Hide Curing and Secondary Leatherworks

Solution Holder is **Adeniyi Adediran** and can be contacted through **a.adeniyi@cgiar.org**

Summary

Other than the carcass for meat, hides are the next most valuable product from livestock production. For this value to be realized, animals and their hides must be properly treated, and artisans require skill sets and appropriate materials. Value is lost when hides are cut and served as food with the carcass. Alternatively, hides are processed by local communities, stockpiled, sold, and fabricated by leatherworks industries into a variety of products for both domestic and export markets. Foremost among those products are shoes, handbags, and leather clothing, with premium value obtained through greater craftsmanship.

Technical Description

Depending on the intended use, animal hides are cured in ways that either retain or remove the hair. The raw hide is carefully removed from the carcass, scraped clear of any remaining flesh, treated with salt or brine, and stretched across a rack until dry, a process requiring between 7 to 30 days depending on the weather conditions. Salt pulls moisture from the skin and prevents flies from laying eggs that later result in putrefaction. After drying, hair may be removed by scraping, and then marketed for forward processing. Another, more advanced approach to curing involves initially soaking the hide in a solution of hydrated lime for 24 to 36 hours, de-liming in an ammonium sulfate solution (or vinegar) overnight, and then washing several times in clean water before stretching and drying. Tanning results in relaxing and stretching the hide and preservation, often through treatment with alum and tannins. Once tanning is completed, the skins are washed a final time and subjected to final stretching and scrapping while drying, resulting in a smooth and pliable finish. Note that several African trees, particularly Acacias are rich in tannin and used in more traditional applications. Bleaching, polishing, and oiling are additional processes that can enhance leather utility and quality.

Uses

The curing of hide and secondary processing into leather is a common practice of pastoralist communities in Africa such as the Maasai in Kenya and Tanzania, the Fulani in northern Nigeria, Niger and Chad, the Peul and Fula in Mali and the Sahelian Tuaregs reaching as far north as Senegal and east as Chad. Their main leather products include pouches, sheathes, wallets, belts, tapestries, and rugs; all used in local communities,

domestic trade, and export. Ethiopia and Kenya have advanced industries producing quality shoes for regional markets. Greatest value occurs when these products enter into the tourist trade.

Composition

The skinning knife is a very sharp knife that is used to peel away the hide from the carcass. The tanner knife as it is commonly known, is the primary tool for fleshing, dehairing, scudding and frizzing hides. This tool scrapes away membrane, fat and excess meat from the hide to ensure it will properly tan. A pair of rubber boots, an apron and elbow-long gloves are needed to protect against harsh tanning chemicals and cuts from sharp knives.

Means of application

A realistic starting scale is the treatment of 10 to 20 hides at a time in 100-liter brining and tanning containers, relying upon as little as five chemicals and hand labor. Personal protection consists of plastic gloves, waterproof aprons, and boots.

Agroecologies	Dryland area.
Regions	Africa South of Sahara.
Developed in Countries	Zimbabwe, Uganda, Tanzania, South Sudan, Senegal, Nigeria, Niger, Mali, Kenya, Ethiopia, Cameroon, Burkina Faso.
Available in	Zimbabwe, Uganda, Tanzania, South Sudan, Senegal, Nigeria, Niger, Mali, Kenya, Ethiopia, Cameroon, Burkina Faso.
Solution Forms	Other.
Solution Applications	Other applications.
Agricultural Commodities	Other commodity.
Target Beneficiaries	All farmers.

Commercialization

Commercialization Category

Commercially available

Startup Requirements

There is growing demand for leather products in Africa, and much of this may be met by young entrepreneurs relying upon local materials. Business plans and financial analyses are available for operations of different sizes.

Production Costs

A modest investment of about US $1,000 establishes a local leatherworks business.

Customer Segmentation

Commercial tanning and leatherworks require competency but offer lucrative enterprises practiced as a cottage industry or at larger industrial scale.

Potential Profitability

Goat or sheep skin of about 0.5 m2 are worth about US $7 each. It costs about US $1.5 to purchase a fresh hide and another US $2 to cure it, resulting in an investment return of about 100%. This is similar to the returns from processing and marketing cowhide, although goat and sheep leather are considered slightly more valuable per unit area. Hides cured with tannins using traditional methods are also considered more valuable than those cured with alum at industrial scales. Ultimately, the value of a leather good product is determined by the quality of the leather it is made from and the artisanship expressed in its fabrication, with the most esteemed fashion brands sold at remarkable prices.

Licensing Requirements

Leatherworks require the handling and disposal of toxic and environmentally harmful materials and are subject to environmental licensing and periodic regulatory inspection beyond the requirement for business licenses.

Innovation as Public Good

Knowhow for value added leather processing is available as Public Good.

Solution Images



Well cured hides of goat (left) and sheep (right) offer potential for value-added industry



A Woman's handbag made from goat leather (top) and additional value added through detailing (below) (photo: infonet-biovision)

Institutions

ILRI
INTERNATIONAL LIVESTOCK RESEARCH INSTITUTE