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DEVELOPMENT CENTRE FOR LEATHER TECHNOLOGY (DCLT)

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BURMA

Technical report: Leather Marketing Survey and Development Potential*

Prepared for the Government of the Socialist Republic of the Union of Burma by the United Nations Industrial Development Organization, acting as executing agency for the United Nations Development Programme

Based on the work of P. B. Buit,
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United Nations Industrial Development Organization
Vienna

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ABBREVIATIONS AND EXPLANATORY NOTES :

CTA	-	Chief Technical Advisor
DCLT	-	Development Centre For Leather Technology
UNIDO	-	United Nations Industrial Development Organization
UNDP	-	United Nations Development Programme
SIDFA	-	Senior Industrial Development Field Advisor
UN	-	United Nations
GIC	-	General Industries Corporation
RTC	-	Road Transport Corporation
PFF	-	People's Footwear Factory (Indaing)
Pcs	-	Pieces
Kgs	-	Kilograms
Sq.ft.	-	Square Feet
Kyat	-	Burmese Currency Approx. Rate of Exchange : - 1 US $ = 8.6 Kyats
lbs	-	Pound Weight
WBC	-	Wet Blue Chrome
SATRA	-	Shoe and Allied Trades Research Association (England)
L/C	-	Letter of Credit
E	-	Export
D	-	Domestic Market

CHAPTER - 1

1. INTRODUCTION

1.2. Purpose of the Project Objectives

The purpose of the project objectives was to provide preparatory assistance to the Socialist Republic of the Union of Burma through General Industries Corporation, Ministry of No.1. Industry, actions leading to : -

- identification and development need priorities of the Burmese Leather and Leather Products Industry sector within the export and home market;
- preparation of a complete outline of the DCLT including the applied research and product development functions and advise the Government authorities of the preparatory work needed prior to starting up the centre;
- provide the Government, in accordance with the findings, with a document required for financing.

1.3. Terms of Reference

Based on the above objectives the expert was provided with the following terms of reference : -

(a) Carry out a market survey of the local market and its development potential in the leather and leather products sector.

(b) Study the present quality of the semi-processed and finished leathers, footwear and leather products from the point of view of the international market demand and possibilities for a sound step by step development for higher added value products to the export markets.

(c) Assist the Leather Technologist CTA of the project in preparation of the techno-economic report covering the following main aspects : -

- present situation in the leather and leather products field;
- domestic market development potential;

- international leather and leather products markets and Burmese development possibilities within this market;

- research and product development outline;

- organizational structure of the DCLT and expected impact on the development of the Burmese leather and leather products industry;

- clearly phased programme with independent project modules which can be implemented as seperate entities according to the technical priorities and availability of funds.

(d). Assist the CTA in preparing the Draft Project Document for the DCLT

The expert was expected to prepare a final report, setting out the findings of his mission and recommendations to the Government on further action which might be taken.

CHAPTER - 2

ACKNOWLEDGEMENT

The UNIDO Expert wishes to thank all persons who gave him valuable help and assistance during the course of his assignment in Burma beginning 24th July 1985 : -

GIC
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RTC
- U THEIN MAUNG
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UNDP/UNIDO
- MR. J. BULJAN, INDUSTRIAL DEVELOPMENT OFFICER.
- MR. J.B. GORSKI, SIDFA
- MR. M.G. HAECKER, LEATHER TECHNOLOGIST (CTA)

- Concerned Tannery Staff at Rangoon and Mandalay, People's Footwear Factory and Leather Products Factory visited by the Expert.

CHAPTER 3

ABSTRACT

The purpose of the preparatory assistance is to provide support to a possible establishment of the Development Centre for Leather Technology (DCLT) in Burma. This assignment, included evaluation of the present situation in the Leather and Leather Products field with a survey of local and international markets in view to identify resource development strategies for a long-term development of Leather and Leather Products Industries in Burma. To be able to carry out a uniform appreciation, this report covers the expert's extensive work with a number of related activities during the period between 24th July 1985 and 9th October 1985.

CHAPTER 4

4. RECOMMENDATIONS

Based on the expert's findings and concluding remarks, following recommendations are made : -

4.1. Consider livestock, raw hides and skins improvement for a wider rehabilitation action programme for the development of the leather footwear and leather products industry in Burma. A possible assistance from UN Agencies to identify in actual needs for a suitable actions to be taken may be considered.

4.2. Formulation as well as implementation of quality standards related to raw hides and skins, semi-processed and finished leather are extremely important which should also include specifications related to sizing and substance ranges, where applicable.

4.3. Training of higher level technicians leading to a suitably acceptable qualifications in the Leather, Footwear, Leather Products Technologies, Chemistry, and Designing should be considered as prerequisites for this development of this sector. Suitable training courses and institutions are identified in the project document and techno-economic study for the establishment of DCLT.

4.4. The tanneries should have reasonably free access to imported component such as chemicals and other consumables. Any changes in the production processing formulations should be made only through a successful trials and development work with consideration to economic factors of price, returns in terms of output grades and yields factors. If tanneries do not have technically viable and economical access to such inputs, they will suffer on quality, inconsistency and often, in a production loss, a handicap for marketing which will be difficult to overcome. Chemicals inputs with some sensitive and important items are listed in Annex 1 where technical evaluation is of extreme importance.

4.5. The expert is of the opinion that the Government may consider implementing "revolving fund", whereby the exports of the leather and leather products sector should be directly related to the allocation of funds for imported inputs, which would also act as an additional incentive for the sector in their efforts to achieving export targets.

4.6. The establishment of DCLT is of importance. Its objectives, functions are identified and elaborated in other reports. Inputs and size of the DCLT's operation should, however be carefully evaluated based on the actual needs and scale of this sector in the country. If some of the inputs are of pro-

duction scale consideration should be given for its full utilization as a pilot production cum development centre.

4.7. Information feed-back from GIC's marketing operations and within the production units needs a very careful formulation and urgent attention. Assistance from UNIDO may be considered as a forerunner to the proposed long-term project to strengthen and improve overall marketing and production performance of the existing plants (See Annex 2 for objectives and terms of reference). Certain physical controls are essential at PFF where, consumption of items in particular to leather, is very high.

4.8. Tanneries should concentrate their efforts towards the establishment of a regular export business for semi-processed leather such as wet-blue chrome, crust and ready-to-finished leathers. Development of finished leather exports should be carried out in gradual phases, which requires expensive chemical inputs and added skills.

4.9. Prior to going into footwear and leather goods manufacturing, both for domestic and export needs, tanneries should establish their quality of finished leather at an acceptable international standards; train senior technical staff through fellowship; identify proper product-mix based on the availability of raw material in the country including outlets for the manufactured goods with an intention to suitably design such an operation.

For achieving such desired results for the above recommendations, 8 and 9, DCLT's services will be very valuable.

4.10. It is desirable that marketing personnel make as many visits to the production units as is economically possible. It is suggested that each plant is visited at least once a month so that the centralized marketing at the GIC level can successfully monitor the production/marketing activities. The production units should speedily advise GIC marketing or procurement of any extraneous problems which although not related to production difficulties, could effect export performance.

4.11. Establish a sound and long-term contacts with selected buyers abroad rather than contacting too many for a limited scale leather production in Burma. This will help in establishing reputation for the tanneries as a reliable source of supply. Once this is achieved, buyers will turn to you rather than yourself looking for outlets. Conventional channels of trade have distinct advantages of providing informations related to price, quality level, styling to the suppliers and therefore part of the responsibilities in export marketing is taken over by them. Conditions of offer terms and deli-

very schedules should be strictly adhered to. (See Annex 3 for Marketing Work-flow).

4.12. The tanneries and shoe units should continue their product-mix to a limited range at this stage to simplify towards planning, production and marketing operations. See Annex 4 for a brief outlay of product-mix for products based on raw materials of Burmese origins and Annex 5 provides process flow-chart. Collection of samples are important for marketing.

4.13. Every effort should be made to encourage the financing of marketing and technical study tours not just to visit established leather sector customers, but to determine what are the sales possibilities for the footwear and leather goods sectors. Such visits should be used, to verify what quality and price areas should be targetted for the level of merchandise, the sector in Burma is capable of producing. A specific reference is made to the important trade fairs at Paris held every year during September. Financial and organizational assistance for such a participation is provided by the EEC office in Brussels to a number of developing countries, for which the Government may be entitled for . Additional regional fairs are held at Hongkong, Singapore with a specific reference to the forthcoming fair at Bangkok between 7-10 November 1985 is highly recommended for Burmese participation as observers.

4.14 The production of a colour promotional brochure is important for the export marketing. Two draft art work are enclosed as Annex 6A and 6B.

4.15. A survey related to the Asian Leather Industry is planned for publication of the international Leather Journal of England. A suitable write-up along with photographs from the tanneries should be sent for inclusion in this survey. This will provide a useful information for the world-wide leather trade, about the Burmese Leather Industry.

4.16. The Government may consider establishing a task force to implement possible recommendations made by the expert. Counterpart staff presently attached to this project,may be considered for such an assignments.

CHAPTER 5

5.1. Activities Carried-Out

The expert carried-out activities in a limited available time, a uniform appreciation of the broad concepts of marketing which included survey of the present status of livestock, hides and skins, quality and quantity output of semi-rocessed and finished leather as well as Footwear and Leather Products in Burma.

Furthermore, market survey of domestic needs and its development potential in the leather and leather products was undertaken through visits to production units, retail shops, discussions with the authorities connected to the sector as well as counterpart team who provided a valuable assistance during the assignment period.

The establishment of a balanced product-mix is hampered by technical expertise and know-how, shortages of tanning chemicals. Therefore, it was difficult to inspect bulk quantities from the production scale to be able to obtain desired statistical data related to grading, sizes etc. However, the expert's findings and concluding remarks will form a very useful guide with the aim to prepare necessary development strategies aimed at long-term development of this sector including the establishment of the proposed DCLT.

Major part of the expert's time was utilized in providing assistance included in part C of terms of reference which forms preparation of the project document, techno-economic report. The Leather Technologist (CTA) formulated and compiled the technical inputs for DCLT such as machinery, equipment and other material requirements.

