

Thesis Ref. No. _____

**MARKETING CHAIN AND QUALITY MANAGEMENT OF HIDE AND
SKIN IN TIYO AND DIGELU-TIJO WOREDA, EAST ARSI ZONE,
OROMIA REGIONAL STATE, ETHIOPIA**

MSc. Thesis



By

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**Department of Animal Production Studies
MSc Program in Tropical Animal Production and Health**

**June, 2014
Bishoftu, Ethiopia**

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SKIN IN TIYO AND DIGELU-TIJO WOREDA, EAST ARSI ZONE,
OROMIA REGINAL STATE, ETHIOPIA**



**A Thesis Submitted to the College of Veterinary Medicine and Agriculture of
Addis Ababa University in Partial Fulfillment of the Requirements for the
Degree of Master of Science in Animal Production and Health**

By

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**June, 2014
Bishoftu, Ethiopia**

Addis Ababa University
College of Veterinary Medicine and Agriculture
Department of Animal Production and health Studies

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DEDICATION

I dedicate this thesis manuscript to my father Ato Argaw Amene and my mother W/O Weinabeba Amare for their affection, love and dedicated partnership in the success of my life.

STATEMENT OF AUTHOR

First, I declare that this thesis is my *bonafide* work and that all sources of materials used for this thesis have been duly acknowledged. This thesis has been submitted in partial fulfillment of the requirements for an advanced M.Sc. degree at Addis Ababa University College of Veterinary Medicine and Agriculture and was deposited at the University Library to be made available to borrowers under rules of the Library. I solemnly declare that this thesis is not submitted to any other institution anywhere for the award of any academic degree, diploma, or certificate.

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LIST ABBREVIATIONS

ALDHO	Arsi Zone Livestock Development and Health Office
BFED	Bureau of Finance and Economic Development
CSA	Central Statistical Authority
DWOA	Digelu-tijo Woreda Office of Agriculture
EEA	Ethiopian Economic Associations
FAO	Food Agriculture Organization of United Nations
GDP	Gross Domestic Product
HS	Hide and Skins
m.a.s.l.	Meter above Sea Level
MoARD	Ministry of Agriculture and Rural Development
PIC	Productivity Improvement Center
RDFR	Revised Draft Final Report
SPSS	Statistical Package for Social Sciences
TWOA	Tiyo Woreda Office of Agriculture

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ABSTRACT

Exploratory study on the production and marketing of hide and skins were conducted in Tiyo and Digelu-tijo Woreda with the objectives of describing the market chain for raw hide and skin, to assess quality management's practices and identify factors affecting both marketing and quality of hide and skin. A survey was conducted collected from 5 hide and skin collection centers (3 from Tiyo and 2 from Digelu-tijo Woreda), all butchereries abattoirs and all middlemen in both Woreda. Semi structured questionnaire and secondary data were collected from both Woreda. In addition, the production and quality of hides and skins were studied from 100 sampled rural household heads from 5 Peasant Association of each Woreda. Descriptive statistics were used to analyze the data. Results indicated that from urban kebeles all respondents in Tiyo Woreda and 65.2% respondents' in Digelu-tijo Woreda sold the hide and skin to the market. Of total respondents 55.4%, 42.4% and 2.2% sold hide and skin for middlemen, collection centers and informal market respectively in Tiyo Woreda. Similarly 68.7%, 23.2% and 8.1% of respondents sold hide and skin for middlemen, collection centers and informal market respectively in Digelu-tijo Woreda. Buying process was done without following the grading standards of hides and skins, by simple sorting based on visible defects, size, pattern and freshness. The average sheep skin sale price of farmers 53.86 birr and 48.83 birr in Tiyo and Digelu-tijo Woreda respectively. Collection centers bought 60 birr, 40 birr and 5.5 birr/kg for sheep skin, goat skin and cattle hide respectively in Assela market. In same manner in Sagurie market collection centers bought 50 birr, 37.75 birr and 7birr/kg for sheep skin, goat skin and cattle hide respectively. Of respondents of farmer 82.6% sold fresh within 12 hours and 17.4% sold the hide and skin unpreserved within 24 hours in Tiyo Woreda. While in Digelu-tijo Woreda about 87.8% respondents' sold hide and skin fresh within 12 hours and 12.2% of them sold the hide and skin unpreserved within 24 hours in Digelu-tijo Woreda. The concerned bodies should reinforce and mainstream the system of buying of hides and skins on standard grade basis for middlemen and collection centers.

Key words: *Degelu-tijo, Hides and Skins, Market Chain, Tiyo, Oromia, Quality.*

1. INTRODUCTION

Ethiopia possesses one of the world largest livestock populations: eighth for cattle, twelfth for sheep and lambs, and eighth for goats (FAO, 2001). Ethiopia's economy is predominantly agricultural where the livestock sub-sector plays substantial role. Agricultural growth, particularly through improved productivity and market access, is one of the principal routes to reducing poverty in developing countries. There is considerable diversity across countries with regard to the importance of smallholder livestock keeping in rural livelihoods. Ethiopia is endowed with a very large and diverse livestock resource in the world. Ethiopia's livestock population was estimated to be 44.3 million cattle, 23.6 million sheep and 23.3 million goats. Based on the off-take rate of 7.0%, 33.0% and 35.0% for cattle, sheep and goat respectively. So, expected to produce 3.1 million hides, 7.8 million sheep skins and 8.2 million goat skins (CSA, 2004 and 2007). So the country is ideal for leather production and making leather products.

The livestock sector in Ethiopia contributes 12 and 33% of the total and Agricultural Gross Domestic Product (GDP), respectively, the agriculture sector provides employment for about 80% of the population (The Economic Intelligence Unit, 2007). The sector also accounts for 12-15% of total export earnings, the second in order of importance, in 1998. Of the total household cash income from crop and livestock, livestock account for 37-87% in different parts of the country, and the higher the cash income the higher is the share of livestock, indicating that increased cash income come primarily from livestock (FAO, 1999). The livestock subsector plays a vital role as source of food, income, services and foreign exchange to the Ethiopian economy, and contributes to 12 and 33% of the total and agricultural GDP, respectively, and accounts for 12–15% of the total export earnings, second in order of importance (Ayeleet *et al.*, 2003).

In Ethiopia hides and skins contribute much to the export earnings from the livestock sector. In addition, it has a large contribution to the leather industry in the country. Livestock hide and skin contribute significant proportion of domestic leather. According Girma (2003) reported that, Ethiopia has been exporting hides and skins in the past 100 years. The country has big potential to develop the sub-sector. In 2002,

hides and skins represent major source of foreign exchange earnings for the country accounting for 14-16% of the total export revenue.

Hides and skins are the basic raw materials for the leather industry. Currently there are about 27 tanneries in the country and have an average capacity of 4,000 pieces of hides and 30,000 pieces of skins per day (EEA, 2007/08). However, they are working under capacity even if the country has a potential to supply around 20 million pieces of hides and skins per annum. The potential supply of hide and skins depend on the scale of meat production, not on the size of livestock population. Thus, the product, i.e. hides and skins, becomes available when meat is needed, not when it is appropriate for leather processing and so it is not primary agricultural commodity. This means that hide and skin supply does not respond to price change (FAO, 1998).

The leather industry processes raw hides and skins and produces semi-processed and finished leather for both export and local consumption. The industries are also sources of employment. This is why the sector needs great attention by the government and all concerned stakeholders (Ayele *et al.*, 2003).

Ethiopian skins and hides, specifically sheep skin, are well known in the world to produce high quality leather due to their fine grain and compact structure. Ethiopian highland sheep skins in particular, remain highly competitive in international markets for some natural characteristics of clarity, thickness, flexibility, strength and compact texture which make them especially suitable for making of high quality gloves, sport equipments and garments. Goat skins, originating from Wollo in Ethiopia and classified as *Bati-genuine* and *Bati-type* are characterized by thick, highly flexible and clean inner surfaces and are in high demand for the production of fashion leathers (Raga, 2003). These qualities are the reasons why a great number of leather producing companies in the world are attracted to Ethiopian skins and hides. Skins, hides and leather products are the second leading export item of Ethiopia next to coffee (Yibralem, 2000).

Although skins and hides are Ethiopia's second largest export item after coffee, they have not been given much attention by academic researchers, probably owing to their relatively small export value share at 7 to 21 percent, compared with the dominant

share of coffee at 44 to 76 percent (Customs Authority 1990, 1994, 1996, 1998), and their unique character as the by-product of meat slaughter and an item of supplementary income for farmers. Therefore, while several studies on the technical improvements in hides and skins have been conducted, the quality management (preservation and transport methods), marketing chain and defects of hides and skins have not been explored in detail.

Considering the development potential and economic importance of hides and skins, in the last few years, the government of Ethiopia has launched different development programs aimed to increase the supply and improve the quality of the raw material. Despite these development interventions, hides, skins and the leather industry are still constrained by the poor quality of raw materials, lack of an efficient market structure, a weak extension service, competition from local/rural tanning industries and a lack of price incentive for production of good quality raw material (Ahmed, 2001).

As a result, the industry in the country has tremendous potential for domestic and foreign exchange earnings and the capacity to attract profitable foreign investment. Though Ethiopia has very good potential to produce substantial quantities of skins over the last 10 years, there are indications that quality of raw hide and skins supplied has deteriorated with an increasing number of poor grades (Bisrat, 2013). The main problems contributing to downgrading hides and skins can be generally categorized as natural defects (scratches, disease, ecto-parasitic defect (ekek) and man-made defects (brand marks, ripping and flaying problems, preservation, transportation, storage and bad handling (Zenaw and Mekonnen, 2012) followed by 'ekek' due to external parasites, shortage of supply of hides and skins to meet the demand of tanneries and absence of effective market demand, absence of credit, high marketing cost, inappropriate management of animals, faults during slaughtering and improper handling of skin and hide before it reached at tannery (Abadi, 2000). These have resulted in an ever increasing number of complaints about the quality of skins and hides available to market. In combination it has adversely affected all aspects of the industry.

So far, very little attention was given for the different causes of quality deterioration of the product, the works done on the prevalence of the different skin defects and

proper management aspects are scanty. Therefore, further research studies are needed on the basis of marketing chain and proper hide and skin quality management strategies.

Problem Statement and Justifications

Hides and skins are important livestock products providing income for the poor people living in the rural areas of the region. They are supplied to domestic and foreign markets. Since they have significant economic importance, much effort is needed to improve the quality and increase the quantity so that there should be effective and efficient utilization.

Traditionally farmers treat their animals when they get sick or injured. Of the different traditional methods of treating animal practiced by the farmers branding was the common and this has a significant negative effect on the quality of the hides or skins produced from branded animal. Badly designed transport vehicles and holding facilities contribute to hides and skins defects during transportation of animals for slaughter. Unreliable supply of curing salt also has similar impact on quality of hide and skin. Hides and skins are meat by-products and there was still little consideration given to the care required for the collection and processing of the hides and skins in to high quality leather (Adugna, 2004).

Limited studies were conducted with regarding the hide and skin marketing chain, methods of preservation and transportation of the raw materials. Hide and skins of the study area were of high natural quality and significant number out of the region, but quality management of product and the opportunities of the product were not observed. Thus, it was important that the continuum of the product quality management would be examined.

An in-depth study of the hide and skin marketing chain and quality management was necessary in order to gain an insight into marketing chain, the key factors involved, price variation and constraints attached to various stages of actors.

Significance of the Study

The study was vital role to specify ideas about the flow of the market chain for hides and skins in the study area. It also contributed to better understanding of the hide and skin quality management and its effect on market prices. Therefore, the study show how hides and skins marketing chain was functioning in the domestic market and quality management focusing on Arsi zone, particularly on Tiyo and Digelu-tijo Woreda which were one of the major hides and skins supplying areas in Oromia regional state. By identifying the major problems quality management, defects or constraints and marketing chain associated with hide and skins in the study area, the study should help to inform policy makers to implement specific and efficient institutional and other relevant options to develop efficient marketing chain, quality management and extension program that were benefit the smallholders in the rural area. It was also provide significant contribution to put the considerable improvement and strategic developments associated with those marketing chain and quality management of the product in both Tiyo and Digelu-tijo Woreda.

Study Objectives

General objectives

- ✓ To study marketing chain and quality management practices and to assess constraints of hide and skin in Tiyo and Digelu-tijo woredas of the East Arsi Zone, Oromia Regional State.

Specific objectives

- ❖ To describe the market chain for raw hide and skin across the Woreda;
- ❖ To assess the hide and skin quality managements practices of the local actors in the study Woredas; and
- ❖ To identify factors affecting both marketing and quality of hide and skin in the study Woredas

Research questions

1. Where are the markets and who are the major actors?
2. Who decides the price and what are the criteria for price fixing?
3. What quality management measures prevail to maintain the quality or add value of hides and skins?
4. What are the major limiting factors in the market chain?

