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Assessment of the Status of Hides and Skins Production, Opportunities and Constraints in Wolaita Zone, Southern Ethiopia

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Abstract
The study was conducted at Wolaita Zone, Southern Ethiopia with the objective of evaluating the status of hides and skins production, opportunities and identifying major problems of hides and skins production and preservation. Multi-stage sampling was employed for all sampling procedures. Three districts were purposively selected based on livestock population, intensity of fattening, degree of slaughtering frequency and number of hide and skin warehouses. From each district, three kebeles were selected randomly. From the selected kebeles, 135 households were selected randomly for interview. Most of the respondents (91%), slaughter their animals in backyard or homesteads during different social ceremonies and religious holidays. The rest have an experience of slaughtering animals in both rural slaughter slabs as well as in their backyards. Majority of the households indicated that they practice slaughtering of large animals during festivals in group. Upon slaughtering, the use of appropriate knife for different slaughtering purposes was not common. According to the survey result, majority of the respondents (72%), use improper knives for ripping and flaying which clearly indicates that there was a probability of flay cuts as defects during slaughtering. Only 27.4 percent of the respondents declared that they have slaughter slabs in their locality and from these 78 percent responded that the slaughter slabs were insufficient and poorly designed. Similar response was also reported by the butchers that the design of slaughtering houses was poor and they were insufficient. Hoisting slaughtered animals for proper bleeding is rarely practiced in the study area. Different types of hide and skin preservation techniques were used by farmers, from which ground drying (57%) and smoking (24%) were common. The main constraints adversely affecting the production and utilization of hides and skins were insufficient slaughtering houses and facilities, poor slaughtering system, poor animal husbandry practices and lack of training on production and marketing of hides and skins with their decreasing index values of 0.208, 0.171, 0.153 and 0.136, respectively. Market access, livestock population and good habit of meat consumption were the first three primary opportunities with index values of 0.285, 0.207 and 0.204 respectively. Training should be given for hide and skin producers as well as collectors for quality hide and skin production and timely collection to reduce spoilage.
Keywords: Constraints, Hide and Skin, Index, Preservation, Opportunities

1. INTRODUCTION

Ethiopia is believed to have the largest livestock population in Africa. According to CSA, (2013), the population of cattle, sheep, goat, poultry, horses, donkeys, mules, and camels was 52.13, 24.2, 22.6, 44.89, 1.96, 6.4, 0.37, and 0.99 million, respectively. Livestock perform multiple functions in the Ethiopian economy by providing food, input for crop production and soil fertility management, raw material for industry, cash income, fuel, and employment (Workneh, 2000).

The livestock subsector is a major contributor to the overall economy. It contributes 19% of GDP and 16-19% of the foreign exchange earnings of the country. It contributes some 35% of Agricultural GDP (or 45% if indirect contributions are taken in to account). With the rapidly growing population, increasing urbanization, and rising incomes, domestic demand for meat, milk and eggs is expected to increase significantly for the foreseeable future. Furthermore, the country's foreign exchange from livestock product is increased, especially for red meat to gulf and within Africa, as well as leather and other livestock product to Europe (FAOSTAT, 2013). Livestock hide and skin contribute a significant proportion of domestic leather. Skin from goat and sheep are important economic products contributing for the largest share to the total and agricultural export commodities (Hadly, 2001 and FAO, 2005) followed by live animals (Hadly, 2001). However, in recent years, this rank has been relegated to fifth level mainly because of rejection and down grading inflicted on hides and skin defects mainly due to infestation by external parasites (Kassa, 2005) but also due to pre-and post-slaughter skin management problems (Zenaw and Mekonnen, 2012).

Based on the off-take rate of 7.0% for cattle, 33.0% for sheep, and 35.0% for goat, the potential production is estimated at 3.1 million hides, 7.8 million sheep skins and 8.2 million goat skins (CSA, 2004 and 2007). This raw material of the leather industry is mainly derived from local areas of the country where basic amenities for slaughtering and subsequent marketing are either not in existence or lacking. Additional sources of hides and skins include slaughter slabs, municipal slaughterhouses, the limited number of export abattoirs and meat and meat

product processing plants. 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 (Mahmud, 2001).

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. 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. The reason behind is the appearance of skin disease called '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 (Mahmud, 2001). This has 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.

Wolaita is one of the most potential sites for hide and skin production due to numerous tributary districts that convey products to zone and presence of private hide and skin collection centers that preserve and transport hide and skin to the national market. However, the potential, production status and associated problems of hide and skin preservation that may result in deterioration of the quality of the product in the study area is not well identified and documented. Therefore, this study was initiated to evaluate status of hide and skin production, preservation methods, opportunities and problems of hide and skin production in the study area.

