredictable weather conditions, disease outbreaks, or conflict, the livelihoods of many people and families connected to the above categories will be affected. Many of the people in the demand chain earn money only when there are transactions. Absence of financial transactions means loss of livelihood for many of them. In addition, government regulations and definitions of individual roles further threaten specific livelihoods; they define some of the actors (*dalala*) as constraints to livestock transactions rather than facilitators, since each actor in the supply chain must add value. The government describes the brokers' role in value addition as 'insignificant or non-existent, threatening their livelihood.

The roles of brokers

There are mixed responses to the role of brokers in livestock marketing. On one hand, they are considered key facilitators of the transaction with low service charges. In this regard, they link not only traders but also pastoralists who sell and buy for reproduction purposes.³ The brokers claim that they represent the person they charge in the transaction.

The *dalala* claim that their role in the transaction is underestimated and misunderstood. According to some informants, the *dalalas* act professionally, and facilitating the transaction. The *dalalas* argue that the business relationship and its continuity are more important than earning money in a single transaction. Therefore, the *dalala* say that they act professionally and guide the buyers as per the specification (breed, age category etc.). For instance, if the buyer wants cattle of Borana breed, the local *dalala* helps in identifying the real Borana cattle breed. They are also better at assessing the age and potential of the animal to respond well to feeding. They link feedlot operators and producers, playing a role not only in the price and supply link, but also narrowing the social differences and creating understanding between the actors. There

³ Sometimes *dalalas* use their own money to buy the animal for reproduction, until the other buyer sells the animal he brought to the market. In this arrangement, the buyer gets the animal he wants while the *dalala* gets a commission.

are different *dalalas* for transactions involving small stock, heifers, and bulls. Mostly, they are linked to the traders coming from Adama or their agents in Borana.

On the other hand, the same people are considered obstacles to the transaction, blocking the direct contact of buyers and sellers. Their negative role is seen to inflate the purchasing prices for the buyers and deflating the selling price for the sellers. Some people consider them unscrupulous actors in the livestock marketing.

The new draft regulation by the Institute of Meat and Dairy Technology under the Ministry of Agriculture considers the *dalala* as obstacles to transactions and plan to put them out of operation. The new draft regulation requires value addition by each livestock marketing actor, although it is not clear what it means in the aggregate. The value addition calls for improving the animals' condition, probably quality and weight gain. The justification for the new draft regulations is to link traders with producers without middlemen and shorten the commodity chains so that the producers benefit more. The new regulation requires all traders (those who buy and sell animals) to be licensed. If brokerage is needed, the *dalala* must be licensed and get legal permission for any commission. The draft regulations do not state who approves the commission or how much the commission might cost.

Despite some contradictory views regarding the role of *dalalas*, there is a general consensus that they play a crucial role in mediating the livestock transaction. In the absence of the *dalala*, the pastoralists can sell to other pastoralists on the basis of trust, but there is some potential for problems in the transactions involving people of different cultural and language groups. The pastoralists may not be able to barter or may not trust the price offered by traders from different ethnic groups. In this regard, the *dalalas* play the facilitation role based on their knowledge of the market in the center and local areas.

Most of the *dalalas* are from the local community many of them being Borana. However, this is not always the case. The issue of trust is very complex because pastoralists know that the *dalalas* work to maximize their own economic benefits, but pastoralists have no option. This is particularly true when there is a language barrier with the seller and they must use a *dalala* who speaks the required language.

The other regulation by the Meat and Dairy Technology Institute controls the direction of animal movement beginning at the primary market, where certificates are given specifying origin and destination. This is mainly to control cross border trade defined as 'illegal' by the government.

Mode of operation

The livestock market chain from Borana to the Middle East is relatively organized, though on individual initiatives, and operates in a relatively predictable manner that reduces the risk for many people involved except the producers. In most cases, the business is determined by the demand at destination. Therefore, orders come from the importers through feedlot operators at Adama to small traders based in Yabello/Dubuluq/Moyale. Based on the specifications given by the importer in the Middle East and the number of animals needed, the traders in Borana collect livestock and truck them to Adama for fattening. The financial sources in the business are

diverse. In most cases, the purchase involves at least three financial sources: the feedlot operator transfers certain amounts of money; the small trader in Borana puts in some additional money, and taking some animals on partial credit from pastoralists/*dalala*. There are cases when feedlot operators also get advances from Arab traders. How credit works depends on the number of sales: if the pastoralist is selling many cattle at a time, there may be credit. For a pastoralist who is selling 1 or 2 animals to fulfill an immediate cash need, he/she must be paid cash immediately. If a *dalala* travels to a bush market and negotiates a price with a herder, he may pay the pastoralist within a few hours on the same day by selling the animal in the same market.

The collected animals for the export trade are transported to Adama using a series of trucks. Most traders in Borana do not have animal holding grounds and prefer to truck the livestock out of the area as soon as possible to minimize additional feeding, watering, labour, and medication costs.

The second mode of operation is that depending on the season, feedlot operators who do not have orders from their business partner(s) in the Middle East buy animals and fatten them. Under such situations, if the traders are lucky, they get directly connected to an importer from the Middle East. If not, they sell to other exporters who have good links to the Middle East, supplying part of the stock (animals that could not fulfill export standards) to the local market. This is relatively riskier than the former mode of operation. This kind of operation can also occur in response to the dropping of livestock prices in pastoral areas due to drought, allowing the traders to capitalize on climatic events.

There are different arrangements for covering the cost of operation. Mostly the feedlot operator covers transport cost while the agents in Borana pay the other costs (broker fee, labor, tax etc). If the agreement is commission based, all the costs are included in the purchasing price and the agent receives net payment of the pre-agreed amount per bull or any livestock type.⁴

The credit based livestock marketing that led to the loss of millions of dollars to Ethiopian and Arab traders is still at work in the livestock marketing business. The credit balance could be either on the side of small traders or agents in Borana or the feedlot operators in Adama. However, the commonly known operation is that the feedlot operators transfer millions of birr to the agents in Borana. The Borana agents buy and send the livestock to Adama. Most of the agents use additional money from their own sources, which they get back after the feedlot operator sells the livestock. The credit system operation can go down all the way to pastoralists selling many cattle at a time. A trader can pay part and promise to pay back the remaining balance in a fixed time period. If the trader sells the animal on credit, this complicates the matter for the original seller. Reclaiming the credit from Adama feedlot operators may take about 4 months. This is because the feedlot operators also lack the finance to manage and feed the animals for 3 months.

The recent form of credit operation among few traders is what they call 'dry check'. The buyer writes a check to the seller, with a fixed maturity date. The seller is expected to go to the bank when the check matures. The maturity date of the check could be weeks or months from the date it is written depending on the expected financial source of the buyer. However, there may not be

⁴ There is no fixed commission rate but 150-200 birr per bull is the most common amount cited by traders. For camel, it is more than 200 birr per animals but this also varies.

enough money in the account of the buyer by the time the check matures. This is less risky, but requires continuous negotiation. As long as the two parties favor their business relation they tolerate each other. The belief among the traders is 'the cash must work', whether it is from Adama or Borana (buyer or seller), but they stress the trust repeatedly.

It is rare to have formal and written agreements. A few weeks' partnership or collaboration in the business may lead to trust between parties for millions of birr; cases have occurred where this trust was broken and unscrupulous traders disappeared with money confiscated from innocent small traders and pastoralists.⁵ Since such trust-based operations were discouraged by the government, traders may not talk about it openly.

Credit based transaction- Moyale case

Trader W and three other partners in Moyale were motivated to sell camels on credit due to the expected high profit margin and the trust they forged with a person they believed to be a dedicated Muslim. They supplied the defaulter with 2512 camels in their two years operation (2009-2011). An average price of a camel was 12500 birr. They ended up disagreeing on the difference of the unpaid balance during the two years' operation. The suppliers in Moyale estimated the remaining balance to be 11,740,000 birr, while the Arab trader said it was only 6 million birr. When the disagreement started, Trader W and his partners asked for a court order on the 347 camels in the holding grounds at Adama. The case took about 4 months, after which they were able to claim the camels and sell them. They lost 45 of the camels in the process, in addition to the 4 months' feeding cost. The weak bargaining power of the suppliers due to their lack of documented evidence forced them to accept the offer from their partner and they signed a new agreement which was based on the amount the defaulter named.

According to one of the suppliers, the defaulter is said to have transferred part of the loss he incurred in gold business in South Africa to the Moyale traders and partly to pastoralists who sold to the traders on credit. After signing the agreement, the Arab trader left the country and the Ethiopian traders lost their money. The case is still in court at Adama. The defaulter is suspected of operating under multiple passports, because they know that he is still traveling to Ethiopia frequently, and the immigration officials are either unable or do not want to detain him.

Trader W says that there are many other similar cases. Trader W still hopes that the trader will pay them one day in the future. They source the camels from Kenya and Somali region of Ethiopia. The 'Bangal' camels in Kenya are preferred by Egyptian importers.

How do traders characterize a market animal?

⁵ Some of the traders are foreign from Arab countries and others are feedlot operators who take credit from Borana, sell on credit to Arab traders and fail to get the money back. In such case, both the feedlot operator and trader in Borana are the losers.

Age and sex are the main criteria for selection of the animal they buy. Physical appearance, body condition and the potential for weight gain are other important criteria for live animal selection. The size of the horn is also a factor, with a demonstrated preference towards smaller horns due to transportation convenience. The Borana cattle easily meet the horn size requirement. There is some difference regarding the potential for weight gain; it depends on how large the body structure is rather than how fat it is during the transaction at the source market. The selection is based on informed judgment rather than any objective measurement of size or physical characteristics.

Despite the mobility of animals due to trade, restocking activities and the concern for Borana breed genetic dilution lead the traders to prefer cattle from Dubuluq. Dubuluq is considered the center of the Borana breed habitat due to its distance from Konso and Guji cattle. Animals come to Dubuluq market mainly from the heart of what is known as Borana Plateau. This ecological zone is preferred by Borana pastoralists for cattle reproduction

Market fluctuation

Unpredictability of demand and price cause general uncertainty for many of the actors involved in livestock markets in Ethiopia. Demand and prices for livestock are dependent on the market and political situations in the Middle Eastern countries, Muslim holidays, the capacity of exporters, weather conditions in Adama, financial recovery from export market, the bureaucracy to clear export and maturity of LC, the export facilities, transport, quarantine services, the type of animal buyers want, the animal body conditions, disease prevalence etc. The combined effect of these factors affects the lower level of the commodity chain more, pushing the risk down to the producers.

What affects pastoralists' access to different markets: Seasonality of livestock marketing

There are variable market routes for Ethiopian livestock. However, the two most used routes for livestock export are via Moyale to Kenya and via Adama to the Middle East. Currently, the route via Adama is the dominant one for bulls, small stock and camels destined for markets in the Middle East and North Africa. According to traders interviewed in Adama, the Middle East is currently more inclined towards the Ethiopian livestock, since the Arab countries prefer white or light colored bulls with short horns. The Borana bulls easily fulfill these requirements. These two criteria are more important than the weight of the animal for export while the local market mainly relies on the weight of the animal (how big it is). Another appealing factor is that most Borana bulls are not used for plowing which can affect the meat quality. The export market prefers bulls between the ages of 3.5 to 6 years. The lower age limit is due to Ethiopian government export rules while the upper age limit is from importing countries.

According to the interviews with different actors of the livestock trade and government officials concerned with livestock trade, the livestock trade, prices, and benefits to different actors shift depending on the seasons. In “normal” years, there are two dry and two wet seasons (classified as: hot dry season from mid-December to mid-March (*bonna*); main rainy season from mid-March to mid-May (*ganna*); cold dry season from mid-May –August(*addolessa*); and short rainy season from September to November (*hagaya*)). Generally, the dry seasons advantage the traders

while the wet seasons are preferred by producers. During wet seasons, the producers can keep their animals and may not be forced to sell at low prices while they can fulfill their requirement for hard cash from small stock sales. This trend shifts when it is dry and resources (pasture and water) are scarce and the animal body conditions deteriorate. The worst season for the pastoralists is drought period, shifting the benefits to the big traders.

