49. PROFILE ON HIDES AND SKINS COLLECTION AND PRESERVATION

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I. SUMMARY

This profile envisages the establishment of a plant for the collection & preservation of 15,000 hides 20,000 sheep skin and 60,000 goat skin.

The present demand for the proposed product is estimated at 15,222, 23,015 and 63,222 for hides, sheep skin and goat skin, respectively, and it is projected to reach at 20,399, 30,842 and 84,723 for hides, sheep skin and goat skin, respectively by the year 2010.

The plant will create employment opportunities for 25 persons.

The total investment requirement is estimated at Birr 2.48 million, out of which Birr 23,000 is required for plant and machinery.

The project is financially viable with an internal rate of return (IRR) of 15% and a net present value (NPV) of Birr 755,620, discounted at 10.5%.

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 seeked. 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 involves pre-storage measures as well as good storage practices.

III. MARKET STUDY AND PLANT CAPACITY

A. MARKET STUDY

1. Past Supply and Present Demand

The livestock population of Ethiopia is the largest in Africa with about 30 million cattle, 25 million sheep and 17 million goats. Although there is a wide domestic as well as export market for hides and skins as well as for leather and leather products, Ethiopia is not benefited much from the sector. Due to low awareness of farmers, poor transportation, marketing and storage facilities in all regional states of the country, a considerable amount of hides and skins is wasted and is not supplied to the market.

Currently, hides and skins has to be semi-processed in tanneries for value-added purposes before they are exported. Hides and skins are supplied to domestic tanneries only. But due to the factors mentioned above, the hides and skins supplied to the tanneries is much lower than their requirement. In other words, annual capacity of existing tanneries is in excess of hides ad skins supplied to the market.

According to the Three Year (1995-197E.C) Development Plan of the BGRS, the livestock population of the region is 253,702 cattle, 102,289 sheep and 240,849 goats. The Resource Potential Assessment carried out by IPS (2003) also reveals that the off-take rate for cattle, sheep and goats is 8%, 30% and 35%, respectively. Taking the off-take rate, the total hides and skins production is estimated to be as follows.

Hides	-	20,296
Sheep skin	-	30,687
Goat skin	-	84,296

The hides and skins production stated above is not expected to be supplied to the market due to households consumption mainly in rural areas and absence of well developed marketing infrastructures. Hence, of the total hides and skins production about 75% is assumed to be supplied to the market. Accordingly, present supply and demand for hides and skins in the region is estimated as follows.

Hides	-	15,222
Sheep skin	-	23,015
Goat skin	-	63,222

2. Projected Demand

Since hides and skins can not be collected from dispersed geographic location directly by tanneries, the demand for cured hides and skins is ever increasing. Moreover, the installed capacity of tanneries in the country is in excess of the present supply of hides and skins. Therefore, this indicates that there is a wide demand for cured hides and skins if supplied to the market. Considering this potential and taking an annual average growth rate of 5% on the present demand, the projected demand for cured hides and skins in BGRS is presented in Table 3.1.

Table 3.1

PROJECTED DEMAND FOR CURED HIDES AND SKINS IN BGRS (pcs)

Year	Hides	Sheep skin	Goat skin
2004	15,222	23,015	63,222
2005	15,983	24,166	66,383
2006	16,782	25,374	69,702
2007	17,621	26,643	73,187
2008	18,502	27,975	76,847
2009	19,428	29,373	80,689
2010	20399	30,842	84,723

3. Pricing and Distribution

The price of cured hides and skins is directly related with the price of raw hides and skins. On the other hand, the price of hides and skins is influenced by the world supply and demand for leather. Therefore, fluctuating prices are observed each year as reflection of the international prices. Average prices of hides and skins (2004) collected from the region are as follows.

Hides	-	Birr 17.50
Sheep skin	-	Birr 22.00
Goat skin	-	Birr 12.00

By considering the cost of acquiring the raw hides and skins, curing processes and profit margin, the following prices are recommended for the envisaged project.

Hides	-	Birr 26.00
Sheep skin	-	Birr 32.00
Goat skin	-	Birr 20.00

The envisaged project will directly sell its products to the existing tanneries in the country.

B. PLANT CAPACITY AND PRODUCTION PROGRAMME

1. Plant Capacity

From the market study, it is a observed that there is a great gap between the demand and supply. The only parameters that limit the capacity of skin and hide collection and preservation plant is the availability of the raw materials (skin and hide) and the difficulty in collecting them. Therefore, a curing plant with annual production capacity of 15,000 hides, 20,000 sheep skins and 60,000 goat skins is 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 starts with a capacity of 60% in the first year, 80% in the second year and 100% in the third year and thenafter.

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 details 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 1,496,500.

Table 4.1

RAW MATERIALS REQUIREMENT AND COST

Sr. No.	Description	Unit of Measure	Qty	Cost (' 000 Birr)
1	Raw hides	pcs	15,000	262.5
2	Raw sheep skins	pcs	20,000	440
3	Raw Goat Skins	pcs	60,000	720
4	Salt	kg	174,000	174
	Total Cost			**1496.5**

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 5,000m^3, and corresponding annual cost are Birr 2,444 and Birr 12,500 respectively. The total cost of utilities thus is estimated to be Birr 14,944.

