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Handling and Management of Skin and Hide after Slaughtering in the Case of Rural and Urban Parts of SNNPR

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Abstract- This study was conducted on handling and management of skin and hide after slaughtering Wolaita zone and Kambata Tambaro zone of southern nation and nationalities people region. During survey time forty butchers/hotels, forty middlemen, twenty collectors and ten traders were identified and conducted the interview. The result showed that absence of flay cut, freshness, size and absence of dirty of the skin are major criteria for quality of hide and skin. Respondents from their experience ascertained that flay cuts, bone break on hide, blood and fresh remnant were among the major defects encountered during slaughtering process where as delay in selling and unstable market are also problems encountered after slaughtering of hide and skin. It can be concluded that during and after slaughter defects have main effect on the potential to downgrade the quality of hide and skins in the study areas. However, they can be minimized through continuous awareness creation and training and provision of more access to market.

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I. INTRODUCTION

The livestock sector contributes 45% of agricultural GDP and 16 to 19% of the foreign exchange earnings of the country (Behnke and Metaferia, 2011). Furthermore, the country's foreign exchange from livestock product is increasing, with spiking trend for leather and meat products.. Skins and hides are the most valuable export item for the country other than coffee. The leather industry is one of the fastest-growing economic sectors in Ethiopia (Abadi, 2000; Bayou, 2007).

Ethiopia has 55.03 million cattle, 27.35 million sheep and 28.16 million of goats (CSA, 2014). This places the country as one of the richest countries in livestock resources. It has a huge potential for production of hide and skins. For instance, its potential was estimated at 3.78 million cattle hides, 8.41 million sheep skins and 8.42 million goatskins in 2012/13 (CSA, 2013). 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. In 2002 hides and skins represent major source of foreign exchange earnings for the country accounting for 14-16% of the total export revenue (Zenaw & Mekonnen, 2012).

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Despite the availability of these physical resources, the leather sector contributes only marginally to the national economy so far. This could be mainly due to the presence of livestock disease and difficulties to meet international standards (CSA, 2011). Skin and hide quality is usually assessed by international standards of physicochemical tests, which are intended to guarantee leather quality and uniformity (Tsegay et al., 2012). Hide and skins are known to have varying physical and chemical properties and thus used for different purposes. Commodity trade patterns have changed during recent years and practical methods for evaluation and classification of skin are necessary (FAO, 2010).

According to the 1998/99 report of Ethiopia, the annual off take rate for cattle, sheep and goat was 7%, 33% and 35% respectively which is from the potential production of 3.1 million cattle hides, 7.8 million sheep skin and 8.2 million goat skin respectively (Bisrat G., 2013). Unfortunately this raw material of the leather industry is mainly from the local areas of the country where basic amenities for slaughtering and subsequent marketing are either not in existence or lacking.

The main constraints to increased utilization of hides and skins are low quality and lack of grading/selection of the raw hides and skins purchased. About 80% of the hides and skins in Ethiopia are produced in rural areas. (Mahamud A., 2000).

Hides and skins production in the southern region of Ethiopia are facing serious defects caused by improper skinning and handling (preservation) and also prolonged storage of untreated hides and skins at various points in its way to the tanneries. The loss to the national economy resulting, therefore, is immense unless a proper collection and prevention means is devised. Once hides and skins have been selected and purchased, every effort should be made to preserve their quality until the time comes for them to be tanned. Thus the objective of the study is to assess the handling and management of skin and hide after slaughtering and assess the postharvest loss of skin and hide.

a) Objectives of the study

i. General objective

- To assess the handling and management of skin and hide after slaughtering in the case of rural and urban part of SNNPR

ii. *Specific Objectives*

- To identify skin and hide handling and management after slaughtering in the region
- To assess the cause for skin and hide defect after slaughtering
- To suggest appropriate improvement option to enhance quality skin and hide production

II. MATERIALS AND METHODS

a) *Description of the study area and sampling techniques*

This study was conducted at Woliata and Cambata Tambaro zones. In Woliata zone, Soddo and Areka town were selected and in Kambata Tambaro zone Durame town and Qachabira woreda were selected based on their potential on skin and hide production. Information was gathered through questionnaire by contacting various key informants such as woreda office experts, butchers, middlemen, collecting centers and traders of skin and hide in each area.

b) *Data analysis*

The questionnaire was pre-tested and then modified on the basis of the information obtained in the pre-tests. Descriptive statistics such as means, frequency distribution and percentage were used to analyze the data. The data were analyzed through software packages using SPSS (version 20).

