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Review on Traditional Hides and Skin Processing Techniques in Ethiopia

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ABSTRACT

The traditional leather products are important household materials and income generating business especially for the rural community. To produce traditional leather products, they follow different steps and procedures and to facilitate this process in between, they apply different materials and indigenous vegetables. The involvement of traditional tanners in the market is significant that the volume of raw cattle hide they absorb for producing traditional leather goods is more than 600,000 per annum. All the local tanners who work through the process were made up of young and middle-aged men. By tradition, local tanners in Ethiopia belong to a low-caste and are looked down upon by other parts of the community. Artisanal group has suffered from prejudice and relative isolation in society. Considering the high amount of produced leather waste which contains toxic and pollutes plant residues, there should be a great interest to develop a water collection center in the nearby surrounding so as to protect pollution of water bodies which are reserved both for humans and animals.

KEYWORDS: *Hides and Skins, Traditional Leather Products, Traditional Tanners*

INTRODUCTION

Ethiopia has the huge livestock population in Africa, it was estimated to be 70 million cattle, 42.9 million sheep, 52.5 million goats, 2.15 million horses, 10.80 million donkeys, 0.38 million mules, 8.1 million camels, 57 million chickens, and 6.99 million beehives (CSA, 2021). Traditionally livestock is an important sub-sector within Ethiopian Economy in terms of its contribution both to agricultural value-added production and to the national economy. Livestock contributes to the production of meat, milk, eggs, blood, industrial raw materials, wool, hair, hides and skin. Leather from animal skin has been chemically modified to produce a strong, flexible material that resists decay. All hides and skins that enter the market for transformation into leather originate from slaughter animals that provide for meat, and hence their hide or skin is a by-product of the meat industry (MOA, 2012).

Animals are sold or slaughtered only at an advanced age, or in the case of urgent need (Ehui, Jabbar, Kiruthu, & Gebremedhin, 2002; Shashe Ayele *et al*., 2003). Self-sufficiency in food production and increase in rural income and foreign currency earning of the country through improving the quality and quantity of export items are among the main objectives of the current agricultural development polices of Ethiopia. Cattle, sheep, and goats are important sources of income for the agricultural community and together comprise one of Ethiopia's major sources of foreign currency earning through export of live animals, as also meat, hide, and skin (Desta, 2008).

Hides and skins could be obtained from fish, birds, and reptiles as well as from wild and domesticated animals. The most important sources are cattle, sheep, and goats. Based on annual off take rates of 7% for cattle, 33% for sheep, and 35% for goats, the potential production is estimated at 2.38 million cattle hides, 10.07 million sheep skins, and 7.38 million goat skins in 1999. 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 inexistence or lacking (Ahmed, 2000). Hide gained from cattle and skins from goats and sheep are important economic products contributing to the largest share of the total agricultural export commodities (FAO, 2005), followed by live animals (Solomon et al., 2003). The availability of hides and skins through slaughtering or death of livestock is of particular importance to the leather industry. Hides and skins have been one of the country's top foreign currency earners. Although today it ranks fourth, next to coffee, chat, and oilseed export, in the 1980s and 1990s it used to be second highest foreign currency earner. In 2011, Ethiopia earned 139.28 million USD from the export

of finished leather, shoes, garments, and gloves to foreign countries (CSA, 2016). However, the production of hide and skin in the subsector is constrained by various structural, production, information exchange, and quality problems, as well as financial constraints. Despite its potential, hide and skin performed weakly not only in the production sector but also in the marketing of hide and skin products.