2. LITERATURE REVIEW

2.1. Conceptual Definitions and Classifications of Hide and Skins

The term "hides and skins" are often used as if they were interchangeable, but according to the British standard definitions; 'hide' is the raw skin of a mature or fully-grown animal of larger kinds, e.g. cattle and horses and also other large animals. 'Skin' is the skin of a mature or fully grown animal of smaller kinds, e.g. sheep, goats, pigs, reptiles, birds and fishes, or of immature animals of the large species, e.g. calves and colts. Hides are divided according to age and weight of the animal. Accordingly:

- Calf skins usually weigh from 0-6 kg., in green condition.
- Adult animal hides which are categorized in to three, light, medium and heavy.
- Light: Hides from young heifers/bulls with a weight of 6-11kg., in green state.
- Medium: Hides from young cows and bull which weigh 11-17kg.
- Heavy: Hides from full-grown cows or bulls which weigh more than 17kg.
- Sheepskins are divided into hairy and wool types subject to the type of the hair cover.
- Goatskins are highly valued as the raw material because of their high quality for upper leathers (Berhe, 2009).

According to European Guidance, Hides and Skins are the dermal envelopes of animals. They are by-products of the meat industry and are obtained after flaying through the separation of the dermal tissue from the carcass.

- *Hides* are the dermal envelopes of bigger ruminants such as cattle, elks, buffaloes, camels or horses, while

- *Skins* are those pertaining to smaller animal species such as pigs, sheep, goats, rabbits or hares or younger animals like calves, but also fur animals and certain reptiles such as snakes, lizards or crocodiles. Internationally, most hides are derived from cattle (Buffalo in Asia), and most skins from sheep and goats (and to a lesser extent calves). Although there are livestock resources of pigs, horses and donkeys in

Africa, they are relatively small in number, and will not be considered in the rest of revised draft report (RDFR, 2002).

2.1.1. Unique features of Ethiopian hides and skins

Ethiopian hides and skins have good reputations in the international leather market for their unique natural substance of fitness, cleanness, and compactness of texture, thickness, flexibility and strength. The cattle hides, identified as “Zebu type”, are popular for their fine grain pattern and fibre structure that are well suited for the production of quality upper leather. The highland sheepskins known as “hair sheep/ Selale type” are considered to be the worlds finest and have a highly compacted texture.

They are excellent raw material for high quality leather for dresses, gloves, sports gloves and other garments. This unique feature of the Ethiopian sheepskins enables them to fetch higher prices in the international leather market. Goatskins from the highlands are categorized as “Bati-genuine” and those from the lowlands as “Bati-type” in the international market. “Bati-genuine” is associated with highest quality class goatskins in the world. The particular characteristics of Ethiopian Bati-genuine goatskins are their thicker, highly flexible and clean inner surface and are known world-wide for being excellent raw material for producing high quality suede leather (Ahmed, 2000).

2.1.2. Production and domestic utilization of hides and skins

The main sources of hides and skins are in rural areas where the major proportion of Slaughtering is carried out at the household level or in backyards that are not equipped with any amenities for undertaking and following proper slaughtering, ripping and flaying procedures. A considerable number of the raw material is derived from slaughter slabs constructed either by local communities, regional governments or HS development projects. Municipal slaughterhouses, local and export abattoirs and meat and meat products processing plants are other sources of HS (Ahmed, 2000).

Livestock producers have various uses of hides and skins for domestic purposes. A research conducted by Kagunyu and his colleagues, (2011) in Kenya show that hide and skin used as a source of various materials which includes; making ropes, building houses, making milking containers, drums, seat covers. Muslim communities use them as praying mats among others. Among the Turkana community, hide and skins are eaten as food and also other communities use them as famine food.

2.1.3. Supply of raw hide and skins

According to case study conducted in cultural and religious significance of livestock in Pakistan show that many society the slaughter of animals is commonly used to provide food for special festivities, often religious celebrations such as the Muslim Eid-ul-Azha. In Pakistan during the Eid-ul-Azha, which is referred to locally as Qurbani, the slaughter of animals may exceed ten times the normal daily rate. Normal, or halal, slaughtering procedures requires animals for human consumption to be fit and healthy, but those used during Qurbani must be of particularly high quality because of their religious symbolism and significance. This festival could thus produce a large number of high quality hides and skins, but the animals are commonly slaughtered on private premises by people with little practical experience. The slaughtering process is often wasteful and unsanitary, and many hides and skins produced during Qurbani are lost or spoiled (Ian and Wilson, 2009).

2.2. Marketing Chain and Marketing Concepts of Hide and Skins

The concept of exchange and relationships lead to the concept of market. It is the set of the actual and potential buyers of a product. Conceptually, however, a market can be visualized as a process in which ownership of goods is transferred from sellers to buyers who may be final consumers or intermediaries. Therefore, markets involve sales locations, sellers, buyers, and transactions. According to Kotler and Armstrong (2003), marketing is managing markets to bring about profitable exchange relationships by creating value and satisfying needs and wants.

2.2.1. Marketing system

In broad terms, marketing system may be defined as the totality of product channels, market participants and business activities involved in the physical and economic transfer of goods and services from producers to consumers. Marketing system operates through a set of intermediaries performing useful commercial functions in chain formations all the way from the producer to the final consumers (Islam *et al.*, 2001).

Three Local market tiers are present in the Hides, Skins and Leather subsector; subsector;-Primary market through local markets in the study area by livestock traders, butchers and local buying groups. Secondary markets which contain main collection centers both in the study area and high potential areas. This is characterized by Hides and Skins Traders. Tertiary market these are highest market level possibly the terminal market locally. This is characterized by exporters, tanners and major buyers in urbanized localities (Mwinyikion *et al.*, 2010).

2.2.2. Marketing channel

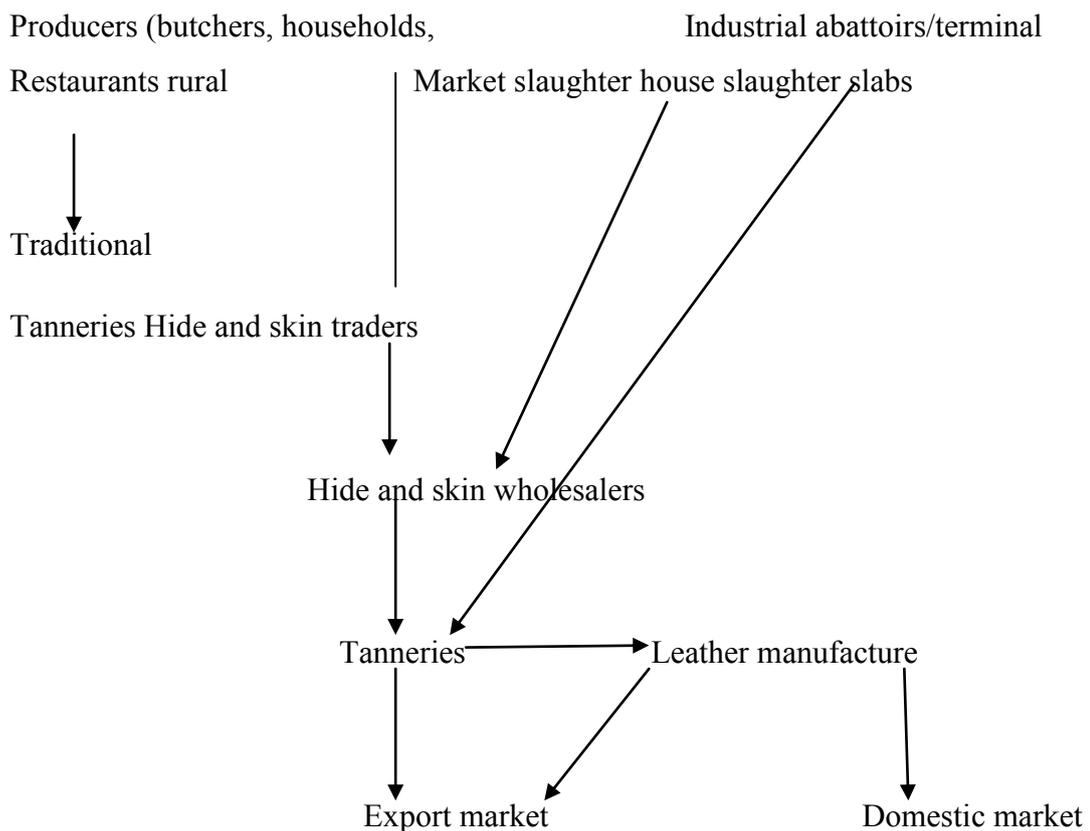
Formally, a marketing channel is a business structure of interdependent organizations that reach from the point of product origin to the consumer with the purpose of moving products to their final consumption destination (Kotler and Armstrong, 2003). This channel may be short or long depending on kind and quality of the product marketed, available marketing services, and prevailing social and physical environment (Islam *et al.*, 2001).

2.2.3. Market structure

The marketing of HS starts at the producer/consumer level and passes through a chain of middlemen until it reaches the tanneries. The market chain for raw HS consists of the primary producers/consumers, who are the initial sources (individual meat consumers, rural slaughter slabs, municipal slaughter houses, abattoirs, meat processing plants), agents of traders, collectors, local tanners, regional medium/small traders, regional/Addis Ababa big traders and tanneries. The individual consumers who kill animals in their backyard sell the HS either to agents, collectors, or directly to regional small/medium traders. After preservation by air-drying or wet salting, the

HS are passed on to big traders and then to the tanneries. The tanneries can be supplied directly from the slaughter premises, regional big traders or Addis Ababa big traders as well. The tanneries process the HS received from their suppliers either in the green (fresh), air dried or wet salted states to semi-finished or finished stages for both local and export markets(Ahmed, 2000).

Market structure depicts the institutional environment among others in which transactions take place, which influences competition and pricing is considered to be fixed in the short run for actor in the marketing channels. Market structure is defined as characteristics of the organization of a market, which seem to influence strategically the nature of the competition and pricing within the market (Meijer, 1994).



Source: (Girma, 2003)

Figure 1: The marketing channels for hides and skins in Ethiopia

2.3. Quality Management of Hides and Skins

The quality of hides and skins for production of different types of leather is determined by certain characteristics of the raw material and these are (PIC, 1990): The thickness, and evenness of the thickness over the surface, the weight, the density and the presence of defects. Hides and skins differ in their structure depending upon the habit of life, season of year, age, sex, and breeding. The various operations involved in the preparation of hides and skins are most easily classified according to when they occur with respect to the time of slaughter. Accordingly, the first of three such periods is designated pre-slaughter. It covers the greater part of the animal's life, from its birth to about the time it is collected for delivery to the butchery. In fact it may be argued that the period begins even earlier, since some of an animal's characteristics are genetically determined. Any selection and breeding program that may be operated on the farm or ranch will inevitably affect many features of the offspring of a particular mating including certain characteristics of the hide or skin. Environmental ones often obscure genetic factors, in particular by the consequences of nutrition (Leach, 1995).

The pre-slaughter operations that affect the quality of the hides and skins available to the tanning industry are principally the result of the quality of the husbandry applied by those who looked after the animals-herders, farmers, ranchers, feedlot staff, veterinarians, hides and skins merchants and transport operators. In some circumstances, domesticated animals may receive almost no attention throughout their lives. These are the animals left to graze or forage (sometimes in open grassland), which may only be handled immediately before dispatch to the abattoir. By way of contrast, some dairy animals kept under intensive systems may be subject to almost continuous scrutiny. In between these two extremes there exist large ranges of animals' production systems, which can present more or less of a hazard to the quality of the animal's hide or skin (Leach, 1995).

In many livestock production systems, disease control is a major aspect of animal's husbandry. Any fatal disease that leads to the condemnation and destruction of the animal, or a serious disease that affects the productivity of the herd will have an adverse effect on the supply of hides and skins (Leach, 1995). The final part of the

pre-slaughter operations involves the supply and transportation of the animal to the market and ultimately the butchery. Special attention is required at this stage since any damage to the animal will not have time to heal before the animal is slaughtered, so any defect will remain on the hide or skins as an open wound. The range of different problems that can occur at this stage is extensive, and many others associated with improper transportation (LeachandIjaz, 1993).

Hides and skins supplied to the tanning industry generally come from two different sources, controlled slaughter in designated establishments and slaughters and deaths elsewhere. The latter includes the significant quantities of hides and skins sometimes available from special festivals (Leachand Ijaz, 1993). Since the primary purpose of slaughter is to provide meat for human consumption, it should be done under the best possible conditions of hygiene and safety. This is most easily achieved in controlled slaughterhouses. This type of operation is also likely to provide the best conditions for hides and skins preparation. In those places where proper slaughtering facilities do not exist, it may be necessary to improvise and prepare carcasses under condition, which would not generally be considered acceptable (Leach and Ijaz, 1993).

