

32. HIDES AND SKINS COLLECTION AND PRESERVATION

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I. SUMMARY

This profile envisages the establishment of a plant for hides and skins collection and preservation with a capacity of 38,900 pieces of hides, 50,250 pieces of sheep skin and 49,200 pieces of goat skin per annum.

The present demand for the proposed products is estimated at 741,028 pieces for hides, 957,220 pieces for sheep skin and 937,549 pieces for goat skin per annum. The demand is expected to reach at 1.39 million pieces for hides, 1.8 million pieces for sheep skin and 1.7 million pieces for goat skin by the year 2020.

The plant will create employment opportunities for 20 persons.

The total investment requirement is estimated at Birr 3.11 million, out of which Birr 54,000 is required for plant and machinery.

The project is financially viable with an internal rate of return (IRR) of 17 % and a net present value (NPV) of Birr 1.49 million, discounted at 8.5%.

II. PRODUCT DESCRIPTION AND APPLICATION

As soon as hides and skins are removed from the animal, it is susceptible to autolysis (self digestion) and bacterial degradation that cause to loose the hide and skin substance and lead to a poorer quality leather. The rate of degradation increases with increase of temperature.

Hides and skins produced in the region 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. Skin and hide collection and preservation involve pre-storage measures as well as good storage practices.

III. MARKET STUDY AND PLANT CAPACITY

A. MARKET STUDY

1. Past Supply and Present Demand

Although Ethiopia has a great potential for the tanning, leather manufacturing, industry, it has not benefited much from the sector. Major reasons for low utilization of the hides and skins resource are part of the raw hides and skins are illegally sold outside the country, in existence of tanneries in towns that are far from the center, part of the raw hides and skins does not reach to the market due to lack of transport and modern marketing facilities and due to low awareness of the population which reside in rural areas. The situation of SNNPRS is not different from this.

In order to fully utilize the hides and skins resources that are found in various parts of the country, it is essential to establish a well organized hides and skins collection and preservation enterprises. According to the Resource Potential Assessment conducted by IPS the region's livestock population is estimated as 9,262,844 cattle, 3,190,732 sheep and 2,678,712 goats. The average off-take rate of cattle, sheep and goat is 8%, 30%, and 35%, respectively. Taking the average off-take rate, the total hides and skins that can be produced in SNNPRS is estimated as presented in Table 3.1.

Table 3.1

ESTIMATED SUPPLY OF HIDES AND SKINS FROM THE SNNPRS

Type	Pieces
Cattle Hide	741,028
Sheep Skin	957,220
Goat Skin	937,549
Total	2,635,796

2. Projected Demand

With the improvement of infrastructure facilities within SNNPRS , increase of awareness of the community, improvement in livestock production and the like; the hides and skins to be supplied to the market is expected to increase in the future. Considering these situations. an annual average growth rate of 5% is applied to project the future demand. The projected demand for cured hides and skins for the project to be established in SNNPRS is presented in Table 3.1.

Table 3.1.
PROJECTED DEMAND FOR CURED HIDES & SKINS (PIECES)

Year	Cattle Skin	Sheep Skin	Goat Skin
2008	778,079	1,005,081	984,427
2009	816,983	1,055,335	1,033,648
2010	857,832	1,108,101	1,085,330
2011	900,724	1,163,506	1,139,597
2012	945,760	1,221,682	1,196,577
2013	993,048	1,282,766	1,256,406
2014	1,042,700	1,346,904	1,319,226
2015	1,094,835	1,414,249	1,385,187
2016	1,149,577	1,484,962	1,454,447
2017	1,207,056	1,559,210	1,527,169
2018	1,267,409	1,637,170	1,603,527
2019	1,330,779	1,719,029	1,683,704
2020	1,397,318	1,804,980	1,767,889

3. Pricing and Distribution

The price of hides and skins fluctuates from year to year and within months according to supply and demand in the world market. Therefore, for purpose of financial analysis, recent prices of acquiring raw hides and skins, curing process and profit margin are considered. Accordingly, the following prices are recommended for the project.

<u>Type</u>	<u>Price/Pieces</u>
Cured cattle skin	Birr 26
Cured Sheep hides	Birr 32
Cured Goat	Birr 20

The envisaged project will directly sell the cured hides and skins to tanneries to be established in SNNPRS or existing tanneries in other parts of the country.