Although it should be reasonable to solicit new business for the export of semi-processed leather from the existing tanneries, inconsistent quality output will create considerable problems to get a continuity on the export business. Major problems identified by the expert included, inadequate and suitably trained manpower in the sector. To be able to prepare UNIDO inputs for the proposed DCLT project, the expert collected background information related to manpower availability and their know-how, which forms a major support information in the preparation of Fellowship training needs. Specific training programmes for instructional and operative staff as well as evaluation technical difficulties in producing desired quality output for a successful marketing of various types of Leather and Leather Products from Burma was also carried out by the expert during his mission.

CHAPTER - 6

6. FINDINGS

Following pages may be duplicating emanating from work done, concerning the DCLT reports. However, these prevail upon completion of the various inputs to assist the authorities concerned towards creating better understanding of the existing situation firstly related to various aspects of technical followed by marketing ends of the expert's assignment.

6.1. Livestock and Raw Hides and Skins Availability :

6.1.1. Livestock Population and the Hides and Skins Supply:

The Livestock population of Burma is estimated at (1983/84) is as follows : -

Cattle	...	9.1 million heads
Buffaloes	...	2.0 " "
Goat and Sheep	...	1.0 " "

Based on the average collection between 1973 and 1984, hides and skins figures are as follows : -

Cattle and Buffalo hides	...	341,600 pcs
Goat and Sheep skins	...	511,000 "

Off-take rates for Cattle/Buffalo and Goat/Sheep are provided by livestock authorities are at the same rate of 7.1 and 20.1 per cent respectively. For the purpose of output of leather, and product-mix, various types of hides and skins are seperated based on the ratio in the population of cattle, buffalo, goat and sheep.

Specifications for various types of hides and collected as shown in table II.

TABLE I : Hides and Skins Weight and Area Specification

Type of Material	Weight/Pcs (wet salted)	Area/Pcs (wet salted)
Cattle Hides	14 kgs	21 sq.ft.
Buffalo Hides	24 "	25 "
Goat Skins	2 "	3 "
Sheep Skins	2 "	3 "

There are two medium scale municipal slaughter houses, one at Rangoon and another at Mandalay. Major collection of raw hides and skins, estimated at 85%, comes from rural areas.

6.2. Raw Hides and Skins Pricing and Grading :

Raw Hides and Skins are collected through about 150 up-country centres directly under control of the GIC, who also monitor the allocation of raw supply to the Government owned tanneries. A total of approximate 150 inspectors are assigned by the GIC to these centres. Part of this team also undertake supervision and inspection of exports of raw as well as semi-processed materials from the two tanneries. Although there are no strict guideline policies laid down for the improvement of hides and skins, these field officials undertake, to a limited scale, supervision and offer training related to flaying and curing aspects.

Buying prices by the tanneries for the hides and skins is provided in Table II.

TABLE II : RAW HIDES AND SKINS PRICE STRUCTURE IN BURMA

Type of Raw Material Grade and Specification			Price Paid per 100* Viss(V) or Piece(Pc) In Kyat By the Govt. Tanneries
Cattle Hides (Domestically used Grade)	I	Large - 36 lbs above	210.00/100 V
	II	"	200.00/100 V
	III	"	180.00/100 V
	I	Medium - 25 to 35 lbs.	220.00/100 V
	II	"	210.00/100 V
	III	"	190.00/100 V
	I	Small - 25 lbs & below	230.00/100 V
	II	"	220.00/100 V
	III	"	200.00/100 V
Buffalo Hides (Export Grade)	I	(Range: Heavy 70 lbs	300.00/100 V
	II	and above medium 70 lbs	100.00/100 V
	III	below)	80.00/100 V
Goat Skin (Domestically used Grade)		34" and above	4.10/Pc
		30" to 33"	3.50/Pc
		30" and below	2.00/Pc
Export Grade		-	5.00/Pc
Sheep Skin		34" and above	3.50/Pc
		20" to 33"	2.25/Pc
		30" and below	1.50/Pc

* 1 viss = 3.6 lbs.

Value return for the primary producer is lower than the above indicated prices and this varies according to the origin and cost of transportation from the collection point to the end-users. Producer prices are approximately 10 to 20 per cent below the above buying prices paid by the tanneries. Prices paid for the hides and skins in Burma have remained unchanged while cost of meat has risen by 300 per cent since 1968.

The expert's findings from his visits to the tanneries reveal that hides and skins have considerable amount of man-made damages, such as flay cuts, bad curing and certain damages due to improper storage and handling. Variety of animal husbandary practices as well as poor post slaughter treatment, adversely affects the quality of leather produced. It is important to recognize that animals are not raised for the value of their hides or skins. The supply of hides and skins is constrained by the production of animals for their meat and milk. Poor quality of the hides and skins are expensive to process, and often cannot be used for the highest value applications. Grading standards are not strictly followed on the basis of the grain quality, but often relates to the shape and appearance of the hides or skins. Furthermore, the tanneries do not strictly evaluate purchases based on out-turn results of the leather produced to be able to establish quality results of different origin.

Butchers/Farmers, who are primary producers of hides and skins, are not made fully aware about the importance of this raw material. Tanneries in return pay comparatively low premia for good quality raw material, thus providing limited incentive for a better use of the hides and skins from slaughter on. However, this is only part of the answer, and such an incentive will not be strong enough to effect any changes in animal husbandary. Lack of salt in various up-country slaughter facilities results in deterioration of quality and in some cases complete loss of this raw material due to putrefication. Despite the recognition of some of these problems and formulation of policies to combat it, lack of resources to implement necessary measures and because of unavoidable slow speed at which such improvements take place, limited actions are taken to remedy the situation and progress on this, has been slow.

Government owned tanneries have to compete with privately or co-operative owned tanneries. Price differential for raw hides and skins paid by the two is considerable with advantage to the later, who obtain better quality raw stock from the up-country collection. Large portion of hides and skins are consumed by rural private/co-operative tanners producing low quality sole leather. Although such rural tanneries cater for the needs of small-scale slipper footwear manufacturers, their such a utilization results in

depreciating the value of this raw material otherwise utilized in the production of exportable quality leather by the merchandised tanneries.

In sum, the hides and skins sector in Burma has cast off the traditional role as exporter of raw materials to develop a base for the establishment of a sound leather industry. However, there is a need to overcome the problems of quality improvement, increased recovery to be able to provide a competitive advantage to the leather industry.

6.3. Leather, Footwear and Leather Products Industry

Not all concerned are always familiar with the infinite variety, diversity and unpredictability of the raw material from which leather is made. In Burma, no information concerning pattern of production, technology, trade statistics, pricing on similar international commodities is available and therefore it defies the application of normal economic key factor for such a research.

Realizing the importance and possible impact on the national economic level, Government of Burma has made a substantial investments in modernizing two tanneries, implementation of leather board and industrial glove production units in Burma. Production of footwear is limited to People's Footwear Factory at Indaing and rubber slipper output at Rubber Factory II. All these plants are operated under a direct control of General Industries Corporation of Ministry of Industries No.1. Their installed capacity and performance and people engaged in the sector is provided in table III.

TABLE III : LEATHER, FOOTWEAR AND LEATHER PRODUCTS INDUSTRY IN BURMA

Name of Plant and(Location)	No. of People Engaged	Installed Capacity and (Product-Mix)	Capacity Utilization Based on 83-84 Performance
1.(A). Rangoon Leather Factory I (Rangoon)		80,000 pcs hides/annum 100,000 pcs goat skins/annum (fully-finished)	40 % total capacity only.
(B). Rangoon Leather Factory II (Rangoon)	- 200	70,000 lbs/annum sole leather 400,000 sq.ft/annum splits from WBC for gloves.	50 % of finished sole and split glove leather production.
(C). Rangoon Leather Factory III (Bassein)		30,000 lbs/annum sole leather	80 % of sole leather.
(D). Rangoon Leather Board Factory (Rangoon)		400 tons of finished leather board/annum	50% Total capacity utilization.

TABLE III : (Contd.)

Name of Plant and (Location)	No. of People Engaged	Installed Capacity and (Product-Mix)	Capacity Utilization Based on 83-84 Performance
2. Mandalay Leather Factory I (Mandalay)	180	80,000 pcs hides/ annum	30% total capacity utilization only partially finished
		100,000 pcs goat or sheep skin/annum fully finished.	
		20,000 pcs hides/ annum sole leather.	
		400,000 sq.ft. splits.	
3. People's Footwear Factory (Indaing)	469	524,000 pairs/annum	84% total capacity utilization.
4. Rangoon Leather Products Factory (Rangoon)	80	240,000 pairs industrial gloves/ annum.	50% Total capacity utilization.
5. Rubber Factory II (Rangoon)	25	55,994 pairs rubber slippers.	-

Two Government tanneries are designed to produce fully finished leather. However, approximate capacity utilization in terms of production and processing is far lower and can be summarised as below : -

1. Wet Blue Chrome ... 50 per cent
2. Crust/Ready-to-finished ... 20 " "
3. Finished ... 30 " "

In other words, reduced capacity utilization of the tanneries indicated in table III, is further decreased due to lower output of finished leather.

There are a number of small private/co-operatives producing leather, footwear and to a small scale, leather goods in Burma. Such tanneries produce mainly sole leather or light weight leather using locally available tanning material, while most of the small scale footwear manufacturers produce slippers, which is the type of footwear widely used in Burma. Leather products for different uses are made of locally produced genuine leather with decorations, carvings and motifs of folk-art origin and have for a long time been traditionally produced in small-scale workshops and sold throughout the country. There is no statistical data or information available covering this small-scale sector.

Additional shoe factory is planned to produce Footwear with the intention to satisfy the domestic and export market needs. One small tannery unit is expected to go into production of wet blue tanned skins in Arakan State.

The reasons for low utilization levels of both the leather and leather products industries in Burma are numerous, such as insufficient suitably trained and qualified staff, lack of chemicals and spare parts etc.

Operational difficulties due to inadequate technical and commercially applied know-how has resulted in inconsistent quality output of various types of product-mix. It is estimated that state-owned tanneries together process about one third of the cattle and buffalo hides and one half of the goat and sheep skins.

Regarding the Footwear output at the PFF, quality is of low standard, due to old machinery and equipment. With the existing equipment and facilities available, it will be difficult for PFF to produce improved quality footwear. Present consumption of leather in combat boots (6 sq.ft/ pair) and in case of foam rubber shoes (4.05 sq.ft and 0.65 lbs) is considered to be very high and constitutes 51 and 65 per cent inputs in total production cost respectively.