2.3.1. Preservation

Preservation prevents putrefaction and keeps skins in good condition until they are processed in tanneries. Being protein in nature; skins are susceptible to attacks by bacteria or mould that leads to putrefaction in hot and humid climates. Dust, dirt, soil, water, blood, fodder, etc., are sources of infection apart from microorganisms that could be transmitted by air, insects, or contact with diseased animals. The weight of a fresh skin is about 60% water, ideal conditions for bacteria to thrive. The protein matter hydrolyzed by bacteria leads to loss of skin substance resulting in poor-quality leather. Curing creates conditions whereby bacteria are prevented from destroying skins. The type of curing used depends on weather conditions, availability of materials, location of tanneries, and so on. For instance, some drying techniques do not work during the rainy season, and salting is preferred. In all techniques, the natural water is removed so that the low percentage of moisture makes the bacteria ineffective and as soon as this condition is reversed, bacteria become active again (FAO, 2001).

Preservation is most effective when it is carried out quickly and thoroughly. Cattle hides, for example, should be dried to a moisture content of less than 15 percent within three days. Sheep and goat skins should be dried to a moisture content of less than 15 percent within one day. If drying takes longer bacterial damage is likely to occur. Similarly, hides and skins preserved by salting or brining should be saturated with salt – sodium chloride – within one day. Properly preserved hides and skins should be free of post-slaughter defects related preservation processes, such as bacterial decay, contamination and adulteration. Dried hides and skins should be flat, smooth and protected against insect damage during long term storage. Salted and brined hides and skins may be rolled, stacked or bagged to facilitate storage and transport (Ian and Wilson, 2009).

Most hides and skins must be preserved to protect them during storage and transport until they are converted into leather. Preservation should ideally begin immediately after slaughter and should never be delayed overnight. If freshly prepared hides and skins cannot be delivered directly to the tannery, they must be preserved. They should also be preserved if the delivery to a tannery is likely to be delayed, especially when the tannery is a long way from the butchery, and it may not be possible to deliver the fresh hides or skins quickly enough. Without preservation, the hides or skins would spoil before they were received in the tannery (Leach, 1995).

Preserved hides and skins may be stored for up to a year while waiting further processing. During this time preserved hides and skins may be collected and transported from remoter parts of a country and undergo grading, sorting and accumulation into large lots pending storage, sale and delivery. Storage usually involves costs such as rent, depreciation and interest charges (Ian and Wilson, 2009).

The most common methods of preservation are drying, salting, brining or the use of other chemicals Refrigeration, freezing and mechanical drying methods can be used, but they are expensive and tend to be reserved for more valuable skins in particular situations (FAO, 2001).

2.3.2. Transportation

Inefficient transportation may cause delays in arrival to tanneries or preservation centers as a result of which green or salted hides and skins deteriorate in quality. Poor handling during loading and unloading may damage quality of hides and skins (Kassa, 2005). Many types of vehicles are used to transport skins from Production sites to markets. Skins are often loaded singly on a truck or tied in loose bundles. Any movement that causes surfaces to rub together can cause considerable damage, especially to the grain, folded edges and corners. Rubbing damage caused during normal transportation by road is more or less negligible, but a certain amount of care is required to ensure protection of bales against rubbing and tearing on the outside surface by adequately covering them with hessian or gunny sacks (Ahmed, 2000).

2.3.3. Storage

To produce high quality hides, storage conditions are as important as proper preparation and preservation. In Ethiopia, a good percentage of skins are damaged during storage and transportation, especially during the rainy season. Problems that occur in rural drying sheds are the major source of damage and loss of skins. Rural drying sheds are highly infested with skin damaging insects, have leaky roofs, and do not use slatted platforms. Skins become damaged and many are totally rejected. While the main portion of insect damage happens in rural drying sheds, insect damage also occurs in tanneries and warehouses of large traders (Kassa, 2005).

2.4. Factors Affecting Hide and Skin Marketing

As a result of the by-product status, not enough attention is paid to maintaining the quality of hides and skins. Hides and skins are affected by pre-slaughter defects accumulated during the life of the animal; peri-slaughter defects during slaughter, and post-slaughter defects during handling, preservation and storage (Mwinyihija, 2010; 2011). In Ethiopia, the economic loss due to hides and skins defect is very high. These defects are encountered from the time the animal is born until the leather processing is completed. It is practically impossible to find out perfect animal hide or skin. Defects

come from carelessness in breeding, feeding, living condition, diseases, parasites, handling, slaughtering, preservation, storing and transportation (MARD, 2007).

2.4.1. Pre-slaughter defects

Most hides and skins are affected by the pre-slaughter defects accumulated during the life of the animal (FAO, 2001). The commonly observed pre-slaughter defects can be natural (poor nutrition, age and sex, breed and climatic effects), mechanical damage (brand marks, scratches, horn rakes, yoke marks etc), or defects due to diseases that can be viral like, small-pox rinder pest, fungal like ring worm or parasitic like tick-damage, sheep ked, louse infestation, mange etc.

2.4.1.1. Small Size

The small size of skin yielded by the hair sheep of tropical and mountain area origin is not considered a drawback because of the skin's superior quality of high tensile strength, compact fiber structure quality of high tensile strength, compact fiber structure and excellent grain. But according to Yacob (2013) review, small size skins that are downgraded due to poor quality are unwanted by tanneries. To the tanneries, processing these skins represents loss of profit due to the chemicals and labor involved in tanning a skin with a small, poor quality surface unsuited for finishing.

2.4.2. Peri- Slaughter Defects

2.4.2.1. Bruises

Are caused prior to slaughtering by yard beating of animals with sticks and ropes by driving them so that they jam in doorways or knock each other against the walls, and also by throwing them down heavily on hard floors, it appears on the meat and so does blood accumulation of extravasations under the hide or skin over the bruised area. Unless the reddish area on the flesh side of the fresh hides and skins are carefully cleaned with out delay local accumulation of the blood quickly causes putrefaction and results in blemishes or weak spots on the final leather animal (FAO, 2001).

2.4.2.2. Rubbed or dragged grain

This damage which is abrasion of the grain is caused by dragging a living animal, carcass or hide over rough ground. The damage occurs mainly in hides of country slaughter particularly in fallen hides. Animals should never be dragged on the ground, on the floors of slaughter house or against any hard surface in the course of moving or flaying, if animals can't be flayed while hanging, the hide should be removed immediately where the animal falls, the pulling of carcass on the hide abrades and remove a large area of the grain and allows sands or other abrasives to become embedded in the depth of the hides. This always results in poor grade of leather and the abrasive substances are detrimental to tanning machinery animal (FAO, 2001).

2.4.2.3. Improper bleeding

If carcasses are not bled out properly at the time of slaughtering, blood remains in the vessels and capillaries of the hides and skins. This blood supplies ideal condition for the growth of bacteria and favours putrefaction along the blood vessels. The leather defect called “veiny” or “prominent blood vessel” arises from treating away by bacteria of the fibrous region surrounding the veins. When the leather is glazed, it receives less pressure in the channeled areas and the blood vessel show up (FAO, 1995).

2.4.2.4. *Poor Pattern*

It is meant, the shape or outline of the flayed hide when it is spread out flat. A regular pattern is very important to the tanner because it enables him to get the best cuts and the most useful part of the raw material. Poor pattern that is asymmetric shape of the hide or skin is considered damaging to hides and skins as far as cuts or scores are concerned. It is caused by incorrect line of ripping. The bleeding cuts must be directly at the centre of the throat. If the legs are not ripped open properly, the proportion of the hide in the shoulder, belly and butt section are not proper. Thus belly hide that should have been part of the belly may be on the butt or the shoulder area. “V” cut in the button either side of the tail downgrades the hide, according to the degree of

damage to the pattern. It is very important that the bleeding cut, the belly cut, and the leg cut are made as straight (FAO, 1995).

2.4.3. Post Slaughter Defects

According to Desta (2008), there are numerous post slaughter defects observed in hide and skins.

2.4.3.1. Flaying defects

Flay defects are very common in Ethiopia because of lack of knowledge and experience of people who perform the job. Inadequate bleeding causes rapid development of bacteria along the blood vessels as a result of bacterial spread from the blood vessels, skin fibers in the vicinity are destroyed and open channels following the course of the blood vessels are formed through the skin surface. These defects show up in the final stage as a groove on the grain surface following the patterns of the damaged blood vessels (Kassa, 2005, 2006). The type of flaying equipment also plays a major role in the production of good quality hides. Almost all slaughter facilities except some modern abattoirs use hand flaying. As a result, flay cuts and gouges are a common feature on hides and skins.

A large number of skins contain defects due to careless and inefficient use of the flaying knife. Cuts, holes and scores produced through faulty flaying greatly diminish the value of skins. Use of an improperly pointed knife adds to the problem. Flaying on the floor causes more cuts and delays in flaying which makes the carcass cold and more difficult to flay. Other defects are due to unnecessary use of a knife, insecure position of the carcass, bad lighting, and lack of skill. Using a fist wherever possible will improve the quality. If the ripping line is not properly cut, the final shape will not be symmetrical and may affect the usefulness of the skin for commercial production of quality leather, ultimately affecting the value of the leather itself. Improper fleshing allows fatty tissues to remain on the skin, resulting in poor curing both by salting and air drying. In tanning and finishing, improper curing results in patches of different quality leather during later processing (Ahmed, 2000).

2.4.3.2. Preservation Defects

Preservation methods such as salting or frame drying are not practical fully by farmers, collectors and traders of hides and skins, as a result of which hides and skins suffer from hair slips, mould and bacterial attacks. Delays in cleaning, drying or curing cause damage through putrefaction. Folding of flint dry skins leads to rupture of fibers and development of cracks (Amsalu *et al.*, 2000). Rubbing, wetting, vermin damage and insect damage are also damages that occur due to incorrect storage of skins (Kassa, 2005; Desta, 2008). The main constituent of skin is protein. After an animal's death, skin proteins are exposed to bacterial attack that leads to decomposition (FAO, 2005). Hair slippage is a sign of putrefaction, usually occurring due to delays in preservation, improper curing, or when dried skins are exposed to rain during transport or storage. If hair slippage is not checked in time, putrefaction starts which can be from both the grain and flesh sides. This leads to decomposition of the grain layer. Lack of air circulation, excess atmospheric humidity, skins contacting frames, ground/soil, poles, or ropes etc. during drying/curing will all lead to putrefaction. High temperatures can exacerbate the problem. Blood is difficult to remove from wool or hair and it aids in bacterial attack along with dung.

2.5. Marketing Problems of Hide and Skins

2.5.1. Poor infrastructure, remoteness and lack of market information

Poor infrastructure increases transport and other transaction costs and is a major limitation to the marketing of hides and skins. These characteristics magnify the effects of inadequate information-sharing, from which markets in pastoral areas are suffering. Wholesalers cannot receive reliable market information from the tanneries on future price trends. This is critical since wholesalers lack any sources of information on the international price and the tannery does not guarantee a fixed purchasing price. It buys skins based on the international price at the time of the wholesalers' delivery, not at the time of the wholesalers purchase from collectors. There is usually a time lag of around 2 to 3 months for delivery from merchants to the tannery since wholesale merchants have to keep the skins stored in salt until a large enough number has accumulated for truck transportation (Kagunyu *et al.*, 2011;

Wayua and Kagunyu, 2008). As a result, the risks of international price changes are shared between the tannery and merchants. The poor transfer of knowledge, skills and information is further manifested by limited interaction of the farmers with extension officers due to poor road networks and resources. Considerable progress has, however, been made in the provision of communication systems such as mobile telephone facilities (Mas and Morawczynski, 2009).

2.5.2. Lack of capital

Finance for initial capital outlay, expansion and working capital remain a major constraint. Setting up a modern slaughter house or a tannery is an expensive undertaking. There are very few financial institutions or banks that are willing to lend money to hides and skins traders as they do not have acceptable collateral; livestock is not accepted as a security for loans and the land tenure in pastoral areas is such that there are no individual title deeds (Wayua and Kagunyu, 2008).

2.5.3. Unfair competition from unlicensed dealers

There are very many unlicensed dealers who do not pay the license, permits and market service fees and so can set the market price at any value. This demoralizes the licensed merchants (Kagunyu *et al.*, 2011).

2.5.4. Inadequate numbers of slaughterhouses and slabs

The number of slaughterhouses in pastoral areas is very limited. Thus, the majority of cattle, sheep and goat slaughter are carried out in the backyard, resulting in poor quality raw hides and skins (Kagunyu *et al.*, 2011).

