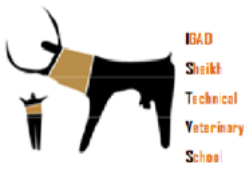




# An analysis of the hides and skins value chain in Somaliland



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PROGRAM ON  
Livestock



# An analysis of the hides and skins value chain in Somaliland

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# Acronyms

FGD	Focus group discussion
GDP	Gross domestic product
ICPALD	IGAD Center for Pastoral Areas and Livestock Development
IGAD	Intergovernmental Authority for Development
ILRI	International Livestock Research Institute
ISTVS	IGAD Sheikh Technical Veterinary School
LIVE	Livestock investment and vocational education program
MoNPLD	Ministry of National Planning and Development
SLCCIA	Somaliland Chamber of Commerce, Industry and Agriculture

# Disclaimer

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## Summary

Livestock is the main source of livelihood and national income in Somaliland. However, it is increasingly being recognized that Somaliland needs to diversify its export portfolio and range of export markets in response to the declining rate of growth of live animal exports. Enhanced trade in hides, skins, leather and leather products presents a potential means for fostering the diversification of the Somaliland exports. Surprisingly, despite a growing body of literature on the marketing of live animals in Somalia, not as much is known about the marketing of hides and skins. To address this dearth of information, a value chain analysis was conducted to map the hides and skins value chain in Somaliland, generate an understanding of the constraints hindering the performance of the value chain and identify potential opportunities to upgrade the value chain.

The findings show that the hides and skin sub-sector employs over 1,190 individuals: 1,050 men and 140 women. Hides and skins collectors account for most of the value chain actors (77%) compared to wholesalers (17%), exporters (5%) and dry hides and skins exporters (4%). Tanning activities generate relatively high number of jobs and value addition, but only up to the wet blue (chrome-tanned) processing stage. The exports of hides and skins sector has declined in recent years (both raw and wet blue) by 30% between 2014 and 2016 and this resulted in the closure of two tanning factories. The situation is attributed to increased competition in the international market, according to the interviewed value chain actors. The financial loss to Somaliland due to the reduced volume of hides and skins exported in 2016 was estimated at more than USD1.9 million worth of sheep and goat skins and USD1.12 million worth of camel hides.

The challenges facing the sector include the low quality of hides and skins due to defects accumulated before, during and after the slaughtering of animals and the lack of harmonized policy and coordination among government agencies involved in the regulation of the sub-sector. It was recommended that government and other development agencies needed to support the sub-sector to unlock its potential in the fight against unemployment and poverty starting with the formulation of a leather sector development policy and strategy.

The developed strategy should, among others, put emphasis on improving the quality of hides and skins produced in the country, upgrading of the existing animal slaughter facilities and equipment, and building the capacity of personnel involved. Other aspects should include the adoption of salt recovery technologies such as those being used in tanneries in Ethiopia in order to make the industry more environmentally friendly, and the intensification of value addition beyond the wet blue so as to produce finished leathers as well as leather products.

# I. Introduction

## I.1 Background information

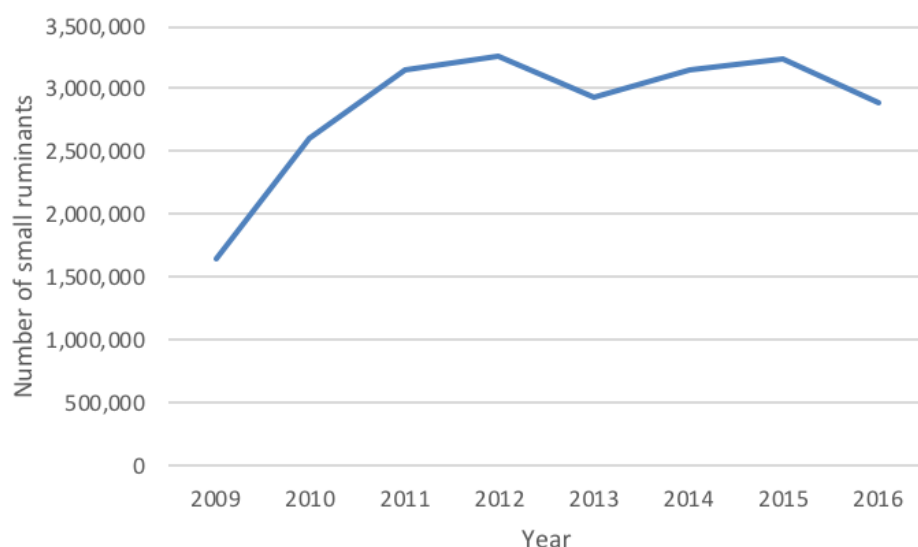
Somaliland lies in northwest Somalia and has a population of about four million. With an estimated GDP per capita of USD444 in 2012 Somaliland ranks as one of the poorest countries in the world (Ministry of National Planning and Development—MNPDP 2017). After more than a decade of internal conflict, Somaliland has managed to secure peace culminating in a reclassification of the country's status from 'humanitarian and recovery' to 'reconstruction and development'. This reclassification follows about two and a half decades of relative peace and stability. The Somaliland National Development Plan for 2017–2021 describes the country's focus as economic growth, sustainable development and poverty reduction.

Livestock is the leading livelihood source for the people of Somaliland. The sector is also the leading foreign exchange earner and the mainstay for the country's economy accounting for about 30% of the GDP (MNPDP 2017). Saudi Arabia is the main export destination for livestock from Somaliland. As the country is heavily dependent on food and other imports, earnings from livestock exports are used to finance importation. However, due to increasing volume of imports which is not matched by similar growth in live animal exports, Somaliland has a large trade deficit which is financed by aid and remittances. To address the situation, the current government policy calls for the country to make efforts to diversify the range of export commodity portfolio and markets.

Live animal exports from Somaliland grew rapidly after the lifting of a nine-year ban by Saudi Arabia in 2009 on animal imports from Somalia. In recent years; however, the growth in animal exports appears to have flattened out (Figure 1) associated with the inability of livestock producers to expand the sizes of livestock herds/flocks reared due to limited land resources (SNCCIA annual reports 2009–2016). As growth in income is key to poverty reduction, efforts should be made to realize higher income from the volume of animals marketed and/or promote growth of export trade in alternative commodities besides live animals. Enhanced export trading in hides and skins provides a way for improving earnings realized from animals marketed and slaughtered for domestic consumption in Somaliland and/or diversification of the country's earnings from commodity exports. However, to come up with strategies that offer the best potential for growth of the hides and skins export trade, a good understanding of the value chain is required including constraints and opportunities facing actors in the chain.

Hides and skins are some of the valued by products from the livestock and meat industry for their use as raw materials in the leather industry. Revenue realized from sales of hides and skins serves to foster the competitiveness of livestock activities by enhancing the value of animal offtake. In Somaliland, export marketing of hides and skins from the domestic meat industry form part of the thriving livestock export trade. Hides and skins export destinations include India, China, Pakistan and Italy and other parts of Europe (Ombui et al. 2014; SLCCIA 2015; SLCCIA 2016). Surprisingly, despite a growing body of literature on livestock marketing in Somalia (Negassa et al. 2008; Mugunieri et al. 2014; Mtimet et al. 2015; Wanyoike et al. 2015; Mugunieri et al. 2016; Costagli et al. 2017), not much is known about the marketing of hides and skins owing to a limited number of studies on the sector.

Figure 1. Annual number of small ruminants exported from Somaliland from 2009 to 2016



Source: SLCCIA annual reports (2009—2016)

From mid-2000, the International Livestock Research Institute (ILRI) and Terra Nuova have been conducting a series of studies on livestock and chilled meat export marketing in Somalia (Negassa et al. 2008; Negassa et al. 2012; Mugunieri et al. 2012). None of these studies have; however, have included marketing of hides and skins in their analysis. Likewise, a recent study by ICPALD (2014) on ‘good practices and lessons in the hides and skins value chain in the IGAD region’ failed to collect any primary data from Somalia and instead relied on available scanty secondary data. By the same token, a study by Ombui et al. (2014) on ‘performance and competitiveness of Somaliland livestock sector’ provided a brief qualitative description of the hides and skins value chain but hardly included any quantitative information.

To address the dearth of information on hides and skins marketing in Somalia, the IGAD Sheikh Technical Veterinary School (ISTVS), ILRI and Terra Nuova conducted an analysis of the hides and skins value chain in Somaliland<sup>1</sup>. The study was conceived as part of the efforts to identify options for enhanced value addition in the livestock sector in Somalia in response to declining rate of growth in live animal exports.

## I.2 Objectives of the study

The general objective of this study is to generate a documentation of the hides and skins value chain in Somaliland. The specific objectives are as follows.

- i. To conduct a mapping of the hides and skins value chain in Somaliland including:
  - types and forms of products traded;
  - main actors involved, costs incurred and benefits received;
  - institutions and governance structures supporting the hides and skins value chain;
  - network of partners supporting the activities of the core actors in the value chain; and
- ii. To generate an understanding of the constraints hindering the performance of the value chain and value chain actors.

<sup>1</sup> The study was undertaken under a project funded by the Danish International Development Agency titled *Provision of livestock investment and vocational education program (LIVE) in Somalia*.

- iii. To identify potential opportunities to upgrade the value chain.

The remaining part of this technical report is structured as follows. Section 2 presents a review of the terminologies and typical processes in the hides and skins industry. A description of the methodology used in this study is then given in Section 3. Section 4 presents the study findings followed by Section 5, which presents the conclusions and recommendations from the study.

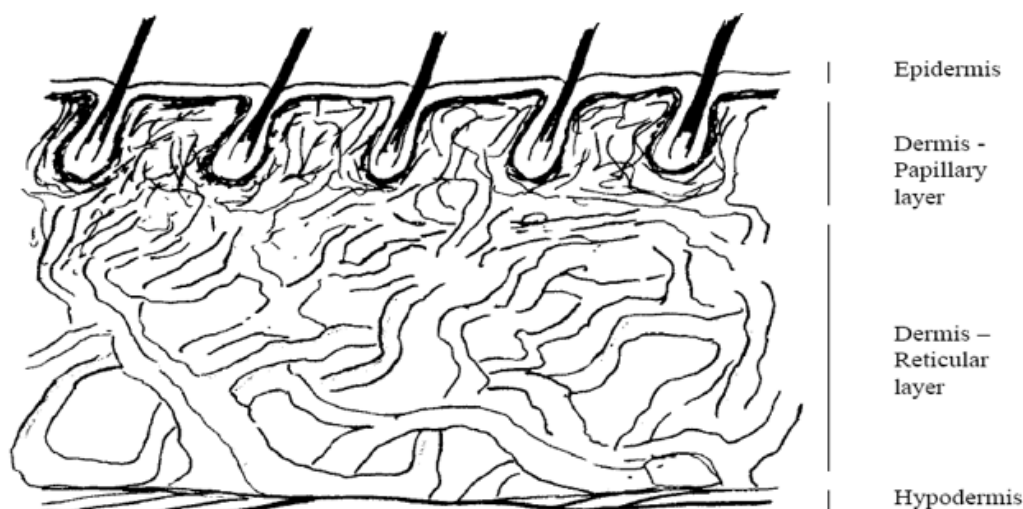
## I.3 A review of terminologies and typical processes in the hides and skins industry as used in this study

### Morphology of hides and skins

Hides and skins are the external integuments of animals; and include materials derived from birds, fish, amphibians, reptiles and mammals. Although hides and skins exhibit considerable variation in size and form, mammalian hides and skins consist of three layers: Epidermis (a thin outer layer of epithelial cells), Corium or Dermis (the thickest layer), and fleshy layer or subcutaneous adipose (hypodermis) as shown in Figure 2 (Leach 1995). The transformation of hides and skins into useful products includes:

- i. curing of the fresh material to prevent spoilage.
- ii. tanning, which converts the hides and skins into leather used in the manufacture of footwear, garments and other leather products.

Figure 2. Transverse section of typical hide and skin



Source: Leach 1995

### Curing of hides and skins

After slaughter, hides and skins need to be cured<sup>2</sup> mainly through salting and drying (dry salting) to minimize the likelihood of putrefaction. After slaughter the hide becomes a perishable commodity. Time and temperature are crucial factors. Green hides and skins should be treated for proper conservation within a couple of hours from slaughter. This period

<sup>2</sup> Curing is employed to prevent putrefaction of the protein substance (collagen) during the time lag from procuring the hide to when it is processed. Curing removes water from the hides and skins using a difference in osmotic pressure. The moisture content of hides and skins is greatly reduced and osmotic pressure increased to the point that bacteria are unable to grow. In wet salting, the hides are supposed to be heavily salted, then pressed into packs for up to 30 days, while in dry salting the salted hides and skins are air dried (but seldom sundried). It is important to note that there is also brine curing (though not common in Somaliland) where the hides are agitated in saltwater bath for about 16 hours. Furthermore, curing can also be accomplished by preserving the hides and skins at very low temperatures.



can be longer in cold climates ( $<20^{\circ}\text{C}$ ) and shorter in hot, humid climates like the one in Somaliland. Apart from bacterial action, a hide or skin can consume itself in a process called autolysis, which reduces the hide to gelatine.

It is important to note that in some cases, a combination of wet salting and drying (dry salting) is used to cure hides and skins. Hides that are wet salted can be dried afterwards and be turned into a dry salted hide. Dry salted hides have a better quality than air dried hides, whereas wet salted hides are of better quality than dry salted hides. As is normal practice, dry salted hides are found in countries with a hot climate (like Somaliland) where wet salted hides would not maintain their natural moisture. What happens in hot climates is that wet salted hides slowly dry out at the edges when undergoing curing or while awaiting shipment. The inner part of a hide would contain a high percentage of moisture whereas the outer edges would be bone dry. Due to the temperature of the environment it is likely that the humid core of a pallet of wet salted hides will slowly deteriorate. Once a hide is dry, contact with humidity should be avoided unless for rehydration for processing, as it will restart bacterial growth and putrefy; whereas if the hide is completely dried, there will be no bacterial growth. This perhaps explains why dry salting is the preferred option in countries where temperatures are high<sup>3</sup>.

## Hides and skins tanning

Tanning is the process that converts the protein of the raw hide or skin into a stable material which will not putrefy and is suitable for a wide variety of end applications. The principal difference between raw hides and tanned hides is that raw hides dry out to form a hard, inflexible material that can putrefy when wetted again, while tanned material dries out to a flexible form that does not become putrid when wetted back. Many different tanning methods and materials can be used; the choice is ultimately dependent on the end application of the leather. The most commonly used tanning material (even in Somaliland) is chromium, which leaves the leather, once tanned, a pale blue colour. This product is commonly called 'wet blue' (Heidemann 1993).

The acidity of hides once they have finished pickling will typically be between pH 2.8–3.2. At this point, the hides are loaded in a drum and immersed in a float containing the tanning liquor. The hides are left to soak while the drum slowly rotates about its axle and the tanning liquor slowly penetrates through the full substance of the hide. Regular checks will be made to see the penetration by cutting the cross section of a hide and observing the degree of penetration. Once an even degree of penetration is observed, the pH of the float is slowly raised in a process called basification. This basification process fixes the tanning material to the leather, and the more tanning material fixed, the higher the hydrothermal stability and increased shrinkage temperature resistance of the leather. The pH of the leather when chrome tanned would typically finish somewhere between 3.8–4.2 (Sharphouse 1983).

During the tanning process, the epidermal and hypodermal layers are removed. Only the corium layers are tanned into leather. The Corium layer consists of two layers. The first layer is the grain membrane with the hyaline layer (arrangement of the hair pores). It makes a distinctive surface pattern for each species of animal, with differences existing between sheep, goats, cattle and camels. The second layer consists of large collagen fibre bundles interwoven at an angle in a three-dimensional network. The fibre structure varies in different parts of the skin and from one species to another. Elastin fibres make leather that stretches while fatty skins yield spongy leather.

One of the advantages of modern tanning techniques is that processing can be interrupted at various stages and the incompletely tanned (semi-processed) materials themselves may be traded nationally and internationally; just like the raw hide or skin. The most commonly available semi-processed materials include pickled hides and skins, wet blue (chrome tanned) and crust leather, as well as tanned (but unfinished) leathers.

It is important to point out that the tanning process is associated with undesirable environmental effects (World Bank 2010), most notably due to heavy use of polluting chemicals in the tanning process and air pollution due to the transformation process (hydrogen sulfide during de-hairing and ammonia during de-liming, solvent vapours). For example, one tonne of hide or skin generally leads to the production of 20–80 m<sup>3</sup> of turbid and foul-smelling wastewater, including

<sup>3</sup> It is important to note that dry hides and skins must be treated against insects and parasites with insecticide and during storage it is imperative to check the effectiveness of the insecticide. A clean warehouse floor is not recommended. Some thin dusting of the warehouse floor with insecticide will bar insects and parasites from entering the warehouse or kill them after they gain access.

chromium levels of 100–400 mg/L, sulfide levels of 200–800 mg/L and high levels of fat and other solid wastes, as well as notable pathogen contamination. Pesticides are also often added for hide conservation during transport. With solid wastes representing up to 70% of the wet weight of the original hides, the tanning process comes at a considerable strain on water treatment installations.