During drought, some wealthy pastoralists buy emaciated livestock because of sharply reduced prices and then feed them with hay and commercially produced forage. They also may rent water tankers and transport water in an attempt to reduce the energy needed by animals to travel to and from water points. After the livestock recover and increase their body weight, the wealthy pastoralists resell them at relatively high prices. The short term effects of this change will inevitably redistribute wealth from the poor to the wealthy, increasing the number of dropouts and destitute families from the pastoral sector. The long term implications of this are not well known and will be a focus of further research by our project.

I interviewed a *dalala* at Dubuluq whose family is located about 35 km on the way to Yabello from Dubuluq. According to this *dalala*, towards the end of the 2011 drought, his brother bought 12 emaciated bulls for the average price of 200-300 birr. After feeding them with commercial forage and hay from the highland for about 2 months, he sold them at an average price of 5000 birr and constructed a five-room house at Dubuluq with his profits. He now earns 200 birr per room per month from renting out the rooms.

Pastoral production is a vulnerable and risky business that is affected by factors on many levels. Climate risks may be local or regional, but the pastoral coping strategies depend on local, regional and global conditions. The vulnerable commodity they raise depends on the global market situation, in addition to the socio-political and economic conditions elsewhere which affects the market access of pastoralists and their coping strategies. This was clearly stated by pastoralists during the Arab spring and recently during a flooding incident in Adama that affected the operation of the feedlots. Despite the growing demand for meat in the domestic market and increased prices for the pastoralists' livestock, the pastoralists still lack access to sustainable markets) that have the potential to absorb the livestock they raise. Both domestic and Middle Eastern markets are affected by religious calendars. Most export livestock from Borana are destined for the Middle East, where the demand depends on the Muslim religious calendar. According to Majid (2010), the annual haji pilgrimage to Mecca involving 3million people every year for about a month. This time period corresponds with the peak of livestock demand in Saudi Arabia as each pilgrim must be fed and sacrifice one animal. This is confirmed by Ethiopian live animal exporters in Adama and export abattoir operators in Modjo and Bishoftu. However, to what extent Ethiopian exporters fulfill this seasonal demand is unclear. According to local traders, this season accounts for about 70% of annual small stock sales to the region, reflecting a rise in demand not only of cattle, but other meat sources as well. On the other hand, the local market is affected by the orthodox fasting seasons and religious feasts: there is high demand during the Ethiopian New Year and Meskel (both in September), Christmas, and Easter. Two months preceding the Ethiopian Easter is characterized by the lowest demand in the local market for livestock products, particularly among the orthodox Christians who are fasting at this time. Climatic variability is another determining factor for pastoral livelihoods and hence livestock marketing. As climatic variability can shake the fundamental basis of the system, it impacts every activity. When it rains pasture and water are available, the cash needs of the pastoralists are limited and they are not forced to sell at low prices. However, this trend changes quickly

when they realize drought is approaching. Due to the optimistic behavior they developed over generations regarding the arrival of rain, they may not sell the animals when the livestock are in relatively better condition. The pastoralists' first coping strategy during drought is to move in search of water and pasture. These places may be far from the market and coming back with the weakened animals to the market becomes difficult. If they manage to arrive their bargaining power is often diminished due to the poor body conditions of the animals and lack of hope for their extended survival from pasture shortage. Furthermore, this corresponds to the season when pastoralists have little food to consume. This adds pressure on the sellers to accept whatever price is offered. Moreover, the place where they migrated to during the drought can expose the animals to diseases and the people to conflicts over resources. Drought weakened animals lack disease resistance ability and easily succumb to it. Both conflict and disease increase the potential loss of the animals.

Timely, adequate and comprehensive responses to climatic variability like drought require access to markets, including cross-border trade consideration. Sometimes, due to the constraints at border crossings, livestock that cannot sustain the trek to the center of Ethiopia may be "lost to drought", which could have been prevented through easier access to markets just across the border. Price disparities between local and international markets can also negatively affect the market. Many traders complain that the high feeding and management cost they incur in the feedlots is substantially reducing their competitiveness in the international market. One of the earlier studies (Rich *et al.* 2009) confirms this. This study suggests high domestic input costs in Ethiopia as the main constraint to the Ethiopian access to the competitive world market. The costs include: feeding, medication and other market related costs for livestock producers and feedlot operators to meet the internationally required standards.

Infrastructure

Increased access to infrastructure like road, markets, telecommunication, market information, schools, and veterinary services is fundamental in improving livestock marketing and pastoralists' risk management capacity. Increased access to such social services increase the capacity of the pastoralists to respond to climate variability before it becomes too late for selling their animals. Such infrastructural development can increase the pastoralists' link to the markets in the center and even to the international market. In recent years, pastoralists are increasingly depending on road networks to transport water and pasture or even the animals closer to water points, where they buy hay and feed them. However, such services are less developed and in most cases inaccessible to many pastoralists.

Mode of transport in Ethiopian livestock marketing

Live animal export from Ethiopia involves at least three types of transport systems: trekking to the local market, trucking to feedlots in Adama and then to Djibouti, and shipping to Gulf states or the Middle East. Transporting livestock requires considerable skill and specialized tasks to move the live animals on land of different terrain, rough or paved roads, and under different climatic and feed conditions. However, lack of appropriate trucks, loading facilities, and guidelines on how to handle livestock from source to destination is the main problem. From Borana, animals are trucked to Adama using ordinary trucks, and loaded by laborers who are

unsympathetic to the animals. The loading process frequently involves beating, dragging, and any possible means to get the animal on truck. There is little concern of the negative impact on the animal or the cost for its recovery in the feedlot. One of the respondents in Adama says that he lost about 100 small stock while transporting 3000 to his holding ground in Matahara (east of Adama). Some died on the vehicle while others arrived weakened and died. The picture below show the treatment of the animals.

Diriba and Hurrisa(2009) describe the Ethiopian livestock transport system: “ordinary trucks are not convenient for loading and unloading, lack shade to protect animals from sunburn and cold, not suitable to provide enough space and difficult to provide rest, feed and water to the animals whenever necessary while on transport. To the contrary, transporting animals by dedicated trucks avoid stress, injuries, weight loss, and deterioration of body condition and death associated to poor transport”.

Transport cost

A truck that carries 20-27 fattened bulls from Adama to Djibouti charges 9000 birr. When there is transport scarcity this can go up to 15,000 birr. An FSR truck charges 5500 from Borana and carries about 17 bulls.⁶ Other additional transport related costs include 450 birr for the ‘combiner’-who embarks on the top of the vehicle and travels to Adama to ensure the safety of the bulls, and 200 birr for vehicle *dalalas*. Loading costs are 10 birr per bull at all markets in Borana. There is no feeding and water cost between Borana and Adama, while from Adama to the point of boarding the ship is the financial responsibility of Ethiopian exporters. Six hay bales per bull is allowed between Adama and shipping, but if the animals stay in quarantine, they are exposed to more feeding costs). Quarantine clearance may take up to 21 days. The exporters pay for water too.

Export promotion

The importance of livestock export development has been advocated by the state for decades (see Aklilu and 2008) to increase pastoralists’ access to markets, ensuring pastoralists’ household food security. The volume of live animal export and the price received have changed dramatically in the last couple of years. For instance, data from Meat and Dairy Technology Institute reveals a dramatic increase in the last five years’ export operation. Accordingly, an aggregate live animal export in 2005/6 was 163343 heads of livestock with total value of 27251 USD. This increased in 2011/12 to 785,078 heads of livestock with total value of 207,050000 USD.⁷ Data in Table 1, show the increase in number and price of the live animal exports in the last 6 years.

⁶ There is no formal insurance system during the transportation. However, traders say, the owner of the vehicle is responsible, if the animal dies due to mismanagement or accident. The amount and mode of payment is negotiable.

⁷ Data for 2011/2012 was not included in the table because it was not livestock specific.

Table 1. Volume (no) and value (000 USD) of live animal export by type of animal from 2005/06- 2010/11

Species	2005/06		2006/07		2007/08		2008/09		2009/10		2010/11	
	No	Val (000) USD	No	Val (000) USD	No	Val (000) USD	No	Val (000) USD	No	Val (000) USD	No	Val (000) USD
Cattle	143,49 9	25,81 9	156,24 7	27,65 2	83,356	19,95 3	84,275	36,24 2	103,01 0	47,98 9	230,60 5	102,47 3
Camel	3,882	943	19,410	4,920	39,926	13,46 7	25,179	11,44 9	79,439	36,60 3	79,908	37,258
Sheep	12,857	414	33,553	1,121	140,29 0	5,729	97,527	4,254	137,57 6	5,649	146,65 5	7,491
Goat	3,105	76	11,363	316	31,197	1,205	5,182	222	11,319	433	14,507	650
Total	163,34 3	27,25 1	220,57 3	33,63 2	294,76 9	40,35 3	212,16 3	52,16 6	331,34 4	90,67 4	471,67 5	147,87 1

Source: Meat and Dairy Technology Institute (MOA)

Despite the dramatic increase of export volume and foreign currency earnings from the sector, there are challenges and concerns that accompany these increases: first, this volume is far below the export potential of the country. Second, the numbers recorded in the official data is not inclusive of all exports, only those legally recorded and is not comparable with the illegal crossborder exports going out of Ethiopia. Third, Ethiopia is increasing exports without improving production, leading to increasingly depleted livestock resources.

Export abattoirs

Export abattoirs mainly source the animals from Borana, Harar, Shashemene, and other lowland areas. The Borana goats and black head sheep are preferred by importing countries. The Modjo modern export abattoir slaughter and export an average of 1700 small stock daily to Arab countries. The goats makes 90% of their export volume. The abattoir buys live animals depending on live weight (maximum 35kg). The price per kg for live weight differs for lowland and highland goats and sheep, at least 1 birr higher for the lowland (32-34 birr per kg at the gate of the abattoirs). Modjo export abattoir occasionally sends its trucks to traders when there is competition for sourcing animals from Borana. The traders pay for fuel only. There is no charge for trucks or driver. This is to get the number of animals they need. The abattoir supplies different parts separately to different countries or for local consumption. The main carcass is sent to Arab countries. The intestine is sent to Turkey and China. Testicles and stomach are consumed locally.

The Modjo modern export abattoir and others are concerned with the continuity of the supply due to five main reasons: increased live animal export via Adama, increased cross-border trade on the east via Somalia, increased local consumption, increased export of chilled meat, and depletion of animals from the sources. The increased differences between local price and international selling price is another concern of the abattoirs. The representatives of the three abattoirs interviewed claim that they are operating below their capacity due to lack of supply. For instance, Modjo organic export abattoir, which has the capacity of exporting 20 tons per day,

exports 8 tons on average (~1000 heads) due to lack of supply. ELFORA slaughters and send 800 heads a day (20% sheep and 80% goat). ELFORA say that 70% of their supply is from Borana, followed by Afar.

Communication/information exchange

Information technology is important not only to exchange price information but also to access information on weather conditions and potential disaster causing hazards. On a broader level, it helps institutions involved in managing the impact of climatic variability to exchange information, coordinate their activities and mobilize resources, nationally and internationally. At the local level, it helps individuals make informed decisions and reduce market risks.

Mobile phones play a more important role for traders than they do for pastoralists. Mobiles link traders to traders in Adama, small traders in Borana, facilitate money transfers and facilitate business negotiations. I asked one of the informants, “How many of the traders that you know own a mobile?” He replied “*muktinuu niqaba*”, meaning, “Let alone traders, the tree itself owns”. He added: “*Daldaalaan mobayilii hinqabne ballaa,*”-“A traders that does not have a mobile is a blind person.”