2.5. Grading of Hides and Skins

Grading of hides and skins is essentially a matter of determining the relative abundance of defects. The defects include knife cuts, bad shape, branding marks, etc. A hide or skin with no defects would be designated Grade I (perfect), while that with many serious defects designated Grade IV (imperfect) or simply discarded (Leach

1995; Mbogo and Malala, 2007). Any hide of intermediate quality would be classified as Grade II or III (Leach, 1995).

Raw skins are downgraded and rejected as a result of various ante-mortem and post-mortem defects contributed by poor animal husbandry and nutrition, skin diseases and parasites, improper slaughter and flaying operations and improper practices of curing, collection, transportation and storage. Estimates from tanneries have put the percentage of reject to be as high as 50 to 60% (Abdi, 2000). In Ethiopia, over 90-95% of skins are collected from animals slaughtered at household level (Ahmed, 2001) and thus post-mortem defects are expected. In Ethiopia, raw skin grading can be done by considering the appearance, mass and size of the raw skins. In Ethiopian tanneries, 35% of sheep and 56% of goat skins have been downgraded and rejected due to pre and post-slaughter defects (Berhanu *et al.*, 2011).

According to research conducted by Zembaba *et al.* (2013) in Bahir Dar town the large proportions of fresh and salted sheepskins fall in grade 2. Comparable numbers of fresh and salted sheepskins were also categorized in grade 1 and 3. In addition, substantial percentages of fresh sheepskins were in grade 4. Although the proportion of reject grades was smaller, considerable attention should be given to reduce the number of skins to be rejected. Similarly, in goats the largest proportions of air-dried skin fall in grade 1 than the fresh and salted skins. Large numbers of salted fresh goat skins lie in grade 2 than the fresh and air-dried ones. So that according to Sertse and Wossene, (2007) study revealed that a considerable percentage of sheep and goatskins are found in grade 4 and reject grades. Due to this the country has lost a large amount of money as a result of direct rejection or costs incurred for defective skins processing.

3. MATERIAL AND METHODS

3.1. Description of the Study Area

The study was conducted in East Arsi zone of Oromia regional state. The zone was located in South-Eastern Ethiopia at altitude ranging from 1500 to 4245 meters above sea level. The annual mean rainfall ranges from 2000 to 4000 mm and annual ambient temperature varies from 20°C to 30°C. The live stock population in this area were includes 3,171,266 cattle, 1,567,482 sheep, 707,847 goats, 13,710 camels, 291,908 donkey and 24, 2357 hoarse. The great majority of farmers were smallholder livestock keepers in traditional husbandry system. Overall zebus are the main cattle breed with crosses making up to 14% of the cattle population (ALDHO, 2014)

3.1.1. Tiyo

Tiyo was one of the administrative Woreda found in East Arsi zone of Oromia regional state and located at 175 km Southeast of Addis Ababa. The annual rain fall and temperature of the Woreda were 1100-1400mm and 10-27°C respectively. The area found at altitudes of 2400 m.a.s.l. The live stock populations in the Woreda include 77246 cattle, 73354 shoat and 27896 equine and 58610 poultry. The main product of the area is wheat, barley, teff, pulse based on their higher respective (TWOA, 2014)

3.1.2. Digelu-tijo

Digelu and Tijo were found at 193 km from Addis Ababa. The annual rain fall and temperature of the area were 900-1400mm and 10-22°C respectively. It found at altitude of 2000-3600m.a.s.l. The soils of the area had 44% red, 35% loam and 21% brown. Live stock population in the area include; 213167 cattle, 119544 sheep, 8170 goat, 23354 horse, 15560 donkey, 324 mule and 104830 poultry (DWOA, 2014).

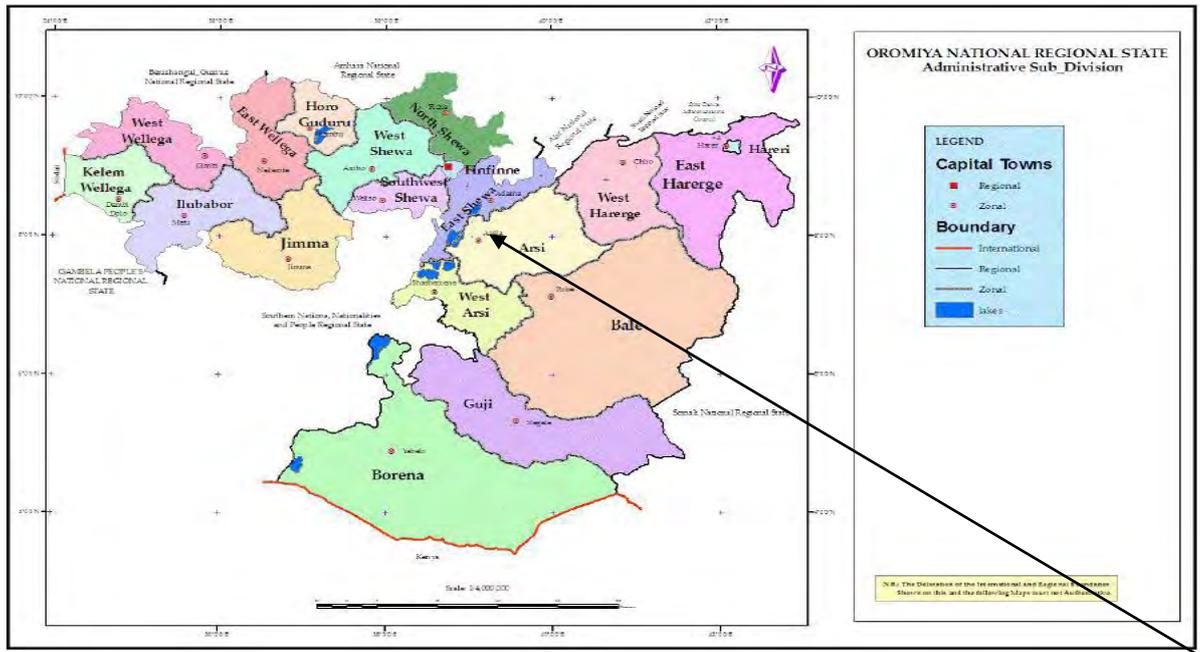


Figure 2: Map of study area

Sources: (BFED, 2008)

3.2. Study Design and Sampling Procedure

A cross-sectional study design was employed to study the hide and skin market chain at the level of producers (homestead slaughter), middlemen, butchers/abattoirs and hide and skin collection centers. Two Woreda (Tiyo and Digelu-tijo) were purposively selected based on potential of hide and skin supply and market accessibility. To select representative sample, a purposive random sampling procedure for farmers was implemented. First, for the homestead hide and skin suppliers, five Peasant kebeles (*Kombolcha, Bilalo, Burka-chilalo, Dosha and Gora-selengo*) from *Tiyo Woreda* and *Sagurie 01, Sagurie-molie, Burkitu-alkessa, Ashebeka-welkitie and Gusha-tiemiela* from *Digelu-tijo Woreda* (one from urban and four from rural) were purposively selected from the list provided by Woreda Offices of Agriculture. *Kombolcha* in *Tiyo Woreda* and *Sagurie 01* in *Digelu-tijo Woreda* were urban kebeles and the rest were rural kebeles. Second, a total of 100 households were randomly selected from each Woreda. Households from each kebele were randomly selected based on proportion of total households of each kebele.

The sample size was determined by using the formula recommended by Ashram (2007) for formal survey studies.

$$N = \frac{0.25}{0.05^2} = 100$$

Where

N=sample size

SE= standard error assuming the standard error of 5% at a precision level of 0.05 and the confidence interval of 95%.

On the other hand, all butchers/slaughter slabs and hide and skin collection centers present in the study Woreda were included in the study. As the number of middlemen involved in the hide and skin market chain was unknown, those encountered during the study were included especially on public holidays where supply was high and their involvement was maximal.

3.3. Questionnaire Design and Data Collection

3.3.1. Questionnaire Survey

A semi-structured questionnaire format which was pre-tested and employed to study the market chain and associated management practices. Secondary data was also obtained from relevant sources (Woreda offices of agriculture hide and skin collection centers, hide and experts in Arsi zone). The questionnaire focuses mainly on type of product sold or purchased by suppliers and buyers, price, management along the market chain and constraints in the market and quality management of the products. A checklist, specifically prepared for the study, was used to guide the interviews with value chain actors.

3.3.2. Key informant interview

To cross check and complement the information collected using cross-sectional survey and to collect data which were difficult to obtain using cross-sectional survey key informants such as development agents in peasant Keble's, experts in Woreda

agricultural offices, head of slaughter slabs and owners of hide and skin collection centers were interviewed on different issues such as annual hide and skin production and marketing system, price variation, trend and availability, quality management and constraints of hide and skin.

3.3.3. Market monitoring survey

Market monitoring survey was carried out to collect data on marketing of hide and skin, selling prices variation and type of hide and skin (fresh, salted and Air dried) that were sold and purchased by preparing market monitoring sheet. Two representative market places Assela in Tiyo Woreda and Sagurie in Digelu-tijo Woreda were selected and monitored. Each market was visited in different market events (during normal/non-festivity, Christmas, Epiphany, fasting period of Orthodox Christians, month of Mowlid in Muslim holidays).

3.3.4. Field observation

Personal observation was undertaken to gather information on the management practice of hide and skin. Such observations focused on preservation methods of the hide and skin in the collection centers', transportation methods and storage of hide and skins, defect assessment of hide and skin in the representative market.

3.5. Data Management and Analysis

The data were analyzed through relevant computer software packages using SPSS (version 20, 2013). Descriptive statistics such as table, means, frequency distribution, percentages and graph were used to analyze categorical data. Data which had multiple response such as list of domestic materials produced from hide and skin, problems of animals replied by farmers and reason of rejected of the product or price lower during selling of the hide and skin replied by farmers analyzed through multiple response. Quantitative data associated with average selling and buying price of hide and skin also analyze through descriptive statistics. Chi-square test were used to know the association of variables like utilization of hide and skin in urban and rural kebeles,

price determination of hide and skin in both Woreda and market information rural and urban kebeles and to know the significance differences of the variables.

4. RESULTS

This section deals with the findings of descriptive analysis on hides and skins marketing chain and quality management focusing on marketing channels, the role of actors that involve in the marketing chain. It also discusses the analysis of quality management strategies among the marketing chain, presents the major factors that involve in marketing chain and quality management by comparing the two Woredas Tiyo and Digelu-tijo. Quantitative analysis was also done on data associated with price of product among different actors.

4.1. Characteristics of Major Market Participants

The demographic characteristics of farmers in terms of sex, educational level and age were described as follows. Respondents were 39% male and 61% females in *Tiyo* and 59 % male and 41% females in *Digelu-tijo* Woreda based on their availability at the time of survey. In *Tiyo* Woreda, about 84% the respondents were illiterate to those with primary school education whereas in *Digelu-tijo* Woreda about 92% were illiterate to those with primary school education. On the other hand, from the total number of butcher men interviewed 48.7 %, 26.1% and 25.2% attended primary school, secondary school and above secondary school respectively. The average age of respondents was 38 and 25 years in *Tiyo* and *Digelu-tijo* Woreda, respectively and all were male. Similarly, the demographic characteristic of local middlemen was described in terms of educational level. Among the 10 middle men from *Tiyo* and 15 from *Digelu-tijo* Woreda, In *Tiyo* Woreda about 80 % of the middle men could read and write and 20% of them have attended secondary school whereas in *Digelu-tijo* Woreda, only 20% from *Tiyo* and none from *Digelu-tijo* have attended secondary school. In *Tiyo* Woreda where Assela was their base, there were three licensed traders/collectors where as in *Digelu-tijo* Woreda where Sagurie was their base, two licensed traders/collection centers. The products commonly bought based on the order of their supply were sheep skin, goat skin and cattle hide.

4.2. Description of Market Chain and Price Determinants for Hide and Skin

4.2.1. Sources of the product and utilization of hide and skin

The source of product for collection centers were farmers, rural slaughter slabs, middlemen and butchers and abattoirs and the final destination of the product from collection center were tanneries. The main sources of the product for middle men were households and they bought the product from different market and around the entry of Woreda market and sold to collection centers.

The common sources of the product that were bought by collection centers and middle men were sheep skin and from the total respondents of farmers above half of them were slaughter live animals 52% and 51% in Tiyo and Digelu-tijo in the last three months. From those respondents about 90.3% and 98% farmers in Tiyo and Digelu-tijo, respectively sold sheep skin in last three months (survey results from December to March). Figure 3 below described that sheep skin was the commonly sold by farmers and the by product or sheep skin was the major sources of product for both middlemen and collection center.