## I.4 Trends in hides and skins exports

In Somaliland, hides are obtained from large animals (cattle and camels) and skins from small ruminants (sheep and goats). Processing of the hides and skins terminates at the wet blue stage allowing trade in the cured dry salted hides and skins as well as the semi-processed wet blue. Recent trends in volume of exported hides and skins are summarized in Table I. These were in addition to other undocumented volume of dry and wet blue hides and skins that were transacted locally, targeting the emerging local craft sector. The main destination countries are India, China, Pakistan and Italy.

Table I. Recent trends in volume of hides and skins exported from Somaliland

	Sheep and goats	Cattle	Camels	Sheep and goats	Cattle	Camels
2012	1,602,300	115,380	17,300	1,758,000	5,580	0
2013	828,820	69,177	12,570	823,000	3,000	0
2014	1,353,250	135,780	17,780	675,000	0	0
2015	1,096,530	91,780	5,700	168,000	0	0
2016	834,250	37,339	0	576,000	37,839	0

Source: SLCCIA yearly reports

## 2. Methodology

### 2.1 Conceptual foundation of the study

This study used a value chain analysis approach to conduct an appraisal of the hides and skins sector in Somaliland. The value chain analysis approach is systemic in nature and is valued for its ability to offer great insights about the contexts within which firms undertake their economic activities. This understanding is crucial for identification of options for enabling gainful engagement of poor households with the value chains resulting in poverty reduction (Kaplinsky and Morris 2001). Consistent with common practice in value chain analysis studies, the hides and skins sector in Somaliland was conceptualized to comprise of an inter-linkage of core processes including production, local trading (wholesaling, retailing), export trade, and processing (locally and abroad). These core processes were in turn linked to a network of partners composed of input and service providers, financial institutions, market information systems and training institutions, among other. Towards this end, the analysis of the value chain included the mapping of the chain, investigating value chain governance, inter-firm relationships and value chain upgrading (Kaplinsky and Morris 2001).

Investigation of value chain governance focused on the relationships among the buyers, sellers, service providers and regulatory institutions that influence the range of activities required to bring a product or service from inception to end use. Governance is about power and the ability to exert control along the chain—at any point in the chain, some market actor sets and/or enforces parameters under which others in the chain operate. It was noted that understanding how and when firms set, monitor and enforce such rules and standards would help market actors in the chain better integrate and coordinate their activities. Besides, governance is particularly important for the generation, transfer and diffusion of knowledge leading to innovation, which enables firms to improve their performance and sustain competitive advantage. Awareness of the governance structure of a value chain would also provide the government, donors and development practitioners with information about how best to provide market actors with the training and technical assistance needed to upgrade their position in the chain. Towards this end, the type of governance structure that exists in the hides and skins value chain were delineated to facilitate the selection of interventions to increase competitiveness in this chain with particular attention to opportunities for the involvement of women.

Analysing inter-firm relationships focused on the nature and quality of the interactions between stakeholders in a value chain. The analysis took cognizance of the fact that relationships can be supportive of industry competitiveness and in turn enhance the benefits of value chain actors; or adversarial to it. Supportive relationships were those that facilitated collaboration; enabled the transmission of information, skills and services; and provided incentives for upgrading. On the other hand, adversarial relationships were deemed to be those structured to maximize short-term profits.

Therefore, while analysing the hides and skins value chain, interviewees were asked questions that revealed whether they considered their relationships to be mutually beneficial; whether their interactions were recurrent and substantial (involving the exchange of information, skills and services in addition to product and money) or were brief, isolated commercial interactions; and whether these relationships were entered into freely from a motive of self-interest, without social or government pressure.

Lastly, in order to respond effectively to market opportunities, firms and industries need to innovate to add value to products or services and make production and marketing processes more efficient. These activities, known as firm-level upgrading, can provide value chain actors with higher returns and a steady, more secure income through the development of knowledge and the ability to respond to changing market conditions. Therefore, in analysing the hides and skins value chain, the objective was to identify opportunities and constraints to firm and industry level upgrading. Specifically, the analysis identified catalyst market actors with the incentives, resources and willingness to promote and facilitate upgrading within the chain.

## 2.2 Study design

This study used both primary and secondary data. Secondary data were obtained from existing documents including livestock industry and market reports and previous studies. Methods used to collect the primary data included focus group discussions (FGDs) and individual face-to-face questionnaire. During the FGD, market actors from different levels of the value chain (Table 2) were congregated in a two-day workshop in Hargeisa between 22 and 24 May 2016. Guided by a moderator and using a checklist of questions developed to guide discussions during the workshop, a value chain map of the hides and skins sector in Somaliland was developed. Appendix I presents the checklist used during the FGD. Tasks performed included the mapping of the core processes, actors, product flows and partner networks in the value chain. Information was also collected on governance issues (i.e. coordination, markets, pricing and information sharing among others) and constraints encountered by actors at different points in the value chain.

Table 2. Participants in the hides and skins value chain mapping workshop

Value chain level	Number of participants
Tannery owners	2
Large scale warehouse assemblers	4
Export traders	3
Hides and skins collectors (small-scale assemblers)	3
Slaughterhouse owners	1
Public sector representation	2
Veterinary training institutions	4
Product quality control sector	2
Civil society	2

The information collected during the FGD served to inform the development of questionnaires used during interviews with the individual value chain actors. Data collected during the survey was used to validate the information gathered during the FGD. During the survey, a total of 90 operators were interviewed. The interviews were conducted in the Somali language by five enumerators who were selected on their ability to translate questions and answers from English to the local language and vice versa. The enumerators worked under a field supervisor who was also knowledgeable in both the Somali and English languages. Sites where the interviews were conducted were identified a priori with the assistance of participants during the FGD with the aim of targeting main market centres where hides and skins activities were prevalent. The selected survey markets included Hargeisa, Burao, Boroma, Gabiley and Berbera regional towns.

Table 3 presents a breakdown of the value chain actors interviewed during the survey. The surveyed actors included 1 tanning factory operator, 5 dry hides and skins exporters, 29 wholesalers or large scale warehouse assemblers, 43 small-scale collectors, 7 butchers and 5 slaughter facility operators. The frequency of the different types of actors in the sample reflects their numbers in the value chain as determined during the FGD. In the case of tanning factories and dry hides and skins exporters the sample sizes represent the entire population of these actors in Somaliland.

As the nature and functions of the different types of value chain actors vary, the survey questionnaire was adapted for each of the different type of actor. Thus, a total of 6 different questionnaires were developed and used for data collection.

Table 3. Numbers of the surveyed hides and skins value chain actors

Town	Tanners	Exporters	Wholesalers	Collectors	Butchers	Slaughterhouses/ slabs	Total
Hargeisa	1	4	11	19	2	1	38
Burao	-	-	8	16	2	1	27
Boroma	-	-	1	2	1	1	5
Gabiley	-	-	7	6	1	1	15
Berbera	1	1	2	-	1	1	5
Total	2	5	29	43	7	5	90

Descriptive statistics were used in the analysis of the data. The results were presented in the form of frequency tables, graphs and cross tabs.

## 3. Results and discussions

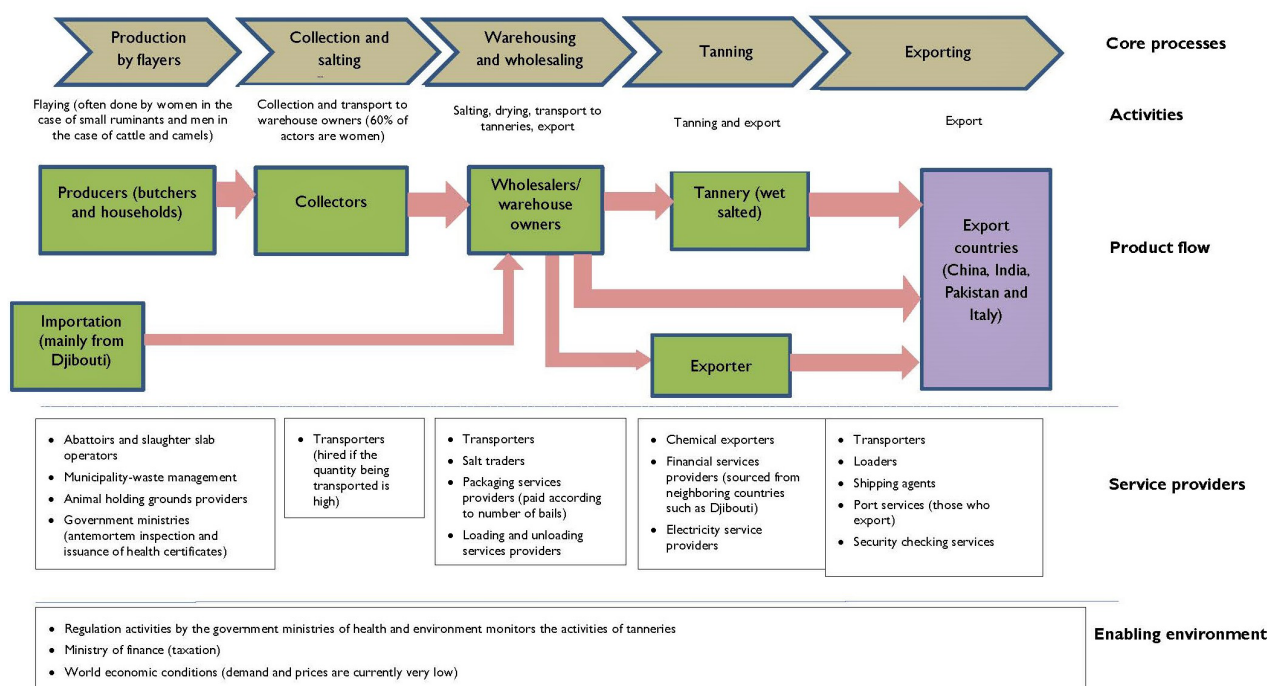
### 3.1 An overview of the hides and skins value chain in Somaliland

Figure 3 presents an illustration of Somaliland's hides and skins value chain including the core processes, main actors, product flow, service providers and the operating environment. Although the value chain extends to other countries, only core processes that take place within Somaliland were considered during this study. Activities that take place in export countries are; however, worth studying and could be a subject for future research.

The core value chain processes include production of the hides and skins (through animal rearing and slaughter), collection of the hides and skins, warehousing and wholesaling, tanning and export marketing. In line with these core processes, the main actors include producers of the hides and skins (livestock producers who slaughter animals for consumption at home or during social functions, butchers, abattoirs and slaughter slabs), collectors, wholesalers/assemblers, tanneries and exporters. Note that the emergent configuration of the value chain during this study is highly consistent with the description provided by Ombui et al. (2014).

As is depicted in Figure 3, it should be noted that product flow and linkages between the series of actors in the value chain are always not linear. For instance, not all hides and skins go through tanneries before export as some—most hides and the biggest proportion (about 60%) of skins—are exported in raw dry salted form. Likewise, although most of the hides and skins by wholesalers are often sold to exporters, at times, some wholesalers also export. It was also noted that some of the hides and skins are imported into Somaliland from Djibouti and then re-exported either after processing into wet blue or in raw dry form.

Figure 3. A schematic representation of the hides and skins in Somaliland



## 3.2 Core process and actors in the value chain

### Production of hides and skins

Animal slaughter within slaughterhouses and slaughter slabs is the leading source of hides and skins traded in Somaliland. These animals are usually brought to facilities by butchery owners who operate businesses of different sizes. There is prominent involvement of women in livestock slaughter and sale of meat in Somaliland. Besides the commercial meat ventures, home slaughter of animals by rural livestock keepers and urban households also generate appreciable volume of hides and skins.

There are six main slaughterhouses in Somaliland, each located in one of the main regions of the country including Borama, Gabiley, Hargeisa, Berbera, Burao and Togo Wajalle. Only Borama and Burao can be termed as modern slaughterhouses. Besides the big slaughterhouses, there are approximately 36 slaughter slabs, one in each administrative district in the country. These main slaughterhouses are the leading source of cattle and camel hides estimated at about 90%. The big slaughterhouses also account for a significant number of skins from small ruminants (40%). Due to the relatively low number of large ruminants (cattle and camel) slaughtered in individual households and slaughter slabs in small towns and villages, these sources account for only a small proportion of the hides produced (10%) compared to 60% of skins from small ruminants.

The main slaughterhouses engage workers who perform the slaughtering and flaying of animals on behalf of butchers who in turn pay a fee for this service. In contrast, animal slaughter and flaying at the slaughter slabs is sometimes done by the butchers themselves. Such butchers; however, pay a fee for the slaughter space and other services, such as water, that are provided at the slaughter slab. Sheep and goats are commonly slaughtered by women while cattle and camel are slaughtered by men.

Normally, butchers take ownership of the hides and skins from their animals after slaughter and often use them to offset part of the slaughter, flaying and carcass cleaning costs. This helps them minimize marketing costs associated with the rather bulky by-product that fetches them low returns. On average, a butcher received about USD0.33 per goat or sheep skin and USD1.3 per cattle hide. Table 4 presents an analysis of the cumulative number of hides and skins produced per

month among the 7<sup>4</sup> surveyed butchers during this study. In an ordinary month, butchers who dealt in goat and/or sheep meat produced between 35–165 skins each (fetching between USD 10 and 55 per month) and those for cattle and camels handled about 3–5 hides. However, the numbers of hides and skins produced during the month of Ramadan and Eid were on average 50–100% higher than the numbers during ordinary times.

Table 4. Number of animals slaughtered per butcher per month

		N	Mean	Std. Dev.	Min	Max
Ordinary month	Sheep	6	52	20	17	75
	Goats	6	52	28	18	90
	Camel	1	1	-	1	1
	Cattle	1	2	-	2	2
Ramadan	Sheep	6	78	43	15	120
	Goats	6	78	58	15	180
	Camel	1	2	-	2	2
	Cattle	1	3	-	3	3

Butchers sold the hides and skins as soon as they found a willing buyer—more often within the slaughter facility where most of the buyers also congregated to collect the green skins for further processing. The period between slaughter and sale of the green hide and skin by the butchers was reported to rarely exceed four hours. All the butchers interviewed sold their hides and skins when still green. More importantly, some of the butchers (3 out of 7) felt that hides and skins were not an important source of income for their businesses ostensibly because of the depressed market prices that have persisted over the last few years.

On average about 90% of the sheep and goat skins produced by butchers were accepted as good by buyers while the remaining 10% were rejected as not meeting the required standards for trade. Those who bought sheep and goats skins from butchers included collectors or agents of either wholesalers, tanneries or exporters. All the cattle and camel hides generated by the single butcher who was engaged in slaughter and sale of cattle and camel meat were accepted by buyers as good.

The surveyed butchers were requested to state if they were aware of the reasons that led to their hides and skins being rejected by buyers. Common reasons cited for rejection included number and location of cuts (three butchers) as well as small size/weight (three butchers). The most frequently cited constraints in hides and skins marketing by the butchers included poorly trained personnel in slaughterhouses whose flaying skills lead to some of the hides and skins being rejected and low prices (two butchers in each case). These findings were consistent with the issues identified during FGDs as the main constraints facing the hides and skins trade at the animal slaughter level (Box 1).

As the quality of hides and skins is also influenced by animal husbandry practices among the pastoralists, during the FGD, efforts were made to document constraints faced by livestock producers which could have implications on the production and quality of hides and skins.

Issues identified included:

- livestock diseases such as lumpy skin and pox.
- low supply of slaughter animals during the rainy season which leads to increase in prices.
- drought, which leads to migration of pastoralists with their stocks resulting in low supply of slaughter animals.
- parasite infestations, which contributes to significant rejection of hides and skins.
- the traditional practice of branding animals for purposes of identification.
- poor animal welfare practices such as beating animals during transportation to the market which damages their skins.

<sup>4</sup> The decision to survey a small number of butchers was informed by information collected in the FGD that indicated that even though butchers took ownership of the hides and skins, they relinquished the commodity barely within hours of slaughter at a minimal fee to collectors or agents of other buyers (wholesalers, tanners and exporters) since many considered it as a by-product of their operations.