According to MOA (2012), annual off-take rate has reached 9.77, 34.61, and 26.11 per cents for bovine animals, sheep and goats respectively and the annual output is estimated at about 5.2 million, 8.8 million, and 6.2 million pieces of bovine hides, sheep and goat skins. So, this indicated Ethiopia is endowed with the resource base required for the commercial production of leather and leather products. Contrarily to other commodities, as far as meat consumption is concerned, hides and skins are produced everywhere, in each village and town, in each and every country, all over the world, without exclusion. Each continent and all seas and oceans produce hides and skins. Where there are people, independent from race, religion or political association, there is a production of hides and skins. There isn't a type of animal in the world that doesn't or hasn't provided the basic material for the production of leather. In Ethiopia there are 30 tanneries and 18 enterprises manufacturing leather products operate in the country producing products ranging from various forms of leather articles such as shoe uppers, leather garments, stitched upholstery, school bags, handbags, industrial gloves and finished leather. Parallel to modern tanning, Ethiopia is also one of the African countries with the presence of huge number of traditional tanners. It is estimated that there are about more than 6722 household traditional tanners in the country, mainly scattered in the northern part of Amhara, Tigray and Oromia regions of the country. In Amhara region alone, 5292 traditional tanners are found. Nationally they have a capacity to utilize more than 700,000 hides per annum. They purchase huge amount of hides due to their ability to pay better price than tanneries and their availability in the nearby compound. In many civilizations around the world, animal hides and skins were processed and used for various purposes since time immemorial. The overall objective of this review on the hide and skin production and marketing trend in Ethiopia, the Traditional hide and skin processing techniques, the production and marketing constraints, opportunities and the economic significance of hide and skin in Ethiopia.

OBJECTIVE OF THE SEMINAR

General Objectives

To review the traditional hides and skin processing techniques in Ethiopia

Specific Objectives

- ✓ Review the hide and skin production and marketing trend in Ethiopia
- ✓ Review the Traditional hide and skin processing techniques in Ethiopia
- ✓ Review the production and marketing constraints of hide and skin in Ethiopia
- ✓ Review opportunities and the economic significance of hide and skin in Ethiopia

Methodology

This senior seminar is reviewed by referring different studies, published documents, and guide books, international journals and proceedings.

LITERATURE REVIEW

Concepts and Definition of hide and skins

The words "hides and skins" are often used interchangeably; however, according to the British standard definitions, hide is the raw skin of mature animals of larger kinds, such as cattle, horse, and other such large animals. Skin is the skin of fully grown animals of smaller kinds, such as shoat, pigs, reptiles, birds, and fishes or of immature animals of the large species like calves and colts (Teame, 2017). Hides are categorized based on the age and weight of animals. Accordingly, calf skins usually weigh from 0 to 6 kg in green conditions. Adult animals' hides can be categorized into three categories: light, medium, and heavy. Light category hides are from young heifers/bulls with a weight of 6–11 kg in the green state. Medium category hides are from young cows and bulls that weigh 11–17 kg. Heavy hides are from full-grown cows or bulls that weigh more than 17 kg. Sheep skins are divided into hairy and wool types depending on the types of the hair coat. Goatskins are highly valued as a raw material because of their high demand for superior-quality leathers (Russel *et al.*, 2005).

Hide and skin production and marketing trend in Ethiopia

Hide and skin production is commonly practiced as an additional activity, and none of the respondents specialized in this activity. The emergence of modern tanning in Ethiopia dates back to 1918 and 1927 with the establishment of the then ASCO (currently Addis Tannery) and Darmar/Awash (currently ELICO) tanneries, respectively. Between 1954 and 1976, Dire, Modjo, and Kombolcha tanneries were established (Darge, 1995). The leather industry sector is one of the growing economic sectors in Ethiopia. However, the sector is constrained by different issues like external parasites, inappropriate management of animals, faults during slaughtering, and improper handling of skin before reaching the tannery, due to which the sector is losing a large amount of money due to the decline in quality and the fall in export price. There are 27 tanneries in Ethiopia produce all forms of hides and skins and finished leather for the domestic and export markets. These tanneries have an

average daily soaking capacity of 107,850 pieces of sheep skin, 51,550 pieces of goatskin, and 9,800 pieces of hide. The annual capacity reaches approximately 48 million (32.4 million sheep and 15.5 million goat) skins and 2.9 million hides (CSA, 2017). However, the importance and uses of hide and skin production in the context of smallholder farmers were multidirectional. The hide and skin are primarily used for income generation and secondarily used for bedding purpose in Ethiopia (Getachew *et al*., 2017).

