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Burma.

DEVELOPMENT CENTRE FOR LEATHER TECHNOLOGY (DCLT) ;)

DP/BUR/82/007

BURMA

Teminal report \*

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 Max G. Haecker,  
Leather Technologist, Chief Technical Adviser

United Nations Industrial Development Organization  
Vienna

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The following Reports are submitted for the Project DP/BUR/82/007: -

- I. Techno-Economic Report - DCLP, (including informations on 2 Site Areas.
- II. Marketing Report.
- III. Draft Project Document based on Site Area at LF (R) 1.

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- Concerned staff at the production plants.

EXPLANATORY NOTES

The following abbreviations have been used in the Report : -

DCLT	-	Development Centre for Leather Technology
NPD	-	National Project Director
GIC	-	General Industries Corporation
CTA	-	Chief Technical Adviser
LF(R)1	-	Leather Factory Rangoon No.1.
LF(R)2	-	Leather Factory Rangoon No.2.
LF(M)	-	Leather Factory Mandalay
LGF(R)	-	Leather Goods Factory Rangoon
PFF	-	People's Footwear Factory Initiating
PER	-	Project Evaluation Report
KYAT	-	Burmese Currency - 1 US\$ = 8.7 Kyats
M/M	-	Man Month
WBC	-	Wet Blue Chrome
CRC	-	Central Research Organization
RIT	-	Rangoon Institute of Technology
PRODOC	-	Project Document
Sq.ft.	-	Square feet
Pcs.	-	Pieces
L/C	-	Letter of Credit
E	-	Export
Lbs.	-	Pound weight
Kg.	-	Kilograms
1 Lakh	-	100 000
R&D	-	Research and Development
PPRS	-	Project Personnel Recruitment Section

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## 1. INTRODUCTION

The Government of the Socialist Republic of the Union of Burma requested assistance from the United Nations Industrial Development Organization (UNIDO) for the Project DP/BUR/82/007 asking for a Leather Technologist (CTA) for the planning of a Development Centre for Leather Technology (DCLT).

The United Nations Industrial Development Organization (UNIDO) was the executing agency and the General Industries Corporation (GIC) Ministry of Industry No.1. was the Counterpart.

A Leather Technologist with long time experience was requested for a four-months-mission from 28 May upto 8 October 1985.

- 1 month has been used for a Europe Study Tour with a Burmese Delegation of 3 persons, and
- 3 months stay in Burma.

In addition a Leather Marketing Expert has supported this mission from the 24 July upto 9 October 1985.

### 1.1. Duties Assigned to the Expert :

- To carry out a Technical Survey on the present status of the Burmese Leather and Leather Products Industry structure through visits to the various production plants, Government offices and Co-operatives.
- To accompany the Burmese participants during a Study Tour Programme to selected foreign countries and to a major Leather and Leather Products Trade Fair.
- To prepare in co-operation with the Marketing Expert and National Counterparts a Techno-Economic Report including the following main aspects : -
  - present situation in the Leather and Leather Products field;
  - domestic market development potential;
  - International Leather and Leather Products Market, and Burmese development possibilities within this market;
  - research and product development outline;

- organizational structure of the Development Centre for Leather Technology and the 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 separate entities according to the technical priorities and availability of funds.
- To prepare a draft project document for the establishment of the Development Centre for Leather Technology.

The Experts are also expected to prepare a Final Report, setting out the findings of the Mission and Recommendations to the Government on further action which might be taken.

## 2. ABSTRACT

Burma has his own Raw Hides and Skins resources. The availability of raw hides and skins is in excess to the production capacity of the Tanning Industry.

The presentation/flaying especially in the rural area is in need of improvement to save the National value of this high valuable raw materials.

The Government owned Leather Industry in Burma is processing approx. 33% of available Cattle - Buffalo hides and approx. 50% of Goat - Sheep skins in four factories.

The renovation in the two leather factories in Rangoon and now also at Mandalay is completed and the equipment for an up-to-date process technology has been installed.

The Leather Products Industry, with one Shoe Factory at Indaing and one well equipped Leather Goods Factory at Rangoon are still not receiving the leather quality required for the production of Shoes and various Leather Goods Items.