Leather goods factory produces industrial gloves for the export market and quality standards are good. Leather board plant at the time of the expert's visit, was not in operation due to shortage of latex. This factory produces limited range of product-mix and quality inspected is of good standard which could be exported. However, a serious bottleneck remains in the grinding of raw material from the tannery waste which limits, to a certain degree, output as well as quality level of leather boards produced.

6.4. MARKET OUTLETS

6.4.1 Leather Industry/Domestic Needs

An important aspect with regards to a better utilization of the production capacity in the Leather and Leather Products sector in Burma is the availability of market outlets, both at home and aboard. Domestic needs for finished leather is limited to PFF and other small-scale slipper producers in the country. Entire requirements of finished leather of chrome uppers, lining and vegetable tanned sole leather comes from Rangoon and Mandalay tanneries. Any surplus quantities available from these plants is sold to local footwear manufacturers. Requirements of PFF between 69/85 average to the following per annum : -

- Shoe upper + lining ... 1,065,542 sq.ft
- Sole Leather ... 140,318 lbs.
- Insole as leather board... 159,811 lbs.

Based on the above requirements of leather for PFF, following quantities remain as surplus either for other domestic needs or for the exports if full capacity utilization is achieved in the tanneries and leather board plant : -

- Shoe upper and lining leather ... 3,209,658 sq.ft.
- Sole Leather ... 259,682 lbs.
- Insole as leather board... 720,189 lbs.

Above analysis will provide a useful information related to the available quantities of leather for a possible exports. Additional quantities of splits output for industrial gloves from two tanneries is estimated at 800,000 sq.ft. while the actual requirement for glove production at full capacity is 700,000 sq.ft.

6.4.2 Leather Industry/Export Performance and Potential

Table IV will show export of different type of semi-processed leather and mainly raw skins between 76/84.

Export performance for raw skins has increased over the past years with the exception of 82/83 period. This was due to decline in demand from the traditional buyers such as Italy during this period. Export performance of semi-processed leather has reduced during the period between 80/84 which is explained because of modernization of both Rangoon and Mandalay tanneries during the same period.

TABLE IV : EXPORT OF DIFFERENT TYPES OF RAW SKINS AND SEMI-PROCESSED LEATHER FROM BURMA

Financial Year	Wet-blue Chrome		Vegetable tanned goat/sheep skins	Dry salted goat skins
	cattle hides ox/cow/buff	goat/sheep skins		
	In Pieces			
1976/77	-	32,000	6,000	16,000
1977/78	13,500	32,000	11,000	35,000
1978/79	18,312	225,950	22,200	53,000
1979/80	118,242	161,250	70,000	65,000
1980/81	92,950	135,000	20,000	65,000
1981/82	45,860	81,700	-	69,200
1982/83	15,740	38,000	-	34,500
1983/84	37,500	27,000	-	72,000

Present exports at a limited scale is restricted to semi-processed leather and industrial gloves other than periodic raw skins which are utilized by the tanneries. All marketing aspects including commercial aspects to include, grading and selection is carried out by GIC. Various practical aspects reflecting on export marketing in relation to production activities is summarised below : -

- 60 per cent raw inputs come from municipal slaughter at Rangoon and Mandalay for hides while skins are collected mainly from the up-country origin with considerable quality and grading variations;

- all inputs from processing are graded according to size/weight in case of hides while skins are processed in a mixed form;

- production plan is not geared to actual market needs or contracts committed. Orders are therefore, completed from various input lots processed over a period of time;

- although grading percentages are indicated in offers or contracts, no strict guidelines or specifications are laid down in respect to grain quality and sizing aspects. In case of hides, major export orders are received for the heavier type of material while light weight hides are used for the production of Shoe uppers/lining for the domestic market. Sole leather is produced from heavy buffalo hides for the local use. Concerning skins, exports are based on table-run selection which includes mix grade and sizes. Existing grade specifications are based on 20 : 40 : 40 : I : I : III, but actual results are much below these specifications.

- actual grading and selection is carried out by a team of selectors from GIC in a store where desired facilities for such an operation like table and adequate light is not provided. Such a situation results in carrying out this task extremely difficult, resulting in a substantial variations in the quality levels;

- a limited wet blue and crust stocks prepared for exports which were inspected by the expert is of inconsistent level from batch to batch due to inadequate processing and important interoperation physical/machinery controls, shortage of chemical inputs, and to some extent, frequent electricity supply interruptions.

- feed back informations related to interoperation control, chemical consumption, cost control methods etc. in the plants are unavailable or not effectively utilized for the technical and management performance evaluation. This causes severe set backs at the production and marketing ends.

Export potential for a limited quantities of leather which will be produced in Burma are **good.** As pointed out in the report, the tanneries have to achieve quality standards, consistancy and regular output, of semi-processed leather. Tanners need raw material such as wet blue, crust, ready-to-finished because there is a deficiency world wide. Volume of such requirements are shown in table VII of output of footwear world wide..Average requirement per pair of footwear may be calculated based on an average of 2.5 sq.ft. Concerning finished leather export, substantial development work remains to be done both in terms of quality and economical product outputs to be able to penetrate into export of finished leather, footwear and leather products from Burma.

6.4.3. Pricing and Production Costs/Leather Industry

Prices obtained for finished leather in domestic market is of acceptable level covering the costs of production with a marginal profits. However, limited quantities of export of semi-processed leather, hides and skins in wet blue and crust stage are selling below the cost of production. Prices offered by the Importers are low due to Burmese leather Industry is new entrant to the export market and Buyers concern about reliability from this end in terms of acceptability for quality standards and timely delivery which is not fully achieved. It must be stated that whatever the world market price of raw stock reaches, it can never exceed that of prices for semi processed and finished leather.

Pricing is related to the cost of processing and production in general. Although physical usages of inputs i.e. raw material, chemicals, and other consumables and their value are important in reducing costs, quality aspects to include out term grades (in percentage), yields are equally important to reduce unit costs.

Following table V will show a comparative raw and chemical cost of producing leather from cattle hides from Mandalay Tannery at three different stages i.e. wet blue, crust and finished stage. As these two inputs are major variable components, no other factors are included for this exercise. The tannery uses two seperate formulations, one for leather produced for exports and another for domestic needs.

TAVBLE V : Comparative Raw/Chemical Costs, Hides Processing (Mandalay Tannery)

Items + (Stage of Processing)	For Domestic Sale (Kyats) per sq.ft.	% Contribution	For Export Sale (Kyats) per sq.ft.	% Contribution
Raw	0.58	17.74	0.85	12.36
Chemicals	0.74	17.92	0.75	10.53
(Wet Blue Stage)	1.62	32.65	1.63	22.89
Add Chemicals	1.27	25.60	2.12	29.77
(Crust Stage)	2.89	58.25	3.75	52.66
Add Chemicals	2.07	41.73	3.37	47.34
(Finished Stage)	4.96	100.00	7.12	100.00

Most of the tanning chemicals are imported into Burma with the exception of lime, salt, sulphuric acid as well as vegetable tanning bark which is used by rural tanners only. It is very interesting to note, high costs of chemical inputs, which is entirely imported, needed to produce finished leather. Export marketing of finished leather is highly sensitive towards colour feel and other fashion related trends and unless, Burma is able to achieve quality standards and quicker delivery, tanneries should concentrate exporting semi-processed leather only.

Further more, cost reduction, with the existing situation in the industry needs to be effectively controlled through various interoperation technical and physical controls to be able to obtain improved grades, yields as well as usages of various inputs. Effects of value added factor will only be achieved through a proper technological and commercially applied practices in the leather production.

6.4.4. Footwear and Leather Products Industry

Very little can be said at this stage regarding the footwear and leather products industry in Burma. Success of existing units and planned expansion in this field is closely related to the achievements of the leather industry. Regarding existing demand for footwear in Burma, large portion of the population is using slippers. Based on the field visits and discussions with the retail shops and consumers, the expert's findings reveal that major part of footwear demand and requirements are for slipper and sandal type of footwear rather than close type. However, limited scale of demand for the military and civil service officials exist for close type of footwear. Due to non-availability of data, it is difficult to establish per capita footwear usage in Burma at this stage. However, it may be pointed out that per capita requirements for footwear in industrialized countries is estimated at 4.0 pair as compared to developing countries 1.0 pair per annum.

Average production of footwear at PFF between 78-85 period for both leather, rubber and canvas was 447,987 pairs per annum.

No efforts are made towards marketing prefabricated shoe uppers or pullovers for exports due to inadequate quality level of leather produced at present. There is a good demand for such type of articles with specific reference to industrial boots or mocassin shoe uppers. This is the first step towards going into the export of footwear.

CHAPTER - 7

7. CONCLUSIONS AND PROSPECTS OF THE LEATHER AND LEATHER PRODUCTS SECTOR DEVELOPMENT

7.1. Livestock, Raw Hides and Skins Sector

A variety of animal husbandary practices as well as poor-slaughter treatment, adversely affects the suitability of the leather, footwear and leather products manufacture. These wide range of policy needs, which have an impact beyond leather and leather products sector, are of extreme importance in determining a potential for the development of leather and leather products industries sector in Burma. Based on the findings, a logical approach would be to include livestock, raw hides and skins improvement for a wider rehabilitation action programme for the development of leather footwear and leather products development in Burma. The appointed DCLT national staff should go ahead in co-operation with the appropriate authorities concerned for the preparation of most urgent needs of the sector with respect to possible extension, and support services related to the improvement of the hides and skins sector of the proposed DCLT plan. Based on the expected growth in the off-take, hides and skins output by year 2000 estimated to be 599,000 pieces of cattle + buffalo hides and pieces of 807,000 goat + sheep skins with improved pricing and collection.
Assuming that a wider action to rehabilitate the leather and leather products industry including the improvement of hides and skins is undertaken, the importance and scope of action for DCLT should be increased. Strict quality control and improved collection concerning raw hides and skins is of great importance. Pricing policies should be carefully reviewed to be able to give preminum for a properly flayed and cured raw material. There is a need to utilize news media to educate primary producers of the importance of this raw material including advise provided towards proper flaying and curing. Furthermore, activities should be extended to supervise and control on utilization and production of the leather from private/co-operative tanners to ensure that the hides and skins utilized are in accordance with the guideline policies and trade practices for this small scale rural sector.