The importance of mobile phones is evident from the expanded services of mobile battery charging in market places using small generators. On 21.10.2012, I talked to five people providing mobile battery charging services using their own small power generators. The number of service providers may be more than five as my counting was not exhaustive. Four of them say that they can recharge 150 -200 mobiles each on a market day. The fifth, a new entrant into the business using tree shade as a place of operation, says he can recharge about 110 batteries, even though the location is not convenient and he has not forged strong business ties yet. He is a government employee contemplating quitting his job and continuing with the mobile charging service as a steppingstone to another business. The fuel cost for the small power generators is about 7 liters maximum (~150 birr). Service providers issue a ticket with a serial number to identify the mobile owners. Part of the ticket remains attached to the mobile phone as an identification, while the pastoralist retains the other part of the ticket with the number corresponding to their phone. When I talked to one of the service providers around 10:30 am, he was issuing an identification number to the 81st mobile owner, showing the demand for this service

Mobile phones play a crucial roles in linking the feedlot owner and feedlot workers. Secondly, it facilitates searches for inputs (feed, water, medication etc.). During transportation, feedlot operators keep close contact with the drivers, make decisions (e.g. if one or more bulls need medication or rest) and guide the drivers to the feedlot upon arrival. Mobile phones also facilitate vertical trader relationships. Traders can exchange price information, supply conditions and number of animals loaded in each truck.

Mobile phones also play an important role in networking local traders in different parts of the country. Traders in different zones may send the animals to their agents in Addis or Adama, who sell the animals and transfer the money via the local bank. Each trader in the zones is linked to an agent or agents in Addis Ababa or Adama, who facilitate the transaction, arrange rooms for the traders, and feeding places for the animals.



The pictures show the services provided by individuals to recharge the battery of mobile cellphones of pastoralists who do not have access to electricity at home. The service providers use generators as source of power, which combines barber and battery recharging services. The recharge costs 5 birr per a single cellphone battery.

According to the informants interviewed formally and informally, livestock marketing information exchange among the traders depends on the kind of business relationships they have. If the traders are not business partners or one is acting as the agent of the other, the information exchanged could be purposefully distorted and misleading in an attempt to minimize the number of competitors in the market. The information exchange among the traders is more frequent vertically (from Borana to the feedlot operators/exporters in Adama or vice-versa) and the information exchanged under such conditions is considered more accurate than the horizontal communication between traders at similar levels. Despite preferences with whom to exchange information, most traders believe that mobile phones have revolutionized the livestock trade. Mobile phones link traders at different levels and sites, from Borana to the Middle East. They also limit new entrants from initiating business, as supplying to exporters/feedlot operators requires prior negotiation with them.

Some traders say that they use mobiles not only for negotiating with other traders and collecting market information, but also to communicate with concerned government officials regarding the possible policy direction of livestock marketing. For instance, if the government is working to ban certain categories of animals from export (age, sex, weight limit etc.), traders will act on that information and avoid buying.

Mobile phones are causing real transformation in the lives of pastoralists. A pastoralist can keep contact with their family at the base settlement, the mobile *foraa* herd, and still go to any market to sell their animals. Mobile phones have shortened the distance which they would have travelled to get information that is now available at their fingertips

The USAID funded livestock information system provides text based information about the recent prices for different livestock types. However, it is questionable to what extent the Borana get the right information. One reason is that the texts are in English which many Borana pastoralists and traders may not be able to understand. The text system is thus more useful to traders who may have some formal education and literacy in English, than it is for the pastoralists. Currently, the traditional information exchange is utilized by the Borana pastoralists more than mobile phones. Sharing information is part of the Borana culture, regardless of age and sex. This does not mean that they do not use mobiles for price and marketing information exchange. As the Borana are interconnected, if someone gets price information from a friend in the market, he disseminates the information to whoever asks for it. Therefore, mobile phones strengthened the already existing Borana information exchange system.

Ethiopian livestock traders' association

The Ethiopian Livestock traders' Association has a general manager, an administrator, a secretary and a regional coordinator at Adama. Its overall activities are managed by a board of directors consisting of 5 members. The general assembly meets every year to discuss the main issues related to livestock trade and policy. It has about 100 members who pay a registration fees and monthly member contributions. The main activities of the association include:

- Market searches
- Link members to market

- Provide training to members in collaboration with MoA (Ministry of Agriculture) and NGOs financing the training (mainly USAID)
- Ensure members operate within the existing legal framework
- Support members by writing letters to get loans for purchasing animals, expanding their feedlots, and improving the general conditions of the feedlot. This is mainly facilitated by Meat and Dairy Technology Development Institute (interview with Henok, livestock marketing expert in the Institute confirmed this).
- Bring members together to discuss their problems, suggest solutions and present the suggestions to the government via MoA
- Work with government on policy issues regarding livestock trade, quarantine and health services
- Disseminate market information, from MoA and embassies in the Middle East to members

According to the manager of the association, one of their main achievements was opening business diplomacy sections in the Ethiopian embassies in the Middle East and Gulf States to undertake several main activities: market searches for Ethiopian livestock, settling of accounts for defaulters, and working on the procedure for all transactions to follow international standards and opening of LC (Letter of Credit). On one hand, the association manager complains about the late entrance of Ethiopia to the market and the low level of export promotion. On the other hand, he has a fear of not fulfilling the demand from the clients due to the depletion of livestock resources.

Challenges to the association

One of the main challenges to the operation of livestock marketing is the uncontrolled movement of the animals across and within the national border. The general manager argues that this puts the registered traders' operation at risk. This view is shared by registered traders in Borana and Adama alike. Price volatility is another problem not only for producers, but also traders. Absence of quarantine service in the country (under construction at Mille) is another constraint to livestock marketing. There is widespread appreciation among exporters of the problem created by the quarantine service in Djibouti, which is a monopoly operated by a Saudi business person. Exporters are not happy with the way the facility operates and with the fact that there is no other option to it. Some Adama informants expressed their doubt of the fairness and professional ethics involved in the certification process. Disease prevalence also is a problem, but the main one is the delay at the port that causes loss to the exporters.

According to the general manager of the association, the concern is now shifting from lack of markets to sustainable supply, since the production side is not improving to meet the demand (quality as well as quantity). There has not been much effort in increasing production and productivity and the impact of drought is undeniably reducing the supply. The impact of drought in depleting the resource is substantial. Therefore, the impact of climate variability is seen not only in the short-term impacts, but also in how it affects the supply chain for long periods, until the next recovery period. In the operation of the livestock marketing, feedlot operators lack both business and management skills needed. Furthermore, their operation is constrained by lack or

limited credit services to sector. The association also lacks resources to fill such skill and financial gaps.

What limits the feedlot operators' capacity in responding to climate induced vulnerability?

Adama feedlots play a fundamental and indispensable role in livestock marketing chains as the main link to the Arab countries. The feedlots feed the animals for about three months during which the animals are vaccinated against specified diseases, cleared from ticks, and gain the required weight for export. Without the feedlots, the Ethiopian livestock might not be exported at all. Despite their important role in value addition and export facilitation, the operation of the feedlots is constrained by many factors, limiting the capacity of the feedlot operators to increase livestock off-take prior to and during severe climate induced vulnerabilities. First, the feedlot operators are working in a limited area that is not always conducive for fattening the livestock. Most of the feedlots are located on flood prone locations around Adama. The expansion of the space is limited by Adama city administration. Moreover, there are ongoing disagreements between the Adama town administration and the feedlot operators. The town administration wants to move the feedlots out of town due to sanitation concerns. The feedlots are considered a pollutant to the town and place an additional burden on the town's meager water supply. As a result, the feedlot operators are given places out of town and are waiting for road construction to begin. It is not clear how the new plan will impact or improve their operations.

Second, the feedlot operators work under limited access to finance. This constrains the fulfillment of required facilities to meet export requirements. Third, since the turn-over of livestock depends on the seasonal market in the Middle East, the statuses of the feedlot stock prior to drought limit the feedlot operators' response to the climate induced vulnerability. In addition, the adaptive capacity varies across gender and wealth groups.

Women are exposed to more market volatility and environmental risks than males because of lower educational levels, higher workloads and increased vulnerability to environmental hazards caused by climate variability. Lack of education impacts on their capacity to analyze the situation and take proactive measures and mitigate shocks, while the increased workload impacts on their time allocation between different responsibilities. Another social barrier may be the absence of female *dalala* and female traders. Most of the women livestock traders we found are small scale, who buy and sell small stock in their local market. There are few pastoral women, mostly widows from which the Adama traders buy the bulls.

Feeding and feed costs

Most of the feedlot operators feed the animals with industrial byproducts from grains and other agricultural products, mainly from food oil processing factories, cotton seed, and from flour mills. The increased price of food grain and oil seeds in turn increased the price for industrial byproducts that the operators get from local food processing factories. Similarly, the price for hay has been on the increase in the last couple of years. Another important food product for

livestock is teff straw. In addition to serving as animal feed, it is also required for construction which is quickly growing. Therefore, the competitive demand for the teff straw contributed to the surge in the price. Hay is preferred to feed the animals during transportation, while teff straw is used to facilitate digestion for the concentrate feeds. Therefore, good weather conditions are important for production of crops and hence availability of animal feed. Feedlot operators estimated the feed cost of a bull to be 1500-1700 birr during one fattening period. This does not include labor, medication and other management related costs.

Sululta hay production and marketing

Natural pastures, forages and browse are the main feed resources in Ethiopia. The production, availability and distribution of the feed is highly influenced by seasons and weather conditions. Sululta is one of the few areas in Ethiopia where hay is produced for commercial purposes. According to Mengistu, acting head of livestock development division of Sululta Woreda agricultural office, 38720 ha of land are delineated for hay production. There are two main reasons for this: the swampy nature of the land that makes it unsuitable for other crop production, and the increasing demand for hay, particularly in pastoral areas, makes it a viable market option. The estimated average harvest per ha is 350 bale (bale of hay is assumed to be 20kg, practically ranging from 15-20 kg dry weight).

The hay is predominantly produced without inputs from the farmers. They call it *kenna waaqaa* 'God's gift'. This is because there is not a significant labor investment required until harvest time. According to the woreda agricultural office, people in the woreda derive 60% of their livelihood from dairy production and sale of hay while only 40% is from crop production and other activities.

The hay is predominantly produced on smallholders' farmlands, who mostly sell it before cutting; the price and amount of sale is negotiated in advance. Sometimes, the farmers take the money months before the harvest at a far lower price than that offered during harvest (7-12 birr per bale of hay). The traders store the hay and sell at the prevailing price, some times as high as 70-80 birr. Since the traders are not registered and do not pay any type of tax, the number of people running this type of business is not known.

As explained by Mengistu, the price has been increasing in the last few years, encouraging more farmers to become involved in hay production. The available information shows that the price of hay was very high in 2011 when a bale of hay was being sold for up to 80 birr, in 2012 the maximum price was 30 birr. If we take the average weight of 18 kg, $30/18=1.67$ birr per bale is the price (November 2012). The fall in price is attributed to improved rain conditions in Borana and low demand for hay. Moreover, the harvest of last year was higher than the preceding years due to favorable conditions at Sululta woreda, causing the market to be flooded. About 50% of last year's harvest was in the storage by early October, 2012 while the harvest for this year was to start in a month's time. Unfortunately, there were cases when the bad harvest at Sululta coincided with a bad season in Borana, hiking the price up, and resulting in a deficient supply of hay. Increased hay price is also attributed to a lack of bulky commodity transport system (more than double of the farm gate price after transporting about 600 km). The further the location in the rural areas with poor road networks, the higher the transport cost. The inefficient transport system of hay also can contribute to death of animals, as it is not possible to transport all the

needed hay during a drought in a short period of time. Transporting thousands of bales requires months, resulting in a loss to both the end users and the traders alike. Sometimes, the traders encounter order cancellations because of the onset of rain while the delay also causes deaths of thousands of animals when there is a drought. A medium level truck locally known as FSR can carry a maximum of 320 bales and charges 8000 to 12000 birr per trip depending on the destination. The price also depends on whether the truck can find commodities to be transported to the center of Ethiopia (from Borana) or whether they will charge the traders for the entire round trip.