### Box 1: Issues identified as the major constraints at the animal slaughter level of the hides and skins value chain in Somaliland

1. Lack of proper facilities and tools within slaughterhouses and slabs that causes flayers to use traditional tools and common knives
2. Poorly trained flayers in slaughterhouses
3. Inadequate number of slaughterhouses leading to slaughter outside the abattoirs, or alternatively, the use of slaughterhouses that are constructed for cattle and camels for small ruminants which poses problems during flaying
4. Unfavourable weather conditions, including high temperature which leads to quick deterioration in the quality of hides and skins immediately after slaughter
5. Low interest among animal owners in rural and urban households slaughtering at home to preserve the quality of hides and skins, ostensibly due to their perceived low value. Their main priority is meat

## Hides and skins collection

Hides and skins collectors procure their merchandise from entities who slaughter animals including butchers, livestock producers and urban households which they often then sell to hides and skins wholesalers. Some collectors are formally engaged by wholesalers to collect hides and skins on their behalf thus acting as agents of the contracting wholesaler. Other collectors work independently and sell the hides and skins they gather to wholesalers at a profit.

Table 5 presents a summary of the characteristics of the hides and skins collectors surveyed during this study. Most (90%) of the collectors owned and managed their hides and skins businesses solely while 10% of the ventures were partnerships. Many of the operators (>60%) were middle aged or elderly (>45 years old) and had been in the hides and skins collection business for many years (over 10 years among 70% of the collectors) and worked with specific buyers (wholesalers, exporters or tanners). In many of the cases (nearly 70%), the business operator solely provided the labour utilized in the business or was assisted by family members. Women formed a sizeable proportion (42%) of the hides and skins collectors. The largest proportions were either illiterate (32%) or just knew how to read and write but had no formal education (24%).

Table 5. Characteristics of the surveyed hides and skins collectors (N=43)

Characteristic	Level	Percentage (%)
Who is the business manager	Owners	88
	Others	12
Age of the business manager	<30	13
	>30–45	21
	>45–60	51
	>60	15
	Average	50
Gender of manager	Male	58
	Female	42
Level of education of manager	Illiterate	32
	Literate	24
	Primary school	2
	Intermediate	12
	Secondary school	10
	College	2
	University	0
Age of the wholesale business	Up to 5 years	7
	5 to 10 years	24
	>10 to 15 years	17
	>15 to 20 years	24
	>20 to 25 years	10
	Over 25 years	17
Form of ownership	Sole ownership	90
	Partnership with another person	10

Note: Mean number of years for wholesale businesses is 18 years.

## Nature and volume of hides and skins dealt with by collectors

Nearly all surveyed collectors traded in sheep and/or goat skins. Only three dealt with camel hides while just 14 traded in cattle hides (Figure 4). Table 6 presents an analysis of the average volume of hides and skins procured and sold by the collectors on a weekly basis during the 12 months preceding this survey. Volume of turnover varied widely across collectors authenticated by the high value of the standard deviation of the number of hides and skins purchased and sold. As expected, sheep and goat skins accounted for the largest share of the turnover volume. On average, quantity purchased and sold per collector totalled 310 sheep and goat skins compared to only 11 cattle and 0.3 camel hides each week. In most cases (77–93%), the hides and skins dealt with were in fresh form as opposed to wet salted (3–22%) and air dried (3%) (Figure 5). The hides and skins collectors dwell close to their geographical areas of operation with distance from procurement to purchase points averaging 2.3 km with a range of zero to 6 km. As a result, the collectors often procure and deliver hides and skins to buyers on the same day. Thus, about 50% of the collectors had no facilities for storing hides and skins.

Figure 4. Frequency of collectors dealing with different types of hides and skins

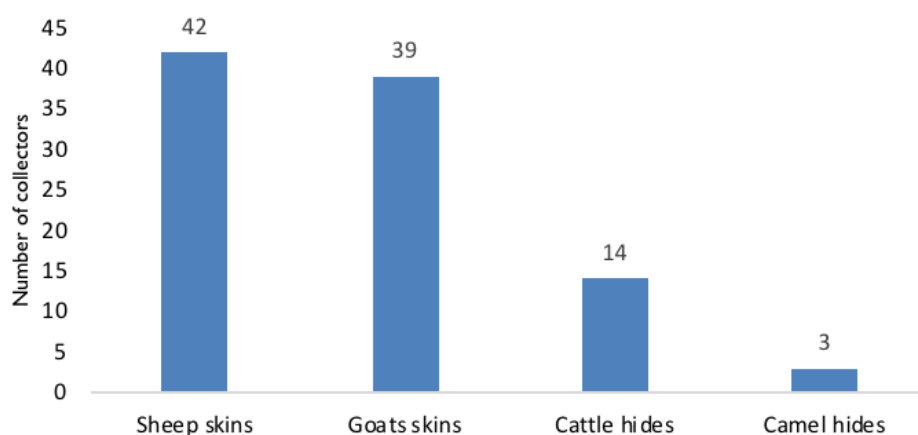
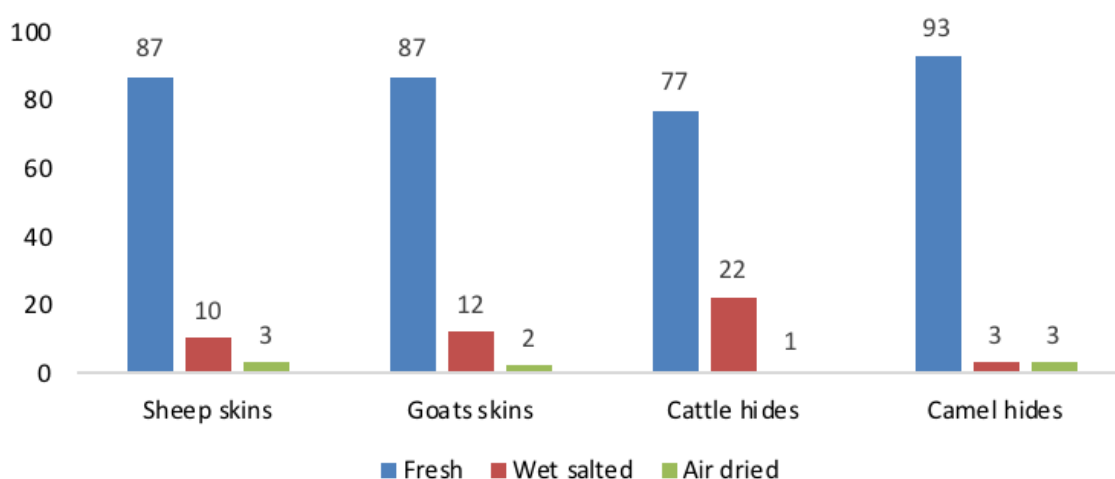


Table 6. Estimated weekly volume (pieces) of hides and skins purchased and sold by collectors during the last 12 months

	N	Mean	Std. Dev.	Min	Max
Sheep skins	40	152	201	0	1038
Goat skins	40	158	233	0	1038
Cattle hides	40	11	23	0	70
Camel hides	40	0.3	1	0	8

Figure 5. Percentage of hides and skins bought and sold in various forms by collectors

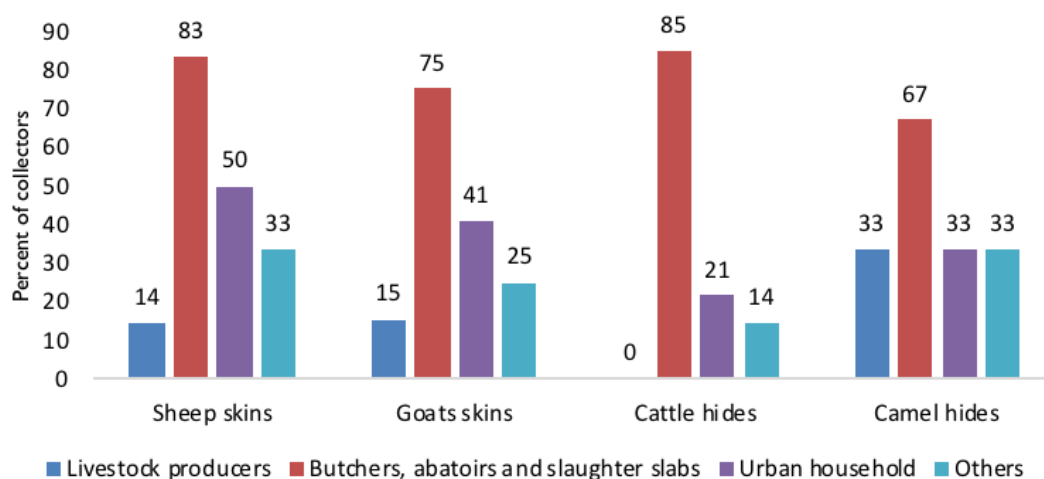


## Procurement of hides and skins by collectors

Butchers and slaughterhouses/slaughter slabs were the most frequently cited (85%) source of hides and skins by the collectors (Figure 6). Other sources included urban households (21–50%) and livestock producers (14–26%). Table 7 presents an analysis of procurement prices for hides and skins among the surveyed collectors. For camel hides, the price shown is for a single piece out of the three produced when a camel is slaughtered. The prices paid for goat and sheep skins tended to be marginally higher for wet salted and air dried skins (USD0.40–0.41 a piece) than for the fresh skins (USD0.33 a piece). This perhaps explains the reluctance by animal owners who slaughter at home (both urban and rural) to invest in proper treatment of hides and skins, taking cognizance of the additional costs of salts and time. The procurement prices paid out varied minimally among collectors as indicated by the low values of standard deviation.

Many of the collectors (61%) said that the prices at which they purchase hides and skins were determined through negotiations between them and the sellers (Figure 7). Payment time for suppliers by the collectors varied across the collectors. While the largest proportion of the collectors (34%) paid their suppliers monthly, some (28%) said that the payment time was determined through negotiations between the transacting parties. Conversely, another 12% of the collectors said that they paid their suppliers after the consignment supplied has been sold. This transaction arrangement ostensibly shielded collectors from losses in case the products are rejected by wholesalers.

Figure 6. Percentage of collectors procuring hides and skins from different sources



## Other trading costs during procurement of hides and skins by collectors

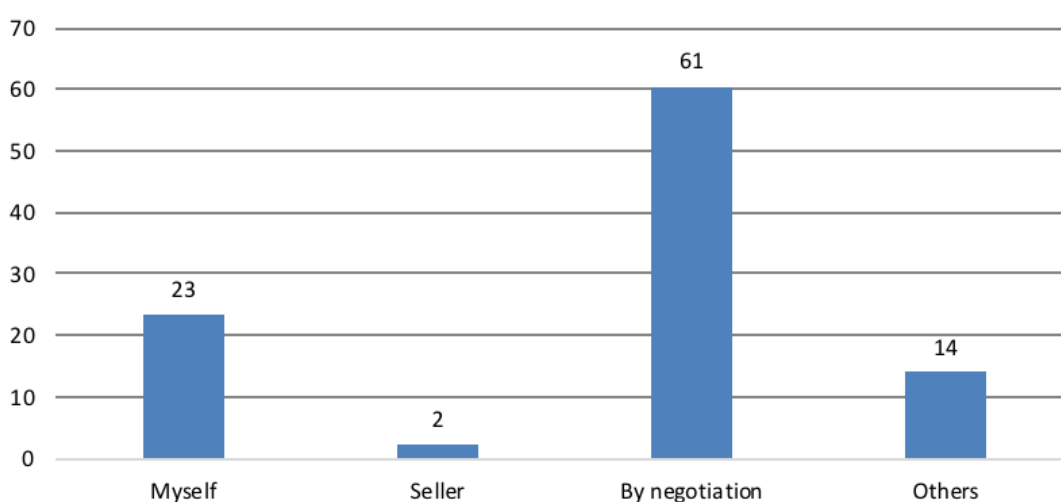
To assess the types and levels of other trading costs during procurement, hides and skins collectors were probed about various expenses incurred during their last completed transaction. Most of the collectors (63%) reported that they incurred some transportation costs. In the entire sample, the transport costs averaged USD0.06 per piece of hide and/or skin. As the reported transport costs were for entire trips and the loads ferried often included hides as well as skins, computation of transport cost per unit of the different types (cattle, camel, sheep and goats) of hides and skins was not feasible.

Only a few (16%) of the surveyed collectors reported that they had incurred some seller search costs during their last purchase. This low frequency of collectors who had incurred costs in search of sellers is perhaps because these value chain actors routinely procure their merchandise of hides and skins from the same places and often the same sellers. Overall, the seller search cost averaged USD0.006 per piece of hides or skins purchased. No taxes and brokerage charges are incurred by collectors during procurement.

Table 7. Procurement prices (USD per piece) paid for various type of hides and skins by collectors

		N	Mean	Std. Dev.	Min	Max
Sheep skins	Fresh	38	0.33	0.07	0.20	0.40
	Wet salted	11	0.41	0.06	0.27	0.47
	Air dried	6	0.40	0.00	0.40	0.40
Goat skins	Fresh	36	0.33	0.07	0.20	0.40
	Wet salted	12	0.41	0.06	0.27	0.47
	Air dried	4	0.40	0.00	0.40	0.40
Cattle hides	Fresh	9	2.08	1.02	0.27	3.00
	Wet salted	3	2.44	0.96	1.33	3.00
	Air dried	1	1.33	---	1.33	1.33
Camel hides	Fresh	3	1.33	0.27	1.07	1.60
	Wet salted	1	1.07	---	1.07	1.07
	Air dried	1	1.07	---	1.07	1.07

Figure 7. Percentage of hides and skins collectors citing the entity who sets prices during purchase



## Treatment of hides and skins after procurement by collectors

While some of the hides and skins procured by collectors are delivered to buyers without any treatment or processing, wet salting is practiced among some of the collectors (40%) of sheep and goats skin collectors, 50% of cattle hide collectors and two of the camel hide collectors (Table 8). In cases where wet salting is practiced, 0.5 kg of salt is used per piece of sheep or goat skin on average. The quantities used to treat cattle and camel hides most often range between 1.5–3 kg per hide. A kg of the salt applied costs about USD0.14 on average.

Table 8. Treatment of fresh hides and skins after procurement

	Sheep skins	Goats skins	Cattle hides	Camel hides
% of collectors that wet salt	43	43	50	67
Quantity of salt (kg) used per piece	0.5	0.5	1.8	2.2

## Sale of hides and skins by collectors

While 55% of the surveyed collectors supplied hides and skins to only one buyer type, 45% sold to different types of buyers. Wholesalers were the most frequently cited buyers of hides and skins by collectors (67–95%) (Figure 8). Much

fewer collectors (18–26%) of sheep and goat skins, 7–21% of cattle hide collectors and 1 or 2 camel hide collectors supplied hides and skins directly to exporters and/or tanning factories. Table 9 presents an analysis of prices received by collectors for consignments sold over the 12 months preceding this survey. Prices received for sheep and goat skins tended to be higher for the wet salted and air dried skins (USD0.50–0.53 a piece) compared to the skins sold in fresh form (USD0.47–0.48 a piece). The collectors received USD2.33 and USD3.29 on average per piece of fresh and wet salted cattle hide respectively and USD1.07–1.33 per piece of camel hide sold. Again, the level of prices received showed little variation among various collectors as indicated by the low values of standard deviations.

Most of the surveyed collectors (74%) indicated that the sales prices they received were determined through negotiation between them and the seller (Figure 9). Payment time for collectors by their buyers varied across the collectors. While the largest proportion of the collectors (40%) said they were usually paid monthly, 30% said that the time for payment was negotiated by the transacting parties. In addition, 19% of the collectors said that they were only paid after the consignment supplied has been sold by the buyer.