7.2. Leather and Leather Products Industries Development and its Market Potential

The General consequantial effects of economic, industrial and sociological development are increasingly felt with substantial public investments increased over a period as seen from table VI. Substantial incurrance in the growth of Agriculture, Livest. k, and Industry is noted. The Leather and Leather Product related Industries being agro-based should be able to contribute substantially if properly planned for its development. The Government of Burma, made substantial investment

towards modernizing two tanneries. The unique combination of adverse operational conditions in leather and leather product manufacturing is dominantly complicated. Acquisition of knowledge on an industrial scale is of great importance. The proposed establishment of DCLI and specially its services will bear the responsibility of improving and extending its operations to the whole of leather and leather products sector in Burma.

Although, Burma has a limited output of hides and skins, table VI will show likely growth rates calculated based on effective output on full utilizations of capacity to an exportable type of semi-processed to finished leather. (See Table VII).

To be able to quantify economic benefits as a result of overall efforts to develop the leather and leather products industries in Burma following broad base picture could be drawn as value added component, raw value taken as 100 unit based on the above analysis.

	Raw	WBC	Crust	Finished
Cattle Hides : (Price Basis US$)	100 (0.77/kg)	127 (0.65/sq.ft)	151 (0.78/sq.ft)	253 (1.30/sq.ft)
Buffalo Hides : (Price Basis US$)	100 (0.37/kg)	169 (0.60/sq.ft)	197 (0.70/sq.ft)	337 (1.20/sq.ft)
Goat/Sheep Skins: (Price Basis US$)	100 (17.10/doz)	155 (0.55/sq.ft)	191 (0.68/sq.ft)	365 (1.30/sq.ft)

As a guide current market prices are indicated in the above analysis. In absence of seperate data for cattle and buffalo hides output estimates are prepared in relation to the population of livestock in the country.

Table VII which forms an indicator, will show the revenue based on the same approach if all available raw hides and skins are converted for export. It is seen clearly the importance of value added as increased processing stages are attained.

Table VIII gives world output and indicate major trading nations in footwear. It is interesting to note a large share for a relative output of shoes in Asia and Middle East. Large portion of shoes produced in countries like Taiwan, India, Korea and exported to various countries in Europe and America. However, recent experiences lower import barrier for footwear caused considerable concern to the producing countries in Asia. Such developments should caution the possibilities for putting up footwear unit entirely to cater the export needs. For domestic requirements in Burma, need to design a suitable product-mix, therefore will be of great importance which could have easy retail outlets. Part of this issue is covered in the findings of this report and it may be pointed out that the

TABLE VI: SECTORIAL ALLOCATION OF PUBLIC INVESTMENT IN THE FOURTH FOUR YEAR PLAN (%)

(Kyats in Lakhs)

Sr. No.	Sector	1982-83	1983-84	1984-85	1985-86
1.	Agriculture, Livestock and Forestry.	18.3% (15,953)	20.7% (19,325)	21.5% (20,152)	23.5 (22,647)
	1. Agriculture	10.0% (8,717)	12.6% (11,750)	13.2% (12,377)	13.5% (13,058)
	2. Livestock & Fishery	5.0% (4,371)	4.0% (3,729)	3.9% (3,684)	5.2% (4,991)
	3. Forestry	3.3% (2,865)	4.1% (3,846)	4.4% (4,091)	4.8% (4,598)
2.	Mining	11.5% (9,973)	7.6% (7,108)	10.5% (9,793)	12.6% (12,236)
3.	Industry	37.1% (32,250)	33.1% (30,932)	28.5% (26,688)	22.7% (21,937)
4.	Power	5.9% (5,149)	7.5% (7,053)	7.6% (7,128)	7.4% (7,145)
5.	Construction	2.8% (2,460)	3.0% (2,834)	3.1% (2,930)	3.2% (3,044)
6.	Transport and Communication	10.2% (8,837)	11.4% (10,682)	11.5% (10,755	11.3% (10,888)
7.	Trade and Social Sectors	14.2% (12,332)	16.7% (76,733)	17.3% (16,343)	19.3% (18,847)
	Total	100% (86,954)	100% (93,567)	100% (93,789)	100% (96,744)

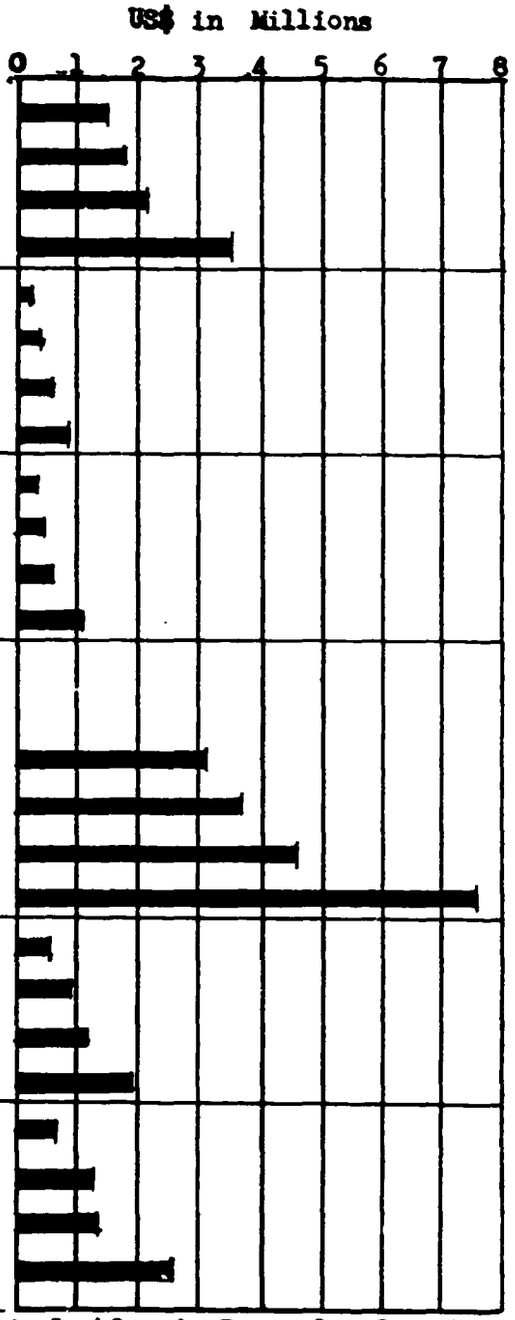
Source : Fourth-Four-Year-Plan target.

TABLE VII: ESTIMATED VALUE ADDED ANALYSIS BASED ON FULL UTILIZATION OF EXISTING TANNING CAPACITY AND NATIONAL RAW STOCK OF RAW HIDES AND SKINS IF CONVERTED IN EXPORT QUALITY LEATHER

		PRESENT TANNING CAPACITIES (RANGOON/ MANDALAY)			NATIONAL RAW STOCK IF CONVERTED IN LEATHER		
		CATTLE HIDES	BUFFALO HIDES	GOAT/SHEEP SKINS	CATTLE HIDES	BUFFALO HIDES	GOAT/SHEEP SKINS
Interoperation Data	RAW PCS	131,200	28,800	200,000	280,112	61,488	511,000
	RAW WEIGHT.	1,836,800	691,200	400,000	3,921,568	1,475,712	1,220,000
	AREA SQ. FT.	2,755,200	720,000	800,000	5,882,353	1,537,200	2,044,000
ESTIMATED REVENUE IN US$ (KYAT) AT FULLY PROCESSED STAGES. STAGES OF PROCESSING	RAW	1,414,336 (12,304,723)	255,744 (2,224,973)	285,000 (2,479,501)	3,019,607 (26,270,580)	546,013 (4,750,313)	728,175 (6,335,123)
	WBC	1,790,880 (15,580,656)	432,000 (3,758,400)	444,000 (3,828,000)	3,823,529 (33,264,700)	922,320 (8,024,184)	1,124,200 (9,780,540)
	CRUST	2,149,056 (18,696,787)	504,000 (4,384,800)	544,000 (4,732,800)	4,588,234 (39,917,635)	1,076,040 (9,361,548)	1,389,920 (12,092,304)
	FINISHED	3,581,760 (31,161,312)	864,000 (7,516,800)	1,040,000 (9,048,000)	7,647,058 (66,529,404)	1,844,640 (16,048,368)	2,657,200 (23,117,640)

NOTE : - Raw Prices are based on the actual value obtained in Burma for Exports.
- WBC, Crust and Finished Leather prices are based on current export market prices of similar raw material origin of established export quality standards.

BAR-CHART ESTIMATED REVENUE IN US$ AT FULLY PROCESSED STAGES.



Present Tanning Capacity		Revenue
(a)Cattle Hides (151200)	RAW	US$ 1414336
	WBC	US$ 1790880
	CRUST	US$ 2149056
	FINISHED	US$ 3581760
(b)Buffalo Hides (28800)	RAW	US$ 255744
	WBC	US$ 432000
	CRUST	US$ 504000
	FINISHED	US$ 864000
(c)Goat/Sheep (200000)	RAW	US$ 285000
	WBC	US$ 444000
	CRUST	US$ 544000
	FINISHED	US$ 1040000
National Raw Stock if Converted in Leather		**Revenue**
(a)Cattle Hides (280112)	RAW	US$ 3019607
	WBC	US$ 3823529
	CRUST	US$ 4588234
	FINISHED	US$ 7647058
(b)Buffalo Hides (61488)	RAW	US$ 546013
	WBC	US$ 922320
	CRUST	US$ 1076040
	FINISHED	US$ 1844640
(c)Goat/Sheep (511000)	RAW	US$ 728175
	WBC	US$ 1124200
	CRUST	US$ 1389920
	FINISHED	US$ 2657200

Notes:-Raw Prices are based on the actual value in Burma for Exports.

-WBC, CRUST and FINISHED leather prices are based on current export market prices of similar raw material origin of established export quality Standards.