Hay is brought to Borana by many different people: traders who are based in Sululta and Chancho, traders from Borana, NGOs, and wealthy pastoralists coming from the production area to buy the hay. From my discussion with the Woreda agricultural office and some traders, price and demand fluctuates depending on the weather conditions in the pastoral areas (Borana, Afar, Karayyu, and Somali). When weather conditions are good in pastoral areas, the demand for hay remains low and the hay business is less attractive (as is the case in 2012). The supply also fluctuates depending on the weather conditions in the production areas, as they rely on rainwater, not irrigation in hay production.

There are many actors in the hay production business and marketing: farmers, laborers, balers, transporters, brokers etc. According to Tesfaye, 5-6% of the hay is consumed locally while the rest is for sale somewhere else (Borana, Adama, afar, Djibouti, etc.). Hay trading business is seasonal, the main activity takes place from November to April every year. According to Tesfaye, the business is tax free and lucrative for the traders. The information from different respondents reveals that the main purchase of hay for the Borana is by organizations involved in pastoral development activities.

According to Tesfaye, there was an attempt by VOCA to strengthen the link between Borana pastoralists and Sululta fodder producers. The link was started on individual initiatives and the plan was to institutionalize it by connecting cooperatives in the two areas. However, the effort was overshadowed by individual traders who dominate the business combined with the weak management system of the cooperatives. .

Case of hay trader: Trader TM

TM starts with explaining how he entered the business:

This business was the work of feudal land owners for which we were laborers. Their children had the opportunity of better education and did not want to continue the business which they considered lower class employment. Their ambition was Europe and America. The business requires trust and social ties, capacity to coordinate, and finance. There is a need to coordinate many actors such as store keepers, laborers, transporters, NGOs who finance the purchases, and the kebele officials at the receiving community. This becomes more difficult during severe drought. While working under our employers, we developed skills required to handle the challenges, how to deal with people, and how to organize activities. For me it represents progress and I am doing well in the business.

Trader TM explains the production and transaction processes:

The hay is produced by smallholders. The production does not require much investment. It is a blessing from God. The only thing expected from farmers is delineating the land and protecting it from free grazing of livestock. When the hay is ready (October-December), the farmers cut it manually. Then the traders who negotiated in advance for its purchase arrive with baling machines, bale it and transport it either to stores or directly to consumers. If the production is in excess of the amount paid in advance, the excess is purchased at the prevailing market price. If the production is less than the amount negotiated in advance, the remaining will be given in compensation from the next harvest. The hay must be transported either to storage or the consumers' market before the rainy season. Once it rains, most of the production areas are not accessible for any kind of transport. This affects not only the stored hay on the land, but also delays planting of the next harvest as the cut hay takes up planting space. The solution in this case is dumping it into the river.

According to TM there are few farmers who store the hay in the open. The majority of the farmers sell the hay while it is still planted. There were some attempts to increase farmers' access to credit to enable them to store the hay and get better prices, but it is unclear how many farmers benefited from the scheme.

FM attributes the plummet in price this year to three factors: good weather conditions in Borana that affected the demand of hay, reduced export of live animals, and a relatively better harvest at Sululta (increased supply). However, the second claim requires verification, as the official record shows more export this year than before.

Trader TM and other traders know several organizations involved in the purchase of hay: Oromia Pastoral Development Commission, Disaster Prevention and Preparedness Commission(DPPC), Save The Children, Gayo Pastoral Development Initiatives, Action For Development(AFD), etc. During drought, these organizations announce competitive bids for the traders explaining terms and conditions. Tesfaye estimates the number of hay traders to be more than 50, but less than five of them supply hay to Borana.

TM started selling hay to Borana 9 years ago. This was an individual initiative he undertook when the annual supply was 3-10 truckloads(less than 3,000 bales). He estimates the current hay requirements of Borana to be more than 100,000 bales during drought. He won the bids for the supply of hay to the Borana twice in the last 5 years. In 2008, he sold 51,000 bales to Oromia Pastoral Development Commission (26.5 birr per bale at Sululta). In 2011, he won another bid, when he supplied about 35,000 bales to AFD for 37.5 birr per bale. In both cases, he supplied hay at early stage of the drought, before the price went up.

The traders bid on two separate kinds of contracts: hay supply and transportation of goods to the destination. Potentially a single trader can win both contracts for supply and transportation. According to TM, this involves tremendous organizational skill; as traders must keep the details of all the trucks transporting the hay (type, plate number, drivers' name license number etc.), the number of bales transported, beneficiary kebele, date of departure and arrival. In some cases, both the transporter and the hay supplier are paid after delivery, when they produce rubber stamped letters from the beneficiary kebele to be verified by local representatives of the organization financing the hay purchase and transport. This becomes more difficult when the supply and transportation are undertaken by different companies or individual actors. The

inefficient transportation system and potential delays can affect the timely delivery of hay, impacting both the suppliers and the beneficiaries. The suppliers lose the market for the hay while the beneficiaries lose their livestock. In addition to hay, different types of processed animal feeds (concentrates) were also transported to Borana to supplement the hay.

It is evident from the discussions that drought in pastoral areas creates and supports business opportunities for many people NGOs employ more people for emergencies, some traders prefer the season for business, and hay suppliers benefit when drought renders grazing land insufficient.

Cooperatives in hay marketing

In addition to the individual traders, there are 4 primary cooperatives that partake in hay marketing. The capacity of the cooperatives differs from one to another, but their abilities are often less than some of the traders. The idea behind the cooperatives was to link producers and consumers through cooperatives from Borana and Sululta. However, the business is dominated by private traders, and the cooperatives are not able to win the bids announced by organizations sponsoring hay for the Borana pastoralists. The individual members (and management committee members) of the cooperatives are traders, and prioritize their private business over their work in cooperatives. The cooperatives have no baling machine, storage facilities, and transportation, thus their cost of operation is higher than other traders and they lack competitiveness. The cooperatives buy hay from members and non-members and supply to consumers. The cooperatives lack organizational skill, finance, and willingness of the management committee members to actively engage, commit and compete for bids in the business.

In summary, Sululta hay plays a vital role in Borana pastoral risk management. It is needed to feed animals in feedlots before export and also fills a gap when there is not ample food supply in pastureland. Hay accompanies not only cattle but also other live animals (small stock and camel) to their final destination for export. More importantly, the hay is consumed by all livestock type while in quarantine in Djibouti. This makes the link of Sululta hay producers and Borana pastoral production very important throughout the entire market chain.

Kera livestock market

There are three livestock markets in Addis Ababa: Kara (northern part of Addis Ababa), Shegole (North-west of the Addis Ababa), and Kera (south part of the city). Kera market is located walking distance from the Addis Ababa main Abattoir known as Kera. It was established around 1956 on 25,000 sm. It is fenced and surrounded by urban infrastructure. There are two sections: small stock and cattle. The section for the small stock is paved and has overhead shelter, while the section for the cattle is half paved and open (no shelter). The animals go in and out through the same gate. Trekking the cattle in the town far from the vicinity of the abattoir is strictly forbidden. If the animals are not sold on the market day, the option is to rent holding ground in the vicinity (5-10 birr per night), excluding the feeding cost and payment for the herders.

Types of animals:

1. The market is predominantly for bulls and steers. Traders and brokers (brokers call themselves *amechach*-facilitators) say that the preferred animals in this market are fat

steers. Kera sources animals from different parts of the country depending on the season and on the timing for fattening the bulls. Accordingly, October was the time for bulls from Harar (eastern Ethiopia). The other sources include Jimma, Bale, Arsi, Wollega, and partly from North Shewa. Jimma and Borana bulls arrive June-August, when the bulls from Harar are not ready. Fattening starts after the farming season, so sourcing from agricultural areas depends on when the plowing season begins and how long it takes to fatten the bulls. Therefore, these regions supply the fattened bulls to market for a few weeks beginning at the Ethiopian Easter. On 5 October 2012, I could not find traders sourcing animals either from the Adama feedlots or directly from Borana. The traders I talked to say that Borana bulls are for export and they are brought to Kera market only when the demand from the Middle East is low. If the demand from the Middle East is high, only those animals rejected from export (particularly steers) end up in the Kera market in Addis Ababa. Also, the young bulls fattened in Adama are not preferred by raw meat eaters. Traders attribute low demand of Adama fattened bulls to the feeding system (feed concentrates, not hay), which affects the moisture content of the raw meat. The meat of young bulls fed on concentrates holds more moisture and lacks flavor. Accordingly, castrated bulls are preferred for local consumption.

The seller pays 10 birr per head before the animals are unloaded and allowed to enter the market yard. In principle, this payment is valid for 5 days and the animal can stay in the market yard without additional charges during this period. However, the traders move the unsold animals out due to limited space and pay another tax on the next market day for the unsold animals. Within a few meters of the market place there are private 'holding grounds' charging about 10 birr per night, excluding the feed. Trekking animals far from the market is prohibited. Traders have their own contact people, who employ herders to keep the animals together while waiting for buyers. The *dalala*-facilitator charges 50 birr per head for each sold animal; the facilitator pays a lump sum for a herder (100-150 a day). The payments from the seller side depend on the long standing business and social relationships, but these kinds of relationships are not mandatory.

The price for bulls/steers covers an average range from 8,000 to 20,000 birr, with some outliers. The traders say that there have been exceptional cases when extraordinary high quality bulls were sold for 36,000 birr (from Selale); it is also possible to buy bulls for 5000 birr or less depending on the size and other locally set indicators of quality and size. Traders attribute the price hikes to the illegal cross-border trade via Jijiga and consequent decline of demand in the local market. The transport cost depends on the distance between source markets and Addis Ababa.

2. *Small stock*: In Kera market the majority of small stock sold are old goats, castrated male goats, and sheep, mainly females that are past reproductive age. It is very rare to find young goats and sheep in this market. The seller brings flocks of small stock and hands them over to a *dalala*-facilitator. The terms and conditions are complex; the facilitator links the buyers and sellers. The *dalala* charges the buyer 5 birr per head while the payment from the seller side is similar to that of the cattle: 50 birr. The taxation for goats and sheep is 1 birr. According to informants, the Borana goats and sheep are too expensive for Addis Ababa local market and frequently end up at Modjo (export abattoirs). The sale price for goats and sheep differs. For goats, it ranges from 600 to

1500 birr, with an average of 1000 birr. The price for sheep ranges from 450 to 1400, with an average price of 900. However, there are exceptional cases when both lower and upper limits are exceeded depending on the size and quality of the animals.

3. *The butchers* buy the number of animals they need and send them to government owned abattoirs. The abattoir gives identification numbers to the animals before they are slaughtered so the meat purchased by the butcher shop can be appropriately matched and delivered to the butcher shops. The available information reveals that the service charge is 280 birr per slaughtered bull, including the transport.

Problems

- The market is located in the city and transporting the animals is allowed by truck only. If the animals are not sold on the market day traders are exposed to additional feeding and holding costs. In addition, the market is not close so animals coming from fattening grounds travel significant distances, frequently resulting in weight loss.
- The market yard for cattle is an open space with no shelter. The feeding and watering places are not large enough for the animals. Even though the market is said to have capacity for about 2000 head of cattle and 3000 small stock, the traders complain about lack of space, facilities and frequent congestion in and around the market.
- The market yard for cattle is partially paved. The unpaved part of the market is constantly trampled by animals, sending dust into the environment, which creates problems for the traders, other market actors and the surrounding community. It is difficult to walk in the market and surrounding areas when there is wind.
- The sewerage and toilet outlets from the surrounding residential and business quarters also flow on one side of the market yard, adding to the pollution.
- Traders occasionally encounter conflict with pedestrians and residents while trekking the animals from the unloading point to the market yard or from the market yard to the abattoir (both less than 200 m distances from each other).