B. PLANT CAPACITY AND PRODUCTION PROGRAMME

1. Plant Capacity

From the market study, it is observed that there is a great gap between the demand and supply. The parameters that limit the capacity of skin and hide collection and preservation plant are the availability of the raw materials (hide and skin) and the difficulty in collecting them. Therefore, a curing plant with annual production capacity of 5% of the projected demand in the year 2008 i.e. 38,900 hides, 50,250 sheepskins and 49,200 goatskins are proposed. The plant will operate 300 working days per annum on a single shift of 8 hours a day.

2. Production Programme

Since it takes time to create awareness among the people and establish a proper collection system of hides and skins, the plant will start with a capacity of 60% in the first year, 80% in the second year and 100% in the third year and then after.

IV. MATERIALS AND INPUTS

A. RAW MATERIALS

The envisaged curing plant needs raw hides and skins and common salt (NaCl) as the main input. They are all available, locally.

The annual raw materials requirement detail at full production capacity of the plant is depicted on the Table 4.1. The total cost of raw materials is estimated to be Birr 1,591,218.

Table 4.1
RAW MATERIALS REQUIREMENT AND COST

Sr. No.	Description	Unit of Measure	Qty	Cost (' 000 Birr)
1	Raw hides	Pcs	38,900	894.7
2	Raw sheep skins	Pcs	50,250	1,005
3	Raw goat skin	pcs	49,200	492
4	Salt	Kg	180,000	180
	Total Cost			2,571.7

B. UTILITIES

The major utilities required by the curing plant are electricity and water. Estimated annual requirements of electricity & water are 6,000 kWh and 5,000m³, respectively.

The total cost of utilities is estimated at Birr 55,916. Detail of which is shown on Table 4.2.

Table 4.2**ANNUAL UTILITIES REQUIREMENT AND COST**

Sr. No.	Description	Qty	Unit price (Birr)	Cost ('000 Birr)
1.	Electricity (kWh)	6,000	0.4736	28.416
2.	Water (m ³)	5000	5.5	27.5
Grand Total				55.916

V. TECHNOLOGY AND ENGINEERING**A. TECHNOLOGY****1. Process Description**

Once hides and skins have been selected and purchased, preservation involves pre-storage measures as well as good storage practices.

Fresh hides or skins must be cured promptly on purchase. It can be preserved either by drying or salting.

If drying is used, the goods should be dried off the ground. One method is to stretch the hides out with ropes attached to simple upright wooden frames. After drying, they may be attacked by beetle or mould and should be sprayed or dusted with appropriate insecticides, for example a 0.25% solution of sodium arsenate.

If salting is used, the fresh hides should be first be well drained of blood, flesh side up on slopping slats above the ground. About 40-50% of hide weight of salt should then be spread on the flesh side. Another hide is then put on top of the first, flesh side up and salted in its turn then another, and so a pile of about 50 hides is built up. During this time the salt dehydrates the hide, and the concentration of NaCl prevents bacteria growth. This is left for about three days, after which the remaining wet salt is shaken off each side. The goods may then be stored

still damp. This has the advantage of making them easier to soak at the start of the tanning process. Alternatively, they may be dried hung over ropes after salting. This makes them easier to store for long periods before tanning.

Preservation also requires adequate protection against attack by rodents and other vermins and against excessive damp and heat, in a manner, which allows periodic inspection of goods if they are to be stored for more than 3 or 4 days.

2. Source of Technology

Curing of hides and skins does not need complicated technology and machinery as depicted on the technology part of this study. The technology is well known by the community. All the facilities can be acquired from local workshops.

B. ENGINEERING

1. Machinery and Equipment

The equipment necessary for the envisaged plant is shown on the Table 5.1. The total cost of equipment is estimated at Birr 54,000.

Table 5.1

MACHINERY AND EQUIPMENT REQUIREMENT AND COST

Sr. No.	Description	Qty.	Total Cost ('000 Birr)
1.	Wooden frame (hide)	100	10
2.	Wooden frame (skin)	300	24
3.	Trolley & weighing mach.	Set	20
	Total Cost		54

2. Land, Buildings and Civil Works

The total land requirement of the project is estimated at 2,000 m²; of this 1,000 m² is built-up area, considering salt store, selection area, roofed building for storage of wet-salted hides and skins and open area for future expansion.

Since putrefaction is accelerated by heat, the buildings should have walls of 4 or 5 m high to protect the goods better from the sun. Wet-salted skin and hides are stacked in heaps in booths separated by low walls with floors slopping down wards to open drains for carrying away any excess brine. The floor should be washable (cement screed finish). So, the construction cost per m² is estimated to be Birr 2,300. The total construction cost is estimated to be Birr 2,300,000.

Total land lease cost, for a period of 80 years with unit cost of Birr 0.1 per m², is estimated at Birr 16,000. The total investment cost for land, building and civil works, assuming that the total and lease cost will be paid in advance is estimated at Birr 2.316 million.