The leather quality for the local and export market is below standard and not according to international specifications and demands.

To improve the situation in all the production plants, DCLT is being planned to play an important part in the development of the Burmese Leather and Leather Products Industry.

It is considered that the DCLT is economically viable. Designs have been made of: site layout, pilot tannery, footwear and leather goods training centre, laboratory, lecture rooms, offices and workshop which includes detailed lists of the necessary machines and equipment. Estimates for building, equipment, auxiliaries, staff and also the operation budget for the first years are included.

Extension - Supporting and Training Services are planned in a scheme for the beginning years of DCLT existence; the total activities of DCLT are estimated to : -

- Extension Services	...	40%
- Supporting Services	...	40%
- Training Services	...	20%



3. STUDY TOUR CARRIED OUT TO SELECTED EUROPEAN COUNTRIES BY THE TEAM

- Participants : - 1. Mr. M.G. Haecker, CTA  
 2. U Soe Aung, Project Director  
 3. Daw Khin Myat Swe, Planning Engineer  
 4. U Min Lwin, Leather Technician

The following Training and Research Institutions as well as Production Units and Suppliers of Chemicals, Machinery and Auxiliary Materials related to the Leather and Leather Products Industry were visited : -

1. Study Tour in Federal Republic of Germany :

<u>Date</u>	<u>Name of Organization</u>	<u>Remarks</u>
28-5-85	Arrival Frankfurt - Germany.	
29-5-85	Hoechst (Frankfurt)	Chemical Industry.
29-5-85	Mueller & Kurth OFFENBACH/MAIN (Frankfurt).	Machines for Leather Goods.
30-5-85	Bayer (Leverkusen)	Chemical Industry.
30-5-85	Dynavac	Tannery Machine Factory.
31-5-85	B.A.S.F.(Ludwigshafen)	Chemical Industry.
3-6-85	Dose (Lichtenau)	Steel Drums Factory.
3-6-85	Pirmasens Shoe Institute (Pirmasens)	Research and Training Institute.
3-6-85	Gebrueder Frank (Pirmasens)	Shoe Machine Factory.
4-6-85	Pirmasens Shoe Institute	Research and Training Institute (Testing Laboratory).
4-6-85	Schoen and Cie GmbH (Pirmasens)	Machine Factory for Shoe Industry.
4-6-85	WSK Fritz Werner GmbH (Schweix-Pirmasens)	Press and Punching Machine Factory.
5-6-85	Otto Specht (Stuttgart)	Leather Testing and Laboratory Equipment.
7-6-85	Moenus Turner (Frankfurt)	Tannery Machine Factory.
7-6-85	Kela (Frankfurt)	Tannery Machine Factory.(Molissa Staking Machine). (Shoedel Staking Machine).

2. Study Tour in United Kingdom :

<u>Date</u>	<u>Name of Organization</u>	<u>Remarks</u>
10-6-85	Cordwainers Technical College (London).	College for Leather Goods Design Making.
11-6-85	Satra (Kettering)	Producers of Physical Leather Testing Machines and Research Institute.
12-6-85	Nene College (Northampton)	College for Leather Technology.

3. Study Tour in Austria :

<u>Date</u>	<u>Name of Organization</u>	<u>Remarks</u>
17-6-85	"UNIDO" Vienna International Centre (Vienna) .	Discussion about the programme in Austria and Italy.
18-6-85	Leather Institute (Vienna)	Research and Training Centre for Leather Technology.
19-6-85	"UNIDO" Vienna International Centre (Vienna).	Discussion for the establishment of DCLT.

4. Study Tour In Italy :

<u>Date</u>	<u>Name of Organization</u>	<u>Remarks</u>
21-6-85	Mostardini (Empoli)	Tannery Machine Factory (measuring machine).
21-6-85	Conceria Euro (S'croce)	Tannery (WBC).
21-6-85	" Pallermo	Tannery.
21-6-85	" Mascagni	Tannery.
24-6-85	Billeri Riccardo and Figli (Empoli).	Tanning Drums Factory.
24-6-85	Mattercci Adolfo	Tannery (Sole - Leather).
24-6-85	Conceria Legnotan (Fonte a Egola).	Tannery.
24-6-85	Conceria Marca Toro	Tannery (Sole - Leather).