Local vs export prices

Live animal exporters complain that the purchasing price and selling prices are not in their favour. Due to increased domestic consumption the selling price for livestock is higher domestically over exports. . However, feedlot operators are not allowed to supply the local market without paying VAT, which they are exempted if they sell to the export market. On the other hand, the export abattoirs complain about price hikes due to legal and illegal live animal exports depleting the livestock resource, resulting in many companies operating at a loss. The same concerns were raised at Moyale market, where a trader claimed that the price of 1kg meat is 60 birr in Nairobi while the same is 100 birr in Moyale. This price differential between Moyale and Nairobi applies to fat older cattle of both sexes..

Small stock trade

It seems that most small traders specialize their operations as they lack the resources to diversify their business. Many small traders say that they are restricted to small stock trade due to financial constraints. For big traders, it is relatively easy to shift between different livestock types depending on the demand but small traders cannot make adjustments in the same manner. KD, a Burji trader, has worked for 15 years in the same business with very little progress. He has been supplying hotels and consumers in Yabello town with old female goats. Occasionally, he sells to other traders coming from the neighboring towns. He combines farming with trade to diversify his livelihood. He uses the luggage compartment of public buses to transport goats, buying space for them and a ticket for himself.

On 21.10.2012, the purchase price for goats and sheep was 29 birr per kg of live weight from pastoralists and 30 birr per kg from small traders who collect the animals at Haro Bakke market. A weighing scale is hung on a tree and will stabilize only when the animal is immobile. The weight of the animal is determined when they stop moving..



Trader weighing sheep at HaroBakke market

Small stock trade in Moyale is dominated by female traders who buy and sell in the same market. Buying and selling occurs on parallel levels, the traders sell what they have and buy from another trader on the same day. The animal can pass through the hands of many small traders before going to the purchase of the final consumer. Each trader expects at least 20 birr per goat, inflating the price for the final buyer. However, while the trader may lose in individual transactions, compensation may be possible through other sales. The traders are predominantly Muslim of the Gari ethnic group. Some of the traders are from the Kenyan side of the border who buy and sell on the Ethiopian side during the day. Married women traders say that they cannot stay overnight other than in their own house. This limits the profit margin that they could earn if they had the freedom of mobility to visit other markets. Dead animals are sold to hotels or butcher shops, despite incurring losses in the transaction of the meat. All butchers and hotels in Borana use old and female goats. All young male goats are for export.

There is a market every morning up to 11 am in Moyale. The unsold goats are handed over to the herder in the afternoon. The women traders have herders which they pay 500 birr per month. The volume of operations differs; many of the traders say they can buy and sell up to 30 goats in a month.



Moyale market, October 27, 2012

Market Chain of small stocks

The market chains and destinations for various age and sex of small stock differ substantially. Old (male and female) goats and sheep are primarily sold for local consumption. A small number may be brought across the border to Kenya. Young male goats and sheep are trucked to Modjo/Bishoftu export abattoirs, passing through many hands. This market chain is extensive; it is less likely that the traders and pastoralists have direct transactions. Instead, the brokers travel several kilometers into the bush and negotiate with the pastoralists to collect a few animals together. Small traders weigh and group the animals within 0.5 to 1 birr difference per kg of live weight. These small traders sell the animals to relatively bigger traders who again sell to traders trucking the small stocks to Modjo/Bishoftu export abattoirs. Many small traders either sell the animals immediately in the same market or keep for a few weeks and feed them. This is particularly true with small traders keeping small stocks to gain weight and recover from the transportation stress, from El-waya, Dubuluq and other bush markets to Yabello area. Since this business is becoming one of the few options for economic livelihood, many young pastoralists are being attracted to the work. The entry point for many of them is acting as *dalala* or laborer.

Cross border livestock trade

The cross border livestock trade between Kenya and Ethiopia has been generally perceived as unidirectional from southern Ethiopia to Kenya. However, the actual cross border trade is more complex. It depends on the demand for specific types of livestock required on either side of the border. There is not much competition for animals required for Moyale/Kenya market and Adama/Modjo currently. Most of the animals to Adama and Modjo (central part of Ethiopia) are for export (mature bulls between 3.5-6 years, male camel, and small stock of 12-35 kg live weight). On the other hand, old bulls and infertile cows are trekked down to Moyale for consumption in Kenya. Young bulls and heifers exempted from export by Ethiopian government are also trekked/trucked to Moyale. Some traders suspect that these young bulls are exported to Gulf States via Somalia where there is no age limit for live export. The intention of banning young and reproductive animals from export by the Ethiopian government was to add value for future increased benefit. However, the demand in the Arab states encouraged the cross-border trade. There are some claims that the young animals are consumed in Kenya while still others say that the young bulls are for restocking purpose in northern Kenya. These different

understandings support the need for further information on the destination of these young animals.



These young bulls are collected at HaroBakke market on 21 October 2012. The trekkers were waiting for owner to start trekking to Dubuluq.

There are many factors affecting cross border livestock marketing: first, it is defined as illegal by the governments. Second, the price offered helps to determine the existing direction of cross border trade. Third, the potential profit from currency exchange also contributes to the direction of the cross border livestock trade. Fourth, as seen in recent months, the political and security conditions, as exemplified by the recent conflict in Moyale that brought cross-border livestock trade to a stand-still, albeit only for couple of weeks. Fifth, the prevalence of livestock disease also impedes cross-border livestock marketing.

During the recent conflict (July-September 2012) at Moyale, the livestock movement halted, and crossing borders was not possible. Fortunately, there was no shortage of pasture and water. Had it been a drought period, the conflict may have caused a loss of livestock, as people would not have been able to access the market in Moyale to sell the livestock. Livelihoods of the people were affected; pastoralists lost access to the market for weeks and hence no fulfillment of their financial need for social, cultural, and household purposes. Other people (traders, *dalalas*, trekkers, etc.) were also affected.

Some traders truck old goats from Yabello and other market places in Borana to Moyale using the luggage compartment of public buses. They have agents in Moyale who receive the animals when they arrive, sell them in the market and send the money back to the traders in Borana. I also observed this in Moyale. There are a few other traders who also send to Dilla in a similar transportation system.

A trader in Moyale who used to trade old cows and bulls to Nairobi says that he stopped doing so because of scarcity of livestock in Ethiopia. He attributes the scarcity to impacts from the 2011 drought. In addition, meat is sold for less in Nairobi compared to Moyale, making returns very low. Currently, there are not many problems in crossing the border. However, traders must pay a tax to do so. The same traders can and sometimes do operate on both sides of the border. I talked

to a person who is a citizen of Ethiopia, but lives on the other side of the border as he has Kenyan identification as well. He has family on both sides.

The market tax is 8 birr for cattle, 10 for camel (50 birr per vehicle carrying 5 camels), and 5 birr for shoats. However, there are additional payments which the municipality collects together with the tax to finance other activities like sport, although not considered as tax. In most cases it is 2 birr for cattle and 1 for shoats. This means a buyer pays 12 for camel, 10 for cattle and 6 for shoats.

The nature and dynamics of this cross border livestock trade is not fully understood due to lack of attention and the methodological challenges the cross border trade poses. Little (2006) noted the methodological challenges of cross border livestock trade research as: general lack of attention to the topic, poor infrastructure, lack of secondary data, and vastness of the region. Another important point of concern is the labeling of cross border as 'illegal' by the government. This increased the sensitivity of the issue making the livestock marketing actors very suspicious of the people they do not know. Despite defining the cross border livestock trade as illegal, the activity has continued. An important point here is that it is not the policy, but demand and price that determine the direction of movement for livestock types.

Cross border livestock marketing challenges

The prevalence of animal disease coupled with free livestock movement across the border exacerbates the risk of spreading livestock diseases. Mitigating livestock disease requires the cooperation of neighboring countries. The occurrence of contagious disease in one of the countries affects their neighbors as well, as importing countries impose bans simultaneously on countries that border the affected area. For instance, the Ethiopian animal and plant health regulatory directorate reports three export bans from Middle Eastern countries from 1997/8 to 2010 due to the outbreak of RVF (Rift Valley Fever) in the neighboring countries, not Ethiopia. As the region is known for its water scarcity, the congregation of animals at water points, specifically during drought, worsen the situation. Livestock diseases primarily affect the pastoralists, who bear the risk of livestock loss and hence food insecurity to the households. As mentioned by trader informants, despite their relative advantage of access to better medical facilities compared to the producers, traders avoid purchase during disease outbreaks, increasing the risk borne by producers.

Climate variability also poses challenges to cross border livestock marketing in different ways. For instance, it can create scarcity on one side of the border, shifting the direction of animal movement. On the other hand, the availability of pasture and water on one side of the border can encourage mobility across the border and hence sale of animal on the side of host country. The concern of pastoralists is herd survival and fulfilling family needs from the sale rather than taxation of the government or generation of hard currency. Therefore, they sell the animals to the person who offers them a better price regardless of any imposed border.

Who benefits

The benefit from livestock marketing seems biased to rich male traders who can manage the risks. Most female traders are restricted to operate in their own town, buying and selling a few head of goats per week. Female and other small traders are more concerned about the negative impacts of climate variability than the big traders. Despite the widespread knowledge of the possibility of transporting water and feed during scarcity, such options work only for capable traders and herders. Climate variability is incurring additional cost for small traders and poor pastoralists.

Most traders in Borana feel that it is the Adama feedlot operator/exporter that benefits most. One of the respondents explains his perception as:

Adama feedlot operators buy a bull for 7000 birr and feed them from 1 to 3 months. Then they sell it for an average of 14000 birr. They are undoubtedly benefiting most. *Loon kan adamaati, maqaan kan boranati* (literally: cattle are owned by Adama traders, the Borana ownership is nominal-the name). He adds: *gmoon adamaa keessa ijaajitu loon booranati* (means: skyscrapers in Adama are built by Borana cattle). Borana pastoralists keep cattle for years and benefit less than the person keeping them for 3 months. We small traders are not benefiting. Our operation is for subsistence.

In the chain of livestock markets producers bear the highest risk, but their relative benefit is less compared to those who buy and sell in the market or the feedlot operators. Rich traders benefit more due to their financial capacity, the volume of their operation enabling loss absorption,, their access to facilities,, and purchasing power to select animals they consider healthy that can survive. From the available information, it seems that the producers bear more risks from climatic variability. Access to information is also very important, despite the widespread mobile phone usage, pastoralists often do not have access to all pertinent information. A simple example from Borana shows this:

A pastoralist who lacks price information sold a heifer at a bush market between Web and Dubuluq for 1900 birr (Web is 50 kilometers from Dubuluq). After a few kilometers on the way to Dubuluq, the buyer sold the heifer for 2200 birr at another bush market. The heifer was eventually sold at 2500 at Dubuluq market. The pastoralist (original seller) who was following the transaction at different levels finally started shouting, saying 'I am robbed'. The issue was settled through negotiation, the pastoralist getting some additional money.

Despite the currency devaluation over years, the relative export value of live animals has increased. However, thousands of the Borana population continued to depend on food aid. Why? The benefits of livestock export trade are not trickling down, the wealth is skewed with only a few households controlling a higher proportion of the livestock and the big traders are benefiting from their increased and improved market access.

Climatic variability also affects small holders relatively more than the wealthy households who have more animals, diversified species, and diversified business activities.. The capacity to adapt to or recover from the shock also differs among different wealth groups, in addition to the severity of the shocks and stressors.

Opportunities and challenges

According to Hamito (2011), the annual total demand of Middle Eastern countries is about 207 thousand tons of meat and 12 million head of sheep, goats, cattle and camels. Based on the export data of 2009/10, the market share of Ethiopian exports was only 3.4 % and 1.4 % of the meat and live small ruminant demand respectively. This shows that there is a high potential to expand Ethiopian exports to the Middle East if the value chain actors in Ethiopia meet export market standards. Ethiopia stands in an advantageous position to other competitors due to its proximity to Middle Eastern countries, adaptation of importing countries to the taste of Ethiopian animals, and diverse agro-ecologies for production of different types of livestock (ibid). From a policy perspective, government interest and support for live animal export and export abattoirs has increased in recent years.