TABLE VIII : WORLD OUTPUT AND MAJOR TRADING NATIONS IN FOOTWEAR

LEADING TRADERS

	Production (m pairs)		Exporters (m pairs)		Importers (m pairs)	
1.	USSR	956	Taiwan	399	USA	516
2.	China	895*	Italy	338	W. Germany	190
3.	Japan	485*	South Korea	202*	UK	129
4.	USA	464	Hong Kong	133	France	125
5.	Italy	445	China	97*	USSR	121
6.	Taiwan	430	Spain	71	Japan	69
7.	Brazil	422	Czechoslovakia	59*	Hong Kong	63+
8.	India	346*	France	56	Canada	57
9.	South Korea	279	Brazil	49	Netherlands	52
10.	Mexico	215*	Poland	33*	Belgium	44

Relative shares of 1981 output were (%) :

Asia & Middle East	41.3
Eastern Europe	20.4
Western Europe	15.1
North & Central America	10.0
South America	8.8
Africa	3.6
Australia	0.5

WORLD OUTPUT*

	Output (m pairs)	Population* (millions)
1981	7 835	4 495
2000	11 160	6 200

\+ presumably mainly for re-exports

* Estimates

Source: SATRA, World Footwear Markets 1983.

establishment of any new footwear leather and leather products industry in Burma will require a detailed feasibility study to cover aspects of design, product-mix.

Table VIII shows world wide production of footwear and its output forecasts. Production share of leather, footwear and leather products are reducing due to high cost of production and treatment of effluent. These countries have to increasingly depend upon the developing countries for such a supply. Table IX presents some data related to exports of Leather from small group of developing countries. Most of these countries, developed their industry in phases, firstly, with the introduction of semi-processed leather and over a period of last 15 to 20 years, improved their know-how, and marketing contacts, to be able to maximise on foreign exchange earnings through presently export of mainly finished leather, footwear and leather products. Although, semi-processing stages bring comparatively low economic returns as seen from the earlier analysis, Burma will require considerable expertise for a gradual shifting towards higher value added stages of processing where suitable manpower development and R&D facilities will play an important role in the overall development of this sector. Although buyers may provide information related to price, quality level, styling, major part of the responsibilities related to quality requirements, will have to be met by the tanneries or Leather producing units in Burma, where R&D inputs within the country will be very valuable.

7.3. Needs of the Industry and the Establishment of DCLT

Two distinct issues emerges from the above background information : -

(1) A large quantity of exportable or otherwise utilizable hides and skins in Burma remains unaccounted for, depriving the country of a possible foreign exchange earnings through a systematic development of leather and leather products industries and its market potential.

(2) The existing production units are under-utilized and available raw materials are not processed to a desired stage of processing due to lack of trained and suitably qualified manpower as well as adequate know-how facilities.

To elaborate the above, given the marked difference in value added components of raw hides and skins and those of semi-processed, finished leather and leather products, the choice should be wherever possible in favour of trading in leather and leather products. This would on a long run benefit the economy of Burma, not only in the form of foreign exchange, but would also contribute to the export diversification programme. It is to be noted that the hides and skins, leather and leather products sector, which is a domestically agro-based, available raw material can contribute for the

TABLE IX : EARNINGS FROM EXPORTS OF LEATHER FROM SELECTED DEVELOPING COUNTRIES

(In Million US Dollars)

REGION Country	AVERAGE 1975-77	1978	1979	1980	1981
ASIA					
India	237.8	233.0	458.8	325.3	294.9
Pakistan	52.6	56.6	125.3	127.7	90.0
AFRICA					
Kenya	3.1	5.3	10.6	12.0	10.0
Nigeria	13.4	16.5	30.2	40.0	35.0
LATIN AMERICA					
Argentina	124.9	253.2	418.6	307.8	325.0
Brazil	61.3	84.1	141.9	87.7	70.0
GRAND TOTAL :	493.1	648.7	1,185.4	900.5	824.9

Source :- FAO, Commodity Review and Outlook, Selected Issues.

country's economic growth, if properly exploited. Based on findings of the expert, tanneries in Burma should concentrate towards establishing a sound base for marketing semi-processed leather first and at the same time as a long-term policies carry out necessary development work to achieving through DCLT'S feasibilities, the production and marketing of finished leather and leather products.

There is an urgent need for adequately trained specialists in providing a required know-how and services to the entire leather, and leather products manufacturing sector, in order to enable the industrial plants established to operate efficiently and to contribute significantly to the overall economy of the country. In order to realize several development aspects of this sector, such as processing technology, production methods, control of the quality of leather and leather products, monitoring of the performance of the plants at the Ministry/GIC level, improve trade and export marketing practices, as well as up-grading of skills of personnels at different levels, it is essential to establish a suitably staffed and equipped pilot plants and laboratory in Burma. This will ensure the best possible implementation of the actions needed to obtain the improvements required in the different aspects of the activities of the entire leather sector as a long lasting support facilities within the country to be able to satisfy the marketing needs.

Such a pilot plant-DCLT, will carry out the extension services including conducting basic and applied research and development work badly needed in the existing factories as well as provide know-how and manpower training for the whole of leather and leather products industries in Burma. It will advise and assist in the selection of plant, equipment and its maintenance, requirements of chemicals and other consumption materials. It will provide the necessary services regarding the manufacture of good quality leather as a base for the further developing into the production of quality footwear and leather products of various kinds.

Technical inputs such as machinery and equipment and scale of operation are being evaluated by the Leather Technologist (CTA) of the project.

While designing the scale of DCLT's operations, it is extremely important to consider its scope and costs for R&D of techniques and operations in relation to the size of industry of Burma. Although economics of leather and leather products processing favours continued inputs on applied R&D activities, economic scale of such needs will have to be carefully evaluated and justified. Large inputs in terms of machinery and equipments on such an applied research will aggrevate the cost of production, making it further difficult to such a micro-economic policies aimed at altering the specific circumstances, and will add to the costs, thus creating handicap.

Possibilities of operating DCLT on a small production scale may be considered as some of the machinery inputs of a commercial size are included in the plan. Such an operation will not only become self supporting, but will provide a good practical applied development and training centre.

To summarize, the Leather and Leather Products Industry in Burma has very significant potential but many accumulated problems as well. A very wide and co-ordinated action is needed for a larger-scale positive effect to be obtained.

Introduction of new technology through R&D work in manufacturing processes on an industrial scale involves heavy financial investment and manpower resources, which is not possible for the size of tannery plants existing in Burma. DCLT's establishment, therefore, is of great importance and will prove to be a very valuable tool (instrument) in the rehabilitation, performance and overall development of this important sector. Based on the increased availability of hides and skins, estimated at 4 per cent and additional 8 per cent due to improved technology resulting in added yield, it should be reasonable to expect a total growth in the availability of national raw stock of hides and skins by year 2000 to equivalent of 17.5 million sq.ft to present 9.4 creating added raw material inputs to the Leather and Leather Products Industries in Burma with a potential to obtain increased added value.

A detailed marketing research work will have to be carried through sampling, pricing, intelligence, establishment of international contacts through the participations in the international fairs, etc. The experiences gained from the similiar situation from the other developing countries, the expert believes that,it should be reasonable to expect that Burmese Leather and Leather Products Industry, will be in a position to develop required international reputation, standards possibly in about 5-10 years with the action programme recommended for implementation.

ANNEX 1 : OUTLINE OF IMPORTANT CHEMICAL REQUIREMENTS IN THE TANNERY

Name of Chemicals	Cattle/Buffalo Hides	Sheep/Goat Skins
1. * Soaking Agent	0	0
2. * Lime Powder	0	0
3. * Sod. Sulphide and Sulphydrate	0	0
4. * Caustic Soda	x	0
5. * Wetting Agent	0	0
6. * Ammonium Sulphate	0	0
7. * Ammonium Chloride	x	0
8. * Bate Powder	0	0
9. * Degreasing Agent	x	0
10. * Salt	0	0
11. * Sulphuric Acid	0	0
12. * Formic Acid	0	0
13. * Sod. Bicarbonate	0	0
14. * Sod. Carbonate	0	0
15. * Sod. Formate	x	0
16. Neutralising Syntan	0	0
17. Retanning Syntan (various)	0	0
18. Fatliquors (various)	0	0
19. Dyeing Auxiliaries (various)	0	0
20. * Ammonium Liquid	0	0
21. * Acetic Acid	0	0
22. * Formaldehyde	0	0
23. * Solvents (various)	0	0
24. * Chrome Powder	0	0
25. * Mimosa	0	0
26. * Other veg. Tanning Materials	0	0
27. * Oxalic Acid	0	0
28. Sole Pretanning Agent	0	0
29. Pasting Agent	0	0
30. Suede Spray	0	0
31. Preservative (various)	0	0
32. Fungicides	0	0
33. Dyestuffs (various)	0	0
34. Impregnating Resin	0	x
35. Penetrator for Impregnation	0	x
36. Resin Binders (various)	0	0
37. Protein Binders	0	0
38. Wax Emulsions	0	0
39. Lacquer Emulsions	0	0
40. Finishing Auxilliaries	0	0
41. Urethane and other finishes	0	0
42. Bleaching Agents	0	0
43. Aluminium and other tanning agents (Mineral Based)	x	0
44. Organic Pigments	0	0
45. * Sodium Bisulphite	0	0
46. * Cal.Formate	0	0
47. * Mg. Sulphate	0	x
48. * Aluminium Sulphate	0	0

EXPLANATION FOR ABBREVIATIONS : -

0 = Required ; x = Not Required ;
*** = Products which may be purchased on bulk tender and others requiring technical evaluation.**

ANNEX 2.

FOLLOW-UP UNDP/UNIDO PROJECT PROPOSALS
Assistance to the Leather Industry in Burma

(Export Marketing And Preparation Of Tannery Production Procedure And Planning Control)

I. BACKGROUND AND JUSTIFICATION

Background information is included in details in the project terminal report.

Based on the findings of the Marketing Report, it is recognized, that one of the most important aspects of basic problems obtain immediate marketing results other than technical aspects is as follows : -

- internal tannery procedures, production planning, interoperation control of factors related to costing, grading and sizing, yields at various stages of operations cause considerable problems towards the technical and marketing ends;

- Export Marketing Section at the GIC as well as tanneries have little or no exposure with the international leather trade and, as such, the industry is not able to cope with the expected responsibilities entrusted to it to further develop and strengthen the export marketing of semi-processed leather.

The above shortcomings forms an appropriate justifications for a possible UNDP/UNIDO assistance for the sector.