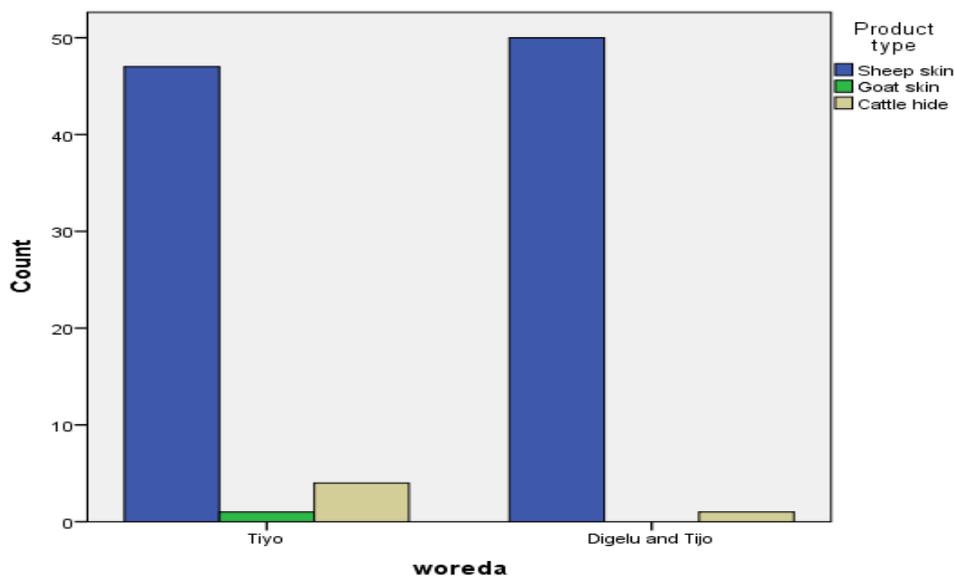


Figure 3: Type of the product that farmers sold in last three months from December to March

Figure 4 emphasized that hide and skin used as a source of cash income was higher in Tiyo Woreda than Digelu-tijo Woreda. However sheep skin as a sources of cash income and cattle hide for domestic use were higher in Digelu-tijo Woreda than Tiyo Woreda.

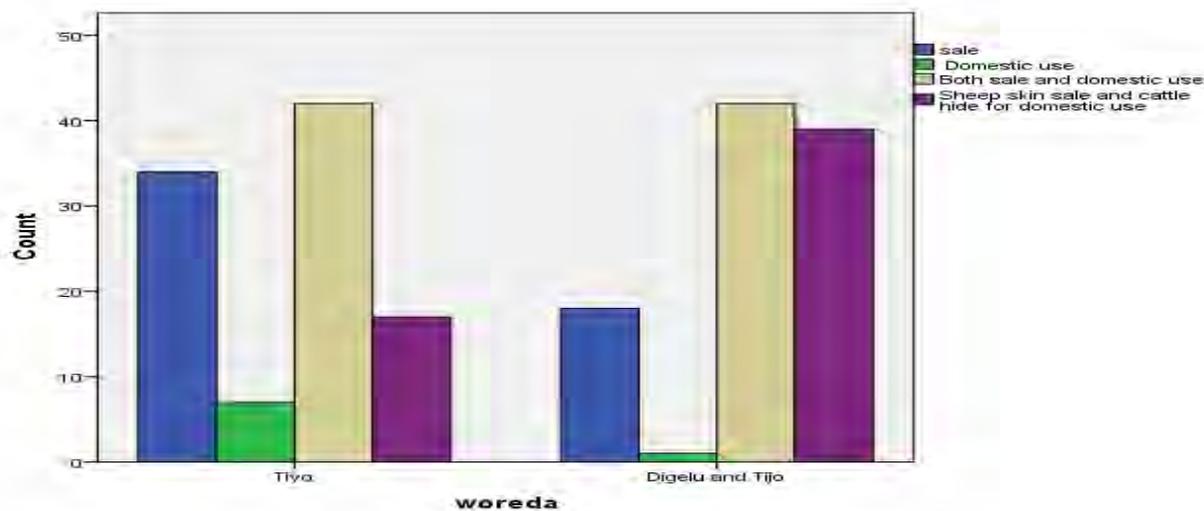


Figure 4: Purpose of hides and skins in Tiyo and Digelu-tijo woreda

The following table (Table 1) described that urban kebele mostly used hide and skin for selling purpose. All respondent (100%) in Tiyo Woreda (kombolcha) and 65.2% (sagurie 01) in Digelu-tijo Woreda used hide and skin for selling purpose. There was

a significance differences for selling purpose of hide and skin in Tiyo and Digelu-tijo Woreda urban and rural kebeles at (P value =0.00).

Table 1: Utilization of hides and skins in rural and urban kebeles in Tiyo and Digelu-tijo woreda

Utilizations	Woreda			
	Tiyo		Digelu-tijo	
	Urban (%)	Rural (%)	Urban (%)	Rural (%)
Sale	100	10.8	65.2	3.9
Keep for household use		9.5	0	1.3
Both for sale and house hold use		56.8	26.1	46.8
Sheep skin sale and cattle hide for household use		22.9	8.7	48
Total	100	100	100	100

4.2.2. Trend of Hide and skin production in the study area

Concerning with trend of availability the product respondents (butchers, middle men and abattoir) in both study area revealed that the accessibility of sheep skin and goat had been decreasing from time to time due to decreased slaughter rate. During this study traders replied that even if the availability of the product weren't constantly decrease the general trend of availability of the product decreased when compared to in the last seven years (Figure 5A-C) .The supply of hide and skin was mostly in special festivals. Results from key informants interview show that supply of the product is highest in festivals like Ethiopian New Year ('*Addis Amet*'), Easter (*Fasika*), the finding of the True Cross ('*Meskel*'), Christmas ('*Gena*'), Epiphany ('*Timket*') and Ramadan in order of their highest supply.

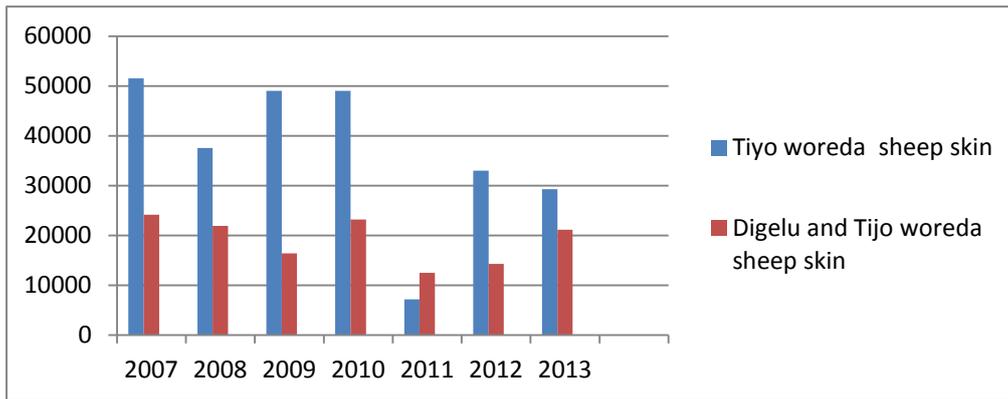


Figure 5A.Trend of sheep skins in Tiyo and Digelu-tijo Woreda(Source: Woreda offices of Agriculture)

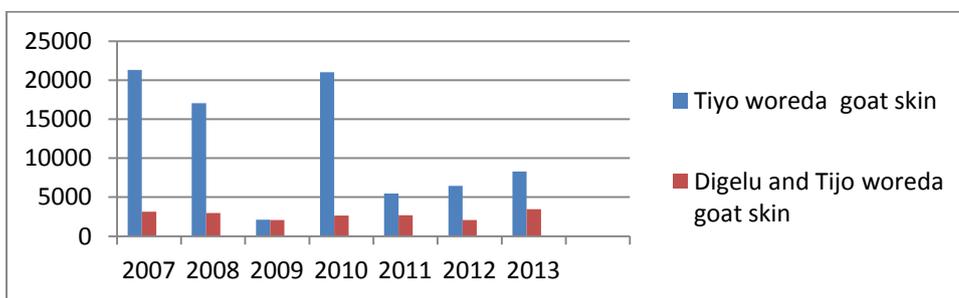


Figure 5B.Trend of goat skin in Woreda Tiyo and Digelu-tijo (Source: Woreda offices of Agriculture)

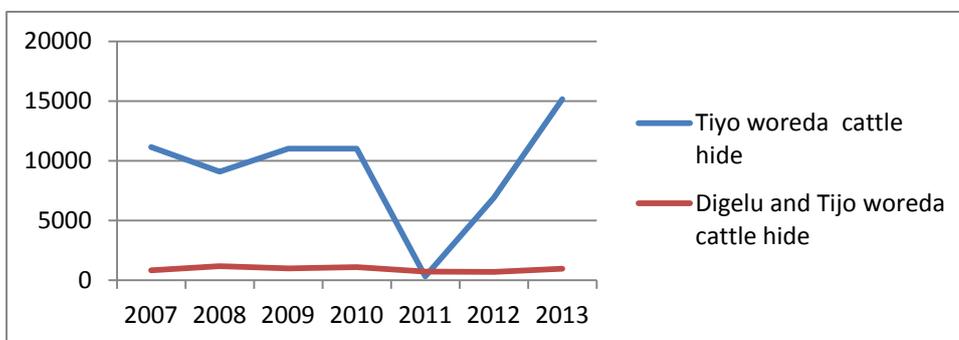


Figure 5C. Trend of cattle hides in Tiyo and Digelu-tijo in Woreda (Source: Woreda offices of Agriculture)

Figure 5A-C: Trend of sheep and goat skins and cattle hide in Tiyo and Digelu-tijo woreda

4.2.3. Market chain of hide and skins in the study area

Majority of house hold and backyard slaughter respondents' sold hide and skin of slaughtered animals to middlemen and collection center in both TiyoWoreda and Digelu-tijoWoreda (Table 2). The proportion of respondents selling hide and skin to informal markets with major destination to local traditional hide and skin processors was higher in Digelu-tijoand TijoWoreda as compared to TiyoWoreda. For those respondents who have noticed selling price variations, collection centers offer better price than middlemen traders. Similarly, interviewed butcher men, middlemen and abattoir works mentioned that the destination of their hide and skin was directly for collection centers.

Table 2: Hide and skin destination and prices from household sources in Tiyo and Digelu-tijo woreda

Variables	Woreda		
	Tiyo (N=92) (%)	Digelu-tijo (N=99) (%)	
Primary hide and skin destination	Middle men	55.4	68.7
	Collection center	42.4	23.2
	Informal market	2.2	8.1
	Total	100	100
Price comparison at destination	At collection center	43.7	27.3
	At broker/middlemen	11.8	19.2
	I didn't compare	44.5	53.5
	Total	100	100

The various agents involved in the marketing process of hides and a skin in both Tiyo and Digelu-tijo Woreda includes producers (farmer, rural slaughter slabs and butchers' and abattoir), middle men, collection centers/traders and tanneries. Producers were the initial sources and consist of individual meat consumers or farmers and butcheries and agents could be of middle men, collection centers and tanneries.

As mentioned above, farmers' sold their products either to middlemen or to collection centers. This constitutes the primary market. Middle men and primary collection centers in turn sell hide and skins collected from the primary sources to either tanneries or second nearby larger collection centers (secondary market). The second collection center finally transports the raw products to tanneries (Figure 6).