However, the livestock production system is not market-oriented, resulting in lack of sustained supply of marketable animals. Ethiopia's livestock and meat exports lack an efficient and effective livestock market system characterized by limited market information, absence of a livestock grading system to provide incentives to producers and limited promotion. Poor market infrastructure and lack of proper transport services, limited knowledge and capacity of value chain actors (producers, dealers, transporters, meat handlers, etc.) to meet international market standards, prevalence of livestock diseases and inadequate veterinary support services add to the problems (Hamito, 2011).

Another important constraint affecting livestock market actors is limited access to market information at the grassroots level. In particular, pastoralists lack clear and detailed knowledge on the desired livestock characteristics and health requirements of importing countries. Further, these producers are also not adequately informed of the importance of establishing source of origin, traceability mechanisms, and related certification processes for marketed animals.

According to livestock traders in Adama, they are competing with traders exporting via Somali directly from free grazing. These traders do not incur feeding, watering, medication, and other costs unlike their counterparts in Adama. Moreover, the Adama traders suspect that there is no quarantine requirement or quarantine oversight is limited, substantially reducing the expenses at the port. This makes Somali traders supply bulls at lower prices and even fulfill preference of many some Arab countries for the young bulls. This mostly happens when there is grass in pastoral areas. Seasons after rain in pastoral areas are times when animals are directly exported via Somalia. Even though the traders are not directly linking their preference for drought periods with such competitors, it seems that this could be one of the reasons they prefer dry seasons for their business. Another complaint is depletion of the animals due to illegal cross-border trade. This concern is equally shared with export abattoir operators for small stock. However, we need information from eastern Ethiopia to substantiate these claims.

In spite of the arguments that attribute the reduction in supply and increased local prices to illegal export, the problem may be deep rooted in the production system. The main suppliers to the export markets are small holder pastoralists whose primary goal is subsistence of the family. The production is not primarily for market. Moreover, frequent droughts and subsequent deaths of large numbers of animals impact the sustainable supply to the market. As the production is mainly dependent on naturally available pasture, the deviation of rainfall invariably impacts the pastoral production and the quality and quantity of livestock available for market. Tolera (2008) describes the production and reproduction performance of livestock under small holders with

poor feeding and management system as sub-optimal and unable to keep up with the growing domestic and international meat demands.

Policy constraints?

Despite the growing importance of pastoral production in the national economy and international beef market, government policy is becoming more stringent and harsh towards mobility, the basis of pastoral production and means of adaptation to climatic variability. The government of Ethiopia is tightening the policy on pastoral mobility, explicitly encouraging sedentary agriculture. While theoretically supporting pastoralism, the Ethiopian government policy clearly states that pastoralists must sedentarize to benefit from development endeavors. Besides the policy of sedentarization, privatization of rangeland, expansion of settlement in previous fallback areas, introduction of regional administrative boundaries and restriction and control on crossing the borders, (Helland, 1998), increased cultivation in the rangelands (Tiki *et al.* 2011), urbanization, provision of centralized social services (Fratkin, 1997), increased resource conflicts and insecurity have greatly constrained mobility. Control on crossing the international boundaries with the pretext of controlling the illegal cross border trade is another constraint to pastoral mobility. In addition, there have been cases of livestock confiscations by Ethiopian custom officials.

It is clear that pastoral communities on the border are more linked to communities nearby, even if divided by country borders than the communities in the center of their country. Diseases, droughts, and other natural and manmade hazards also affect the communities on both sides of the border, cementing their interdependence and strengthening the resource sharing and coping strategies.

Another concern from the producers and traders alike is the restriction from the government and stringent specifications from importing countries. In some cases the Ethiopian government export policy contradicts the specification of the importers. For instance, there is a weight limit of 320kg live animal and minimum price of 500 USD per head from the Ethiopian government. Officials will not give custom clearance to exporters, unless the above conditions are fulfilled, in addition to other requirements. However, some countries prefer to import young bulls of less than 3 years, in which the live weight is less than the Ethiopian government export regulation specifies. Importers who cannot fulfill their livestock requirement through legal trade look to other alternatives where weight limits do not exist, e.g Somalia.. Some people say the bulls available from Somalia are Ethiopian bulls channeled through Somalian markets, despite the ban through the legal export line.

Another concern from pastoralists and other small traders is the lack of demand for old bulls and cows in the international market. The demand for these type and age of livestock is in the local market and across the border in Kenya. Heifers are also exempted from export. The two possible market outlets for reproductive heifers are across the border to Kenya and central Ethiopia for reproduction. The marketing of heifers to central Ethiopia mainly takes place among different cooperatives or the links created by the agricultural bureau. Such sporadic demand for different age and sex categories makes livestock marketing uncertain in managing risks related to climatic variability. During drought, the demand for emaciated heifers and cows declines sharply and there may not be any buyers, as the feedlot operators buy bulls only.

Policy and local Knowledge: A gap?

Some feedlot operators complain about existing knowledge gaps in the management of the animals which is primarily prescribed by Western-educated Ethiopian professionals. They say that the professionals recommend the feeding conditions and management copied from Western ranch management systems. However, the animals' body condition, and their response to the same feeding condition does not align with the theory informed by different contexts and types of cattle. They believe ignoring the local knowledge gained through experience can affect their business operation. For instance, the professionals recommend that the animals stay a long time in the feedlot (to gain more weight), which the feedlot operators consider the main cause of loss to their business. The professional's advice also contradicts the requirement of many clients who want animals weighting between 250-280kg. The minimum live weight of export allowed by Ethiopian government is 320 kg. This difference in export policy vs. importers' needs promotes contraband because importers who cannot get the animal they want through the legal export system resort to other sources, mainly via stateless Somalia. According to respondents, this is a loss for both the traders and the government.

Early attempts in pastoral development and impacts

Interventions in the southern rangeland go back about four decades. The main focus at the initial intervention stage was technical assistance to increase livestock production and productivity through the provision of water points and increased market access for the pastoralists. Different approaches were suggested, among them cooperative ranches. This intervention was favored for three reasons: to transform the management system, increase pastoralists' access to markets, and ensure sustainable livestock supply to these same markets. It was also considered a solution for animal traceability, improved health and management conditions and a means to penetrate international markets. From this proposal onwards, different projects were implemented under different objectives, but always with the core focus of improving pastoralists' livelihoods by increasing livestock off-take. The early attempts advocated for restricting livestock movement within the ranch boundary for one year as a means of controlling disease transmission and then 4 months' stay in the feedlot for further fattening and stricter disease surveillance.

The project prepared for the southern rangeland development in 1974 envisaged disease free zones and penetration of the most restrictive Western markets 5-8 years following the initiation of the project. Thirty five years later, the same objectives are the focus of development interventions. Little progress has been made. Furthermore, the Borana pastoral production is now even more at risk to climate induced vulnerability. Why? The main argument for pastoral livelihoods improvement was access to markets. In this, there are achievements. There are market places in different locations. However, to what extent the pastoralists benefited from access to these markets is not clear.

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Annex I: case of Feedlot operators/exporters

The backgrounds of the livestock exporters/feedlot operators differ as they have varying years of experience in business. AB, 57, explains how he entered into the livestock trade:

Four years ago, I was operating a small food oil processing factory and supplying the by-products to feedlot operators as animal feed. One day it came to my mind that I should also be involved in this business. I started with 130 bulls. It was the most profitable and encouraging of all my operations then after. The government assistance and encouragement for export was another reason for me to get involved in livestock export. Now the business is not as attractive as when I started. There are many problems (see below).

AB lost 19 bulls at Djibouti due to various reasons which he does not properly explain. This impacted his relationship with authorities of the National Bank of Ethiopia because they demanded that he deposit the equivalent value of the bulls in USD. Therefore, he could not get export clearance after this incident and now sells to other exporters. He says that all risks are borne by Ethiopian exporters until the livestock board the ship. That was how he lost the bulls.⁸

Haji employs about 30 people, some of them family members involved in feeding the animals and health supervision. About 15 of his employees are cleaners. The wage for cleaners is nominal because while they do clean the feedlot, they also take the dung which they sell Haji has bank accounts in Yabello and Bule Hora branches to avoid carrying cash.

MS, a young exporter, also had experience in oil food processing before entering the livestock export business. Sintayehu started in the livestock business with finances from his family and expanded it with loans from banks. His initial capital 10 years ago was 30000 Ethiopian birr.

⁸ The main benefit to the Ethiopian government here is foreign currency that is earned. If a trader registers 1000 bulls for export, the government expects the equivalent value in USD to be channeled via the formal banking system. Otherwise, the trade is considered as contraband or illegal. The traders are paid in birr and are not allowed to collect USD. The transaction must be based on a LC. In this particular case, there was difference of 19 bulls between the registered number of bulls for export--for which the exporter got clearance from the government--and the value deposited in USD.

Annex II: information from Borana traders: case summaries

The following are summary notes from respondents in Borana.

1. YH

YH was a geography teacher in a public school. He holds a BSc degree in teaching. He decided to enter the business as a camel and cattle trader which he later abandoned due to the credit based operation and started small stock trade (supplying to export abattoirs). He says that his parents lost 1.4 m birr to a Yemeni trader. According to YH, the trader relocated from Yemen to Mali and could not be traced. There was no written agreement for the credit sales with the Yemeni trader.

YH has 28 buying agents based in Borana and Konso who collect the animals and hand them over to him. He gives the buying agents money in advance and tells them the maximum price he will offer per live weight. Based on the agreement, the agents buy and sell to YH. YH is based in Yabello and follows the transactions via mobile phone. He does not visit any market place. In addition to the agents, he has 10 employees who move around, collect and weigh the goats and sheep, and truck them to Mojo/Bishoftu/Addis Ababa. Five of them are based in Mojo and Bishoftu. They receive the livestock, keep them for two days so they can recover from the transportation stress and then hand them over to export abattoirs in Mojo and Bishoftu. He has weighing scale sites at Yabello, Dubuluq, Teltele, and Konso. The average live weight of the animal he buys is 22kg (ranging from 12 to 35). The purchasing price per kg between April and June was 25 birr. The current purchasing price is 29-30 birr per kg live weight. YH currently sells at 32 birr per kg live weight at Mojo/Bishoftu. However, he says that there is about 1.5 kg weight loss in transporting. Had it not been for his efforts to feed the goats in the rented holding grounds around Mojo/Bishoftu, the weight loss would have been about 4 kg per goat. He pays 4 birr per day per goat for feed and water during the two days recovery period at the destination market. One major problem for Habtamu and other traders trucking small stock to abattoirs in central Ethiopia is weight loss. In Borana, Habtamu weighs and buys goats and sheep that grazed the full day and drank water. Conversely, abattoirs weigh the animals in the morning when the stomach is empty. The traders say that this is forcing them to leave the business. For Habtamu the mode of payment depends on the demand side. If there is high demand, the abattoirs pay him cash. If the demand is not so high, it could be on credit, which he gets back after the chilled meat is exported and LC matures.

The locations/numbers of his agents are:

Twenty are based in different parts of Borana

Eight of them based in Konso

The favorable seasons for his business are during Eid al-adha and Ramadan. Habtamu says the demand is high during these Muslim holidays. Eid encourages sacrifice and sharing of food with the needy and neighbors, while the fasting season of Ramadan increases the demand for meat. Eid also encourages live goat and sheep export for sacrifice. Therefore, Habtamu buys the big goats beyond the weight limit of export abattoirs and supplies them to live animal exporters during Eid.

2. BL

He was the head of Meat and Livestock Development Board southern regional office during the military regime. He retired when the organization was sold to a private investor, currently operating as ELFORA.