II. OBJECTIVE AND OUTPUTS

1. Purpose :

The purpose of the assistance is to : -

- identify the existing production planning, internal control methods in particular to the systems related to the costing, grading and sizing, yields at various interoperation stages and appropriately modify to the needs of the tanneries and marketing section of GIC;

- prepare a complete outline of such procedures appliances towards improving the monitoring of production flow, costing and effective interoperation control methods;

- prepare in consultation with the counterpart agency a detailed analysis of existing export marketing contacts to include outlets, costings and prices obtained, overall performance related quality specifications such as grades, yields, sizing, product-mix chemical and physical properties and prepare a suitably acceptable standards based on the available raw materials and export market demands;

- conduct a study tour with a possibility of participation at the International Leather Fair at Paris to be held between 7-10 September 1986, with a objective to introduce marketing authorities to various participating organizations with the intention to establish international contacts in the leather trade.

2. Output

The outputs expected from the above assistance are the following : -

- Manual containing a complete production planning and control, reporting and cost methods in the tannery.

- Marketing and production guidelines to include a detailed quality specifications related to grades, sizing, product-mix and chemical and physical properties.

- International contacts in the trade as an outcome of a study tour with a realistic feed-back information received based on the above two outputs related to prices obtained for the tannery's output from Burma and design for its future development strategies.

III. ACTIVITIES

The activities required to produce the above outputs are as follows : -

Details of Activities	Implementation Schedule
- Briefing in Vienna	
- Field assignment of the Leather Technology Expert covering all aspects of outputs other than study-tour and its related outputs.	1st to 3rd month

Details of Activities	Implementation Schedule
- Preparation of the first draft manual related to production planning and control, reporting and cost method, to be discussed in joint meeting/seminar. Consisting GIC Marketing personnel, authorities from the tannery plants and finalization of such procedures for its implementation, including its agreed time schedule.	3rd month
- Study tour to coinside with the International Leather Fair, at Paris between 7-10 September 1986 in addition to selected countries in Europe and South East Asia to establish marketing contacts including possible briefing at UNIDO Headquarters at Vienna.	4th month
- Preparation and finalization of report including monitoring the implementation procedures agreed during joint meeting/ seminar (3rd month of the project activities).	5th and 6th month
- Debriefing of the Expert at Vienna.	6th month

IV. INPUTS

1. Government Inputs

The Government, through the Ministry of No.1 Industry and its implementing agency and the General Industries Corporation will provide the following : -

- appoint full-time national counterparts as follows : -
  - responsible marketing and production control officers from : -
    - (a) GIC
    - (b) Tannery Plants
- make available relevant statistics and existing tannery procedures;
- organize the travel and contacts with authorities directly involved with the project activities;
- provide necessary office facilities and secretarial support and also work related transportation;

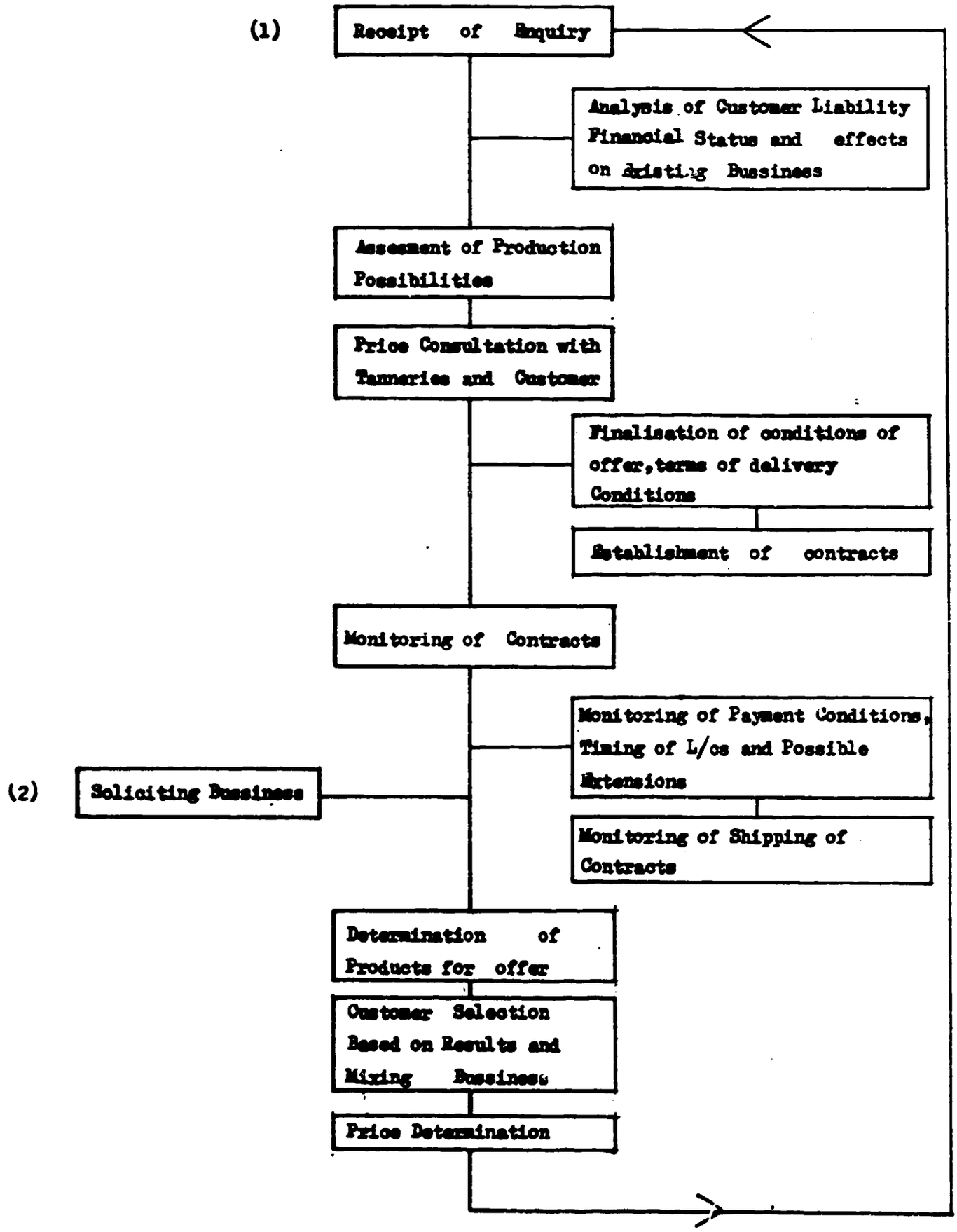
- select and nominate (official UN nomination forms approved) suitable participants for the study tour as follows : -

  (a) Marketing Officer

  (b) Leather Technologist, and

  (c) Planning Official

ANNEX 3 : MARKETING WORK FLOW



ANNEX 4A : MARKETABLE PRODUCT-MIX FROM HIDES AND SKINS OF BURMESE ORIGIN (LEATHER)

Type of Raw Material	Type of Leather and Explanations

Cattle Hides	- WBC, Crust sides (E)
	- Ready-to-finished (E)
	- Finished Leather
	  - Aniline as softy and crushed or embossed type.(D,E)
	  - Conventional smooth aniline will be difficult to obtain in large quantities and not advisable as average quality output will be lowered. (D,E).
	  - Semi-aniline i.e. little correction with suitable resin, urathene and other types of finishes (D,E).
	  - Corrected grain, either smooth or embossed (D,E)
	  - Suede leather, preferably in the form of butts. (D,E)
	  - Light weight vegetable tanned leather (D,E)
	- Substance for leather produced from cattle hides would be maximum of 2.2 mm. Economically lighter weight substance leather is recommended.
	- Limited yield of splits estimated at about 4.6 sq.ft. per hide depending upon the weight of raw material.

Buffalo Hides	- WBC/Crust/Ready-to-finished same as cattle hides.(E)
	- Finished leather
	  - Aniline same as cattle hides (D,E)
	  - Conventional smooth aniline will be difficult to make due to grain defects.(D).
	  - Semi-aniline, same as cattle hides. (D.E)
	  - Corrected grain, mainly embossed type with limited quantities obtainable as smooth grain (D,E)
	  - Suede leather from buffalo on a commercial scale will be difficult to produce due to long fibers.(D).
	  - Good demand for industrial type of shoe upper leather (E).
	  - Heavy substance sole leather.
	- Substance for leather produced from buffalo hide would be comparatively higher to that of cattle hides and for chrome upper this could be achieved upon 3 mm.
	- Increased yield of splits estimated between 6 to 12 sq.ft. per hide. Lime splitting would increase the splits yield.

NOTE : - D = Domestic; and E = Export.

Annex 4A (Contd.)

Type of Raw Material	Type of Leather and Explanations
Goat Skins	- WBC, crust ready-to-finished both for grain and suede leather. Selection for suede will have to be done accordingly. (E). - Finished Leather: - Glace type shoe upper may be difficult to produce requiring better grain quality and advance technology. With the existing situation, tanneries should aim at producing improved quality shoe uppers such as imitation glace kid, smooth semi-aniline, and major inputs could go into the production of crushed grain softy shoe upper leather which has a good demand for the production of mocassion type of shoes. (E,D). - Lining Leather - Chamois Leather - Wooven Leather
Sheep Skins	- WBC, crust, ready-to-finished both as grain and suede leather. Selection for suede will have to be done accordingly. (E). - Finished Leather: - Mainly lining leather and some quantities could go into production of garment leather or shoe uppers. - Chamois Leather - Wooven Leather