MATERIALS AND METHODS

Description of the Study Area

Wolaita zone is located 390 km southwest of Addis Ababa and 165 km from Hawassa. It has a total area of 4,541km^2 and is composed of 12 districts and 3 registered towns. It is approximately 2000 meters above sea level and its altitude ranges from 700-2900 meters. The population of Wolaita zone is about 1,527,908 million of which 49.3% are male and 51.7% are female (CSA, 2007). Out of these, 11.7% live in towns and the rest 88.3% live in rural areas. The annual population growth rate of the zone is 2.3%. It is one of the most densely populated areas in the country with an average of 290 people per km^2. The area is divided into three ecological zones: *Kola* (lowland <1500m), *Woina Dega* (mid-altitude 1500-2300m) and *Dega* (highland > 2300m). Most of the area lies within the mid altitude zone.

Rainfall is bimodal, with an average amount of about 1000 mm (lower in the lowlands and higher in the highlands). Mean monthly temperature varies from 26^{0}C in January to 11^{0}C in August. Soils (mainly Vertisols and Nitosols) vary in pH from 5-6. Primary occupation of the zone is farming. Mixed crop-livestock production predominates, but there are some pastoralists in the lowlands. Generally, the climatic condition is conducive to livestock production.

Methodology

Sample Selection

At the beginning of the study pilot survey was undertaken to understand and update the existing information about hide and skin production and preservation practices. During the survey, concerned offices, private hide and skin collectors, butchers and informal hide and skin merchants were involved. Multi-stage sampling was employed for over all sampling procedure. From the total 12 districts, 3 representative districts were purposively selected based on the information obtained (livestock population, intensity of fattening, degree of slaughtering frequency and number of hide and skin warehouses). From these districts, nine kebeles were selected randomly. From the selected kebeles, representative households were selected randomly for interview.

Data Collection

Structured questionnaires were developed and pre-tested before use and necessary adjustment was made prior to the actual survey. The major data collection methods used includes formal survey via questionnaires, discussions with individual key informants and focus groups, observation and visual aids.

Statistical Analysis

Data collected during the individual interview were analyzed by using SPSS 20.00 release (SPSS, 2012). Survey results were reported using descriptive statistics. For ranking major constraints and opportunities of hide and skin production and utilization, priority index was employed using the following formula:

Priority index (PI) = $\frac{(F1X3) + (F2 X 2) + (F3 X1)}{\text{Sum (F total)}}$

That is, Index was calculated as Index = Sum of [(3 X number of household ranked first) + (2 X number of household ranked second) + (1 X number of household ranked third)] given for an individual constraint or opportunity divided by the sum of [(3 X number of household ranked first) + (2 X number of household ranked second) + (1 X number of household ranked third)] for overall constraints or opportunities.

RESULT AND DISCUSSION

Purpose of keeping animals by the household

Farmers in the study area rear cattle mainly for multipurpose (30%), for fattening as income source (23%), for security (9.6%), for milk purpose (30%) and for draught purpose (7.4%). Relatively, the large percentage (23%) of households that practice cattle fattening indicates the potential of producing meat animals that are slaughtered locally and produce hide and skin.

Slaughtering practice

Most of the respondents (91%), slaughter their animals in backyard or homesteads during different social ceremonies and religious holidays. The rest have an experience of slaughtering animals in both rural slaughter slabs as well as in their backyards. Majority of the households indicated that they practice slaughtering of large animals during festivals in group. Upon slaughtering, the use of appropriate knife for different slaughtering purposes was not common. According to the survey result, majority of the respondents (72%) use improper knives for ripping and flaying which clearly indicates that there was a probability of flay cuts as defects during slaughtering. The result is consistent with the report of Koloka (2010) that lack of knowledge and experience of people who perform skinning, the type of flaying equipments used for flaying and lack of slaughter facilities in almost all slaughtering slabs were the main sources of flay cuts and gouges of hides and skins in Ethiopia.

Only 27.4 percent of the respondents declared that they have slaughter slab in their locality and from these 78 percent responded that the slaughter slabs were insufficient and poorly designed which in turn indicates that there is a quality problem of hide and skin. Similar response was also reported by the butchers that the design of slaughtering houses was poor and they were insufficient. Hoisting slaughtered animals for proper bleeding is rarely practiced in the study area. Only 36 percent of the respondents practice hoisting for proper drainage of blood from the dead carcasses of small ruminants.

Preservation of Hide and Skin

Majority of the household respondents (76%) sold hide and skin to market after backyard slaughter in fresh (unpreserved state) where as the rest practice different types of hide and skin preservation techniques from which ground drying (57%) and smoking (24%) were common. The result is different from the report of Juhar (2015) that 85 % of hide and skin producers sell unpreserved hide and skin. These techniques of hide and skin curing are worse in maintaining the quality of hide and skin. As reported by the respondents, ease of using and material availability were the common reasons why the households preferred ground drying and smoking as methods of hide and skin preservation. In addition, 75% and 25% of butcheries in the study area sold fresh and salted hide to the market respectively.