Figure 8. Percentage of collectors who had sold hides and skins to various types of buyers during the last 12 months

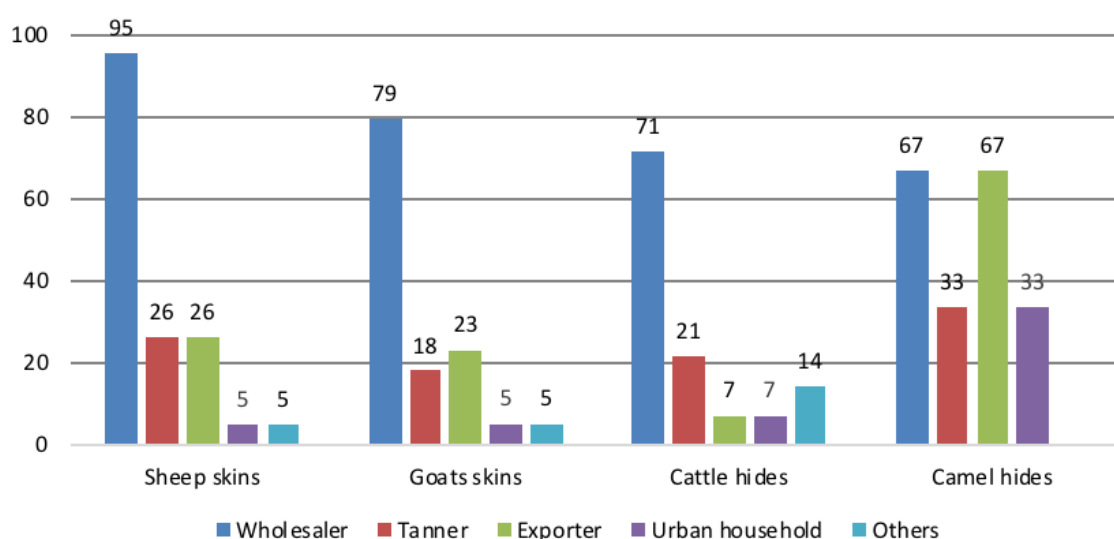
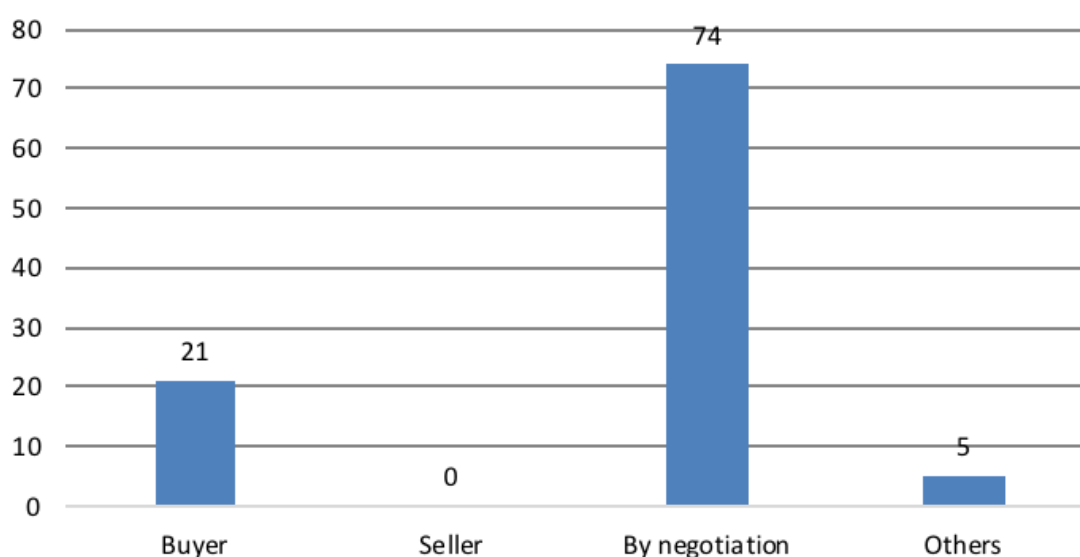


Table 9. Prices (USD per piece) received for various type of hides and skins sold by collectors

		N	Mean	Std. Dev.	Min	Max
Sheep skins	Fresh	37	0.48	0.10	0.27	0.67
	Wet salted	11	0.50	0.08	0.40	0.67
	Air dried	6	0.53	0.08	0.40	0.67
Goat skins	Fresh	34	0.47	0.10	0.27	0.67
	Wet salted	12	0.52	0.09	0.40	0.67
	Air dried	4	0.50	0.07	0.40	0.53
Cattle hides	Fresh	9	2.33	1.35	0.40	4.13
	Wet salted	3	3.29	1.46	1.60	4.13
	Air dried	1	1.60	---	1.60	1.60
Camel hides	Fresh	3	1.51	0.15	1.33	1.60
	Wet salted	1	1.33	---	1.33	1.33
	Air dried	1	1.33	---	1.33	1.33

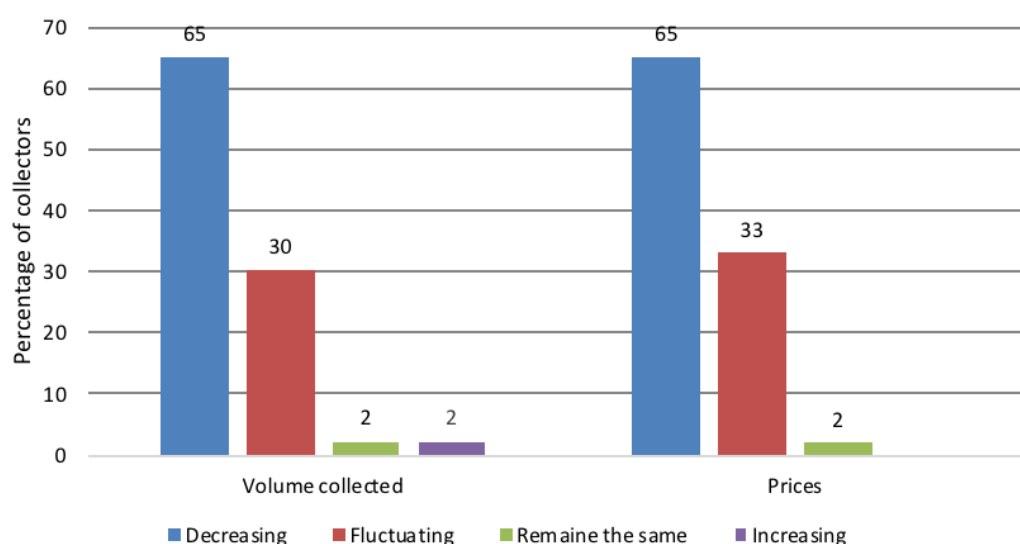
Figure 9. Percentage of hides and skins collectors citing the entity who sets prices during sale



## Perceived trends in hides and skins business by collectors

Views were also sought from hides and skins collectors about recent trends in the business. Many of the collectors (65%) lamented that both the volumes and prices of hides and skins collected during the past three years has declined (Figure 10). On the other hand, 30% said that during the period, volume handled had been fluctuating, while 33% said the same about prices received. Only 2% of the respondents said that volume handled had increased. Only 2% of the collectors said that the prices they had received had remained unchanged.

Figure 10. Percentage of collectors citing their perceived trend in volume collected and prices of hides and skins during the last three years



## Factors influencing selection of hides and skins

The decision on whether to accept or reject a piece of hide or skin supplied by the seller is made by the collector. This is determined by a number of factors. Figure 11 presents the percentage of collectors citing factors influencing the decision to accept a piece of hide or skin. The number and location of defects related to cuts caused by bruises, injuries and flayers

was the most frequently cited factor (88%). Other factors that were often cited include number and location of defects related to husbandry practices such as branding (66%) and the amount of fat retained on the hide or skin during flaying (59%). Many of these attributes also scored high when the collectors were requested to rate the importance of the factors they mentioned in determining quality. The numbers and location of defects related to cuts and husbandry practices such as branding were respectively the second and third most frequently ranked as number one (25% and 15% of cases for each) (Figure 12). The weight or thickness of hides and skins was; however, the most highly ranked factor (32%).

Figure 11. Percentage of collectors citing factors influencing the decision to accept a piece of hide or skin

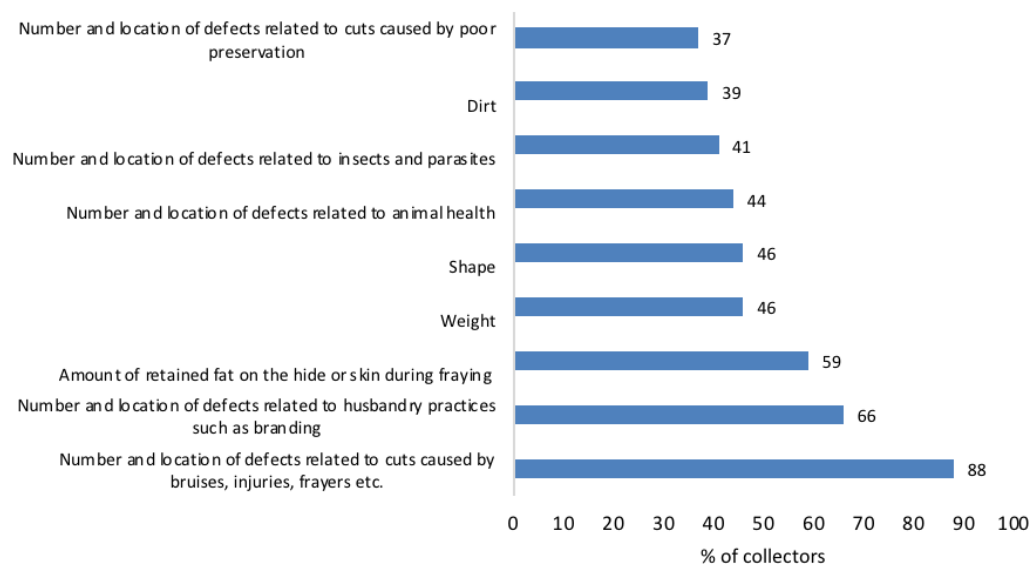
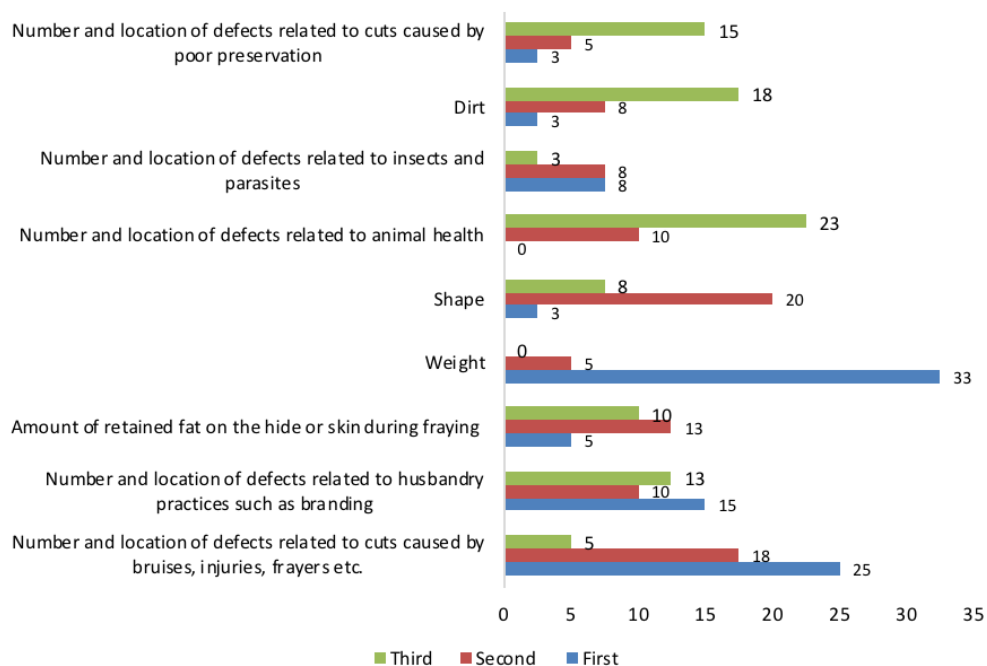


Figure 12. Percentage of collectors citing the three most important factors influencing their decision to accept a fresh hide or skin



## Knowledge about grading among hides and skins collectors

Awareness about quality requirements is a prerequisite in enabling value chain actors deliver goods and services that meet the required quality. Box 2 describes the system of grading applied for hides and skins meeting the requirements for trade in Somaliland as articulated by value chain actors during the FGD. Although the grading is performed at the wholesale level, an assessment of the level of knowledge about the grading system among collectors was deemed important as it has implications on their capacity to meet the required quality. The collectors were asked to name the grades used to describe the quality of hides and skins. Table 10 shows the percentage of collectors who cited the grades used in the marketing of hides and skins in Somaliland. While many of the collectors knew about grades I, II, and III, an appreciable number (up to 44% of the cattle, goats and sheep hides and skins collectors and 2 of the camel hides collectors) lacked this awareness. Grade IV was only cited by a low percent of the collectors (up to 15%). This lack of knowledge about the grading scheme among some collectors is perhaps because at this level of the value chain, hides and skins are either accepted or rejected by buyers and same prices are paid for grades I, II, and III.

### Box 2: Grading of hides and skins in Somaliland

Based on quality, hides and skins marketed for export in Somaliland are categorized into different grades including grade I (best), grade II, grade III, and grade IV (poorest quality). Only grades I, II, and III are accepted for export marketing. However, when demand is high or there is shortage in the international market, orders may be received for grade IV. The factors that influence the quality and grade of hides and skins were identified during the FGD and include:

1. completeness of the hide and skin based on the shape and pattern;
2. cleanliness of the hide and skin based on extent of presence of fat and dirt;
3. weight of the hide and skin reflected on the thickness, being an indicator of how well the animal was taken care of; and number and spread of defects on the hide and skin; and
4. levels of the different quality attributes in different grades.

Grade I	Grade 2	Grade 3	Grade 4
<ul style="list-style-type: none"> <li>• Full size (big skin) &gt;2 years old</li> <li>• Zero cut</li> <li>• Fully covered by salt (no putrefied areas)</li> <li>• Good body condition of animal</li> <li>• No fat in the skin</li> <li>• Timely salted (2–3 hours after slaughtering)</li> </ul>	<ul style="list-style-type: none"> <li>• Full size</li> <li>• &gt;2 years old</li> <li>• 1 cut located on the side</li> <li>• 1 defect</li> <li>• No fat in the skin</li> <li>• Timely salted (2–3 hours after slaughtering)</li> </ul>	<ul style="list-style-type: none"> <li>• Small size</li> <li>• 2–3 cuts around periphery but sometimes towards to the centre</li> <li>• Little amount of fat</li> </ul>	<ul style="list-style-type: none"> <li>• Small size (not mature e.g. below 6 months shoats and &lt;1 year for cattle)</li> <li>• &gt;4 cuts around the centre</li> <li>• A lot of fat</li> <li>• Salting done after 18 hours from slaughter</li> <li>• Skin had not been well covered with salt i.e. some parts not salted</li> <li>• Branding at the centre of the skin</li> </ul>

Table 10. Percentage of collectors who were aware about the grades used in hides and skins trade in Somaliland

	Grade I	Grade II	Grade III	Grade IV
Sheep	67	67	56	14
Goats	70	70	57	15
Cattle	79	79	57	14
Camel	100	100	33	0



## Constraints faced by hides and skins collectors

Table 11 shows the frequency of surveyed collectors citing the most important constraints in the marketing of hides and skins in Somaliland. While issues mentioned mostly related to activities during the animal slaughter, bottlenecks were also identified at other nodes in the value chain including the animal production and end market. Poorly trained personnel and lack of proper facilities and tools were the two most frequently mentioned problems at the animal slaughter level of the value chain (40% and 37% respectively). Issues that were frequently mentioned at the animal production level of the chain included infestation of animals by parasites (37%), drought, the traditional practice of branding animals among local community (19% in each case) and low interest to preserve quality of hides and skins among livestock keepers (16%). The surveyed hides and skins collectors often lamented about declining export markets.

Table 11. Frequency of collectors citing the most important constraints in marketing of hides and skins in Somaliland

Constraints	Percentage of collectors (%)
Poorly trained personnel in slaughterhouses	40
Parasite infestations	37
Lack of proper facilities and tools leading to flaying with knives	37
Declining market	30
Drought	19
The traditional practice of branding animals	19
Low interest among livestock keepers to preserve quality of hides and skins	16
Declining prices	9
Livestock production constraints	7
Low supply of animals during rainy season	7
Slaughterhouses that are designed for cattle and camel but not small ruminants	2

## Hides and skins wholesaling

Wholesalers often procure hides and skins from collectors and sell to exporters and tanning factories. Table 12 presents a summary of the characteristics of the 29 hides and skins wholesalers surveyed during this study. Compared to the exporters, the hides and skins wholesalers were more numerous and more geographically dispersed. Nevertheless, the largest proportion of the sampled wholesalers (38%) was from Hargeisa, reflecting a large concentration of these value chain actors in the city which is the administrative and commercial capital of Somaliland. Respondents were in most cases (82%) the owners of the wholesale business while in the rest of the cases they were either hired managers (four cases) or other workers (one case).

The surveyed businesses had been in existence for many years (mean=18 years). Majority of the businesses (79%) were sole proprietorship enterprises, with the remaining (21%) being partnerships. The owners of the businesses were often also the managers, save for only six (21%) of the cases. The managers were often middle aged (mean=49 years) and male (90%). While the largest proportion of the managers (38%) was educated up to secondary school level. The level of education among most of them (55%) was low. Furthermore, in most cases (nearly 60%), owners of the hides and skins wholesale businesses were also engaged in other economic activities including other businesses (55%), livestock keeping (15%) and employment in other sectors (10%).