Ethiopian small ruminant skins, especially sheep skins, traditionally have a very good reputation for quality in the world leather market due to their fine grain and compact structure (Abadi, 2000). According to the USAID (2013) report, the existing 27 tanneries in Ethiopia produce all forms of hides and skins and finished leather for the domestic and export markets with average daily soaking capacity of 107,850 pieces of sheep skin, 51,550 pieces of goatskin, and 9,800 pieces of hide. Meanwhile, the annual capacity reaches approximately 48 million (32.4 million sheep and 15.5 million goat) skins and 2.9 million hides. However, the capacity to process hides and skins greatly exceeds domestic supply, particularly for raw sheep and goatskins (USAID, 2013). Although Ethiopia has very good potential to produce substantial quantities of hide and skins, the quality of the hide or skin is to a large extent related to the amount of damage to the grain (or outside) surface. In this regard, the leather industry sector is losing large amounts of money due to the decline in quality and the fall in export price (CSA, 2017, ESGPIP, 2009). It is estimated that about one quarter to one-third of all the skins processed at tanneries are unsuitable for export due to various defects (Kassa, 1998). Some reports indicated that the major problem affecting the leather and especially the tanning industry is related to skin diseases, scratches, scabs, and branding, poor pattern, flay cuts, putrefactions, and poor substances (Abadi, 2000).

Based on annual off take rates of 7% for cattle, 33% for sheep, and 35% for goats, the production stood at 3.78 million cattle hides, 8.41 million sheep skins, and 8.42 million goatskins in 2012/13 (CSA, 2013). The 7% off take rate for cattle falls significantly below the African average of 12.71% and the world average of 20.31%. However, the offtake for sheep ranks slightly below the average level in Africa and the offtake for goatskin ranks slightly higher than the African average, although both remain well below the world average (USAID, 2013). The percentage of skins having defects, which end up downgrading the quality, has increased tremendously in Ethiopia. Skin quality is primarily defined by the absence of damage to the grain layer of the skin (Hadly, 2001). Tanneries state that only 10–15% of the harvested skins qualify for top grade, with the rest being downgraded and sometimes even rejected. The quality of finished leather is related to a number of surface and structural defects that the hide and skin acquire in the life of the animal, during slaughtering, storage, and transportation stages (Kidanu, 2001). The causes of defects on raw hide and skin can be broadly classified as pre-slaughter and post-slaughter defect causes.

The marketing of hide and skins starts at the producer/consumer level and passes through a chain of middlemen until it reaches the tanneries. Collectors of raw hide and skin are available in almost all towns of Ethiopia. They collect the hide and skins through rural agents or through farmer's carriage to the market and urban areas through intermediary collectors or themselves. The major producers of hides and skins are individual householders residing in the different kebele across Ethiopia. About 90–95% of the hide and skin production is derived from urban as well as rural backyard slaughters, while the remaining 5–10% is produced from major urban slaughterhouses and export abattoirs (Ahmed, 2000). Rural and urban slaughter operators in rural slaughter slabs produce a sizable volume of hides and skins, second to the individual household. These operators use poorly equipped slaughter points, where the infrastructure is sometimes a slab of concrete, under a shade, or using poles for hoisting carcasses. The hides and skin from the sources (usually the household across the country) are normally collected by village-level collectors, intermediary traders/collectors, and large traders/wholesale suppliers (Behailu Amde, 2017).

The actual market supply of hides and goatskins, unlike sheep skins, is far below the production potential. This can be seen from the 1994/95 production and tannery purchase data. Based on the estimated production of Hide and skin (1994/95), which stands at 2.23 million hides, 9.32 million sheep skins, and 7.04 million goatskins, the amount captured by tannery purchase in the same year is 48, 75, and 97% of the available potential of cattle hides and goat and sheep skins, respectively. The balance is either utilized by local tanners, left unutilized or smuggled into neighboring countries. On the other hand, the raw material supplied to the existing tanneries of the country is further processed to semi finished or finished leather for the local and export markets. Because reliable information is lacking, the respective proportions of the non-recovered hides and skin, i.e., utilized by local tanners, wasted without any use, and directed to illicit trade, could not be indicated (Mohammed, 2000). However, according to one field survey report of leather market authority conducted in 1999 in the Amhara region, there were 5,299 local tanners that consumed some 85% of the region's annual hide production, amounting to 626,569 hides. Moreover, the 865 local tanners in Tigray region use on average eight hides and eight to ten goatskins per month for converting the raw material into different household or farming input items. It is believed that quite a considerable number of local tanners found in other regions of the country make use of the raw material as well (Bisrat, G., 2013).

