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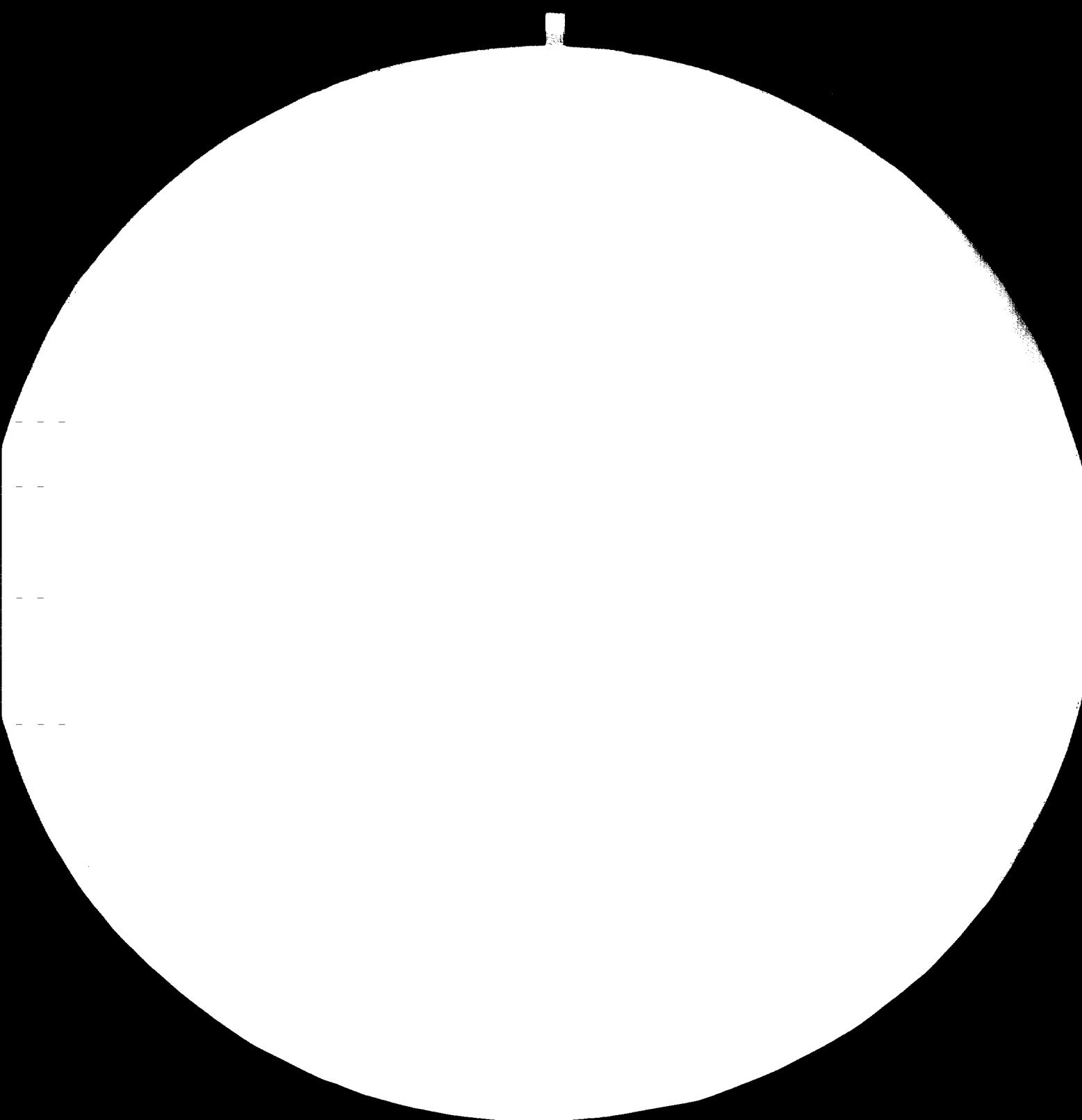
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LEATHER GARMENT MANUFACTURING
SI/ETH/77/801
ETHIOPIA

Technical report: Development of leather goods and
garment manufacture

Prepared for the Government of Ethiopia
by the United Nations Industrial Development Organization,
executing agency for the United Nations Development Programme

Based on the work of Karen Hellemaa, leather products and
garment manufacturing consultant

United Nations Industrial Development Organization
Vienna

Explanatory notes

References to dollars (\$) are to United States dollars.

The monetary unit in Ethiopia is the birr (Br). There are 100 cents to 1 birr. During the period covered by the report, the value of the birr in relation to the United States dollar was \$1 = Br 2.05.

Amounts of leather are given in square feet (ft²; 1 ft² = 0.09 m²) or as number of pieces.

E.C. is the Ethiopian Calendar. Ethiopia uses its own solar calendar. Equivalent years are given in brackets i.e. 1969 E.C. (1976/77). The fiscal year in Ethiopia runs from 11 September to 10 September.