BL started as a partner with two other Borana pastoralists. The initial contribution was as follows:

1. BG 49000 birr
2. ML 56000 birr
3. LB 47000 birr

They currently have 118 bulls grazing on free range at Abuno (28 km from Yabello). They pay 400 birr per month to the herder. They are waiting for the announcement of a bid from a company called Jakaranda agro-industry to supply with the fattening bulls. LB has acquired a plot of 10000sm to construct a feedlot in Adama. His plan is to start operations in 2013. If he cannot fulfill the facilities soon, he will rent the feedlot and start fattening cattle. BL and his partners also work for commission. In this case they get 100 to 150 birr net per bull as their commission.

BL and his partners keep written records of their transactions. They recently entered into an agreement with MA, a feedlot operator in Adama, to supply him with 1500 bulls. When interviewed in October 2012, they had sent 1200 bulls.

The average live weights recorded are:

The average live weight of 162 bulls sent to Adama on 14.10.2012 was 231kg

The average live weight of 29 bulls sent to Adama on 15.10.2012 was 246 kg

The average live weight of 68 bulls sent to Adama on 16.10.2012 was 230 kg

They do not have a written agreement with MN. MN transfers the money via a local bank that BLB and his partners use to buy bulls. BL and his partners carry a few thousand birr in cash that they can use to buy livestock from pastoralists. They go to the market with notebooks, negotiate the prices and write down the name of the seller and the amount of money they should owe him. They agree on the price, receive the bulls and pay the traders afterwards. This is to avoid the risk associated with carrying cash. The traders go to LB's house and collect their money, which usually happens the same afternoon or next day unless they previously negotiated for credit. Sometimes, the trader may buy more animals and may not have enough money on the account. This may cause a delay of payment for weeks or even months. During BLB's interview, many small traders came to collect their cash and were told to return next the day because the mobile network was down and he could not request the cash transfer he needed from Adama. BL remembers the day when he and his partners bought 527 bulls in the same market (Dubuluq) and paid 12,000 birr broker fee.

After loading the bulls on the vehicle to Adama, any risk is transferred to the partner at Adama. This is also on understanding, no written agreement. When the company is well established, the operation is based on written agreements, specifying terms and conditions. There is a level of impersonality regarding plc, and no binding social relationships, necessitating written agreements.

Cost of trekking:

Dubuluq to Harobakke 25 birr

El-wayya to HaroBakke 20 birr

HaroBakke to communal grazing area (20km away) 10 birr

Note: Most of the time, these costs are included as part of the purchasing price.

Climate variability

Liban prefers the dry season when the supply is high and prices are relatively low. However, Liban does not want droughts. He says they are a huge lose to pastoralists and the nation alike. Traders can manage to buy only a small proportion of the available cattle. This purchasing process is also selective and restricted to bulls for export. This benefits only a few rich traders. Many traders stop buying during drought. The majority do not benefit from the drought or the glut of available cattle for sale. He says, even if we try to buy as many cattle as we can, there are many constraints: transport, finance, lack of holding grounds, feed availability, medication, management and other related costs. Traders buy bulls and the remaining categories of cattle do not have demand. The drought also impacts production and reproduction of the animals, disrupting the continuous supply of livestock to market. Liban also practices pastoralism.

He comments on credit operation:

Buyers who take credit can change their mobile phone and may not be traced. If there is a formal and written agreement, they can be traced and brought to court. However, many local traders do not ask for formal agreements because they think that the big trader goes for another trader (not to put much pressure on the trader). It is considered mistrust. The role of *dalalas* in convincing traders to enter into such informal credit schemes is also significant.

Information exchange

Liban says that he calls Belachew Hurrisa, former livestock marketing authority director and now employee of USAID, to know the plans of the government and NGOs regarding livestock marketing and to determine any intention of policy change. He says he acts on the basis of policy direction. For instance, if the government is working to ban the export of certain categories of animals (age, sex, weight limit etc.) they act accordingly and avoid buying these categories. Mobile phones play an indispensable role in their business. It links them to traders in Adama, small traders in Borana, facilitates money transfers and aids in business negotiations.

Cross-border Trade

According to BL, the Ethiopian cattle are exported via the Somalia Republic. He says there is a better price on the Somalia side. The chain is short (few middle men), transport to the port is relatively short, and there is no feeding cost. The animals are exported directly from free grazing. The charges at the ports of Somalia are cheap, or non-existent. He says Kenyan sheep and goats come to Ethiopia from Chalbi and Marsabet.

3. IW

IW started in the livestock trade with three goats. He buys and sells small stock in the same market. He buys bulls from El-wayya and Dubuluq which he either sells in the same market or treks to Haro bakke market, depending on demand. He pays trekkers 20 birr per bull. On 19.10.2012, he bought 5 bulls at Dubuluq market and sold them the same day to Adama feedlot operators in the same market. He paid 250 for *dalala* and his net gain was 600 birr. He bought the five bulls for 27,000 (ranging from 5000-7000). He does not keep written records of his business and says he does not remember the number of cattle he bought and sold in the last six months. IW partnerships with others are not permanent and depend primarily on his daily cash requirements. He cooperates to buy and sell in one market with one person and in the another market with another partner. Establishing permanent partnership requires having similarities, chewing chat together, drinking together etc. IW says he does not fulfill such requirements and cooperates with others in the market alone.

IW is also a farmer. His farming strategy is buying *kallo* (pasture reserve) from farm owners and using it for grazing until he sells the bulls. Recently, he bought grazing land surrounding a farm of an individual for 800 birr. This was used for a week for six bulls. For IW, the most important factor influencing his business is not the season, but presence or absence of traders in the market. If there are big traders in the market, he buys and sells. If there are no traders in the market, he may not make any purchases. What determines his business operation is therefore the demand side. He is also aware of how climate events affect supply as well as demand. He says few traders come to buy during drought, and the stage of drought determines potential benefits. If they arrive at the late stages of drought when the animals are too weak, the chance of their recovery becomes slim. In order for traders to benefit, the animals must be capable of responding to feeding and medication. Late action is a loss-loss situation for both the traders and pastoralists. The death of animals also affect the future reproductive capacity of the cattle in the region, and continuity of the livestock trade.

During the 2011 drought, IW lost 2 bulls out of 5. This was an enormous loss for him. He bought the bulls during the onset of the drought when the prices were relatively high (3500+6700). His future business strategy during drought depends on the availability of feed in stock. If he can store feed beforehand, he can buy cattle.

IW sold on credit to an Adama feedlot operator in August and he did not get 7000 birr yet. The reason for selling to the operator on credit was to avoid a long period feeding at Yabello. Waticha's main business constraint is his lack of finances to buy a viable number of bulls and keep them fed until he gets a buyer.

One main problem most traders bring up is the frequent disappearance of animals, particularly small stock. Even if the traders try to mark the livestock with their own identification, people are clever and can clean it off easily. Another emerging problem is the purchase of stolen animals, later resulting in conflict with the real owner whose property was stolen

Trekking

The number of animals a trader buys depends on the financial capacity of the person. Therefore, the trekkers may team-up and trek bulls of many small traders at a time. A team of 2-3 trekkers can trek about 100 bulls. The fee is a fixed amount per bull and depends on the distance trekked.

HGHG was a trader of camel, cattle, and shoats. He stopped shoats' trade due to their weight loss during transport and the stringent rule of abattoirs to weigh the animal in the morning, when the stomach is empty. HG keeps the animals on the 48 ha grazing land he leased 27 km from Yabello. This grazing land is used for his family herd as well as livestock he buys for trade. He uses a pond as well as motorized borehole. The motorized supply of water costs \$0.75 per head of cattle and \$1.25 per camel for every watering day. The watering day for cattle is every third day while camels can stay hydrated after drinking for up to seven days. The watering cost for small stock is 50 cents per watering day.

HG supplies a few people in Adama and operates on written agreements, specifying age, price and body condition. He uses his own money to collect the livestock. HG pays 6000 man-day per year (including his farm workers).

HG says that he has an accountant but we never got the opportunity to talk to him. Sometimes, Garbi works on commission. For instance, he supplied camels on a commission of 200 birr net per camel recently. He lists all the operation costs and transfers them to the Adama agent. However, he does not prefer working on commission.

HG sold livestock in Moyale for about 10 years.

HG claims that he make an average net profit of 150-200 birr per bull. Fees for the *dalala* and taxation are considered as part of the purchasing price. Trekking and labor costs are deducted from the gross profit. HG says that as long term business relationships are more important than one time profits, traders in Borana are cautious of not exaggerating their profit. When the transaction is with a new person, profits up to 1000 birr per bull is possible. The profit margin also depends on demand. When there is high demand, we add a bit, he says.

4. MM

MM graduated from Yabello pastoral college in 2011. He entered into the business first as a trekker, then collecting animals as an agent to others. He uses his own money to purchase animals as well as some from the better-off traders. He supplies small stock to Habtamu (see earlier). He says that his fellow

graduates are not employed and dependent on their families while he is capable of sustaining himself. He buys small stock and keeps them for a few days, giving them food and water every day. He uses his family plot to keep the goats. He uses family labor. The goats browse with the family herd. During this “holding period” his main priority for the animals is weight gain. He operates on pre-agreed prices per live weight and the weight gain is a means of maximizing his profit. He also sells to any person offering better prices. He does not trek to market, but negotiates and sells the stock from home. He also practices pastoralism. He has had experiences where he was forced to buy small stock before having it weighed because the seller refused to weigh it. This was not good for his profit.

5. TI

These are the sentences TI used to show how the livestock trade business is viable. *Loon wal nyaatu malee nama hin nyaatan. Loon nama nyaatanii garuu hingeessan.* The first sentence states that if you lose on one cattle you profit from the other and compensate. The second sentence is stronger. It says loss from cattle will not take you anywhere. This means, you can keep it and profit. As long as you can feed them, you can profit, he says.

On 21.10.2012, he bought 9 young bulls from HaroBakke and sent them to Dubuluq, en route to Moyale. He pays 25 birr per head for trekking. He received the bulls from trekkers on Friday morning and then sells them in Dubuluq market. He also sells cattle at Bakke market if he gets profit. If the animals are not sold on Friday at Dubuluq, this costs him 20 birr per head for one week herding around Dubuluq again. For Ibro, selling on credit by small traders is an attempt to reduce costs, when they could not find buyers.

6. BB

On the day that I met BB, he and his partner had 3 bulls from El-wayä, 2 from Dubuluq and bought 2 others from HaroBakke. At the end of the day they sold 5 and 2 remained from El-wayä. According to BB, the price of bulls older than 7 years was 12000 birr before July, dropping to 8000 birr in August. Now, in October, the price had recovered somewhat to 9000 birr. Therefore he estimates the average in the last six months to be 10,000 birr.

7. DS

DS started with assisting other traders and earning money when he was a student. His father was also a trader. Working with other traders helped him build trusting relationships and enabled him to borrow money to start his own business. He mostly buys from Alona (bush market close to Arero). The market day for Alona is on Friday. He buys from Alona and treks to Harobakke. This happens during the dry season when pastoralists do not want to trek the cattle long distances due to the weather conditions. However, he is not happy with the prices offered at Harobakke because the market is dominated by Guji cattle and traders want to use Guji cattle as a standard to set the price for Borana cattle. Therefore, if the prices are set too low for Borana cattle, he may be forced to trek to Dubuluq. He buys and sells cattle,

camels and shoats. He also supplies ELFORA and Modjo modern export abattoirs. If he is successful, he can supply 4-7 vehicles per week (1 vehicle estimated to hold 170 shoats). He also complains about the problem of weight loss and the rigid weighing schedule of the abattoirs in the morning when the animals' stomachs are empty. Transport per goat is about 25 birr. As other friends, he has now stopped buying shoats for abattoirs since incurring losses from past agreements.. He says procuring transport for shoats is expensive since there are not many vehicles with double decks to transport shoats and they are rarely available.

DS hates the management in the camel trade. Camels disappear and return to the family that originally owned them. Searching for them and bringing them back incurs additional costs. Transporting them immediately addresses this issue.

If DS learns that drought is approaching, he sells the animals he has in the stockyards and stops buying others.