Figure 1. Traditional market area for hides and leather products

Traditional hide and skin Processing and impacts to the Environment

Traditional leather production is one of the polluting cottage industries around the communities. This happened because of generations of huge amount of solid and liquid wastes such as wastes of fleshing, buffing dust, skin trimmings, hair drops and poison plant residues left after processing, emitting of obnoxious smell due to degradation of protein us material of hide and generation of gases such as NH3, H2S and CO2. Accumulation of these wastes leads to sludge problem. Even if treatment of solid wastes were not cost effective, they were not in a position to create a new way of processing. Traditional leather processing in Ethiopia are facing lot of solid waste problems and many local tanneries drop their works due to external forces of the nearby cities and urban dweller expansion for not meeting environmentally friendly production of leather (Figure 3).After the local tanners bought dried hides, the processes in converting hides into durable product, commonly there are basic practical steps followed. Leather production involves various stages have been classified under three broad arranges as follows; the preparatory stage, tanning stage and the crusting stage.

Figure 3. Hide soaking the ear by river.

Preparatory Stage

The start of the traditional tanning process begins with the collection and sorting of the raw hides. The types of hide usually used are cow and bull/oxen hide. Traditional tanners usually bought hides from the nearby market; however, they also buy from big suppliers especially when prices fall in the market with subsequent fall in demand for raw products. In such a situation, they manage to pay better prices as compared to prices paid by tanning industries or raw hide skin suppliers. Focus of the traditional leather producing cottage industry is the transformation of untreated hides that are brittle under dry conditions and may rot under wet conditions into durable, imperishable leather by processes which incorporate tanning agents into the hides.

The first task for the local tanners is to collect the raw hide and this is usually a cow hide dried by sun or in very few occasions fresh hide collected from primary producers and small traders in their vicinities. Those in which the hide is prepared for tanning it includes soaking, washing, flesh removal, hair removal, scudding and deliming.

Table1. Materials used

Items/materials	Uses
Hides	For processing into unappreciable leather product
Scraping Knife	Fleshing
Underground whole earthenware pot	soaking, tanning
Axe	For removing hair
Sticks/chikal	For stretching the soften hide
Seewing needle/"wosfe"	For making holes normal

Source: Gebrehiwot T. (2017)

Soaking

The dried hides collected from market are subjected to become soft by soaking the hides in the river basin (Figure 4). Soaking Solid waste in the local tanners the main wastes are solid by products and liquid wastes. These include hide dusting, raw hide trimmings, and hair from liming and then rinsing is the first step in traditional leather making. The first step when traditionally making hides into leather is to thoroughly clean them. Soaking will help soften the hides, making the next steps easier to perform and important to remove dirt, debris, blood and excess animal fat from the hides. This has been done by simply soaking the hides in water for about 3 days in the nearby river; tanners with bare foot will immerse early in the morning and bring back to home during evening for just protecting from theft and carnivorous animals. The next day they will take to the river, the same steps will be followed for 3 consecutive days depending the nature and thickness of the hide. Washing will help soften the hides, making the next steps easier to perform. The purpose of this operation, as the local tanners explained, was to increase the amount of water in the hide close to that of the living hide, remove foreign bodies, hair and loosen the hide structure. The waste river water is discharged into a river where both animals and even on the upper part used for human drinking. No water treatment mechanisms are set (Gebrehiwot T., 2017).

Figure 4. Soaking of hides in the nearby river.

Fleshing

After the hide become relatively soften, they bring back to their backyard around homestead and dry on the sun by stretching on the ground using woods for stretching (Figure 5). The flesh side of the stretched hides will be on the above sun side for fleshing. The process of removing hair from hides required a knife and small axes.

Fleshing is just to cut away unwanted fat and flesh. In this process, hairs are removed through knife and axes. Removing any fats and other unwanted flesh debris using scraping tools/ sharp axes in between while drying on the sun, they sprinkle pieces of water. The aim of this process was to loosen the flesh and unwanted fat still adhering to the materials. Excess flesh, fat and muscle must now be removed from the hides. This was done with a fleshing axe. The scraping axes were then used vigorously to remove the fats and meat leaf from the grain side of the hide. To make soften more, the fleshed stretched hides were taken back to river to stay one extra day.

Figure 5. Removal of fat and excess flesh.

Un-Hairing

The soaked hides are transported to tan pit or vats immersed in a mixture of cow urine, grinded vegetable fruits and water (Figure 6). These mixtures loosen excess fat, flesh and make easy to make to remove the hair, epidermis and to prepare the hides for removal of loose flesh and fat during fleshing process.