Study Tour in Italy (Contd.) :

<u>Date</u>	<u>Name of Organization</u>	<u>Remarks</u>
24-6-85	Conceria Italcromo (Ponte a Egola).	Tannery.
24-6-85	Illo Italiana SRL (S'Croce).	Chemical Industry (Finishing).
24-6-85	Conceria Tibet	Tannery (Pig Skins).
25-6-85	Gozzini	Tannery Machine Factory.
25-6-85	Conceria Spaccatrice	Tannery.
25-6-85	" Alefant	Tannery.
25-6-85	" Gragnoli	Tannery.
25-6-85	" Stampel	Tannery.
25-6-85	Effluent Treatment Plant (S'Croce).	
28-6-85	Departure Rome/Italy.	

The above-mentioned Study Tour was extremely valuable to the Burmese participants as visits covered a broad based areas of the Leather and Leather Products Industry. The Team was well received, as well as organizations visited provided all informations needed for the participants.

During the time of the Study Tour there had not been any Leather or Leather Products Trade Fairs, which could have been visited.

### 3.1. Technical Survey :

The Expert has been in Burma on a four-months-mission from November 1984 till March 1985, under SI/BUR/84/802.

- During this time the Leather, Footwear - Leather Goods Industry as well as the slaughter house Rangoon, CRO, RIT and corporations have been visited to get full information regarding the status of livestock, availability of raw hides and skins, production capacity of the production plants, the quality of leather at various stages of the production as well as the final quality of leather products. The results of this market survey are still valid for the present mission, DP/BUR/82/007 from May up till October 1985.
- This survey also has given a good knowledge required for planning the "Development Centre for Leather Technology" (DCLT) as an independent operating "National Centre" as requested by the Government.

### 3.2. Activities

For the preparation of 2 Draft Project Document of DCLT at different site areas, a detailed machine and equipment list has been established. As planned for every section a separate and specified, import and local available items have been listed in 27 pages.

The basic prices for the import items has been taken from latest proforma invoices or telex offers which had been received after they had been requested during the Study Tour. Local available items have been noted according to counterparts information. For the machines, main spares for 1-2 years have been considered by adding 10% of the machine value.

The Techno-Economic Report has been prepared containing all the required informations for the establishment of DCLT, at the site area in the LF(R)1 compound, and also at a site area outside Rangoon independently. Also including its project activities and modalities of implementation, details regarding extension, supporting and training services, cost of investment, UN and Government Inputs, operation cost for the beginning five-years and layout plans.

To this date no information has been received from the Government for a site area where DCLT will be located.

## 4. FINDINGS

### 4.1. The Leather Industry in Burma :

Under the direct control of the General Industries Corporation (GIC), Ministry of Industry No.1 are indicated below the following factories : -

- LR(R)1, one of the most modern equipped medium size Leather Factory at Rangoon.
- LF(M), one new renovated medium size Leather Factory with up-to-date modern equipment at Mandalay.
- LF(R) 2, a cottage industry type of factory at Rangoon.
- LF. Bassein, a cottage industry type of factory at Bassein.

### 4.2. Availability of Raw Hides and Skins :

According to the livestock population and the killing during one year, in average : -

- Cow/Buffalo hides	...	341 600
- Goat/Sheep skins	...	511 000

should be collected and available for all the tanneries in the country.

A considerable quantity of hides and skins are not reaching the four Government owned factories. Some may be used by the private rural tanneries, but still there are too many which are not accounted for.

#### 4.3. Production Capacity :

The four Government owned Leather Factories together have an installed production capacity per year for producing : -

Cow/Buffalo hides for shoe upper leathers	...	160 000	pcs
" " " " sole leathers	...	26 670	"
Goat/Sheep skins	...	200 000	"
Splits from WBC	...	800 000	sq.ft.