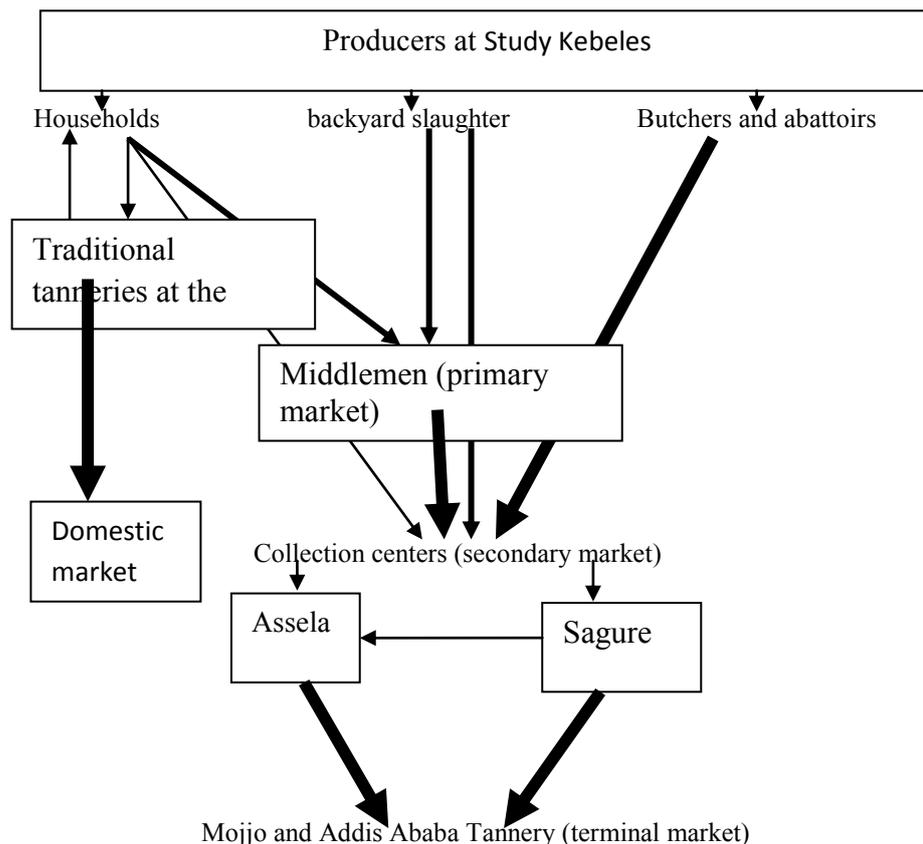


Figure 6: Marketing chain of hide and skins in the study area

4.2.4. Domestic utilization of hide and skin

This study also established that some of the hides and skins remain at the production site for local use without entering the formal market. The major raw material that is left for local use is cattle hide followed by sheep skin. (Table 3) lists the major household materials produced locally from cattle hide and sheep skin in the study areas. Goats were not commonly reared by farmer in the study area

Forty six percent of respondents in Tiyo and 62% in Digelu-tijo evaluated that price of hides is much higher when it was sold for local use than when sold to formal markets. Among the major reasons why hide and skins were sold for domestic utilization were: necessity for making household utility 48% and 61% for Tiyo and Digelu-tijo Woreda respectively, product rejection 9% in Digelu-tijo Woreda and due to lower market price 18% and 12% in Tiyo and Digelu-tijo Woreda, respectively.

Table 3: List of domestic materials produced from hide and skin with their local names in Tiyo and Digelu-tijo woreda

Domestic materials	Woreda			
	Tiyo		Digelu-tijo	
	Response		Response	
	N	Percent (%)	N	Percent (%)
<i>Kurbet</i> (Cattle hide)	64	36.2	81	36.2
<i>Dibidab</i> (Sheep skin)	30	16.9	26	11.6
<i>Wenber</i> (Cattle hide)	58	32.8	80	35.7
<i>Cover of materials</i> (Cattle hide)	3	1.7	12	5.4
<i>Mechagna</i> (Cattle hide)	11	6.2	13	5.8
<i>Miran</i> (Cattle hide)	3	1.7	5	2.2
<i>Getaget</i> (Cattle hide)	4	2.3	4	1.8
<i>Kebeto</i> (Cattle hide)	4	2.3	3	1.3
Total	177	100.00	224	100.00



Figure7: Domestic materials produce from cattle hide: A) *Wenber* B) *Mechagna* C) Cover of *Enkib* D) *Agelgilas* sources of decoration

4.2.5. Hide and skin prices and price determinants

According to the various respondents, the price of hide and skins fluctuates at different occasions. Collector's replied that the prices of sheepskin rich up to 100 birr when the demand for export is high. Figure 8 indicated that in Tiyo Woreda the average sheep skin selling price for farmer and backyard slaughter men was 53.86 birr where as in Digelu-tijo Woreda the average sheep skin selling price for farmers was 47.83 birr.

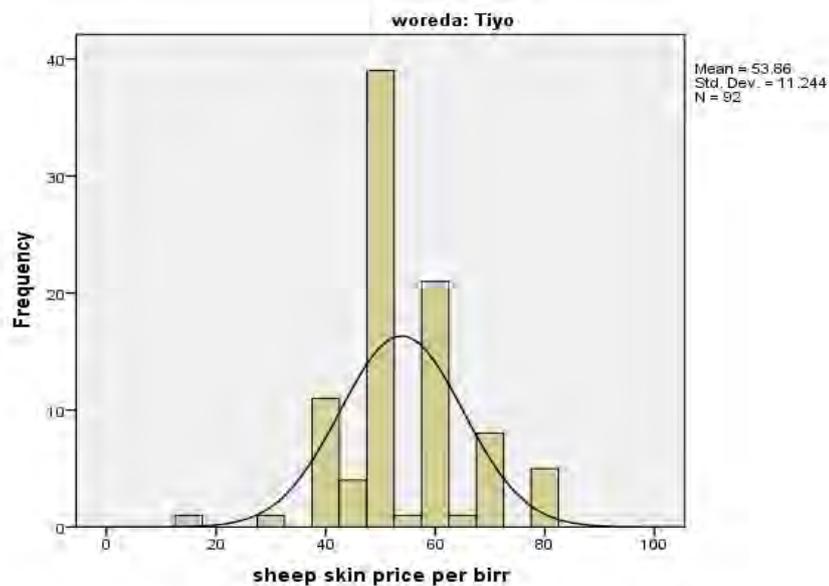


Figure 8A: Frequency of the sheep skin price in Tiyo Woreda

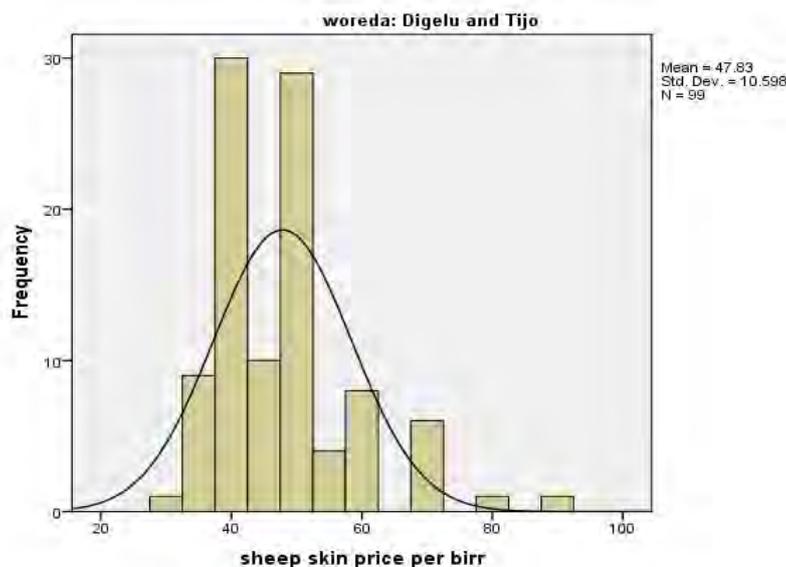


Figure 8B: Frequency of the sheep skin price in Digelu-tijo Woreda

Sources : (Survey results from December to March)

Figure 8A-B: Frequency of sheep skin price in Tiyo and Digelu-tijo woreda

Table 4 Indicated that the average selling and buying price of the product (hide and skin) for different actors in both Tiyo and Digelu-tijo Woreda. The average selling price of butchers were 58.61 birr, 38.57 birr and 5.5 birr/kg for sheep skin, goat skin and cattle hide respectively in Tiyo Woreda. Similarly, the average selling price of butchers were 48.85 birr, 35.55 birr and 7 birr/kg for sheep skin, goat skin and cattle hide in Digelu-tijo Woreda. Middlemen’s bought sheep skin 48.00 birr and 38.00 birr from farmers’ in Tiyo and Digelu and Tijo Woreda respectively. They commonly bought sheep skins. In the study the actual selling price of the product for middlemen weren’t known because of middlemen were not interested to tell the selling price of the skins. The average buying price of collection centers were 60.00 birr, 40 birr and 5.5 birr /kg for sheep skin, goat skin and cattle hide and sold with its grade of the product accordingly with tanneries price fixation in Tiyo Woreda. Similarly ,in Digelu and Tijo Woreda the average buying price of collection centers were 50.00 birr, 36.66 birr and 7birr /kg for sheep skin, goat skin and cattle hide and sold with its grade of the product accordingly with tanneries price fixation in Tiyo Woreda.

Table 4: Average selling and buying price of hide and skins with different actors in Tiyo and Digelu-tijo woreda

Variables	Woreda						
	Tiyo			Digelu-tijo			
	Product type			Product type			
	Sheep	skin	Goat	Cattle	Sheep	Goat	Cattle
	(Birr)		skin	hide	skin	skin	hide
			(Birr)	birr/kg	(Birr)	(Birr)	birr/kg
Butchers	*58.61		*38.57	*5.5	*48.85	*35.55	*7
			birr		birr		
Middle men	48.00				38.00		
Collection centers	60.00		40.00	5.5	50.00 birr	36.66	7

Sources: (Survey results, 2006)

*=indicated that selling price of the hide and skin the

Collection centers in both Woreda revealed that hide that bought less than 10 kg were lower price 4 birr in Sagurie market and 3.5 birr in Assela market place. Regarding with price determination in most cases buyers played the leading role in price determination during purchasing market. There was significance difference in Tiyo and Digelu-tijo Woreda with price determination at (P value < 0.05).

Table 5: Price determination of farmers in Tiyo and Digelu-tijo woreda

Price determination	Woreda	
	Tiyo(%)	Digelu-tijo (%)
Buyer	65.2	80.8
National price	16.3	13.1
Negotiation	18.5	6.1
Total	100	100

Table 5 indicated that about 65.2%, 16.3% and 18.5% of respondents determine the price through buyer, national price and negotiation in respectively in Tiyo Woreda. In the same manner in Digelu-tijo Woreda about 80.8%, 13.1% and 6.1% of respondents determine price through buyer, national price and negotiation respectively.

4.2.6. Hide and skin market information

The accessibility of market information to the farmer is not as expected. In TiyoWoreda, more urban respondents than rural respondents got informed mainly thanks to the utilization and 39% of ton of mobile phone whereas in Digelu-tijo more rural respondents are informed by sicking information from their acquaintances (Table6).

Table 6: Access to market information of urban and rural kebeles of Tiyo and Digelu-tijo woreda

Method of getting market information	Woreda			
	Tiyo		Digelu-tijo	
	Urban (%)	Rural (%)	Urban (%)	Rural (%)
Personal observation	26.9	21.2	13.0	
Other farmer	3.8	16.7	8.6	47.3
Telephone	38.5		8.6	
Total	69.2	37.9	30.2	47.3

There was significant difference on market information between urban and rural kebele in Tiyo and Digelu-tijo Woreda at (p value=0.00)

4.3. Hide and Skin Quality Management Practices

4.3.1. Preservation

All household and backyard slaughter respondents affirmed that they did not preserve hides and skin. About 82.6% farmers sold hide and skin fresh within 12 hours in Tiyo and 87.8% in Digelu-tijo Woreda, whereas some farmers sold the product unpreserved within 24 hours (17.4% in Tiyo and 12.2% in Digelu-tijo Woreda). Similarly, all middlemen in Tiyo Woreda didn't preserve hide and skin market rather they sold hide and skin immediately within 12 hours after buying the skin. However, in Digelu-tijo Woreda about 53.3% of middlemen sold the hide and skin after preserving with salt.

Collection centers had their own storage and preservation place for cattle hide in abattoir so that immediately after butchers slaughter animal within 2-3 hours cattle hide preserve with salt in abattoir. Sheep and goat skin preserve after transport to another storage place from abattoir in Tiyo Woreda. However, in Digelu-tijo Woreda sheep and goat weren't slaughter in abattoir. After buying the product from producers, collection centers preserve the product with salt manually in both study area so that based on trader reply during directed interview the preserved hide and skin would stay up to 3 months in their storage without quality deterioration until transported to the tannery (Terminal market).



Figure 9: Salt preservation of the hides and skins in Assela and Sagurie collection centers

4.3.2. Storage

Collection centers in both study areas had separate preservation and storage place for sheep skin, goat skin and cattle hide. Tiyo Woreda collection centers had retaining hall until preservation after buying. In Digelu-tijo Woreda collectors keep the product simply hanging on wooden bars.

4.3.3. Transport

Farmers' commonly carried hide and skins by their own to market place or collection centers by placing them in plastic bags. These were commonly sheep and goat skins. Similarly, middlemen carried skins with their own. On the other hand, collection centers transported the product with a camion to tanneries. In Sagurie market collection centers use animal cart to transport hide and skin from buying market place to storage and preservation place.