ANNEX 4.B. : IDENTIFICATION OF PRODUCT-MIX, FOOTWEAR FROM LEATHER PRODUCED IN BURMA

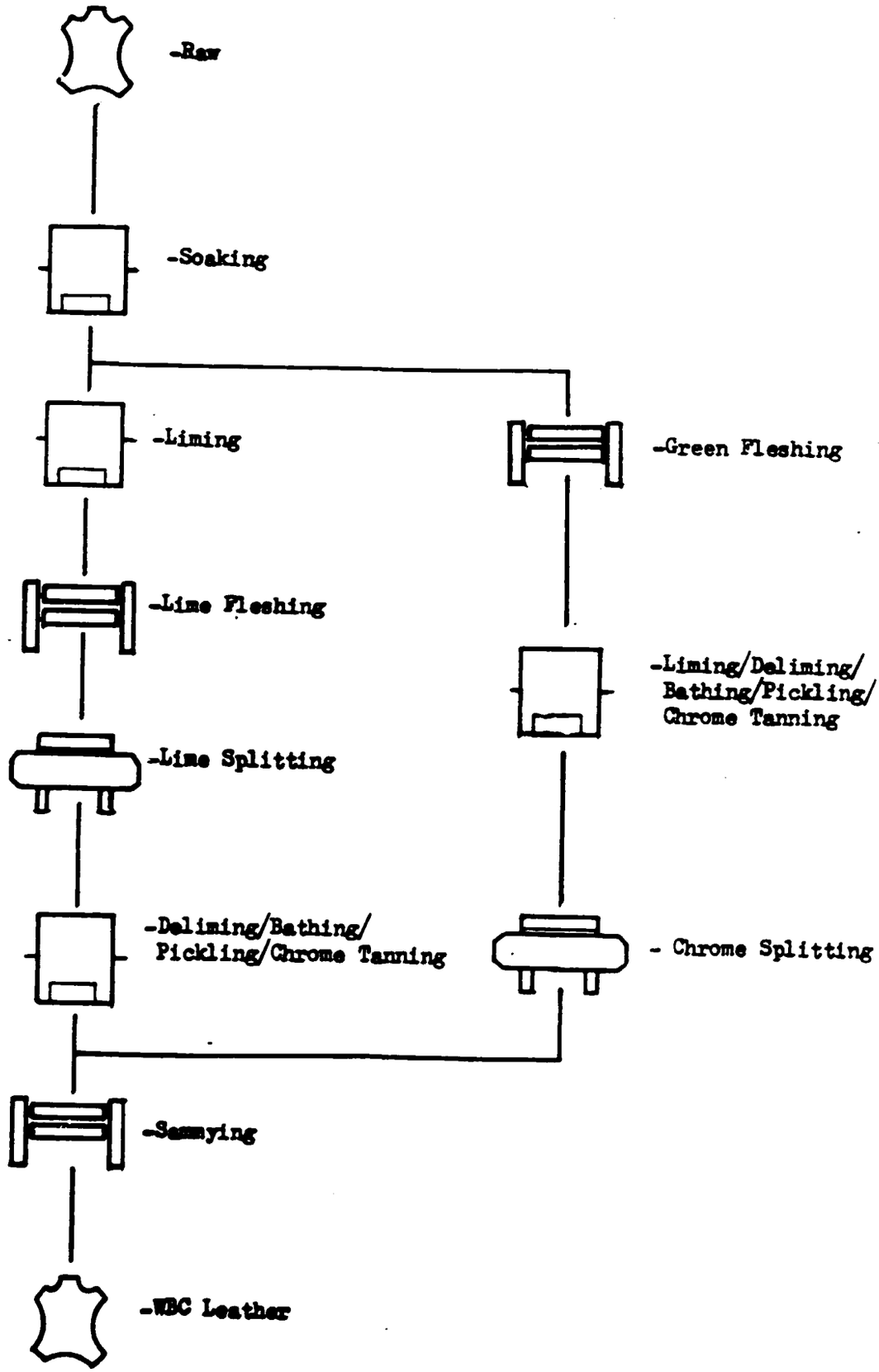
Estimated Population In Burma By Age Group			Identification of Footwear and Leather Goods Product-mix
Age Group	% (1984-85)	Number in Thousands	
0-14 years	37.07 M-37.51 F-36.64	13491 6769 6722	Sandals, slippers, sports shoes, school uniform shoes, slippers - school bags of various kinds.
15-59 years	56.31 M-56.21 F-56.40	20491 10145 10346	Sandals, slippers, sports shoe, uniform shoes of various kind, ladies open type fashion shoes, mocassin shoes for men, Army and Industrial boots, close type fashion shoes for ladies and men, ladies and men hand-bags and travel goods of various kind.
60 years and above	6.62 M- 6.28 F- 6.96	2410 1134 1276	Sandals and slippers of various kind, mocassin shoe for men and similar type of shoes for ladies, close type of shoes for men and ladies, ladies and men handbags and travel goods of various kind.

NOTE : - M = Men, F = Female } - Increase in Population over the previous years is estimated at 2.1 per cent.

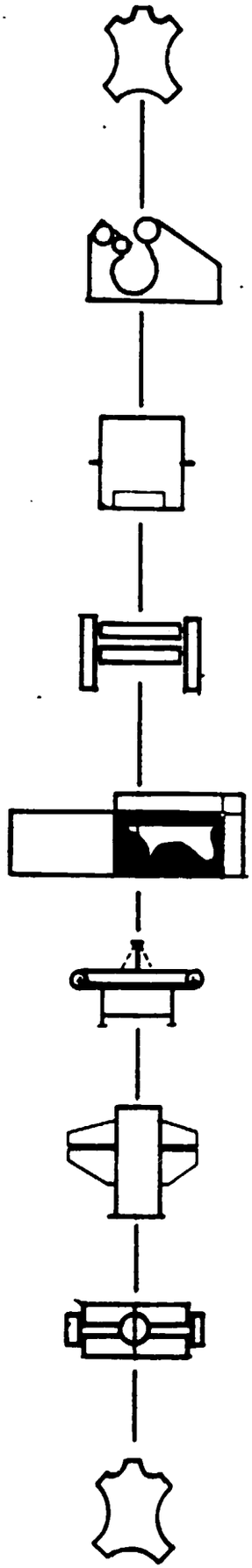
- **Export of prefabricated shoe uppers, pullovers should be considered, as such items have a good demand at present.**

ANNEX 5A : GENERAL PROCESS WORK FLOW-CHART

(a) WET BLUE CHROME (WBC) PRODUCTION



(b) CRUST (Ready to Finished Leather)



-WBC Leather

-Shaving

-Retanning/Dyeing

-Sammying/Setting Out

-Drying

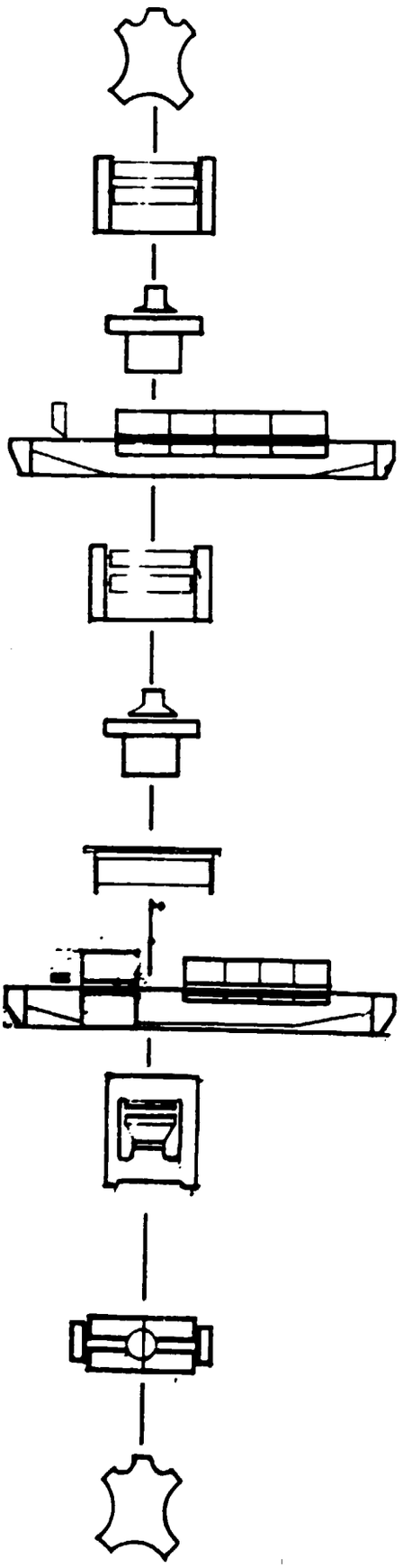
-Reconditioning

-Staking

-Measuring

-CRUST(Ready to Finished Leather)