It is estimated that approx. 33% of cow/buffalo hides available in the country, and approx 50% of the goat/sheep skins are being processed in the above-mentioned four Government factories.

#### 4.4. Leather Quality

The Leather quality for the local and export market is below standard and not according to the international specifications and demands. Also, there has been some all round improvement during the last month.

#### 4.5. Leather Products Industry :

##### - Footwear :

The People's Footwear Factory at Indaing (PFF) is the only shoe factory in the country, producing approx. 262153 pairs of leather combat and other leather shoes per year. The demand for leather combat shoes is increasing, like : -

<u>Production figures/pairs</u>	<u>1980</u>	<u>1984</u>
Combat Shoes	194 493	257 701
Leather Footwear	32 839	4 452
	<u>227 332</u>	<u>262 153</u>
	*****	*****
		+ 34 821
		(15.32%)

This Factory has a limited capacity, using very old out-dated machines.

According to informations, a new Shoe Factory is in the planning stage.

- Leather Goods :

The only one Leather Goods Factory (LGF/R) at Rangoon is a well equipped factory which has been renovated only four years ago. Present production : -

- approx. 240 000 pairs of industrial gloves  
from chrome tanned splits/textiles.

This production is much below the installed capacity. The required leather quality for the production of other leather goods is not available.

4.6. Qualified Manpower

The Leather and Leather Products Industry is suffering heavily as the required trained and qualified manpower is not available.

The Technology in the tanneries is still too much based on the cottage or rural type of working methods.

During the last 20 years no technical staff personnel has been sent out of the country for full training courses.

There is also insufficient experience with the upto date chemicals and development in the International Leather and Leather Products Industry and markets.

4.7. Marketing

Details have been mentioned in the enclosed marketing report.

## 5. SUMMARY OF RECOMMENDATIONS :

- Burma has its own raw material, raw hides and skins, resources and is not depending on supplies-imports from other countries. These resources are very high national and should be fully utilized.
- Priority should be given to improve the flaying - preservation and the collection of raw hides and skins all over the country. All these proper treated - preserved raw materials must reach the tanning industry for further processing into higher valuable items of leather products. Good quality raw materials are the foundation for a good leather quality.
- The availability of raw hides and skins is much in excess compared to the production capacity of the a tanning industry. The expansion of the leather as well as the leather products industry should be planned in time and in proportion to the increasing availability of raw hides and skins. One or two new leather factories will be required during the next 3 - 5 years.
- Quality improvement in the tanning industry by implementation of strict process and quality control for the production of various types of leather upto the international standard and specifications should be followed. The improved leather quality is urgently required in the footwear and leather products industry for the production of quality leather items for the export and local market.
- The only shoe factory at Indaing which is working with very old out-dated machines and not economical should be renovated.
- To reach the above target for all round improvement, the training of manpower in all the leather and leather products industry is very essential. Priority should be given for training higher level technicians.
- The establishment of the DCLT is already over due for several years. DCLT as a national centre is very important to engage in quality-development-extension supporting and training services in close co-operation with the production plants and marketing. DCLT will be well equipped with up-to-date machinery for any kind of R&D work. DCLT should operate on non profit making basis, allowing the related industry to take full use of the centre.

- DCLT should be at least during the beginning years of operation a centre according to its name "Development Centre for Leather Technology". Earlier or later it may be used also as a "pilot production centre" utilizing the available machines. Any production however should not interfere or reduce the quality of R&D or actual activity of DCLT.
- The DCLT planned as an independent operation centre, as requested by the Government of Burma, is based on the actual needs and size of the related industry in Burma on long-term investment for the future.
- Qualified and well trained technical staff should be available to operate DCLT successfully at the time of initial functioning in August - September 1988.
- Finally, the aim of the DCLT should be to reach the all round improvement target in the leather and leather industry after 5 years of operation and the final goal another 3 - 5 years.
- Exhibition of Burma leather - leather products at International Fairs should be organized in the similar way as done for the first time at the 40th UN Anniversary Exhibition at Rangoon in October 1985.
- For improvements on the marketing side, detailed informations have been given in the enclosed marketing report.