Figure 10: Means of transportation of hides and skins for farmers and collection centers:

A) On foot in a plastic bag B) by a camion

4.3. 4. Local quality standards

Findings from key informant interview and direct observation suggested that local collectors and middlemen use various criteria to identify the quality of the product they received from the producer/middlemen when they were buying hide and skin. Among those criteria freshness, flaying quality, knife cut, size, products from over-aged animals and roughness were observed. Traders totally rejected if the knife cut was at the center of the skin whereas if the knife cut was at the end of periphery or extremities, they bought with lower price. In the same manner, if the hide and skin was putrefied they total rejected the skin where as if the product shows bad smell but not putrefied they bought it with lower price. Aged and smooth skins were determined by simply massaging the product with hand. However, formal grading by categories of product was not done and this was done, as the collectors said, only tanneries.

4.4. Major Factors Affecting Hides and Skin Quality and Marketing

There were a number of highlighted constraints that hamper further development of the marketing and quality of hides and skins sector in Tiyo and Digelu-tijo Woreda as well as in the region as whole. The following production and quality marketing problems were indicated by respondents and various actors.

4.4.1. Production Constraints

Farmers raised number of problems related to livestock production and quality of hides and skins. Production Problems that constrained of farmers summarized in (Table7) Parasites, other animal diseases and shortage of water are the major constraints in both Woreda.

Table 7: List of factors affecting livestock production and hide and skin as per the opinion of respondents in Tiyo and Digelu-tijo woreda

Limiting factors	Woreda			
	Tiyo		Digelu-tijo	
	Responses		Responses	
	N	Percent (%)	N	Percent (%)
Skin disease	16	14.5	25	20.0
Ecto parasite	19	17.3	29	23.2
Lack of feed	0	0	7	5.6
Lack of water	20	18.2	29	23.2
No problems	55	50.0	35	28.0
Total	110	100.0	125	100.0

4.4.2. Market constraints

Quality of products, market price, market access and information were cited as most important market constraints in the study areas. Products could be rejected or prices lowered due to flay cuts for more than 75% of the respondents (Table 8, Figure 11). The average selling price of sheep skin for farmers in Digelu-tijo Woreda was 47.83 birr and the price of petrified skin and flay cut skin was 10 birr.

Table 8: Reason rejected or price lower farmers for their product in Tiyo and Digelu-tijo woreda

Woreda				Responses	
				N	Percent (%)
Tiyo	Reason of rejected or lower price		Flay cut	56	44.4
			Putrefaction	9	7.1
			Market price lower	43	34.1
			Small size	2	1.6
			Aged	7	5.6
			Poor pattern	4	3.2
			Smooth skin	5	4.0
			Total	126	100.0
Digelu-tijo	Reason of rejected or lower price		Flay cut	86	41.7
			Putrefaction	18	8.7
			Market price lower	62	30.1
			Small size	16	7.8
			Aged	10	4.9
			Poor pattern	8	3.9
			Smooth skin	6	2.9
			Total	206	100.0



A) Flay cut in Sagurie market place B) Putrefaction in Assela market place
C) Defects due to blackleg (*Furie*) disease in Sagurie market place

Figure 5: Different defects of skins in Assela and Sagurie market

Moreover, licensed collection centers reported that they had limitations such as inadequate finance, delayed payments from tanneries, occasional shortage or unsustainable supply of salt for preservation, occasional failure to find fair and timely markets and market information. Middlemen also complained that although their contribution was immense in supplying the market, they had never got trainings on skin and hide handling.

5. DISCUSSION

5.1. Supply and Source of Hide and Skin

Key informants in both study area revealed that the supply of the product was highest in festivals during Ethiopian New Year (*'Addis Amet'*). These were due to in Ethiopian New Year (*Addis Amet*) no religious or culture exception, all societies who could slaughter animal might slaughters and these were why the reason of the product were highest supply in Ethiopian New Year. Similar findings were reported by Hadushet *al.* (2013); Ian Leach, (2009) who noted that most of the respondents from the interview results that the slaughter their animal was in holidays and other ceremonies and often religious celebrations the slaughter of animals may exceed ten times the normal daily rate.

Respondents on the trend of availability of hide and skin in both Woreda revealed that the accessibility of the sheep skin and goat skin had been decreasing from time to time. The main reason regarding the decreasing hide and skin stated by farmer were it was due to the increasing the cost of live animal. Farmers slaughter one ox with groups (*Kircha'*) rather than slaughtering sheep and goat by own self. Key informants also mentioned that domestic utilization of the product also one important factor especially cattle hide which weren't commonly supply by farmers. The current study, related with Koloa and Moreki (2010) who noted that even though the consumption of meat had increased over the years, hides produced do not reflect such a scenario.

In this study, the source of product for collection centers were farmers, rural slaughter slabs, and butchers and abattoirs and the final destination of the product from collection centers were tanneries. The final destinations of the product for middle men were collection center. The current study was in agreement with Ahmed, (2000); Koloa and Moreki (2010) and Chemonics (2002).

5.2. Marketing Chain of Hide and Skin

5.2.1. Utilization of hide and skin

Domestically farmers used hide and skin as a source of making house hold containers such as *Kurbet, Dibidab, Wenber Mechagna, Cover of materials* and others. This indicates all raw slaughtered were not properly supplied to market. Similar findings were reported by Hadushet *al.* (2013); Koloa and Moreki, (2010) and Mapiyeet *al.* (2006b) which reported that hide and skin used as a source of various materials which includes making ropes, building houses, making milking containers, drums, seat covers.

In current study, urban kebele used hide and skin for selling purpose. All respondent (100%) in Tiyo Woreda (Kombolcha) and 65.2% (Sagurie 01) in Digelu- tijo Woreda used hide and skin for selling purpose. These finding were higher than Hadushet *al.* (2013) report who revealed that about 31% of respondents used hide and skin for selling purpose.

5.2.2. Access to market information services

The accessibility of market information to the farmer is not as expected. Only urban kebeles had an access to market information through telephone. The current study similar with Wayua and Kagunyu, (2012) report as the producers had limited information on market outlets of hides and skins.

5.2.3. Marketing chain of hide and skin

In present study, producers (farmer, rural slaughter slabs and butchers' and abattoir), middle men, collection centers/traders and tanneries involved in the marketing process of hide and skins in both Woreda. These findings were in agreement with Ahmed (2000) who stated that the market chain for raw HS consists of the primary producers/consumers, who were the initial sources (individual meat consumers, rural slaughter slabs, municipal slaughter houses, abattoirs, meat processing plants), agents

of traders, collectors, local tanners, regional medium/small traders, regional/Addis Ababa big traders and tanneries.

The delivery of the skins and hides from farmers after slaughtering live animal that the raw materials were directly sold to the middlemen and accounts 54.54% in Tiyo and 68.7% Digelu-tijo Woreda, respectively. Lower values of 21% were reported by Hadushet *al.* (2013). Respondents' replying that the hide and skin were sold to Woreda market accounts a 42.4% in Tiyo and 23.3% Digelu-tijo Woreda, respectively. These findings were lower than Hadush *et al.* (2013) report who revealed that respondents' replying that the hide and skin were sold to Woreda market accounts 53%.

5.2.4. Price determination and price variation of the hide and skin

Buyers played the leading role in price determination during purchasing at Woreda level and kebele market places. Based on key informant response it was due to the price of hide and skin determine by international market. When the export price of hide and skin were expensive tanneries bought the hide and skin with higher price, similarly collection center and middlemen bought hide and skin with considering the buying price of tannery. The current findings disagree with Kagunyu *et al.*(2011)who reported that prices of hides and skins are determined by the form in which they were sold; the prices of sun dried hides and skins (suspension dried and ground dried) were the lowest, followed by raw hide and skins which are fresh from the slaughter.

Survey results show that price of the hide and skin could not constant, it varies from time to time. Collector centers mentioned that it was due to the price variation of tannery and export demand of the hid and skin; market price of the hide and skin is high when the demand of the export of the product is high and the reverse is also true. These findings were agreed with Triple (2002) who revealed that the price of hides and skins fluctuates from year to year and within months according to supply and demand in the world market.

Average selling price of raw sheep skins for farmers was 53.86 birr and 47.83 birr in Tiyo and Digelu-tijo, respectively. These variations might be due to distance of the

Woreda from terminal market. Since, Tiyo Woreda was 175km far from Addis Ababa whereas Degelu-tijo Woreda 193 km far from Addis Ababa. However, current findings of average selling price of raw hide and skin were higher than Hadush *et al.* (2013) report that the average selling price of raw hides and skins by analyzing the quantitative data was 41.43 birr.

On average butchers sold sheep skin with 58.61 birr in Tiyo Woreda where as farmers sold sheep skin on average 53.86 birr in this Woreda. This variation originated from farmers commonly sold skin for middlemen while, butchers sold their hide and skin directly for collection centers. In this study, in both woreda sheep skin was expensive than goat skin. These might due to sheep skin were highly needed by tanneries for export purpose.

5.3. Hide and Skin Management Practices

5.3.1. Preservation, storage and transport of hide and skin

In current study, about 82.6% and 87.8% farmers sold the product fresh within 12 hours in Tiyo and in Degelu-tijo Woreda respectively. These results were higher than Hadush *et al.* (2013) report who revealed that 63% of the farmers sold the raw hides and skins after one day without adding any value addition or initial preservation systems. Moreover, about 17.4% of hide and skin in Tiyo and 12.2% of hide and skin in Degelu-tijo Woreda were sold hide and skin without preservation within 24 hours. These findings were lower than Hadush *et al.* (2013) report who stated that 23 % of the respondents sold after two or more days which were also not proper for the quality, price, and benefit of the raw material.

Collection centers in both Woreda mentioned that the preserved hide and skin would be stay up to 3 months in their storage without quality deterioration until transported to the tannery. These findings disagree with Ian and Wilson (2009) who reported that preserved hides and skins may be stored for up to a year while waiting further processing. These variation might due to the present findings were starting from preservation until transportation whereas their findings were include for others further processing.

Collection centers properly store the hide and skin in their storage place after preservations. The current finding is at variance with the report of Kassa (2005) who disclosed that good percentage of hide and skins were damaged during storage especially during the rainy season.

Farmers transport the product from their house with on foot packing with plastic bag to collection centers where as collection centers transport the product with camion (Fig10 A and B). Transport with plastic materials may facilitate the growth of bacteria by increasing temperature before preservation. Similarly, middleman's transport the hide and skin by own self and animal cart which also prone to damage with dirty materials. These finding were supported with (Ahmed, 2000; Hadush *et al.* (2013) and Kassa, 2005) which revealed that poor handling during loading and unloading may damage quality of hides and skins. So the current study shows that among the factors of farmer for the quality deterioration, value or price and rejection for the raw hides and skins was transportation mechanism before reaching the collection centers.

5.3.2. Hide and skin quality determination and rejection

Results from observation and interview show that collection centers and middlemen used various criteria to determine the quality of hide and skin. Among criteria those knife cut, size, roughness, freshness, and pattern and aged were observed. Similar findings were reported by Chemonics, (2002) who stated that weight, size, patches, and holes are just a few of the parameters that determine the value of hides and skins. The present findings differs from the report of Triple (2002) in that he disclosed that grading of hides and skins is designated traditionally. In the study even if collection centers and middle men used certain parameters to determine the quality of hide and skin were appreciated standard grading systems were done in tannery.

Among the producers (farmers) who were interviewed all of them replied that price lower or rejection of the hide and skin during selling of the product in Tiyo Woreda whereas 86.9% of the total respondents replied that price lower or rejection of t he hide and skin during selling of the hide and skin in Digelu-tijo Woreda. These findings were supported with Kagunyu *et al.* (2011) report who revealed that among

the producers who were interviewed 85% said that their hides and skins have been rejected at one time or the other.

Respondents gave various reasons why hides and skins were rejected which included: flay cut, putrefaction, small size, smooth skin and poor pattern. These findings were disagree with Kagunyuet *al.* (2011) who reported that various reasons of why hides and skins are rejected which included poor methods of curing hides such as using the sun drying methods, mechanical damage of hides and branding. Smooth skin also rejected by collection centers these might be due to breed type, nutrition status and age of the animal. Similarly, in the present study small size skin also rejected by collection centers. Similar findings were reported by Yacob (2013) who stated that small size skins that are downgraded due to poor quality are unwanted by tanneries.

5. 4. Hide and Skin Quality and Marketing Constraints

5.4.1. Production constraints

Husbandry related quality defects of the products were livestock skin diseases like small pox and parasites accounted to the deterioration of the quality 43.2 % and 31.8% from the total respondents in Digelu-tijo and Tiyo Woreda respectively. These findings were agree with Berhe,(2009) who stated that most important husbandry related quality defects of the products were livestock diseases and parasites, like mange were indicated as the major hindrance of quality by 64.5% of the sample farmers. About 18.2% respondents in Tiyo and 23.2% in Digelu-tijo woreda replied that lack of water during the dry season hampered livestock production which ultimately affected skin and hide production. This had negative impact on hide and skin quality after the animal slaughter. However, in other studies scarcity of water and its impacts on quality of hide and skin weren't reported.