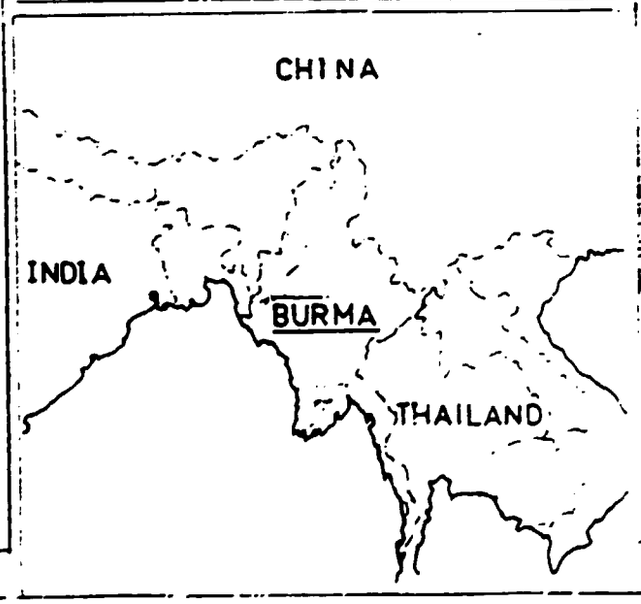
(c)FINISHED LEATHER PRODUCTION



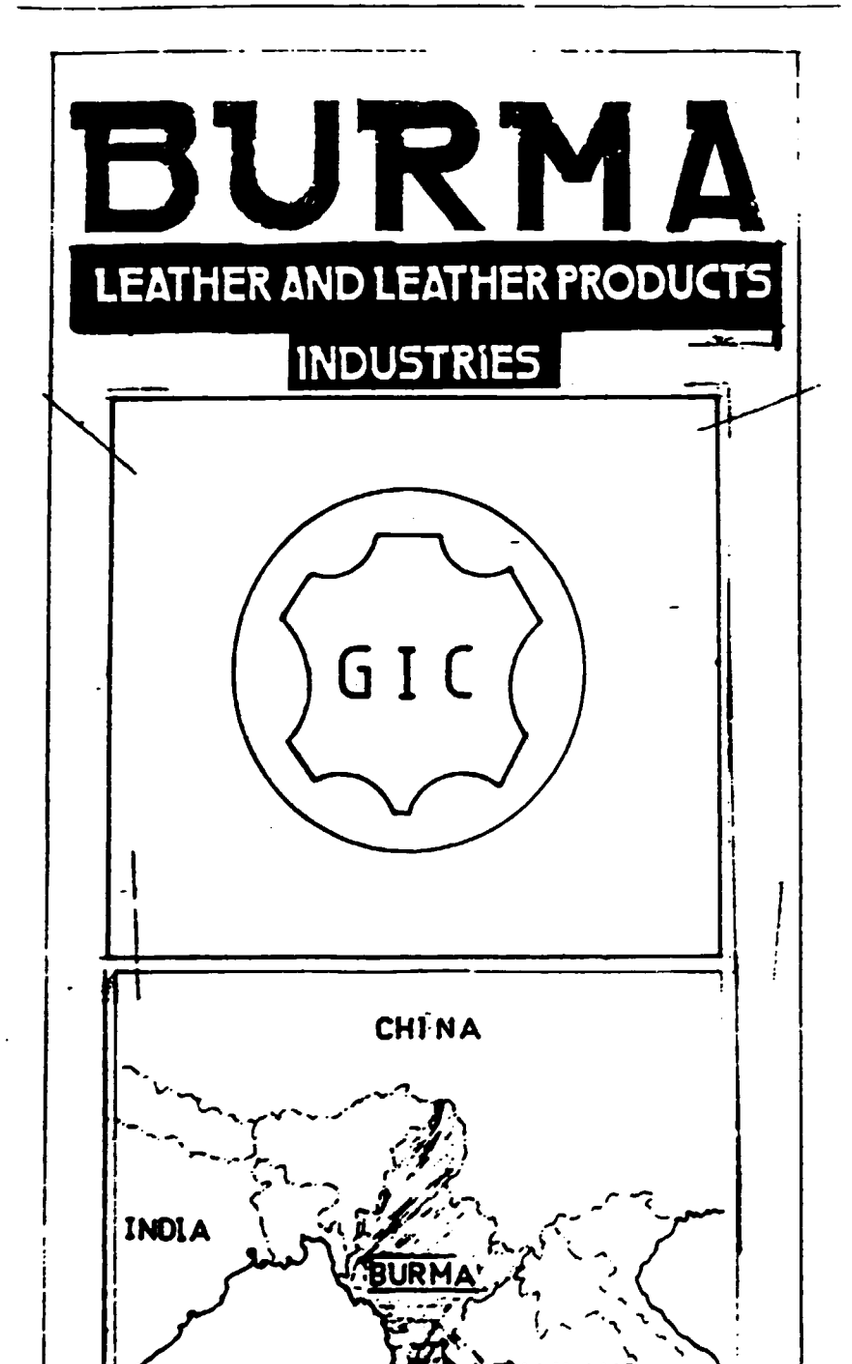
ANNEX 6A: Suggested Colour Brochure

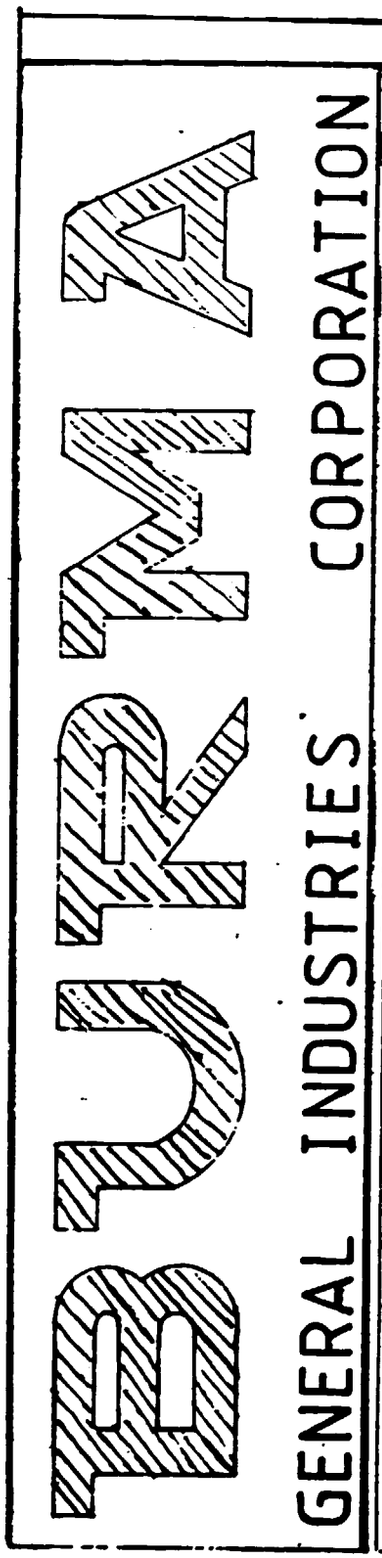
BURMA

LEATHER AND LEATHER PRODUCTS INDUSTRIES



ANNEX 6B: Suggested Colour Brochure





GENERAL INDUSTRIES
CORPORATION
PO BOX
RANGOON
TEL:
TELEX :

LEATHER FACTORY
RANGOON
TEL:

LEATHER FACTORY
MANDALAY
TEL:

PEOPLES' FOOTWEAR
FACTORY
INDAING
TEL:

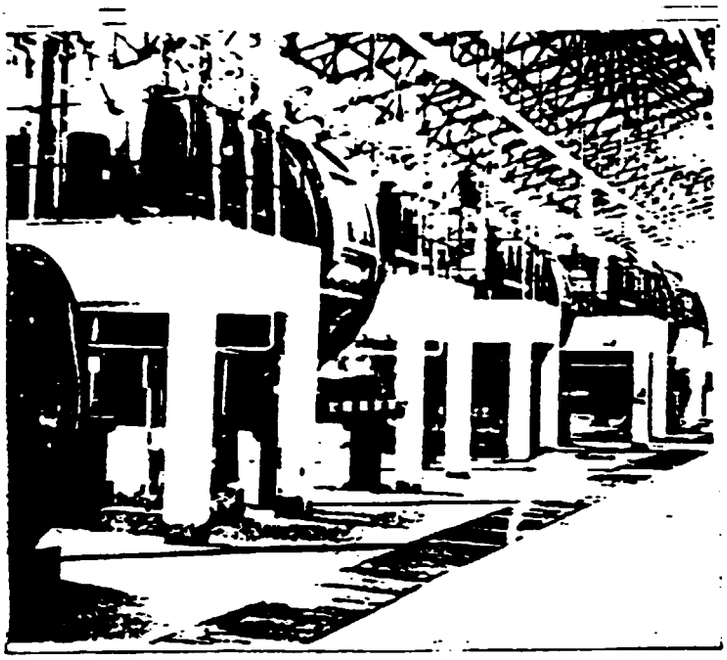
LEATHER GOODS
FACTORY
RANGOON
TEL:

RESEARCH AND DEVELOPMENT

Innovative work in the leather product area is likely to make a great contribution in small industrial development.

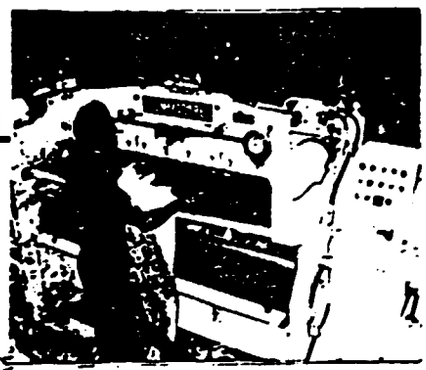
QUALITY

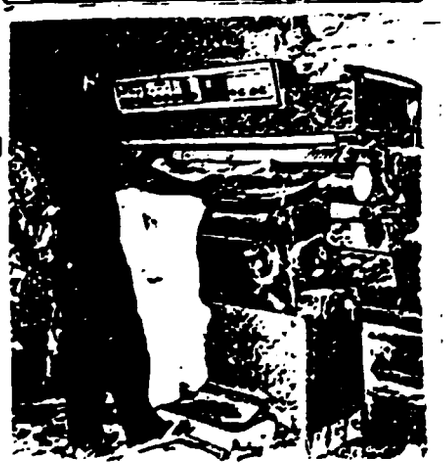
A massive quality control programme for leather products will ensure that world standards are being met.



SOURCE OF SUPPLY OF RAW MATERIAL

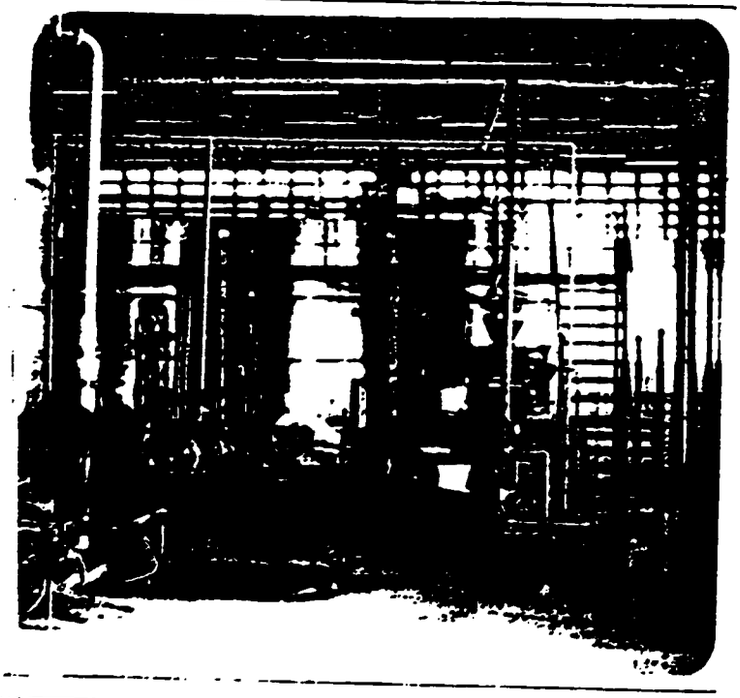
In common with other developing countries, Burma is turning its hides and skins into semi-processed and fully-finished leathers in its two modern, well equipped tanneries, each capable of handling bufallo hides, cattle hides, goat and sheep skins with a selection of finishes.





PRODUCTION

The production of fibreboard, shoes and other leather products is a rapidly developing area offering a variety of internationally styled goods suitable for overseas marketing.



PROCESSING

Each tannery is able to offer wet blue, crust and finished leather at competitive prices in the domestic and export markets