The fact that most producer respondents reported to sell hides and skins in a fresh state in 12 hour without preservation is encouraged. Delaying preservation of selling without the necessary precaution results in the spoilage of products and degrades their quality. Foxwell (1999) observed that pastoralist use sun drying methods of curing hides and skins leading to poor quality products. Jabbar *etal.,* (2002) has identified that most animals in African countries are slaughtered in facilities which do not have adequate infrastructure or tools required to ensure production of good quality hides and skins. As a result hides and skins that are ground dried become poor in quality.

Constraints of Hide and Skin Production

The main constraints adversely affecting the production and utilization of hides and skins as reported by the interviewed households were insufficient slaughtering houses and facilities, poor slaughtering system, poor animal husbandry practices and lack of training on production and marketing of hides and skins as extension service with their decreasing index values of 0.208, 0.171, 0.153 and 0.136, respectively. The result is consistent with the report of Ahmed (2000) that the main constraints in the production and marketing of hides and skins included an inadequate network of primary buyers, lack of facilities for slaughtering, preservation, storage and transportation, 'lack of incentives for improvement' and limited effectiveness of government extension service and other man-

made and natural damage inflicted on the raw hides and skins downgrades quality. The result is also supported by the report of Jabar *et al*., (2002), poor animal husbandry (inadequate and poor quality feeds, inadequate parasite and disease management) and inappropriate slaughtering, flaying, collection and initial processing methods used were the main problems that affect hide and skin quality.

Table 5: Constraints of Hide and Skin Production

NO	Constraints	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	F-sum	PI	Rank
1	Poor animal husbandry practices	5	1	88	2	2	18	2	1	0	0	890	0.153	3
2	Poor treking of live animals	2	1	0	0	1	4	17	7	25	0	194	0.033	8
3	Backyard slaughtering system	3	95	3	5	2	0	1	0	17	0	994	0.171	2
4	Lack of training on production and marketing	16	4	5	75	1	3	1	0	1	2	790	0.136	4
5	Lack of/improper use of preservation	2	20	4	3	3	55	2	0	1	0	556	0.095	6
6	Poor or delayed transportation	1	0	17	2	64	2	3	3	2	0	579	0.099	5
7	Market demand/black market	3	3	0	19	3	2	42	2	0	3	395	0.068	7
8	Insufficient slaughter houses	102	2	2	2	17	7	1	0	2	0	1213	0.208	1
9	Insufficient incentive and information	2	0	0	0	1	3	6	31	2	4	166	0.029	9
10	Using hide and skin for local purpose	0	0	1	0	0	1	0	0	1	30	45	0.008	10
		TOTAL										5822	1.000	

PI = Priority Index

Opportunities of Hide and Skin Production

Despite there were many constraints that affect the production and utilization of hides and skins in the study area, there were also a couple of opportunities to produce and utilize hide and skin. From the study, as indicated in Table 5, market access, livestock population and good habit of meat consumption were the first three primary opportunities with index values of 0.285, 0.207 and 0.204 respectively.

Table 6: *Opportunities of Hide and Skin Production*

NO	Opportunities	1st	2nd	3rd	4th	5th	6th	7th	F-sum	PI	Rank
1	Good habit of meat consumption	27	13	44	20	11	1	0	602	0.204	3
2	Livestock population	18	12	34	45	4	24	5	613	0.207	2
3	Market access	60	38	21	8	12	6	11	844	0.285	1
4	Better infrastructure	18	31	3	15	13	1	0	428	0.145	4
5	Extension service	3	4	6	11	5	7	4	152	0.051	6
6	Emerging meat export market	2	4	5	7	0	8	9	116	0.039	7
7	Credit service	1	22	3	3	4	6	12	202	0.068	5
		TOTAL							2957	1.000	

PI = Priority Index

CONCLUSION AND RECOMMENDATION

CONCLUSION

Farmers in the study area rear cattle for multipurpose: for income source, for security, for milk purpose and for draught purpose. Relatively, the large percentage (23%) of households that practice cattle fattening indicates the potential of producing meat animals that are slaughtered locally and produce hide and skin. Majority of the households indicated that they practice slaughtering of large animals during festivals in group. However, use of appropriate knife for different slaughtering purposes was not common.

About 76% of respondents sale hide and skin to market after backyard slaughter in fresh (unpreserved state) where as the rest practice different types of hide and skin preservation techniques 57% &24% ground drying and smoking respectively.

The main constraints adversely affecting the production and utilization of hides and skins were insufficient slaughtering houses and facilities, poor slaughtering system, poor animal husbandry practices and lack of training on production and marketing of hides and skins with their decreasing index values of 0.208, 0.171, 0.153 and 0.136, respectively. Market access, livestock population and good habit of meat consumption were the first three primary opportunities with index values of 0.285, 0.207 and 0.204 respectively.

RECOMMENDATION

- Training should be given for farmers to produce quality hide and skin
- All hide and skin producers and collectors need to use proper method of hide and skin preservation
- Slaughtering facilities must be fulfilled by government to maintain hide and skin quality
- There should be frequent awareness enhancing training for different responsible bodies from farmer to warehouse level by government and NGOs.

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