Table 12. Hides and skins wholesale businesses and business managers' characteristics

Characteristic	Level	Percentage (%)
Who is the business manager	Owners	79
	Others	21
Gender of manager	Male	90
	Female	10
Level of education of manager	Illiterate	14
	Literate	24
	Primary school	10
	Intermediate	7
	Secondary school	38
	College	3
Years of existence of the wholesale business	University	3
	Up to 10 years	10
	>10 to 15 years	31
	>15 to 20 years	28
	>20 years	31
Form of ownership (% of businesses)	Sole ownership	79
	Partnership with another person	21
Owner engaged in other economic activities		59

Note: Mean age of business managers is 49 years. Mean number of years of existence of wholesale businesses is 18 years.

Table 13 shows the annual volume of hides and skins purchased and sold by the sampled wholesalers between 2014 and 2016. The volume in 2016 was relatively lower because the year was not yet complete at the time of this survey and the quantities reported were only for the previous nine months. Fewer wholesalers dealt with cattle and camel hides (9 to 17 wholesalers respectively) compared to those who dealt with sheep and goat skins (22 and 27 respectively). By the same token, the number of pieces traded on average included more of goats and sheep skins than camel and cattle hides. Nevertheless, for all the livestock species, the number of hides and skins that had been bought and sold varied widely across individual wholesalers (as denoted by the large values of standard deviations).

Table 13. Volume of hides and skins purchased and sold between 2014 and 2016 among the surveyed hides and skins wholesalers

Year	Statistic	Camel hides	Cattle hides	Goat skins	Sheep skins
2016	N	9	17	22	22
	Mean	10,915	4,343	11,749	10,655
	Standard deviation	22,232	4,612	7,628	6,384
	Median	2,920	3,200	12,500	10,150
	Minimum	1,743	10	600	600
	Maximum	70,000	17,885	30,000	21,000
2015	N	11	16	26	27
	Mean	11,735	6,626	20,075	18,747
	Standard deviation	14,172	7,033	20,891	22,657
	Median	7,000	4,773	13,300	18,000
	Minimum	431	40	400	500
	Maximum	51,132	21,555	97,910	120,000
2014	N	11	17	27	27
	Mean	7,173	8,871	21,077	19,767
	Standard deviation	5,685	9,077	21,139	23,321
	Median	6,000	6,000	13,000	15,000
	Minimum	948	50	200	700
	Maximum	16,950	25,150	100,000	120,000

To further investigate the level of the hides and skins industry competitiveness at the wholesale level of the value chain, a four-firm concentration ratio (CR4) was computed using data on the annual volume of turnover. A four-firm concentration ratio measures the combined market share held by the largest four firms in an industry (University of Minnesota 2016) (Formula 1). The level of concentration in an industry is considered low if the ratio ranges between 0 and 50% and medium if the ratio falls between 50 and 80%. A ratio of between 80 and 100% indicates high level of concentration characteristic in industries with oligopolistic type of competition. The concentration ratio in the case of hides and skins wholesaling in Somaliland ranged between 37 and 36% between years 2015 and 2016, to 31% in year 2014 (Table 14) suggesting a rather high level of industry competitiveness.

$$CR_4 = ((Q_1 + Q_2 + Q_3 + Q_4)) / T \quad (1)$$

Where;

$Q_1, Q_2, Q_3, Q_4$  are the quantities of hides and skins sold by each of the 4 largest firms respectively.

T is the total quantity of hides and skins sold by all firms.

Table 14. Concentration ratios in the wholesale section of the hides and skins value chain in Somaliland

Year	2016	2015	2014
Volume of hides and skins bought and sold by all firms	664,959	1,263,228	1,332,494
Volume of hides and skins bought and sold by the biggest four firms	237,964	462,108	408,491
Concentration	36%	37%	31%

## Procurement of hides and skins by wholesalers

Wholesalers procure hides and skins mainly in three forms: green, wet salted, and air dried; with the green form being the most prevalent. For instance, 82–100% of the surveyed wholesalers (Figure 13) were engaged in buying green hides and skins compared to 23–67% wet salted and only up to 15% air dried hides and skins buyers. Moreover, estimates by the surveyed wholesalers showed that raw fresh hides and skins on average accounted for the largest share (68–80%) of their total purchases during the past year (Figure 14). In contrast, the wet salted form accounted for 17–31% of the purchases while procured amounts in air dried form were negligible. These results are consistent with findings from interviews with collectors who said that most of the hides and skins they supplied to wholesalers were in fresh form.

Table 15 shows the percentages of wholesalers who had purchased hides and skins from various sources during the past 12 months. In each case, the denominator used is the corresponding total number of wholesalers (N) who had purchased the respective type of hides/skins. Collectors were the most frequently cited sources. Urban households and livestock producers were also mentioned as sources of sheep and goat skins, albeit less frequently. This indicates, perhaps, a desire by these sellers to reap higher prices by selling to wholesalers than to collectors. Often (about 70% of cases), the size of consignments purchased was less than 200 pieces.

Figure 13. Frequency (%) of wholesalers who had purchased various types of hides and skins during the past year

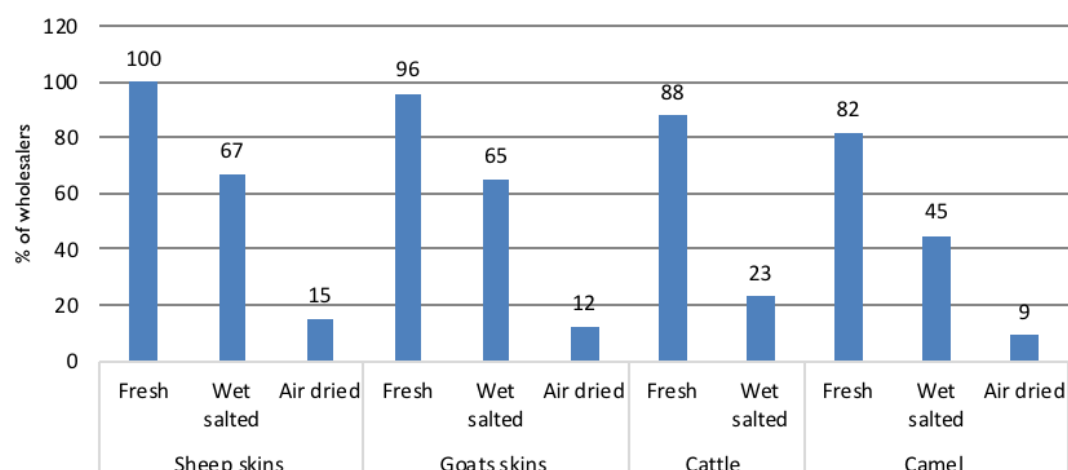


Figure 14. Percentage of different forms of hides and skins in the quantities purchased by wholesalers

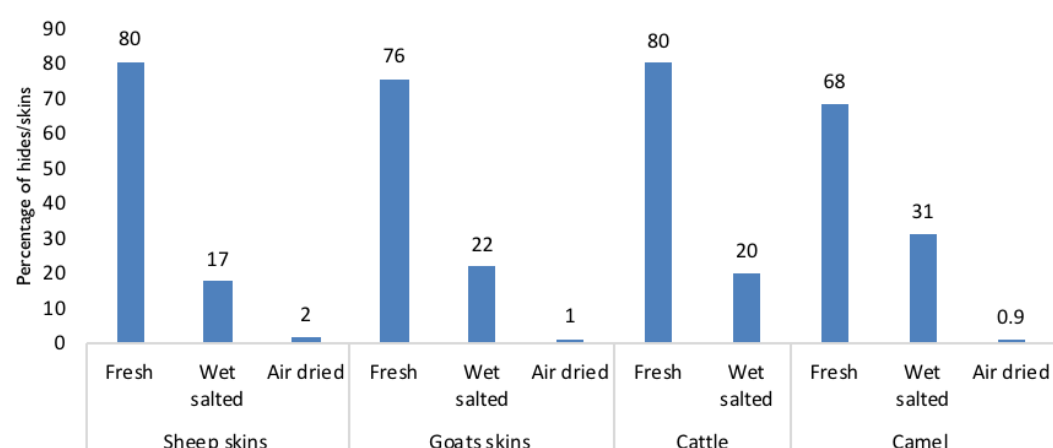


Table 15. Number and percentage of wholesalers who had procured hides and skins from different sources during the past 12 months

Species	Form of hide/skin	Number of wholesalers (N)	Source of purchase (% of wholesalers)			
			Livestock Producers	Collectors	Urban households	Other
Sheep skins	Fresh	27	19	100	37	22
	Wet salted	18	6	44	67	28
	Air dried	4	25	75	75	25
Goat skins	Fresh	25	12	96	28	2
	Wet salted	17	12	58	47	29
	Air dried	3	33	67	33	33
Cattle	Fresh	15	13	100	13	13
	Wet salted	4	0	25	0	25
Camel	Fresh	9	11	100	0	11
	Wet salted	5	0	54	0	60
	Air dried	1	0	100	0	100

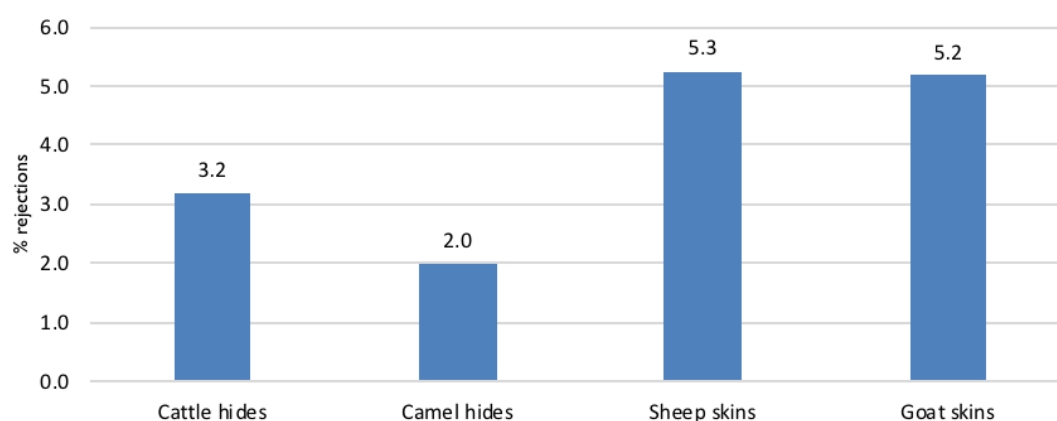
All the surveyed wholesalers had at least regular collectors with whom they had a long term business relationship. In nearly all the cases where this long term business relationship existed (28 wholesalers) it was in the form of a verbal agreement. On average, a wholesaler had about 30 regular collectors who were verbally contracted but the number varied widely from a minimum of two to a maximum of 200. Consistent with the claims by collectors in the hides and skins collection section, most of the wholesalers (62%) stated that the prices they paid the suppliers were determined through negotiation while 32% said that they set these prices themselves. As alluded to by collectors, the period within which payment to suppliers was made by wholesalers varied widely. The largest proportion of the wholesalers (32%) said they paid immediately after supply. Conversely, 28% said they paid monthly compared to 24% who paid after selling and 10% who said that payment time was determined through negotiation with the supplier.

Table 16 presents the percentage of the surveyed wholesalers citing defects that they commonly observe in the hides and skins that they purchase, which determine the decision on whether to accept or reject any given piece and the price to pay if the product is accepted. In each of these cases, the denominator used in the computation of the percentages is the number of wholesalers who deal with the particular types of hides/skins (28, 29, 17 and 11 for sheep skins, goat skins, cattle hides and camel hides respectively). Flay cuts was the most frequently cited defect across the four different types of hides and skins by animal species (82–94%). This finding is consistent with the finding in the study by ICPALD (2014) on good practices and lessons in the hides and skins value chain in other IGAD countries. Other commonly cited defects during this study included putrefaction (41–63%) and retained fat on the hides and skins (36–59%). Estimates by the wholesalers showed that on average, about 5% of sheep and goat skins, and 2–3% of cattle and camel hides are rejected at this point of the value chain for being defective (Figure 15). This indicates that the selection process used by the collectors who are the main suppliers of hides and skins to wholesalers is quite rigorous and that collectors know what is demanded by wholesalers.

Table 16. Percentage of wholesalers citing defects they commonly observe in the hides and skins that they purchase

Type of defect	% wholesalers reporting the defect in respective species			
	Sheep skin (N=28)	Goat skin (N=29)	Cattle hide (N=17)	Camel hides (N=11)
Putrefaction	61	55	41	63
Dirt	7	3	6	0
Poor pattern	18	17	29	27
Improper bleeding	0	0	12	0
Flay cuts	93	86	94	82
Bruises	11	10	18	18
Retained fat on hides and skins	46	44	59	36
Destruction arising from health of an animal	11	14	18	0
Destruction arising from insects and parasites infestation	7	10	6	0

Figure 15. Average percentage of hides and skins rejected by wholesalers because of being defective



Time taken between procurement and sale of hides and skins by wholesalers varied depending on the prevailing level of demand. At the time of this study, the time delay between procurement and sale among the wholesalers averaged seven months and ranged from a minimum of a month or less to a maximum of two years. To prevent spoilage, newly purchased hides and skins are treated (Table 17) and in some cases this was regardless of whether a hide/skin had been treated by the seller. In most of the cases (36–96% of wholesalers), the hides and skins are salted before being stored in warehouses. On average, salting costs about USD0.14 a piece for shoat skins and about USD1.4 a piece for cattle and entire camel hides (the three pieces produced during slaughter). In a limited number of cases, chemicals as well as sun and air drying are also applied for preservation. Despite these efforts, 62% of the wholesalers claimed that they incur losses during storage. The value of losses during storage averaged about USD40 per wholesaler per annum but varied widely with a maximum value of USD466. Besides treatment to prevent spoilage during storage, other value-added activities by wholesalers included sorting (55% of wholesalers), bailing (75% of wholesalers) and transportation of hides and skins to buyers' premises (44% of wholesalers).

Table 17. Percentage of wholesalers citing the additional methods they use to preserve different types of hides and skins they procure

Fresh		Type of hide/skin procured		
		Wet salted	Air dried	
Is any additional method of preservation used (% saying yes)		100	91	100
Preservation method used (% of wholesalers)	Salting	96	60	36
	Sun drying	0	10	9
	Air drying	0	10	0
	Chemicals	4	15	55

The set of value addition activities performed by hides and skins wholesalers also includes grading. Table 18 shows the frequency of the surveyed wholesalers who were aware about the different grades used in export marketing of hides and skins in Somaliland. The three export quality grades were widely known among wholesalers with awareness levels about the individual grades ranging from 75–100% of the wholesalers. Most of the wholesalers (84–100%) also indicated that the three export quality grades of hides and skins fetched the same prices. This lack of price differentiations among the alternative grades of hides and skins at this point of the value chain is intriguing. Perhaps, this could be due to the fact that the quality of raw hides and skins obtained from livestock produced in pastoral systems is actually not easily defined and determined. As hides and skins are processed into leather and leather products, their quality becomes easier to determine and the results may conflict with grading of the raw material. This is because some of the defects become apparent only during processing and require extra processing to correct or camouflage them. This not only increases processing costs, but also reduces the quality of the final products (Triple Line Consulting 2002). One may intuitively argue that production systems that predisposes animals to high chances of pre-slaughter (natural) defects are more prone to have defects that would not be visible before processing and thus likely to incur price discount<sup>5</sup>.

Table 18. Frequency of surveyed wholesalers citing grades used in hides and skins marketing in Somaliland

N		Grade I		Grade II		Grade III		Grade IV	
		%	N	%	N	%	N	%	N
Sheep	Fresh	28	93	28	93	28	86	28	32
	Wet salted	12	100	12	100	12	100	12	41
	Air dried	3	100	3	100	3	100	3	33
Goats	Fresh	29	93	29	93	29	86	29	34
	Wet salted	11	100	11	100	11	100	11	36
	Air dried	3	100	3	100	3	100	3	33
Cattle	Fresh	15	93	15	93	15	80	15	13
	Wet salted	2	100	2	100	2	100	2	100
Camel	Fresh	8	88	8	88	8	75	8	25
	Wet salted	4	100	4	100	4	100	4	50

<sup>5</sup> Livestock raised in Somaliland fall in this group and are likely to accumulate defects because of the traditional, extensive and non-commercial husbandry methods used that tend to encourage the production of more defect-bearing raw materials. In particular, cattle and camels are relatively old by the time they are slaughtered. For example, an ox at 10 years of age is likely to have accumulated many times the pre-slaughter defects accumulated by an animal of two years slaughtered after commercial production elsewhere in the world. Since pre-slaughter defects typically account for two-thirds of defects on hides and skins, it might explain why premium prices are not offered for the apparent high-grade dry hides and skins.