The hides were soaked with a solution containing part of the plant containing tan from vegetables which are usually ground into smaller pieces is immersed in a solution containing 10 - 20 liters of cattle urine or in cases where vegetable is not available, 10 pieces of another plant fruit is allowed to leach out into 5 litres of cattle urine ,buried in a large pit dug out from the ground, which you would have to stir manually with a large, wooden paddle and remain in the solution in underground for about 24 hours or up to 3 days based on the nature of the processed hide.

It was observed that when left for longer periods in the bath, creating holes in the hides and may decay easily. The respondents explicated that the process aids in loosening the hair follicles, which enables the easy removal of the hair from the hides. The liming process they add, also removed fat from the hide for tanning. After these steps again it were allowed to be stretched back on the ground exposing to air and direct sun light.

Figure 6. Hides soaked in mixed vegetable and cow urine.

Tanning Stage

The final stage in the traditional leather making process was laid out and stretched to dry on the ground were allowed to be mixed with milled oil seeds for making the leather smooth, colorful and shiny.

The raw collagen fibers of the hides must be converted into a stable product which is no longer susceptible to rotting. This is done by adding vegetable tanning. The vegetable material used for tanning in the final stage is local named as "Kachima". According to the tanners, this oily vegetable is important in making shiny, smooth and colorful for the processed leather good. Probably these tanning agents significantly improve the hide's dimensional stability, abrasion resistance, resistance to chemicals and to heat, the ability to flex innumerable times without breaking.

Crusting Stage

Drying, Softening and Oiling

The immediate post-tanning activities are drying, softening and oiling. The tanned leathers were first dried on a drying line and allowed to dry partially before commencing the softening process. The artisans regularly turned and reposition the leathers. The technique normally used by the tanners to soften and stretch their leathers was to wrap part of the leather around a stick and dragging it between a flat-ground after satisfactorily softening and stretching the leathers, they were then oiled using vegetable oil (Rhusnataliensis). 4 kilos of vegetable oil (Rhusnataliensis) was oiled uniformly on the grain surface of the product. After oiling, the leathers were sorted out and bended equally to make it easily transport from place to place.

Traditional Leather Products

Handicrafts are not commodities merely produced by hand, but something created by local tanners whose energy and spiritual outlook were translated into products with the aid of raw materials, tools and his skills. Traditional tanners' processes hides and change to leather of various forms among the most common ones include bags, wallets, belts, musical instruments, traditional kitchen goods, baby carrier (called a mahazeya or ankelba) traditionally treated hide decorated with cowries shells, sleeping mat, bags for grain transportation, hat, bracelets, leather made chair, package for praying book pocket and many more tourist attraction traditional leather products. In Ethiopia, there are lots of leather products that are locally manufactured using the

products originally came from local tanners. As compared to other products, these leather products are durable and stay longer period of time without any damage on the collagen part of the leather. So it makes the product highly popular in market and tourist attraction goods.

Sleeping Mat

As seen in Figure 6, Local name "Jendi" or in others named as "korbet" rural sleeping mat, these sleeping leather products are usually purchased by rural family members or by farmers used as a sleeping bed stretched usually on the floor at home. Likely it brought warm environment during cold weather.

Figure 7. Sleeping leather mat/Jendi.

Book Binding

Leather used in book binding has many of the same preservation needs: protection from high temperatures, high and low relative humidity, light exposure, dust buildup, pollution, mold, and bug infestation (Figure 7).

Figure 8. A set of leather bound spiritual books

Dyeing of Leather

The tanners claimed used the color for dyeing of Leather in Ethiopia were yellow, blue, green, Black and cinnamon brown. The cinnamon dye was prepared from millet husk (eleusinecoracana), whiles the black was constituted from a compound containing fermented liquids and rusted iron materials.

Constraints of hide and skin production and marketing in Ethiopia

The main constraints adversely affecting the production and marketing of hides and skins faced were reflections of the gap between demand and potential supply: nationalization of major industry, financial institution, allocation of quotas, fixing prices, legal monopoly of corporation, restriction of trade movement, inadequate network of primary buyers, lack of facility for slaughtering, preservation, storage, transportation, disease, parasite, flay cut, lack of incentives for improvement, and limited effectiveness of government extension service (Girma Admasu, 2002; Feleke and Amistu, 2016).