V. TECHNOLOGY AND ENGINEERING

A. TECHNOLOGY

Once hides and skins have been selected and purchased, preservation involve 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. 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 323,000.

Table 5.1

LIST OF MACHINERY AND EQUIPMENT AND COST

Sr. No.	Description	Qyt.	Unit Cost '000 Birr
1.	Wooden frame (hide)	100	5,000
2.	Wooden frame (skin)	200	8,000
3.	Trolley & weighing mach.	set	10,000
	Total		**23,000**

2. Land, Buildings and Civil Works

The total land requirement of the project is estimated at 2,000 m^2, of this 1,000m^2 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 tiles). So, the construction cost per m^2 is estimated to be Birr 1,500. The total construction is estimated to be Birr 1,500,000. The land lease value at a rate of Birr 1.2 m^2 for 70 years land holding is Birr 168,000. Hence, the total cost of building, land and civil work assuming that the total land lease cost will be paid in advance is estimated to be Birr 1.668,000.

3. Proposed Location

Since the region has no tannery at all, the location is best determined by the availability of raw material and infrastructure like transportation, water and electricity. Assosa is proposed as an ideal location for the envisaged plant.

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	15	500	90,000
3	Storekeeper	1	500	6,000
4	Driver / purchaser	2	500	12,000
5	Cashier	1	450	5,400
6	Guard	4	250	12,000
7	Secretary	1	600	7,200
	Sub-Total	**25**	**4,300**	**150,600**
8	Employees Benift (25% of Basic Salary	-	-	37,650
	Grand Total	**-**	**-**	**188,250**

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 hides and skins collection and preservation project is based on the data provided in the previous chatpers and the following assumptions:-

Construction period	2 years
Source of finance	30% equity
	70% loan
Tax holidays	3 years
Bank interest	10.5%
Discounted cash flow	10.5%
Repair and maintenance	5 % of Plant machinery and equipment
Accounts receivable	30 days
Raw material (local)	
• Hides and skins	2 days
• Others	60 days
Work in progress	2 days
Finished products	2 days
Cash at hand	5 days
Accounts payable	30 days

A. TOTAL INITIAL INVESTMENT COST

The total initial investment cost of the project including working capital is estimated at Birr 2.56 million. Details are indicated in Table 7.1.

Table 7.1

INITIAL INVESTMENT COST ('000 BIRR)

Sr. No.	Cost Items	Cost
1	Land	168.00
2	Building and Civil Work	1500.00
3	Plant Machinery and Equipment	23.0
4	Office Furniture and Equipment	75.0
5	Vehicle	175.00
6	Pre-production Expenditure*	415.8
	Total Investment Cost	**2356.8**
7	Working Capital	125.10
	Total Cost	**2,481.88**

B. PRODUCTION COST

The annual production cost at full operation capacity of the plant is estimated at Birr 1.97 million (see Table 7.2). The material and utility cost accounts for 77 per cent while repair and maintenance take 0.8 per cent of the production cost.

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* *Pre-production expenditure include interest during construction (Birr 315,800) training (Birr 25,000) cost of registration, licensing and formation of the company including legal fees, commissioning expenses, etc.*

Table 7.2

ANNUAL PRODUCTION COST

('000 BIRR)

Items	Year			
	3	**4**	**7**	**10**
Raw Material and Inputs	897.9	1197.2	1496.5	1496.5
Labour Direct	54.2	72.3	90.4	90.4
Utilities	9.0	12.0	14.9	14.9
Maintenance and repair	9.7	12.9	16.2	16.2
Labour overheads	22.6	30.1	37.7	37.7
Administration Cost	36.1	48.2	60.2	60.2
Total operating costs	**1029.5**	**1372.7**	**1715.8**	**1715.8**
Depreciation	142.2	142.2	142.2	87.2
Cost of Finance	183.2	164.9	109.9	55.0
Total Production Cost	**1354.9**	**1679.8**	**1967.9**	**1858.0**

C. FINANCIAL EVALUATION

1. Profitability

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

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

2. Break-even Analysis

The break-even point of the project is estimated by using income statement projection.

$$BE = \frac{\text{Fixed Cost}}{\text{Sales-Variable Cost}} = 28\ \%$$

3. Pay-Back Period

The investment cost and income statement projection are used to project the pay-back period. The project will fully recover the initial investment and working capital within 7 years time.

4. Internal Rate of Return and Net Present Value

Based on the cash flow statement, the calculated IRR of the project is 15 % and the net present value at 10.5% discount rate is Birr 755,620.

D. ECONOMIC BENEFITS

The project can create employment opportunities for 25 persons. In addition to supply of the domestic needs, the project will generate Birr 1.36 million in terms of tax revenue. Moreover, the Regional Government can collect employment, income tax and sales tax revenue.