The surveyed wholesalers were also probed about their knowledge of the attributes used to determine the grade of hides and skins. Number and location of general cuts related to bruises, injuries, flaying and fat retained on the hides and skins were the two most frequently cited attributes (nearly 70% of wholesalers in each case) (Figure 16). Other attributes that were frequently mentioned included weight and shape of the hides and skins, number and location of defects related to health of animals and husbandry practices (over 50% of wholesalers in each case). While the importance of each of these attributes may vary in determining grade, there was no consensus on their relative importance. The largest proportion of respondents (33%); however, cited the number and location of general cuts related to bruises, injuries and flaying as the most important attribute determining the quality of fresh hides and skins. In comparison, the number and location of defects related to poor preservation and weight were cited as the most important attributes determining grade of wet salted and air dried hides and skins respectively by the largest proportion of respondents (40% in each case) (Table 19).

Figure 16. Percentage of wholesalers citing attributes to determine grade of hides and skins used

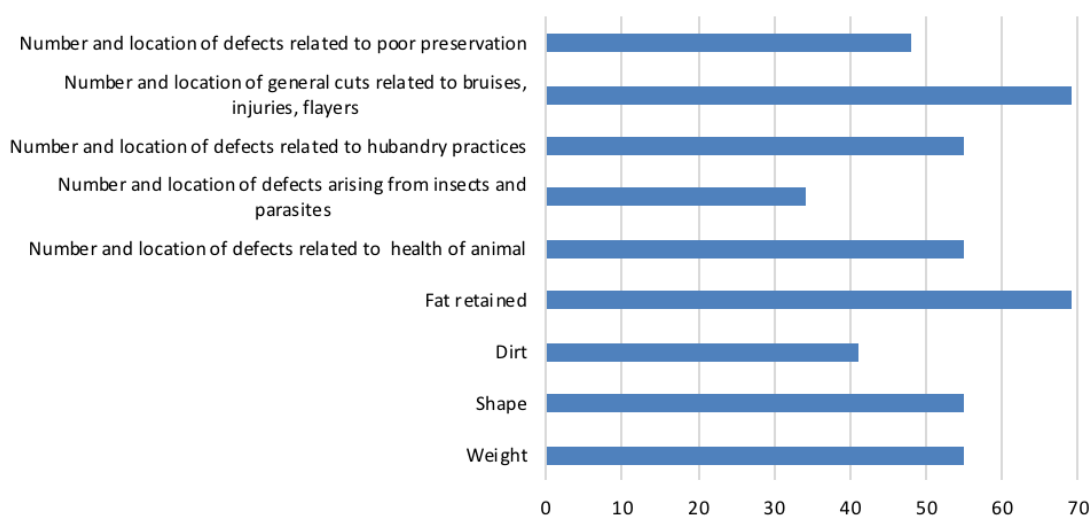


Table 19. Frequency of wholesalers citing the relative importance of various attributes in determining grades of hides and skins

Form of hide/skin	Fresh skins (N=27)			Wet salted (N=10)			Air dried (N=5)		
	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>
Rank									
Weight	15	4	11	0	20	10	40	0	0
Shape	7	12	11	10	10	10	20	0	20
Dirt	7	8	4	0	0	0	0	20	0
Fat retained	4	12	19	10	0	20	0	0	20
Number and location of defects related to health of animal	0	15	15	10	10	20	0	20	60
Number and location of defects arising from insects and parasites	4	15	4	10	20	20	0	40	0
Number and location of defects related to husbandry practices	11	19	19	20	10	10	20	0	0
Number and location of general cuts related to bruises, injuries and flaying	33	0	7	0	20	10	0	0	0
Number and location of defects related to poor preservation	7	4	4	40	10	0	20	20	0
Others	11	12	7	0	0	0	0	0	0

## Marketing of hides and skins among wholesalers

Exporters and tanning factories were the most frequently cited market outlets by wholesalers (88 and 77% respectively). Other wholesalers were also frequently cited as market outlets by the wholesalers (about 60% of cases). In addition, a few wholesalers (four) were occasionally involved in export trading of hides and skins. Data about the most recent sales transaction showed that on average prices received by wholesalers ranged from USD0.72–0.76 per piece of shoat skin (Table 20). While data about prices received for cattle and camel hides was unavailable perhaps due to the thin nature of trade in large ruminants' hides in Somaliland. Findings during focus group discussions indicated that a wholesaler typically receives about USD6.5 per cattle hide and USD3.5 per one of the three pieces of camel hide produced during slaughter.

Table 20. Price (USD/piece) received by wholesalers for the most recent consignment of hides and skins sold

	N	Mean	Std. Dev.	Min	Max
Fresh shoat skins	8	0.72	0.20	0.40	0.93
Wet salted shoat skins	11	0.76	0.18	0.40	0.93
Air dried shoat skins	5	0.74	0.42	0.27	1.33
Wet salted cattle hides	1	4	-	4	4

Many of the wholesalers (25) indicated that the level of the prices they receive from buyers are fixed through negotiations. Most of the wholesalers (27 out of 29) also indicated that they had buyers with whom they had long term business relationships. In most of these cases (24 wholesalers), the nature of the business relationship with buyers was described as a 'verbal contract to supply'. After supply, the duration within which wholesalers are paid by buyers varied. In the largest proportion of cases (48%), wholesalers were paid only after the consignment supplied had been sold by the buyer. Conversely, in 22% of cases the wholesalers negotiated with the buyer about payment time while in 14% of the cases payment was received immediately after supplying.

## Transaction costs

Using information from the most recently completed buying and selling transactions, estimates of transactions costs in hides and skins wholesale businesses were made. The set of transaction costs incurred during purchase included vehicle loading, unloading and transportation costs (60% of wholesalers), taxes/market levies (21% of wholesalers) and seller search costs (25% of wholesalers). Two wholesalers also claimed that they engaged and paid for the services of a broker. All these costs lumped together averaged USD0.041 per piece of shoat skin purchased. On the other hand, transaction costs during selling included vehicle loading, unloading and transportation costs (63% of wholesalers), government taxes (46% of wholesalers) and buyer search costs (29% of wholesalers). The three types of transaction costs were; however, rather low at USD0.008, USD0.002 and USD0.001 per shoat skin on average respectively.

## Constraints facing hides and skins wholesalers

Table 21 presents the frequency of hides and skins wholesalers citing the constraints they face. Lack of proper facilities leading to use of knives during flaying was the most frequently cited constraint (54% of respondents). Other constraints that were frequently cited included poorly trained personnel in slaughterhouses (about 40% of respondents) and parasite infestations in livestock that cause destruction of hides and skins (36% of respondents).



Table 21. Constraints faced by hides and skins wholesalers

Constraints	Percent of respondents (N=29)
Lack of proper facilities hence flaying is done using knives	54
Poorly trained personnel in slaughterhouses	39
Parasite infestations	36
Drought	29
Low interest among animal owners to preserve the quality of hides and skins	25
Traditional practice of branding animals	18
Poor practices when transporting animals to market leading to damages to hides/skins	11
Livestock production constraints	4
Low supply of animals during the rainy season	4
Few slaughterhouses hence some animals slaughtered outside abattoirs	4
Some slaughterhouses are constructed for cattle and camels not small ruminants	4
Weather conditions including high temperature which affect quality	4
Others	43

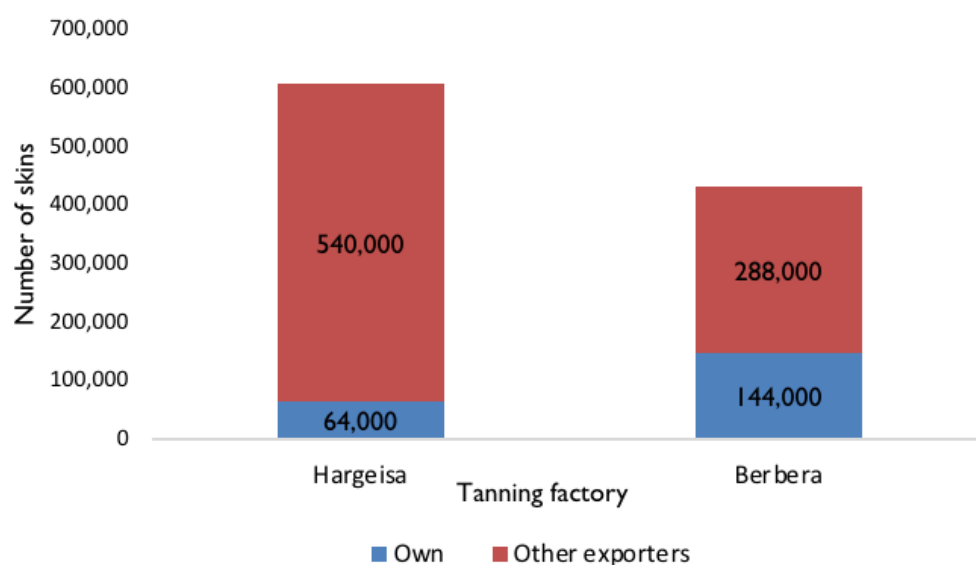
In addition to the constraints identified during the individual questionnaires, the FGD identified numerous other challenges faced by wholesalers including:

1. scarcity and high price of salt especially during the rainy season.
2. bad smell that emanates from hides and skins warehouses forcing wholesalers to constantly relocate their stores to avoid encroachment into urban areas.
3. relocation of businesses to faraway places from population centres, which increases transportation costs.
4. financial capital tied up in huge stocks of hides and skins stored during low demand seasons, with storage period extending for up to a year at times.
5. lack of financial credit.
6. lack of sufficient number of warehouses which sometimes necessitates hiring of storage space.

## Leather tanning factories

At the time of this study, there were only two functional tanneries in Somaliland (one in Hargeisa and another in Berbera) with two other Chinese owned factories having recently ceased operation ostensibly due to increasing concerns by the government on environmental issues. The tanneries processed their own merchandise as well as hides and skins for other exporters. Figure 17 shows the numbers of hides and skins processed in the 2 tanning factories during the last 12 months when the survey was undertaken. These numbers are higher than those reported in the SLCCIA annual report suggesting some misreporting or that some of the hides and skins processed had not been exported. For the data collected during this study, processing for other exporters accounted for the bulk (67–89%) of the skins tanned in both factories. The tanning factories charged a fee of USD0.2 per piece of skin processed for another exporter.

Figure 17. Number of sheep and goat skins processed during the last 12 months



For hides and skins processed for their own merchandise, wholesalers accounted for the largest amount (82–100%) of raw skins procured. The Hargeisa tannery also imported raw skins from Djibouti and Ethiopia. Information collected from the FGD revealed that the imported skins were of better quality than the local due to better animal slaughter facilities and techniques used in Djibouti. Furthermore, the price paid for the imported skins were lower (USD0.8 a piece) than that paid for the locally procured skins (USD0.9 a piece), perhaps due to low assembly costs.

Tanning factories sometimes incurred some transaction costs during procurement of unprocessed skins. These costs included seller search costs, transport costs, loading and unloading costs and taxes. Table 22 presents the transaction costs (USD/piece of unprocessed skin) incurred by the surveyed plants for their most recently procured consignment. Seller search costs average USD0.004 per piece of raw skin. No other transaction cost was reported for the plant in Hargeisa compared to the factory in Berbera where expenses were reported on transportation (USD0.13) loading and unloading (USD0.04) and taxes (USD0.045).

Table 22. Transaction costs (USD/piece of skin) incurred by tanning plants for their most recent consignment purchased

	Hargeisa	Berbera
Number of skins bought	4,499	19,000
Seller search costs	0.004	0.0042
Transport cost	0	0.13
Loading and unloading	0	0.04
Taxes	0	0.045

Tanning costs were estimated at USD0.2 per piece of sheep or goat skin. This cost excludes the value of losses suffered during processing which varied widely from 0.01% in Hargeisa to 30% in Berbera. Besides wet blue, both tanneries were also involved in export marketing of dry salted skins which accounted for 12% of the total exports in the Berbera tannery and 60% in the Hargeisa tannery. On average, the tanneries received a price of USD1.1 per piece of dry salted skin exported. On the other hand, prices received from the export of wet blue skins were said to vary depending on quality. The wet blue skins are categorized into seven quality grades, denoted as tannery run (TR) 1–7, with TR1 being the most superior quality. The tanneries were getting a price of USD21 per dozen of wet blue skins of grades TR1 to TR5 while a dozen of grades TR6 and/or TR7 go for USD18.

Table 23 presents the transaction costs (USD/piece of goat or sheep skin) incurred for the most recent consignment of sheep/goat skins exported. The volume of the consignment varied. The 48,000 pieces of shoat skins for the Hargeisa plant

are equivalent to two full containers. On the other hand, for the Berbera plant the total volume fell short of a full container and included both wet blue and raw skins. The set of transaction costs incurred included transportation cost to the port, loading and unloading costs, buyer search costs, shipment costs and government taxes. Total transaction costs amounted to USD0.037–0.067 per piece of skin. Taxes accounted for most of the total value of the transaction cost (25–70%).

Table 23. Transaction costs (USD/piece of skin) incurred by tanning plants for their most recent consignment sold

Type of sheep/goat skins	Hargeisa	Berbera	
	Wet blue	Wet blue	Salted
Number of skins	48,000	12,000	7,500
Transport	0.004	0.017	0.016
Loading and unloading	0.006	0.008	0.007
Buyer search cost	0.001	0.000	0.000
Taxes	0.025	0.017	0.016
Shipment costs	0.000	0.025	0.017
Total	0.037	0.067	0.056

During the FGD, constraints were identified that influence the performance of tanning factories in Somaliland. These include:

1. a remote location due to people complaining about pollution including on ground water;
2. occasional shortages in the supply of some tanning chemicals;
3. the low quality of local hides and skins. From every 2,000 pieces only 1,200 are usually good. The other 800 are still exported to India but at a low price; and
4. a lot of changes in ministries (frequent reshuffles of ministers) which affects the continuity of policies. This includes conflicting directives from ministries; a case was cited where one ministry was said to have no problem with the location of a particular factory while at the same time another ministry demanded the factory to be moved due to pollution.

## Dried hides and skins exporters

Export of hides and skins from Somalia has a long history. During the FGDs it was claimed that some families that are currently involved in this business have been doing it for over 150 years. Exporters usually have specific partners (importers) whom they trade with and most of these business relationships were established many years ago, mostly by immigrant family relatives. As the number of exporters is relatively small, only five of these businesses (four in Hargeisa and one in Berbera) were interviewed during the survey.

The majority (four) of the business firms were rather old ( $\geq 15$  years) apart from one that was started in 2012. Business owners in all the five cases were men. Three of the businesses were solely owned while the rest were partnerships. The business owners often doubled as the managers (four of the ventures). Age of the business managers ranged between 50–66 years. Three of the business managers were educated up to the secondary level while one had no formal education but was literate. The surveyed hides and skins exporters had a combined labour force of 39 nearly all of whom (38) were men.

Figure 18 shows the total number of hides and skins purchased during the past 12 months by the five dry hides and skins exporters surveyed. Goat skins accounted for the largest number of pieces (about 323,000) followed by sheep skins (about 147,000) and cattle and camel hides (36,080 and 24,115 pieces, respectively). The overall total by the five exporters (531,754 pieces) represents about 37% of all the hides and skins exported from Somaliland in 2016. Table 24 presents additional summary statistics about the volume purchased by the dry hides and skins exporters. The quantities purchased differed substantially among the five exporters authenticated by the high values of standard deviations. Note that the surveyed exporters during this study were the biggest in Somaliland at the time. When sales data from the five exporters

was combined with export volume by the two tanning factories, the computed market share for the four biggest operators was estimated at 44% in 2016. This result suggests the presence of some competition in the tanned and dry hides and skins export market segment of the value chain.