5.4.2. Quality constraints

The major factor affecting the quality of hide and skin is poor hand flaying of farmers. In the study poor flaying causes holes and cuts on the hides and skins, which results

price lower and also rejection by collection centers due to poor quality. These findings were agreed with Kagunyuet *et al.* (2011); Kassa, (2005, 2006) and Mwinyihija, (2010) findings who revealed that flay defects are very common in Ethiopia because of lack of knowledge and experience of people who perform the job.

5.4.3. Financial constraints

Lack of finance was a major constraint in Sagurie market place for collection centers. Collection centers in Sagurie market mentioned that the problems were aggravated due to delayed payments from tanneries. The current study was related with wayua and Kagunyu, (2012) who noted that finance was a major constraint there were very few financial institutions or banks that were willing to lend money to hides and skins traders as they do not have acceptable collateral.

6. CONCLUSION AND RECOMMENDATIONS

Exploratory study on the production and marketing of hide and skin was conducted in Tiyo and Digelu-tijo Woreda with the objectives of describe the market chain for raw hide and skin, assess quality management's practices and identify factors affecting both marketing and quality of hide. The following conclusions were forwarded based on the results:

Producers (farmer, rural slaughter slabs and butchers' and abattoir), middle men, collection centers/traders and tanneries involved in the marketing process of hides and skins in both Woreda. Majority of house hold and backyard slaughter respondents' sold skin of slaughtered animals to middlemen and collection center in both Woreda whereas butchers and abattoirs directly sold for collection centers. Cattle hide commonly used for domestic purpose for farmers. The average selling price of raw sheep skins for farmers were 53.86 birr and 47.83 birr in Tiyo and Digelu-tijo Woreda respectively. Buyers played the leading role in price determination during purchasing market places. Collection centers and middlemen used various criteria to identify the quality of the hide and skin when they were buying. Farmers' commonly carried skins by their own to market place or collection centers by placing them in plastic bags while, collection centers transported the product with a camion to tanneries. At the farmer's level the discussion and analysis results showed that majority of the quality problems which were observed in collection centers were from poor hand flaying or knife cuts, due to skin disease, parasite lack of water and poor animal husbandry practices. The quality constraints of hides and skins finally caused rejection hide and skins and higher price incurred at collection centers and tanneries.

Based on the above conclusion the following recommendations should be forwarded:

- ✓ There should be forwarding adequate information for farmers' to sell hide and skins to collection centers or traders in order to sell their hide and skins with better price.
- ✓ Convincing of farmers for supplying the hide and skin especially cattle hide to the market and decreasing domestic use of cattle hide were needed.
- ✓ The concerned bodies should reinforce and mainstream the system of buying of hides and skins on standard grade basis for collection centers.
- ✓ Creating awareness on the basis of hand flaying for farmers should be needed in order to minimize the financial loss of the product and awareness of rural farmers to supply hide and skin to the market should be necessarily.
- ✓ In order to utilize our livestock by-products effectively and decrease the prevalence of skin disease and parasites; adequate veterinary services should be implemented.
- ✓ The government and private institutions should organize individual middlemen under micro for proper management of hide and skin and producing employment for them.
- ✓ The government should create market opportunities for collection centers and giving certain incentives for further initiative work of them.

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8. APPNEDIXES

Appendix 1: Farmers Survey Interview Schedule

I. Demographic and farm characteristics of house holds

Respondent ID ----- Date-----

Zone, Woreda----- Peasant Association (Kebele) --

Sex.....

Age.....

Level of education.....

Code for age, sex and level of education

Age in years	Code	Sex	Code	Level of education code	Code
<14years	1	Male	0	Illiterate	1
15-30 years	2	Female	1	Only read and write	2
30-45 years	3			Primary school	3
45-60 years	4			Secondary School	4
>60years	5			Above secondary school	5

II. General

1. Did you slaughter any animal in 2005 E.C? a) Yes b) No
2. Did you sell Hides or Skins to market in 2005 E.C? a) Yes b) no
3. Did you slaughter an animal in the last one month? a) Yes b) no ___if yes, How many? ___
4. Did you sale Hides or Skins in the last one month? a) Yes b) no if yes, which one? Sheep skin___ goat skin___ hide_____
5. What do you do with skin and hides produced when animals are slaughtered for household consumption? A) sale it B) keep it for household utility C) sheep skin sell and cattle hide for house hold utility D) both for sell and house hold utility
6. What is your reason for keeping it? A) When the skin is rejected B) when the market price gets lower C) because it need it D) other specify_____
7. If you keep it what kind of utensils are produced out of it? _____
8. What is the price of that utensil as compared to selling the skin/hide? _____
9. If you sale the skin/hide, to whom do you sale? A) Middlemen B) collection center C) informal market for local consumption D) other specify_____
10. Where the price of hides & skins is become fair?
a) At local collector b) at broker c) at whole seller d) I didn't compare
11. Who fixes the price of the skin/hide? A) The buyer B) myself C) national price D. negotiation
12. What is the current market price for sheep skin? A) Sheep skin_____ B) Goat skin_____ cattle hide___?
13. Did you know the market price before you sell your Hides and Skins? a) Yes b) No
14. If yes, how did you get price information of Hides and Skins in the market?
a) Broker b) personal observation c) Other Hides and Skins traders

d) Other farmer e) Radio f) Telephone g) other (specify) -----

15. How did you qualify the timeliness of the information? a) Timely b) outdated

16. How did you qualify the adequacy of the information? a) Adequate b) moderate c)

Inadequate

17. Did you face difficulty in finding buyers when you wanted to sell? a) Yes b) No

18. If yes, is it due to:

a) Inaccessibility to market c) Lack of price information

b) Low price offer d) due to low quality e) other (specify) -----

19. In what state do sale the products? A) Fresh within 12 hours B) unpreserved in 24 hours C) unpreserved in 48 hours D) dried E) salted

20. If you dry the skin for sale, how do you dry it? A) On the ground B) on frame C) other specify _____

21. How did you transport the product from home to market?

A) Head/back loading (carrying by packing with plastic and with hand) c) Vehicle e) Other (specify) -----

b) Animal's cart d) Pack animal

22. Have you ever got your skin and hides rejected or price lowered? a) Yes b) no if you yes what are the Common reasons _____

23. What problems did you face to your animals in 2005 E.C?

a) Disease b) parasites c) lack of feed. d) Lack of water e) no problem

24. Do you think these problems affect the price and acceptability of hide and skins?

a) Yes b) no

25. Did you have extension agent contact in 2005 E.C?

a) Yes b) No

26. What was the extension advice on?

- a) Veterinary service
- b) Animal husbandry
- c) Hides and Skins preservation (management) & transport
- d) Animal products handling
- e) other (specify) -----

Appendix 2: Interview schedule for butchers and abattoirs

Respondent ID ----- Date-----
 Zone, Woreda----- Peasant Association (Kebele) ----

1. What do you do with the skin and hides produced after slaughter? A) Give it back to the owner B) preserve it C) sale it D) send it to tannery fresh___ or preserved_____
2. If you sale it, in what state? A) Fresh within 12 hours B) unpreserved in 24 hours C) unpreserved in 48 hours D) dried E) salted
3. If you preserve it, what methods do you use? A) Salting B) Drying C) other specify_____
4. If you sale the products, where is the destination? A) Middlemen B) Collection center C) Tannery D) other specify_____
5. What is the current market price for A) sheep skin_____ B) Goat skin_____ cattle hide___?
6. Who fixes the price? A) The buyer B) myself C) national price D) other specify_____
7. Have you ever got your skin and hides rejected or price lowered? _____ what are the _____ common reasons _____

Appendix 3: Hides & skins for middle men interview schedule

Respondent ID ----- Date-----

Zone, Woreda----- Peasant Association (Kebele) -----

Where are you common sources of skin and hides? A) households B) backyard slaughter C) butchers D) others specify_____

Which one is the most common product you buy? A) Sheep Skin B) Goat Skin C) cattle hide

What is the trend of availability? A) increasing B Decreasing C) constant

If availability is reducing what do you think is the reason? A) Animal number decrease B) slaughtering rate decrease C) many middlemen D) local use E) other channels of market F) others specify_____

What is your current buying price for A) sheep skin---- B) goat skin--- C) cattle hide--
-

Where do you sale the products? A) to collection center B) to other middlemen C) other specify_____

What is your current selling price for A) sheep skin---- B) goat skin--- C) cattle hide-

Who fixes the price? A) the buyer B) myself C) national price D) other specify_____

9. Have you ever got your skin and hides rejected or price lowered? _____ What are the common reasons_____

10. What criteria do you use to buy the product? A) Size B) undamaged by knife C) freshness D) pattern E) roughness_____

11. What is your best preference? A) Fresh B) Dry C) Preserved/Salted

12. In what state do you sale the products? A) Fresh within 12 hours B) unpreserved in 24 hours C) unpreserved in 48 hours D) dried E) salted

13. How do you transport the products? A) Carry B) animal transport C) camion D) other specify _____

14. Did you use additional Preservation to Hides & Skins before taking to terminal market?

a) Yes b) No

15. If yes, what method of preservation did you use? a) Salted b) Sun dried

c) Other (specify) -----

16. What defects did you observe in the raw hides you purchased?

a. Flay cut b. putrefaction c. small size d. Poor pattern f. disease due to black leg and small pox p) smooth skin h. improper bleeding and aged animal

17. What technical and administrative support do you get from concerned Institutions?

a) Training b) Technical follow up c) Quality assurance

d) Different incentives e) Experience sharing f) no technical support

Appendix 4: Collection centers/ traders interview schedule

Respondent ID -----

Date-----

Zone, Woreda-----

Peasant Association (Kebele) -----

-

1. How long have you been in Hides & Skins trading?

a) Less than a year b) 1 to 4 years c) 5 to 10years d) Over 10 years

2. at what time did the supply of hides and skins became high?

a) Ethiopian New Year (Mesmerism) b) Ethiopian X-mass and 'Timket' c) Ethiopian Easter d) Other (specify) -----

3. Where are your common sources of skin and hides? A) households B) backyard slaughter C) butchers D) abattoirs E) middlemen F) others specify _____

4. Which one is the most common product you buy? A) Sheep Skin B) Goat Skin C) cattle hide

5. What is the trend of availability? A) Increasing B) Decreasing C) constant

6. If availability is reducing what do you think is the reason? A) Animal number decrease B) slaughtering rate decrease C) many collection centres' D) local use E) other channels of market F) others specify _____

7. What is your current buying price for A) sheep skin---- B) goat skin--- C) cattle hide--?

8. Where do you sale the products? A) To another collection center B) to tannery C) other specify _____

9. What is your current selling price for A) sheep skin---- B) goat skin--- C) cattle hide-?

10. Who fixes the price? A) The buyer B) myself C) national price D) other specify _____

11. Have you ever got your skin and hides rejected or price lowered? _____ What are _____ the _____ common reasons _____

12. Did you know the market price before you sell your Hides and Skins? a) Yes b) No

13. If yes, how did you get information on price of Hides and Skins in the market?

A. Other Hides and Skins collectors' b. personal observation

c. Radio d. Telephone e. Other (specify) -----

14. How did you qualify the reliability of the information? a) high b) moderate c) low

15. How did you qualify the timeliness of the information? a) timely b) outdated
16. How did you qualify the adequacy of the information? a) adequate b) moderate c) inadequate
17. Is there price variation of Hides & Skins in the market? a) Yes b) No.
18. If yes, what could be the reasons you think? a) Tannery price variation/setting b) Price increases on holiday's c) Price decreases or increases seasonally d) Traders having big capital can increase or decrease the price of the day e) Export price variation f) I do not know g) Other (specify) -----
19. When the price variation reaches high? a) During holidays b) Other than holidays
c) It depend on the price of export price variation d) others
20. What criteria do you use to buy the product? A) Size B) undamaged by knife C) freshness D) pattern E) age f) roughness g) others
21. Do you grade the products when you buy? _____
22. What defects did you observe in the raw skins and skin you purchased?
A) Brand b) flay cut c) poor pattern d) small size e) putrefaction f) improper bleeding
g) gouge marks
a. Brand c. Poor pattern d. Fallen hides / skin. Putrefaction f. improper bleeding g. others (specify) ----- Put in order of importance
23. What kind of defects leads you to reject the products _____?
24. In what state do you sale the products? A) Fresh within 12 hours B) dried C) salted
25. What is your best preference? A) Fresh B) Dry C) Preserved/Salted
26. How do you transport the products? A) animal transport B) camion D) other specify _____

27. At what time of the year does Hides & Skins supply, demand and price reach their respective peak?

Time	Supply	Demand	Price
A. At festival period/holidays			
B. At wet time period other than holidays			
C. At dry time period other than holidays			