III. RESULTS AND DISCUSSION

a) *Characteristics of hide and skin producers and marketers*

The household characteristics such as gender category, age group and educational status of the respondents are described in Table1. Out of the total interviewed butchers the average household male respondents were 95% and the average mean number of females were 5% while the average household male

respondents were 100% for middleman, collectors and traders of different age and educational status. The study observed that hide and skin producers and marketers were mainly a male domain than women. Similar ideas were reported by (Alemnesh *et al.* 2018).

Out of the total interviewed butchers about 70% of the house hold respondents were found in age group between 30 and 50 years, 10% of the households were below 30 years old and 20% of the house hold respondents were above 50 years old. About 55% interviewed middlemen of the house hold respondents were found in age group between 30 and 50 years, 25% of the households were below 30 years old and 20% of the houses hold respondents were above 50 years old. About 60% interviewed Collectors of the house hold respondents were found in age group between 30 and 50 years, 15% of the households were below 30 years old and 25% of the houses hold respondents were above 50 years old. About 80% interviewed traders of the house hold respondents were found in age group between 30 and 50 years, 5% of the households were below 30 years old and 15% of the houses hold respondents were above 50 years old. The study observed tha hide and skin producers and marketers were found in age group between 30 and 50 years mainly a male domain than women.

In the study area, total interviewed butchers 15% respondents were illiterate, 25% only read and write, 37.5% completed primary school, 17.5% joined secondary school and 5% had diploma. About 40% interviewed middlemen were illiterate, 35% only read and write, 20% completed primary school, 5% joined secondary school and none had diploma. On the other hand, about 20% interviewed collectors were illiterate, 50% only read and write, 30% completed primary school and non had joined secondary school or diploma while 10% interviewed traders were illiterate, 25% only read and write, 45% completed primary school, 15% joined secondary school and 5% had diploma.

Table 1: Characteristics of hide and skin producers and marketers

Variables	Type of respondents			
	Bucher (M=40)	Middleman (N=40)	Collectors (N=20)	Traders (N=10)
Sex				
Male (%)	95	100	100	100
Female (%)	5	0	0	0
Age(year)				
<30 (%)	10	25	15	5
30-50 (%)	70	55	60	80
>50 (%)	20	20	25	15
Education level				
Illiterate (%)	15	40	20	10
Read and write (%)	25	35	50	25
Primary school (%)	37.5	20	30	45
Secondary school (%)	17.5	5	0	15
Diploma (%)	5	0	0	5

b) *Perception on major criteria for quality of hide and skin*

Based on the survey result there are different criteria used by respondents for quality skin and hide. These include size, absence of flay cut, weight, absence of dirt, freshness as shown in table2. Absence of flay cut (100%) and freshness (100%) of the skin are the main criteria for butchers followed by size (65%), absence of dirt (45%) and weight (10%) of the goat and sheep skin the same trend is observed in case of middlemen. Whereas in case of collectors size (100%), absence of flay cut (100%) and freshness (100%) of the skin are the main criteria followed by absence of dirt (75%) and weight (5%) of the goat and sheep skin. Except weight (5%) of the goat and sheep skin size, absence of flay cut, absence of dirt and freshness are the main criteria for traders. This study shows that except weight of goat

and sheep skin size, absence of flay cut, absence of dirt and freshness are very important criteria for selling and buying of goat and sheep skin for all respondents. Similar idea was reported by (Ahmed, 2000, Chemonics, 2002, Kagunyu *et al.*, 2011 and Hagos *et al.*, 2013).