Figure 18. Total number of pieces of hides and skins purchased during the last 12 months

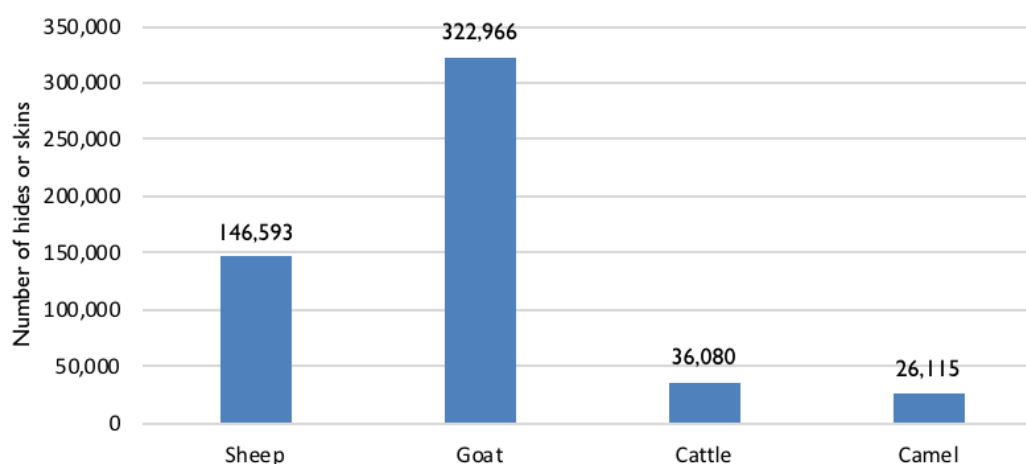
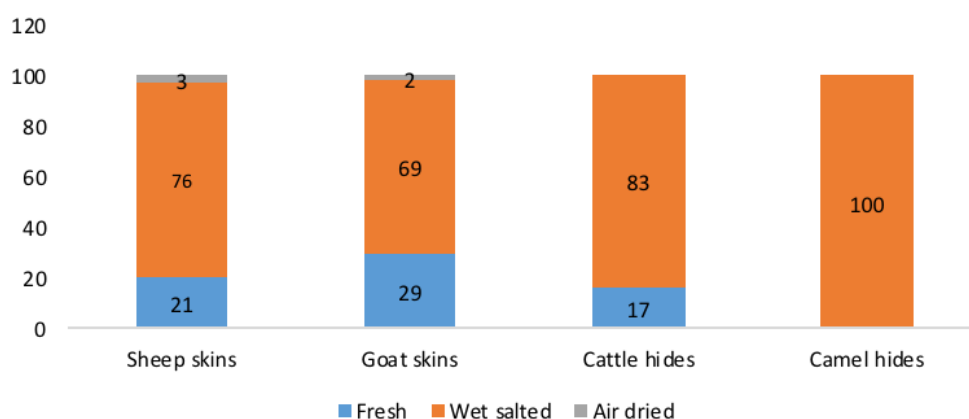


Table 24. Summary statistics on volume of hides and skins purchased during the past 12 months among exporters

	N	Mean	Std. Dev.	Minimum	Maximum
Sheep	5	29,319	28,584	11,793	80,000
Goat	5	64,593	65,372	14,000	142,000
Cattle	4	9,020	6,339	80	15,000
Camel	4	6,529	5,017	115	11,000

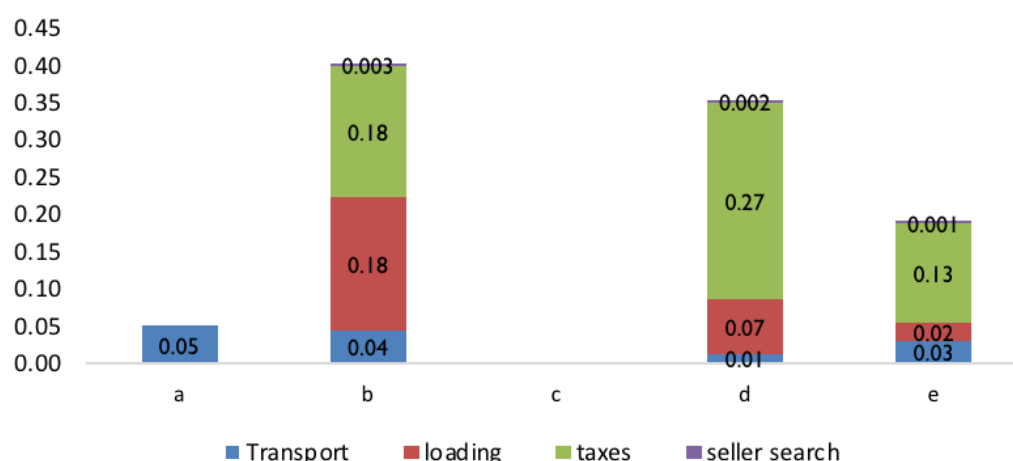
Wholesalers were ranked as the leading source of hides and skins by all the exporters surveyed while collectors were ranked second by three of the exporters. Most often (69–100% of the total volume of hides and skins purchased), exporters procured hides and skins in wet salted form (Figure 19). Nevertheless, appreciable amounts (17–29% of goat skins and cattle hides) were also procured in fresh form. Consistent with the claim by wholesalers, four of the surveyed exporters said that the price they pay for hides and skins are arrived at through negotiations with their suppliers. All the five surveyed exporters said they had some long term business relationship with at least some of their suppliers. This relationship involved written contracts in the case of three of the exporters and verbal contracts for the remaining two exporters. The numbers of suppliers engaged in long term business relationship however varied from just three to nearly 30 suppliers per exporter.

Figure 19. Percentage composition of different forms (fresh, wet salted and air dried) of hides and skins and volume procured



Exporters also incur several transaction costs during procurement including transportation costs, cargo loading and unloading costs, market taxes/levies and seller search costs. Whether any one of these transaction costs is incurred and how much depends on the point of purchase and cargo volume. Information about the most recent consignment of hides and skins purchased showed that four of the five exporters had incurred one or more of these transaction costs (Figure 20). Market taxes/levies accounted for the bulk of the transaction costs (44–76%) among the three exporters that had paid for this.

Figure 20. Other costs (USD/piece) incurred by exporters during purchase of their most recent consignment of hides and skins



### Common hides and skins defects and their influence on grading

The exporters use a four-grade system to categorize the quality of hides and skins they deal with. Grades I, II, and III are accepted as good for export while grade IV is rejected (see Section I.1). Grade I comprised of the largest proportion (50–80%) in the consignments of hides and skins procured during the last 12 months compared to grade II (10–30%) and grade III (0–30%). The purchase prices are not based on quality and the grading is designed to minimise risks of having many rejects within any consignment.

It was reported that the grading of hides and skins into grades I–IV was determined by a number of factors. Table 25 presents exporters citing the frequency of factors influencing the quality of hides and skins. The most frequent attributes included number and location of defects related to (I) cuts caused by bruises, injuries and flayers among others; (II) insect and parasite infestation by ticks, mange, lice and the like; and (III) animal health issues such as tumours and abscesses.

Table 25. Exporters citing the frequency of factors influencing quality of hides and skins

	All hides and skins		Fresh		Wet salted		Air dried	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Number and location of defects arising from insect and parasite infestation e.g. ticks, mange, lice etc.	7	18	2	13	4	21	1	25
Number and location of general cuts (open or cicatrized) caused by bruises, injuries, flayers etc.	7	18	2	13	4	21	1	25
Number and location of defects related to poor preservation/salting like stains or putrefaction	3	8			3	16		
Weight (thickness) of the hide/skin	5	13	2	13	2	11	1	25
Number and location of defects related to the health of an animal e.g. tumours, abscesses etc.	6	16	3	20	2	11	1	25
Shape and pattern (completeness) of the hide/skin	3	8	2	13	1	5		
Amount of dirt on the hide/skin	2	5	1	7	1	5		
Amount of retained fat on the hide/skin during flaying	2	5	1	7	1	5		
Number and location of defects related to husbandry practices e.g. branding	1	3	2	13	1	5		
Others	2	5						

Table 26 presents the numbers of exporters citing common defects observed in the hides and skins supplied to them. The most frequent flaws witnessed include flay cuts (between 4 and five of the exporters) and putrefaction (4 exporters across different types of hides and skins). Retained fat was also commonly cited as a problem in sheep and goat skins (between 3 and 4 of the exporters). Defective hides and skins may be rejected by buyers. Estimates by the surveyed respondents showed that on average, rejected defective hides and skins by exporters during procurement ranged between 3% to nearly 6% of the pieces supplied to them.

Table 26. Defects commonly observed by exporters in the hides and skins that they purchase

Defects	Sheep skin	Goat skin	Cattle hide	Camel hide
Putrefaction	4	4	4	4
Poor pattern	1	2	2	1
Flay cuts	4	5	4	5
Bruises	1	2	2	1
Retained fat on hides and skins	4	3	2	2
Destruction arising from health of an animal	2	1	2	2
Destruction arising from insects and parasites infestation	1	0	1	1

## Handling of hides and skins after procurement

The average time between procurement and sale of hides and skins by exporters varied widely across exporters and was estimated to range from just one month to two years. Consequently, storage of hides and skins and treatment to prevent spoilage were the most important functions performed by exporters in the value chain. In the case of fresh hides and skins, the curing to prevent spoilage mainly involved wet salting and thereafter, treatment with pesticides during storage. The estimated cost of salt treatment ranged between USD0.09 per piece of sheep and/or goats skin to USD0.13 for cattle and camel hides. Chemical treatment during storage on the other hand amounted to about USD0.07–0.13 per piece of sheep or goat skin to USD0.27 per piece of cattle or camel hide. Despite the measures taken to prevent spoilage during storage, three of the exporters said that they suffered losses during storage which was estimated between 1–2% of the stored hides and skins for two of the exporters and USD50 per year for the third exporter.

## Export of hides and skins

Data on total volume of hides and skins exported during the preceding one year were available from only two exporters. One of the exporters has not sold anything since 2014 while the other two were reluctant to disclose this information. Export destinations included China, India and Pakistan (Table 27). While most of the hides and skins (77%) were exported in raw cured form, one of the exporters who had an order for wet blue sheep and goat skins engaged the services of a local tannery to do the processing. On average, an exporter receives a price of USD7.5 per piece of cattle hide, USD4.5 per piece of camel hide, and USD1 per piece of shoat skin.

Exporters incurred numerous other costs while servicing orders by their customers in foreign countries. These expenses included transport costs during the delivery of goods to the port (USD0.004–0.02 per piece of shoat skin and USD0.03 per piece of cattle or camel hide) loading and unloading costs (USD0.01 per skin or hide), and buyer search costs (USD0.001–0.004 per skin or hide). In many of the transactions, importers were companies that had long term trading relationship with the exporters (60% of the transactions) in contrast with one time sales (40%).

Table 27. Numbers of hides and skins exported by the surveyed export traders during the last 12 months

	China	India	Pakistan	Grand Total
Dried camel hides	7,520	----	7,000	14,520
Dried cattle hides	15,000	10,000		25,000
Dried goat skins	32,500	----	100,900	133,400
Dried sheep skins	21,000	60,000	----	81,000
Wet blue goat skins	16,750	19,600	----	36,350
Wet blue sheep skins	23,000	13,500	----	36,500
Grand total	115,770	103,100	107,900	326,770

The FGD identified numerous constraints that impeded the performance of hides and skins exporters. These include:

1. a loss of containers implying that exporters were sometimes forced to sell to buyers in initially unintended countries. The frequent loss of containers was attributable to non-recognition of the Somaliland government by other countries which leads to problems with documentation;
2. high export taxes. For example, the tax paid for a 40 feet container of wet blue (24,000 pieces) is USD950 while a 20 feet container is charged USD850; and
3. a lack of money transfer services forcing the exporters to either open bank accounts in neighbouring countries such as Djibouti or the United Arab Emirates or use other people's bank accounts.

### 3.3 Quantifying physical flows and number of market actors along the value chain

Table 28 presents the estimated number of core value chain actors and direct employees in the hides and skins value chain in Somaliland. The number of exporters and wholesalers in the country was documented during the FGD. On the other hand, the number of collectors was estimated as a product of the median of the number of collectors per wholesaler (15) and the number of wholesalers (36). Overall, the industry is an important livelihood source for over 1,190 persons—1,050 men and 140 women. Hides and skins collectors account for most of the core actors (77%) compared to wholesalers (17%), exporters (5%) and dry hides and skins exporters (4%). The two tanning factories have a combined work force of 54 with women accounting for 15% of this number. This demonstrates the potential for hides and skins value addition activities in generating employment. Note that the actual number of persons who rely on hides and skins as a source of their livelihoods and incomes is certainly higher than estimated here as this analysis fails to include the provision of inputs and services to the main value chain actors.

Table 28. Estimated number of actors and employees in the hides and skins value chain in Somaliland

Level of the value chain	Actor	Total	Men	Women	Notes
Tanneries	Employees	54	46	8	
Dry hides and skins exporters	Owners	8	8	0	2 of the operations were partnerships of 2 and 3 persons; 6 not engaged in other activities)
	Employees	39	38	1	
Hides and skins wholesalers	Business owners	36	30	6	65% engaged in other economic activities
	Employees	158	122	36	
Hides and skins collectors	Owners	540	484	56	Used median=15 collectors per wholesaler; Women=10% of the collectors 33% who engage hired labor and the median =2
	Employees	356	320	37	
Total		1,092	1,048	144	

### 3.4 Distribution of income to individual actors along the value chain

Before deciding to enter a new market, a person must first determine whether, and to what extent, the business will be profitable for them. This is particularly important for poor people who have limited resources and cannot afford to choose the wrong market sector. In order to identify segments of the value chain that could be an impediment to sustainability of the chain; revenues, costs and margins along the chain were consolidated and compared for different market channels within the hides and skins value chain. This helps to delineate inherent potential for scaling up and the likely investments/interventions required to facilitate such an endeavour.

Table 29 presents a breakdown of average costs and margins related to various actors in the value chain. In the case of camel hides, the costs and returns are per a single piece out of the three produced during slaughter. Tanneries enjoy the highest level of margins per shoat skin (USD0.56) compared to other value chain actors (USD0.08–0.15) apart from butchers. The tanneries however posted the highest amount of variable costs (USD1.3 per skin) attributable to the relatively higher price paid for the higher quality of skins procured (USD0.9 compared to USD0.8) by dried skins exporters and the costs of processing. Nevertheless, the ratio of margins to marketing costs which is at times used to indicate level of performance in securing profitability by firms is highest for tanneries (USD0.43) suggesting that these operations are financially more efficient compared to others in the value chain. However, while the levels of margin accruing to butchers is relatively high compared to that of other value chain actors, costs incurred by the butchers have not been factored in.

Table 29. Distribution of income and cost among various value chain actors

		Cost of raw materials	Processing costs	Transaction and other costs	Total variable costs	Margin	Selling price	Margins / Costs
Shoat skins	Butchers					0.40	0.40	
	Collectors	0.4	0.0	0.0	0.4	0.15	0.55	0.38
	Wholesalers	0.55	0.14	0.05	0.7	0.06	0.80	0.09
	Tanneries	0.9	0.2	0.24	1.3	0.56	1.70	0.43
	Raw hides/skins exporters	0.8	0.0	0.22	1.0	0.08	1.1	0.08
Cattle hides	Butchers					4.0	4.0	
	Collectors	4	0.0	0.0	4.0	1	5	0.25
	Wholesalers	5	1.4	0.31	6.7	1.19	6.5	0.18
	Raw hides/skins exporters	6.5	0	0.22	6.7	0.78	7.5	0.12
Camel hides	Butchers					2.0	2.0	
	Collectors	2	0.0	0.0	2.0	0.50	2.50	0.25
	Wholesalers	2.50	0.47	0.104	3.1	0.90	3.5	0.29
	Raw hides/skins exporters	3.5	0.0	0.22	3.7	0.78	4.5	0.21

### 3.5 Estimation of the value of the losses along the value chain

An attempt was made to estimate the total value of losses along the value chain. Losses were assumed to stem from two main causes—non-collected hides and skins due to lack of market and rejections due to poor quality and/or spoilage. The overall volume of rejections along the value chain was calculated using estimated rates at different points in the value chain and data from the SLCCIA on the final volume of the merchandise exported. For example, letting the amount exported be  $X$  and the rate of rejections by exporters be  $R_e$ , the actual quantity rejected by exporters,  $Q_e$ , was estimated as:



$$Q_e = \left[ \frac{X}{\left(1 - \frac{R_e}{100}\right)} \right] - X$$

Following findings during the FGD, it was assumed that the number of hides and skins imported from neighbouring countries and later re-exported represented about 6% of the total exports.

Table 30 presents the estimated number of hides and skins rejected at different points in the value chain in 2016. No rejections were reported for camel hides as the number exported during the year was also zero. Overall a total of 254,425 sheep and goat skins valued at USD279,867 were rejected including 158,006 pieces by collectors, 74,658 pieces by wholesalers and 21,761 pieces by exporters. On the other hand, a total of 3,438 cattle hides valued at USD25,787 were rejected and these included 2,190 pieces by exporters and 1,248 pieces by wholesalers.

Table 30. Estimated number of hides and skins rejected at different points in the value chain in 2016

Value chain actor		Shoat	Cattle	Camel
Exporter	Quantity exported	784,195	35,569	-
	Rejection rate %	2.7	5.8	4.2
	Rejected quantity	21,761	2,190	0
Wholesaler	Quantity presented for sale	1,347,396	37,759	-
	Rejection rate %	5	3	2
	Rejected quantity	74,658	1,248	0
Collector	Quantity presented for sale	1,422,054	39,007	-
	Rejection rate %	10	0.0	0.0
	Rejected quantity	158,006	0	0
Total rejections along the chain		254,425	3,438	-
Valuation price (USD/per piece)		1.1	7.5	4.5
Value of rejections		279,867	25,787	-

The volume of hides and skins not sold due to lack of market and other reasons was calculated as the estimated total number of hides and skins produced from animals slaughtered in Somaliland less the number exported (dry and wet blue) and the number rejected. Too et al. (2015) estimates that a total of 38,094 heads of cattle, 249,400 camels and 3,901,250 sheep and goats are slaughtered in Somaliland in a year. Table 31 shows the estimated number and value of losses because they were not sold or due to other reasons. A total of 2.3 million small ruminants' skins worth over USD2.55 million, and 250,000 camel hides produced worth USD1.12 million were not exported in 2016. This volume represents all the camel hides and 59% of the small ruminants' skins produced in the country.