3. Proposed Location

The location is best determined by the availability of raw material and transportation to the leather processing plants. So, the plant is proposed to be located in Kuraz woreda, Omarate town.

VI. MANPOWER AND TRAINING REQUIREMENT

A. MANPOWER REQUIREMENT

The envisaged project requires a total manpower of 25 persons. Table 6.1 presents the list of manpower required along with estimated annual labour cost. The total annual labour cost is estimated at Birr 188,250.

Table 6.1**MANPOWER REQUIREMENT AND ANNUAL LABOUR COST (BIRR)**

Sr. No.	Description	Req. No.	Monthly Salary	Annually Salary
1	Manager	1	1,500	18,000
2	Semi skilled Operators	10	4,000	48,000
3	Storekeeper	1	500	6,000
4	Driver / purchaser	2	1,000	12,000
5	Cashier	1	450	5,400
6	Guard	4	1,000	12,000
7	Secretary	1	600	7,200
	<u>Sub-Total</u>	20	9,050	108,600
8	Employees Benefit (25% of Basic Salary)	-	-	27,150
	Grand Total	-	-	135,750

B. TRAINING REQUIREMENT

The operators need to be trained in the local leather institute or PIC found in Addis Ababa for two weeks. The training cost is estimated to be Birr 25,000.

VII. FINANCIAL ANALYSIS

The financial analysis of the hides and skin collection and preservation project is based on the data presented in the previous chapters and the following assumptions:-

Construction period	1 year
Source of finance	30 % equity 70 % loan
Tax holidays	5 years
Bank interest	8%
Discount cash flow	8.5%
Accounts receivable	30 days
Raw material local	30days
Raw material, import	90days
Work in progress	5 days
Finished products	30 days
Cash in hand	5 days
Accounts payable	30 days

A. TOTAL INITIAL INVESTMENT COST

The total investment cost of the project including working capital is estimated at 3.11 million. The major breakdown of the total initial investment cost is shown in Table 7.1.

Table 7.1
INITIAL INVESTMENT COST

Sr. No.	Cost Items	Total Cost (‘000 Birr)
1	Land lease value	16.0
2	Building and Civil Work	2,300.0
3	Plant Machinery and Equipment	54.0
4	Office Furniture and Equipment	75.0
5	Pre-production Expenditure*	228.7
6	Working Capital	436.9
	Total Investment cost	3,110.7

* *N.B Pre-production expenditure includes interest during construction (Birr 128.72 thousand) training (Birr 25 thousand) and Birr 75 thousand costs of registration, licensing and formation of the company including legal fees, commissioning expenses, etc.*

B. PRODUCTION COST

The annual production cost at full operation capacity is estimated at Birr 3.19 million (see Table 7.2). The material and utility cost accounts for 82.37 per cent, while repair and maintenance take 2.35 per cent of the production cost.

Table 7.2**ANNUAL PRODUCTION COST AT FULL CAPACITY ('000 BIRR)**

Items	Cost	%
Raw Material and Inputs	2,571.70	80.62
Utilities	55.92	1.75
Maintenance and repair	75	2.35
Labour direct	81.45	2.55
Factory overheads	0	0.00
Administration Costs	54.3	1.70
Total Operating Costs	2,838.37	88.98
Depreciation	238.7	7.48
Cost of Finance	112.95	3.54
Total Production Cost	3,190.02	100

C. FINANCIAL EVALUATION**1. Profitability**

According to the projected income statement, the project will start generating profit in the first year of operation. Important ratios such as profit to total sales, net profit to equity (Return on equity) and net profit plus interest on total investment (return on total investment) show an increasing trend during the life-time of the project.

The income statement and the other indicators of profitability show that the project is viable.

2. Break-even Analysis

The break-even point of the project including cost of finance when it starts to operate at full capacity (year 3) is estimated by using income statement projection.

$$BE = \frac{\text{Fixed Cost}}{\text{Sales} - \text{Variable Cost}} = 35 \%$$

3. Pay Back Period

The investment cost and income statement projection are used to project the pay-back period. The project's initial investment will be fully recovered within 6 years.

4. Internal Rate of Return and Net Present Value

Based on the cash flow statement, the calculated IRR of the project is 17 % and the net present value at 8.5% discount rate is Birr 1.49 million.

D. ECONOMIC BENEFITS

The project can create employment for 20 persons. In addition to supply of the domestic needs, the project will generate Birr 1.54 million in terms of tax revenue. The establishment of such factory will have a foreign exchange saving effect to the country by substituting the current imports.