On the other hand, absence of flay cut (100%), weight (100%) and freshness (100%) of the hide are the main criteria for butchers followed by absence of dirt (90%) and size (30%) the cattle hide. The mean average middlemen result shows that absence of flay cut (100%), absence of dirt (100%) and weight (100%) of the hide are the main criteria followed freshness (55%) and size (50%) of hide. In case of collectors and traders absence of flay cut, weight, absence of dirt and freshness are the main criteria for selection of cattle hide followed by size. Similar finding was reported by (Jabbar and Benin 2002, Berhe 2009 and Tekle, 2009)

Table 2: Perception on major criteria for quality of hide and skin

Selection criteria		Type of respondents			
		Bucher (N=40)	Middle man(N=40)	Collectors(N=20)	Traders(N=10)
Skin	Size	65	95	100	100
	Absence of flay cuts	100	100	100	100
	Weight	10%	5%	5%	2%
	Absence of dirt	45	80	75	100
	Freshness	100	100	100	100
Hide	Size	30	50	45	40
	Absence of flay cuts	100	100	100	100
	Weight	100	100	100	100
	Absence of dirt	90	100	100	100
	Freshness	100	95	100	100
	Size	37.5	20	30	45
	Absence of flay cuts	17.5	5	0	15

c) *Slaughtering area selection by butchers*

Based on the survey result slaughtering practices, causes of defects during slaughtering and time of selling hide and skin after flaying are shown in table3. All butchers (100%) interviewed during survey time showed that bleeding of sheep and goats was done on ground this is the same in case of cattle. On the other hand, the finishing area of sheep and goat slaughter is done mostly by hoisting which is 70% and remain 30% is on the ground. About 80% of finishing practice of slaughtering of cattle is done on the ground and the rest 20% is done by hoisting. Flay cut (75%) is the main defect during slaughtering of hide & skin which is followed by bone break on hide (15%), flesh remnant (8%) and blood (2%). Similar idea was reported by Hagos *et al.*, (2013), Zembaba *et al.* (2013) and Melkamu (2014). Most of the respondents (65%) confirmed that time of hide and skin selling after flaying was within 24 hours this affects quality of hide and skin in the study areas.

Table 3: Butchers perception during slaughtering of hide & skin

Slaughtering type	Variables	Bucher (N=40)
Slaughtering sheep and goat	On ground	100
	Hoisting	0
Finishing	On ground	30
	Hoisting	70
Slaughtering/bleeding cattle	On ground	100
	Hoisting	0
finishing	On ground	80
	Hoisting	20
Defects during slaughtering	Fly cuts	75
	Bone break on hide	15
	Flesh remnant	8
	blood	2
Timing of hide and skin selling after flaying	Within 12 hours	23
	within 24 hours	65
	within 48 hours	12

d) *Hide and skin marketing constraints*

In this study the major sources of products for collection centers were butchers, middleman and collectors. In all interviewed actors marketing is the main problem in the study areas table 4 below. The problems faced by hide and skin traders in all survey areas include market problem such as lack of competitive market, fluctuating price, poor quality and lack of price information. Based on the survey, in case of interviewed butcher major constraints in marketing were lack of

competitive market (60%), followed by lack of price information (17%) and fluctuating price (12%) as in hide and skin marketing. On the other hand, lack of competitive market (52%), followed by fluctuating price (30%) and poor quality (18%) as in hide and skin marketing in interviewed middlemen. The same trend was observed in case of all collectors and collecting centers. This agrees with the finding of Berhe (2009) and Kagunyu *et al.*, (2011).

Table 4: Hide and skin marketing constraints

Variables			Type of respondents			
Management			Bucher (N=40)	Middleman (N=40)	Collectors (N=20)	Collecting Center(N=10)
Is there market problems	yes		100	100	100	100
	no		0	0	0	0
Main Problems in marketing	fluctuating price		12	30	45	35
	lack of competitive market		60	52	40	55
	lack of price information		17	0	0	0
	poor quality		1	18	15	10

IV. CONCLUSION AND RECOMMENDATIONS

Accordingly to the current study in all survey areas attention on hide and skin handling, management and marketing system was very low. It was found that majority of hide and skin produced are brought to collecting centers although there are a significant number that fail to reach the formal market due to sever defects. Major defects that were observed during slaughtering by respondents were flaying cut, break down of bone and other process on the hide, blood, flesh remnant. Major defects that were observed after slaughtering prolong storage and delay in sell.

Since hide and skin defects primarily originate during the slaughtering process, adequate slaughter facilities should be made available to producers so that slaughtering will be done properly. Both during slaughter and post-slaughter defects can be avoided or minimized through trainings and continuous awareness creation of all stockholders. A means of marketing access of hide and skin should be facilitate by government.

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