Table 31. Estimated number of hides and skins not sold in 2016 due to lack of markets and other reasons

	Cattle	Camel	Shoats
Number of animals slaughtered	39,476	249,400	3,901,250
Number of hides/skins lost because they were not sold or due to other reasons	469	249,400	2,321,190
Valuation price (USD/per piece)	7.5	4.5	1.1
Total value of lost hides/skins (USD)	3,518	1,122,300	2,553,309

## 3.6 Inputs and support services required by core value chain actors

The core value chain actors—producers, collectors, wholesalers, tanners and exporters of hides and skins—rely on a network of partners who supply them with the inputs and services they require to perform their functions. Figure 2 provides a documentation of inputs and service providers at different levels in the hides and skins value chain. The input and service providers include animal health input and service providers, slaughter service providers (abattoirs and slaughter slabs), government regulatory bodies, transporters, suppliers of curing salts and chemicals and other development partners.

Livestock producers rely on animal health services and inputs providers for prevention and control of animal diseases and parasites. Diseases such as lumpy skin, pox, dermatitis and parasites like ticks and mange which are common in Somalia and the wider Eastern Africa region are significant causes of pre-slaughter defects in animal hides and skins. Behailu (2017) provides a description of the damage caused by livestock diseases and parasites to animal hides and skins and the implications on quality. Unfortunately, animal health services and inputs in Somaliland are widely unavailable rendering prevention and control of animal hides and skin damaging diseases and parasites difficult.

Animal slaughter services are also a key input in the generation of hides and skins. The quality of facilities where slaughtering is done impacts on the quality of hides and skins. As already indicated, there are six main slaughterhouses in Somaliland but only two can be termed as modern. The main slaughterhouses are supplemented by some 36 slaughter slabs located in the various administrative districts in the country which are commonly run by the local government administration. As findings from a study by Kinyanjui et al. (2011) showed, inappropriate practices and lack of adequate and appropriate equipment are the main challenges especially in government run slaughter facilities in Somaliland.

Interviews with slaughterhouse operators also revealed practices that may undermine the quality of hides and skins from animals slaughtered in their facilities. For example, cattle and camel and in some cases sheep and goats in many slaughterhouses/slabs were bled on the ground as opposed to when the carcass is hanging. In numerous other cases the removal of the hide/skin is extensively done using knives as opposed to fisting and/or use of other recommended equipment such as dehiders to avoid infliction of fray cuts. In some slaughterhouses, slaughter persons who often doubled as flayers had never received any skill enhancing training on hides and skins, and their knowledge on factors influencing quality is limited.

Many of the different types of value chain actors (collectors, wholesalers, and exporters) often seek the services of transporters especially when large volumes of merchandise are being moved. Salt suppliers were identified as critical partners for wholesalers who use the ingredient for preservation (salting) of hides and skins. Scarcity and high price of salt especially during the rainy season were identified as important problems. During the FGD, participants explained that during the rainy season holes where the salt is mined often get flooded making it impossible to extract the input. Some participants observed that importing salt could be cheaper than buying it from local suppliers. Poor quality salt (due to contamination by sand) as well as problems in weighing and measuring during packaging of salt by the salt dealers was also cited as a problem. Essentially, the salt sellers do not weigh the quantity of salt during packaging. For example, a sack of salt should weigh 50 kg and cost USD7. In practice the sack often weighed less (up to 30 kg) but buyers were charged the same price. Other crucial services sought by wholesalers include packaging/bailing services (paid for according to the number of bales) and vehicle loading and unloading services during transportation.

At tannery level, the main set of inputs and services sought included tanning chemicals, reliable and affordable electricity and plant repair services. As tanneries also doubled as exporters, they also required international money transfer services and port and shipping services (including security checking) just as is the case with dry hides and skins exporters. Chemicals used for skin tanning were imported from India by factory owners. However, they observed suppliers of these raw materials were often unreliable. It should also be noted that there is lack of a public national power grid in Somaliland and tanners produce their own energy from fossil fuel—which is expensive and likely to affect competitiveness of final products in the international markets.

The tanners and other exporters mainly relied on financial institutions in neighbouring countries especially Djibouti when conducting business transactions with their overseas trading partners. With Somaliland being officially unrecognized internationally, documents issued by local financial institutions are also often unrecognized.

### 3.7 Governance in the value chain

Results from the analysis of levels of market share commanded by businesses in the hides and skins sector in Somaliland showed no presence of dominant firms at any stage in the value chain but rather indicated that competition is abundant (Section 3.5). In the absence of a lead firm to define product and production process parameters in the value chain in Somaliland, the quality of hides and skins selected for export marketing by the value chain actors is largely determined by what buyers in the importing countries are willing to accept. However, due to the pollution that is usually associated with hides and skins operations, the government is heavily involved in its regulation. For instance, owing to the bad odour that often emanates from hides and skins warehouses, the preference by government authorities is to have these storage facilities located far away from peoples' dwelling areas. Warehouse operators complained that with the ongoing rapid expansion of urban areas, their businesses are constantly being forced to relocate to other uninhabited areas due to human encroachment.

Likewise, in the tanning industry, operators are closely monitored by various government ministries including the ministry of environment which performs regular inspections of the tanneries to guard against any adverse environmental impacts; ministry of health which is involved in the inspection of chemicals used in the tanneries; ministry of industry which allocates sites where tanning factories are going to be located; and ministry of finance which comes up with taxation regime in order to ensure that negative externalities from the hides and skins activities are internalized. As already mentioned, tannery operators lamented about inconsistencies that characterize decisions by regulatory ministries on running of businesses in the hides and skins industry. In addition, it was observed that there is lack of expertise within the public sector in executing their roles for effective running of the sub-sector, potentially opening possibilities for rent seeking and unpredictable environment for investors.

It was also established that actors in the value chain are involved in some form of horizontal and vertical coordination of their activities. These efforts involve different types of actors all of whom were said to be members of an organization called Somaliland Leather Association. One of the functions of the association is resolution of conflict among its members. Examples of such conflicts that have been resolved in the past include disagreements over agreed prices between exporters and their overseas customers. Other objectives of the association include improvement in quality of hides and skins, finding new export markets for hides and skins from Somaliland and collaboration with government to enhance the performance of the hides and skins industry. The board of directors of the association only includes wholesalers, exporters and tanners.

### 3.8 Enabling environment

Value chain performance is influenced by the characteristics of the environment within which the chain is immersed. The map of the hides and skins value chain in Somaliland presented in Figure 2 also captures information about the enabling environment within which the hides and skins sector in Somaliland operates.

Livestock keeping is the leading economic activity in the country, ensuring availability of hides from the domestic meat industry. Also, the export marketing of hides and skins has a long history with the trading relationships often featuring immigrant family relatives, contributing to the survival of the export trade despite many years of instability in Somalia.

On the downside, animals graze on rangelands that are inhabited by thorny shrubs often inflicting injuries on animals and undermining the quality of their hides and skins. The situation is worsened by some pervasive cultural practices including branding and colouring of animals after sale in markets which is destructive to their coats. Animal slaughter facilities are also often poor leading to poor quality of hides and skins. Diseases such as sheep and goat pox, lumpy skin, mange and

parasites including ticks were said to cause rejection of 50% of hides and skins produced due the pre-slaughter defects. The situation is worsened by lack of strong animal health services to prevent and control the outbreak of such diseases.

The economic and policy environment in which the value chain operates also presents some challenges. The fact that the Somaliland state is not officially recognised poses some difficulties to local exporters when conducting transactions with international buyers. As already indicated, the exporters are forced to rely on banks in neighbouring countries to conduct transactions. In addition, regulation of the sector within Somaliland suffers from lack of coordination among the various government agencies involved. Because the value chain terminates in export markets, its performance is also influenced by global economic trends and trade policies in importing countries. Examples of policy changes that have had implications in international marketing of hides, skins and leather include the revision of import and export tariffs by China in 2009 and the prohibition of products containing dimethyl fumarate—a biocide used in preservation of leather products during storage or transportation—in the European Union market. At the time of this study, it was noted that the sector had performed poorly over the previous three years owing to a slump in international demand and prices for leather. Note also that exporters of hides and skins from Somaliland face competition from exporters in other countries including in Europe and Central and Latin America which may have higher quality products.

## 4. Conclusions and recommendations

### 4.1 Conclusions

While livestock is the leading source of livelihoods and national income in Somaliland, it is increasingly being recognized that there is need for efforts to diversify the country's export portfolio and markets in the face of flattening rate of growth of livestock exports and increasing need for more foreign exchange to finance imports. Enhanced trade in hides, skins, leather and leather products presents a potential means for fostering the diversification of the Somaliland export trade. Moreover, revenue realized from the sale of hides and skins could serve to foster the competitiveness of livestock activities by enhancing the value of animal offtake. Surprisingly, despite a growing body of literature on livestock marketing in Somalia, not much is known about the marketing of hides and skins owing to the limited number of studies on this topic. To address this dearth of information, a value chain analysis of the sector was conducted to identify potential opportunities for enhancing the export marketing of hides and skins in Somaliland.

The data used during this study included both primary and secondary data. The secondary data was obtained from documents, including livestock industry and market reports and previous studies by other researchers and research organizations. The primary data was obtained through FGD with various types of value chain actors including hides and skins collectors, wholesalers, exporters, tannery operators, government officials and other interested parties. In addition, individual interviews were conducted with a total of 90 value chain operators using a semi-structured questionnaire. Sites where the interviews with individual value chain actors were conducted were identified a priori with the assistance of participants during the FGD and targeted main market centres where hides and skins activities were prevalent. These included Hargeisa, Burao, Borama, Gabiley and Berbera regional towns.

The main destination markets for hides and skins from Somaliland include China, India and Pakistan. Most of the hides and skins (77%) are exported in raw cured form. Essentially, the core value chain processes that take place within Somaliland include production of the hides and skins (through animal rearing and slaughter), collection of the hides and skins, warehousing and wholesaling, tanning, and export marketing. Collectively, it was estimated that the industry supports a total of over 1,190 persons—1,050 men and 140 women. Hides and skins collectors account for most of the value chain actors (77%) compared to wholesalers (17%), exporters (5%) and dry hides and skins exporters (4%). The two tanning factories have a combined workforce of 54 demonstrating the potential for downstream value addition activities in the sector to generate employment. However, it was noted that the hides and skins sector has declined in recent years with the total number of pieces exported falling by 30% between 2014 and 2016 coupled with the closure of two tanning factories. Value chain actors attribute the situation to the difficult conditions in the international market leading to reduced level of activity by marketing agents in the value chain in Somaliland. The financial loss to Somaliland due to reduced volume of hides and skins export in 2016 was estimated to be more than USD1.9 million worth of sheep and goat skins and USD1.12 million worth of camel hides.

There are six main slaughterhouses in Somaliland located in the main regions of the country (Borama, Gabiley, Hargeisa, Berbera, Burao and Togo Wajalle) which act as the main initial sources of the hides and skins marketed for export. These are supplemented by 36 slaughter slabs often located in the country's administrative districts. Only two of the slaughterhouses (Borama and Burao) can be termed as modern slaughterhouses while the rest often lack adequate and

appropriate equipment leading to poor quality of hides and skins due to slaughter defects such as flay cuts. Slaughter practices in some of the abattoirs also undermine the quality of hides and skins produced including bleeding animals on the ground as opposed to when the carcass is hanging, and extensive use of knives as opposed to fisting during skinning. In some cases, flaying is done by persons who have never received any skill enhancing training on hides and skins and their knowledge on factors influencing quality is limited. However, the factors and practices that undermine the quality of hides and skins in Somaliland go beyond animal slaughter. The most cited pre-slaughter factors include diseases and parasites that afflict animals, bruises and injuries on animal coats often caused by thorny bushes in rangelands where animals graze, and the husbandry practice of branding animals. Putrefaction due to poor preservation of the hides and skins after slaughter and retained fat were the most frequently cited post-slaughter defects that undermined quality.

While grading is practiced during procurement at the wholesale stage of the value chain and beyond, suppliers of hides and skins exported in dry salted form receive the same prices for the three different export quality grades identified. A possible reason for this is that defects in hides and skins from animals reared in extensive systems are not highly visible before tanning. This premise was rendered some credence by operators of tanning factories who lamented that despite accepting only the best quality skins from the local market, 40% of these were downgraded and sold at a lower price after processing. It was also found that the tanning factories in Somaliland are engaged in importation of raw skins from neighbouring Djibouti and Ethiopia and these were said to be of better quality than the local skins due to better animal slaughter facilities and techniques used in the two countries.

On value chain governance, industry concentration was found to be low at both wholesale and export stages pointing to a high level of competitiveness. Nevertheless, tanneries generated the higher amount of value added per shoat skin (USD0.56) compared to other value chain actors (USD0.08–0.15) besides butchers. In addition, wholesalers, exporters and tannery operators complained about the way activities in the sector are regulated by the government. Of major concern were the frequent changes in the government ministries involved which affected the consistency of policies. The pervasive changes in the government ministries were also blamed for frequent issuance of conflicting directives regarding the suitability of the location of warehouses and tanning factories. In addition, actors complained about high costs and/or the occasional unavailability of important inputs such as salt and chemicals used in leather tanning.

## 4.2 Recommendations

Numerous recommendations arise from this analysis which could enhance the performance of the hide, skin and leather sector in Somaliland.

1. These findings demonstrate the importance of the hides and skins value chain as a livelihood source in Somaliland and as a supplier of products for the export market. This calls for efforts by the government and other development agencies to support the sector's development and unlock its potential in the fight against unemployment and poverty in Somaliland. The development of a hides, skins and leather sector strategy could be a good starting point.
2. Given the occasional inconsistencies that characterize decisions by regulatory ministries related to the management of businesses in the hides and skins industry, there is a need to develop a harmonized hides and skins industry policy. This should serve to guide the activities of investors and decisions made by regulators. The prevailing situation is not conducive to the good performance of the sector as it only serves to increase uncertainties among private investors.
3. Efforts should be made to improve the quality of hides and skins in Somaliland which is lower than in neighbouring countries. Such efforts may include the upgrading of the existing animal slaughter facilities and equipment in those facilities, capacity building of relevant personnel such as flayers on appropriate practices, awareness raising among farmers as to how to brand the live animals without causing too much damage to the hides and skins, and enhancing availability of animal health inputs and services.

4. There is a need for the formulation of and adherence to standards based on international requirements, which is one of the missing links in securing better prices for finished products.
5. There is a need to address the problems related to the procurement and availability of inputs in the hides and skins industry, particularly of salt. One possible intervention to improve the procurement process would be the introduction of labelling to ensure buyers are aware of what they are purchasing. To address the shortage in supply of salt, investors and development agencies should explore the possibility of introducing salt recovery technologies such as those used in tanneries in Ethiopia. The recovery and recycling of salt also renders the hides and skins industry more environmentally friendly.
6. Policy should encourage more value addition through the tanning of more hides and skins into finished leather and the manufacturing of leather products such as footwear. As data on market margins shows, such downstream processing activities would generate more employment and add value that would benefit actors within the local economy. To access the technology needed for this type of upgrading, policy could encourage local investors to partner with foreign investors and set up value addition activities. In the case of tanning, it is important to note that processing of raw hides and skins into wet blue is costlier in terms of pollution than the subsequent processes of processing wet blue into crud and finished leather.



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# Appendices

## Appendix I: A checklist used for the mapping of the hides and skins value chain

- a) Mapping of core processes
  - i) What are the core processes in the hides and skins value chain in Somaliland?
  - ii) Who are the actors involved and what do they do? (Probe further based on gender)
  - iii) What does the flow chart of hides and skins in Somaliland look like? (Construct the flow chart and indicate the volume of products involved, number of actors and jobs generated for the different core processes.)
  - iv) Where does the product originate from and where does it go? (Geographical locations of different core processes/actors including final markets)
  - v) How does the value of hides and skins change along the chain? (Prices at different points in the value chain)
  - vi) What type of relationships and linkages exist? (Are there any horizontal and/or vertical integration?)
  - vii) What is the grading system used in the marketing of hides and skins at different points in the value chain?
  - viii) What are the attributes considered during grading of hides and skins at different points in the value chain?
  - ix) What are the key constraints in the marketing of hides and skins at different points in the value chain?
- b) Mapping of partner networks
  - i) What types of services are feeding into the chain in each link of the market chain?
  - ii) Are services missing and who could provide the missing services?

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