Moreover, others constraints are shortage of raw material, quality deterioration, defect, the utilization of hide and skin for traditional household items, the existence of cross-border illicit trade, and misuse of the raw material due to lack of awareness, poor infrastructure, remoteness and lack of market information, and unfair competition from unlicensed dealers, all of which result in a low recovery rate and ultimately shortages of raw HS in the central market (Mohammed, 2000; Kagunyu *et al*., 2011).

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 & Kagunyu, 2008).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 (Mas & Morawczynski, 2009).

Opportunities and economic significance of hide and skin sectors in Ethiopia

There are many opportunities in the hides and skins sectors in Ethiopia. These are raw material availability due to the large livestock base in pastoral areas, ready market, the growing national and international markets for hides, skins, and leather products, use of wet salting technology to improve curing and preservation by using simple and effective technology of preserving hides and skins using salt with a potential of increasing profits many fold local processing and value addition in community-based tanneries, and government willingness in revitalizing the hides, skins, and leather sectors through public/private partnerships (Mwinyihija, 2011).

Hide and skin contribute to our country as foreign exchange and employment-creating opportunity. Hide and skin are animal by-products that generate high revenue, next only to coffee. They are produced jointly with meat and possibly milk, but generally account for less than 5% of the values of the animals. Although leather gained from the hides of large ruminants is used mainly for shoe-making, is the most important of world trade in hides and skins, these small scale may also be of value. Sheep skins are often traded with wool attached, including the special case of karakul, best known as astrakhans, while goat fibers such as mohair and cashmere are highly valued. Goat and pig skins provide delicate leathers, while rabbit skin is also of value, where their main importance today is in clothing, particularly coats (Mekonnen and Gezahegn, 2008).

The Ethiopian Leather and Leather Product Institute (ELLPI) contains two sectors: tanning and dressing of leather, luggage, and handbags; and footwear manufacturing. The number of employees in both the tanning and dressing of leather and footwear manufacturing industries increased significantly from 950 007 people to 1 902 194 in 2000 to 2013, respectively; there was a data gap in 2012. This

significant change in the number of employees in the leather industry, as well as other manufacturing industries, is due to the government policy that gave priority to producing more value-added products. In 2007, the number of employees in tanning and dressing of leather, luggage, and handbags was 3 793, which then increased significantly to 15 452 in 2013. At the same time, the number of employees in the footwear-manufacturing industries increased from 4 558 in 2007 to 16 150 in 2013. However, the share of the leather industry in the total manufacturing sector declined from 8% in 2011 to 2% in 2013; this is due to a significant increase in the textile and wood industry from 13 431 (8%) and 3 988 (2%) in 2011 to 416 913 (22%) and 114 485 (6%) in 2013, respectively. On the other hand, employment in micro and small enterprises engaged in the leather industry also increased; there were more than 12 000 individuals working in shoe-making businesses in 2011 (Abebe & Schaefer, 2013). This indicates that the export tax on raw hides and skins and unfinished leather products led to the increased production of finished leather products and footwear in the country.

CONCLUSIONS

Ethiopia has the largest livestock population in Africa. Livestock sectors play vital roles in generating income to farmers, creating job opportunities, ensuring food security, providing different services, contributing to asset, social, cultural, and environmental values, and sustaining livelihood strategies of peoples. The hides, skins, and leather sectors of Ethiopia have potential because of the availability of raw material, which in turn is due to the large livestock base in pastoral areas, the ready market, and the growing national and international markets for hides, skins, and leather products. Leather production involves three stages that are the preparatory stage, tanning stage and the crusting stage. The first task for the local tanners is to collect the raw hide and skin, and dried by sun. Those in which the hide is prepared for tanning it includes soaking, washing, flesh removal, hair removal, scudding and deliming. Then laid out and stretched to dry on the ground were allowed to be mixed with milled oil seeds for making the leather smooth, colorful and shiny. In Ethiopia, there are lots of leather products that are locally manufactured using the products originally came from local tanners such as Jendi"/"korbet" rural sleeping mat, bags, wallets, belts, musical instruments, traditional kitchen goods, baby carrier (called a mahazeya or ankelba) traditionally treated hide decorated with cowries shells, bags for grain transportation, hat, bracelets, leather made chair, package for praying book pocket and others.

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