8. AT

AT is a shoats trader. He keeps records of the total kg weighed, number of animals, and other associated costs for each market day. On 21.10.2012 at Harobakke market, he bought 26 shoats for 28.5 birr per kg live weight. He says when it rains, the goats shrink and lose weight. According to this informant, if the prevailing price for live weight is 28.5 birr per kg and if it is raining on the day AT weighs and receives the goats from his agents, he may pay 28.75 birr per kg live weight, depending on the negotiations with the agents. Note that weighing and receiving the goats from agents can take place the same day in the same market or agents may trek and keep the goats for few days. There is no uniformity in this process. While trekking or keeping the goats, it may rain and force the two sides to negotiate and set new price. In such situations, he adds some cost for his customers to sustain the business relation. He used to supply Modjo abattoirs. Due to the credit problem, he stopped and now sells to other traders in Yabello. He is one of the 28 agents of Trader H. AT sold 70 goats last week and had 40 in stock when I interviewed him in October.

Buying stolen animals is one of the problems he occasionally encounters. If theft is proven, he returns the animals to the owner. If he can trace the seller, he may be able to get his money back. No trader mentioned that cases are taken to court. Of course, theft is becoming a common problem in southern Ethiopia, especially on the borders with other pastoral groups like Gabra. Theft seems to be replacing cattle raid as a source of stolen animals.

Other problems:

- Death of the animals due to disease. One of the main problems related with goat trade is *sombessa* followed by *azurite* (goat diseases).
- Some lost to snake bites.
- Some eaten by wildlife.
- Some die due to abrupt weather changes. This mostly related to the unexpected arrival of rain that causes death of goats.

During the long dry season, goats can gain weight easily depending on their previous feeding conditions. If the goats are from a feed scarce region, they can adjust to Yabello feeding conditions. If they are from a region that has ample browse and fodder supply, it is difficult for them to adjust. AT negotiates with Trader H on the price per kg live weight and collects the goats. The weighing takes place in the afternoon when the animals are full from their morning feeding and watering. During the rainy season, pastoralists often withhold animals from the market and prices increase.

Notes on Market Chains

Small stock are mostly supplied to abattoirs in Modjo and Bishoftu. *Dalala* travel a few km into the bush, negotiate a price per kg, and come back with the animals. Then the small traders, like AT, weigh and pay the *dalala* who then pay the pastoralists. “We then hand them over to bigger traders trucking to abattoirs,” says AT.

9. HR

HR buys and sells about 10 bulls in a week. For HR the availability of cash and the personality of the buyer determines how quickly the seller is paid. According to HR, every trader tries to maximize the profits, sometimes dragging out repayments. Like many other small traders, HR also prefers the season of resource abundance for his business. He remembers the impact of the 2011 drought when he paid 25 cents for every watering day to sustain each of the 50 bulls he kept for 2 months. It was a large additional cost for him. HR summarizes the importance of mobile phones in business : *Mobayiliin ila nama bane*—“the mobile phone opened our eyes.”

10. KA

KA has a license to trade and complains about competing with unlicensed traders who do not pay tax. KA explains how he came into the business:

When I was a kebele security guard, one of the big traders reported to me the loss of 20 goats and I helped him find the goats. Then he approached me and gave me 5000 birr to work for him, sharing the profit. Over time I became a self-sufficient trader. However, due to the credit based operation and confiscation of 20 bulls; I am temporarily out of business.

He lost 20 bulls to Moyale customs, confiscated about 20 km inland. According to KA, he was trekking the bulls to hotels in Moyale Ethiopia. He took the case to court and won and is waiting for the compensation. There are similar cases where the custom officials confiscated animals far from the border and the court ordered customs to compensate the owner. Other informants also say that cases like this forced the customs authorities to relax their tight control on the border. KA condemns the monopoly of a few big traders who are trying to impose price limits, and calls for more big traders. He also calls for local traders’ capacity building to respond to climate variability, so that they are not forced to sell the animals on credit. He says this will also assist in the destocking.

11. UM

He buys and keeps slim animals for about 2 months on communal grazing grounds to improve their body condition. While interviewing UM, a small trader came to ask him for a repayment on the goats he supplied to UM. UM had sold the animals to an abattoir on credit, and he explained that he is waiting for repayment.

12. DB

DB started as a trader of thread, then pushed a hand cart; the profit from this business enabled him to construct a house. Then he used the house as collateral to procure a bank loan and started in the livestock trade. He sends old goats to his agents in Dilla and Moyale who sell them to consumers and hotels. He also supplies local abattoirs. When he does not get vehicles to transport the animals, he pay herders to take care of the animals. He also uses luggage compartments of public buses for transporting the goats to Dilla and Moyale. DB makes a profit of 50-100 birr per goat he sells.

13. CW used to supply to ELFORA when it had its purchasing site in Borana. When ELFORA, the large Ethiopian-based agribusiness firm, withdrew from Borana, CW started a deal with another trader. Currently he supplies goats to the trader at 29 birr per kg live weight. CW keeps the animals for one week, feeding them to gain weight. He can receive up to 20,000 birr advance from Trader H without any written agreement. He is also involved in small scale fattening. He fattens the bulls used for plowing and sells them. The main challenge to his trade is the sometime disappearance of the goats he buys. The only means of identification of the goat ownership is the mark painted on the body of the animals. This can be washed away very easily and painted with another color and mark. Some of the paints that are insoluble in water are washed by kerosene.

CW says that his net gain is 10 birr per goat. One of the main costs he incurs is for water, as he must provide water to the goats in order for them to gain weight. Despite complaining about the watering costs, CW prefers the dry season for his business as it is the season when goats can gain weight easily. He expects a maximum of 1 kg weight gain for a week of feeding during the rainy season while this can be 2 kg weight gain in dry season.

However, he does not like drought. He lost 19 cattle during the 2000 drought period. If he gets involved in the cattle trade, the rainy season or seasons of feed availability are preferable to him. He does not keep cattle for long, preferring to buy and sell immediately. During the 2011 drought, he stopped trading and migrated with his family herd. Only two of his 20 cattle died. A challenge to his business is his inability to fulfill the ever changing specifications for livestock (mainly weight limit) from importers. Price fluctuation is another challenge.

14. HB

HB is a cattle trader. He buys and sells about 12 bulls per week. Two of his partners are located in rural areas and they use communal grazing land for the cattle they buy.

15. MS

MS owns a feedlot at Adama. He exported livestock 3 times, and incurred financial losses in two of the transactions. Now he sells cattle to other exporters. The causes of the losses were: 14 bulls tested positive for Lumpy Skin Disease (LSD) and were rejected from export in October 2011. He sold them to local traders at a loss. Waiting for shipment was another cause for financial loss. Since a ship carries 1200 bulls, he had to wait at the port feeding the animals for about 21 days. MS did not have a sufficient number of animals (1200 bulls) to fill a ship only with his animals. Therefore, he was waiting for another exporter to fill the gap. This means, MS transported the bulls to Djibouti without having enough information regarding the shipping system and its requirements at the port of Djibouti. Finally Trader FK's bulls arrived and shipment commenced. When he exported live weight was 1.6 dollar per kg at Adama while it was 1.85-1.95 dollar at Djibouti when he finally shipped them. According to SM, all the costs before the animals board the ship are the responsibility of Ethiopian traders. It is very infrequent that traders insure against accident.

16. BK

BK buys goats from El-wayya and Harobakke and supplies to Yabello consumers and hotels. He has 2 regular customers that are hotel owners:

- Meraha buys 2 goats per week
- Malimu buys 4 goats per week.

In the last six months, he supplied hotels with approximately 144 goats: 6 goats times four weeks times six months equals 144 goats. $4 \times 6 \times 6 = 144$ goats

On average, he sells 3 goats per week to other consumers. He mainly buys and sells old female goats. On the day I interviewed him, he was coming from El-wayya market. He sold 4 goats to the hotels he has agreements with before coming to my hotel for an interview. He claims that he earns 20 birr net per goat from his standing order with the hotels. He explains the change in transport cost as:

Cost item	From El-wayya to Yabello	4 years ago/2008	Now/2012
Trekking		2	5
Trucking		3	8
Taxation		3	7

He bought the last goats for 450-500 birr

He is constrained by lack of finances or access to credit. He has experienced little growth in his business in the last 15 years. 'Unlike the male goats and bulls, our operation is localized and our profit margin is

narrow', says Kuka. I asked him why he does not go to other market places and explore possibilities there. He says 'I do not want to lose my small money to skillful thieves elsewhere'.

17. KK

KK is based in Moyale and supplies to Adama traders. He sources the animals from Ethiopia as well as from Kenya. When he buys from Kenya, KK says that he pays double taxes, 35 birr on the Kenyan side for a bull and 12 birr on Ethiopian side for the same bull. Traders in Adama send advance money to KK (as much as 3million birr) and KK buys cattle and camels with it, combining the sum with his own money. His operation is based on the orders that come from Adama as he does not enter into written agreements in his operation. He expects a profit of 1000 birr per camel. Labor cost, brokers' fees and other costs are deducted from this.

During the 2011 drought, he rented a water tanker to transport water to his family herd and livestock for marketing. He also charged other pastoralists 3 birr per cattle for a single watering time. He remembers paying 160,000 birr for the rented water tanker during the drought. During this period, he sustained 200 mature cattle and 70 calves.

KK also remembers other wealthy pastoralists like *aba gada* who rented water tankers to transport water. Some of the pastoralists teamed up and shared the service and the costs. This reduced the energy requirements for the cattle to move and enabled fast recovery for many of the cattle.

KK pays taxes, brokers' fee, and other costs involved in his business in Moyale, while the cost for transport is paid to people in Adama. He gets his money back when the animals are sold. According to KK, there are two sources of finance in this business: credit from KK himself or from his partner based at Adama. KK gets back returns on his initial investment (principal plus the growth as profit). Fees at Moyale are considered as part of the purchasing expenses by KK

According to KK, many traders whose animals were confiscated by customs authorities won the cases in court. The basis of their claims were that they were trekking to Ethiopian Moyale without the intention of crossing the border and the court accepted the argument. Many of the animals were confiscated before reaching Moyale town.

Annex III: Notes on Haro bake market information from Borana traders: case summaries

On October 21, 2012, the price of camels are down compared to previous months. The price for bulls (male cattle) had increased in comparison to prices in August and September when it dropped due to Adama feedlot problems because of heavy rains, and conflict in Borana. During the heavy rain in Adama, feedlot operators limit their purchase or stop completely depending on the location of the feedlot. There are other reasons mentioned for this slowdown: slow weight gain of the animal during cold months, increased flood and mud in the feedlot. About 500 cattle were estimated to have been sold on October 21st, 2012 (Borana zone tax collector). I observed hundreds of young bulls (<3 years) trekked to Dubuluq market from HaroBakke. One of the informants trades young bulls and heifers which he treks to Dubuluq. The final destination of this category of animal is Kenya. The demand for such young animals rises when there is a good demand for old bulls, because many pastoralists sell old bulls and buy one or more young ones as replacement. Therefore, the informant prefers to buy the younger animals when there is a demand for mature and old ones in Adama. This informant does not take the animals to Kenya, but he says that those people trekking to Kenya make an additional profit from currency trading . Many of the small traders keep the marketing animals on communal grazing land and they pay for herder labor only.

On this market day the following observations were made:

- A truck carrying 17 bulls charges 5500 birr from Haro Bakke to Adama
- Vehicle broker fee is 200 birr
- Buying brokers' fee is 30-50 birr per bull
- Tax is 12 birr per bull
- Loading fee per bull is 10 birr (170 per truck)
- 'combiner' fee is 450/truck. This is a person travelling with the bulls. He will be on the top of the truck to ensure the safety of the animals.
- Average purchasing price of mature bulls=7000
- Purchasing price ranges between 5000 and 9000 birr
- Camel price 10000 to 13,000. The price drop is attributed to lack of demand from importing countries Demand increases during Muslim holidays, but there are none approaching resulting in the price drop.



Meat market at HaroBakke.