The following abbreviations of organizations are used in this document:

EDDC	Ethiopian Domestic Distribution Corporation
HASIDA	Handicrafts and Small-Scale Industries Development Agency (MOI)
MOI	Ministry of Industry
NLSC	National Leather and Shoe Corporation
NPC	National Productivity Centre (MOI)
PPPD	Project, Planning and Policy Department

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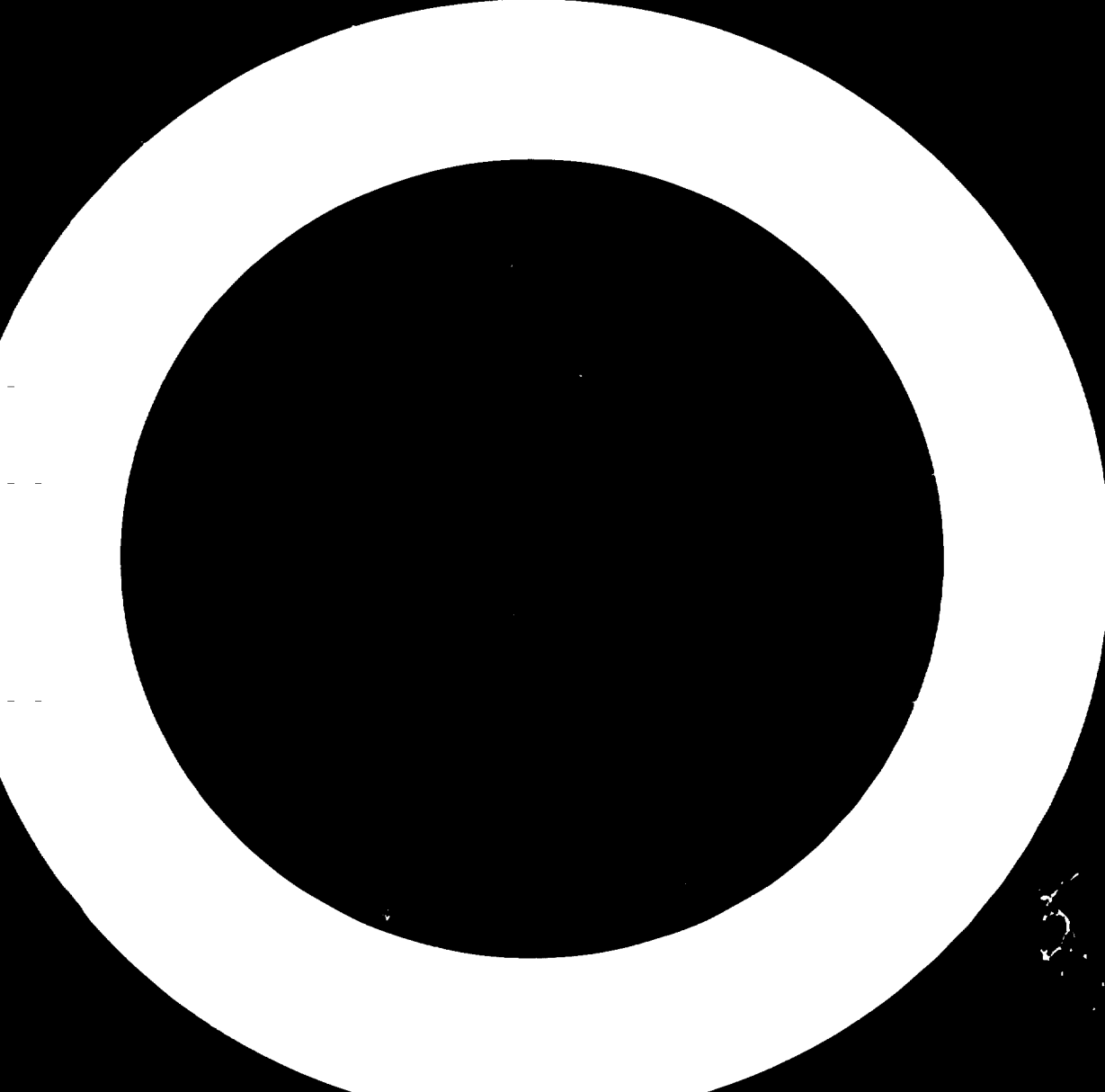
ABSTRACT

The United Nations Development Programme (UNDP) project "Leather garment manufacturing" (SI/ETH/77/801) was carried out in Ethiopia by an expert of the United Nations Industrial Development Organization (UNIDO), executing agency.

The object was to explore the possibility of establishing a leather products and garment industry in Ethiopia. The mission lasted three weeks, from 12 March to 3 April 1979. Ethiopia has the largest hides and skins resources of all African countries and thus the potential for developing a sound leather and leather products industry. At present only raw and semi-processed hides and skins are exported and, although these are already Ethiopia's second largest foreign exchange earner, the development of a consumer goods industry would not only maximize the value of Ethiopia's leather resources but also would create employment opportunities. Ethiopia has yet to enter the world leather products market, but the expert considers it both feasible and very important for Ethiopia to develop a finished leather goods industry as soon as possible.

The expert recommends a cautious beginning with a factory capable of producing around 60,000 units per annum. Initially the industry would aim to meet the needs of the domestic market, and would gradually build up its skills, experience, confidence and contacts with foreign buyers so that it could increase production and expand into the export market.

Proposals for follow-up missions to Ethiopia by two further experts, and for the training of personnel to work in the leather products and garment industry in Ethiopia are also made.



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INTRODUCTION

The United Nations Development Programme (UNDP) project "Leather garment manufacturing" (SI/ETH/77/801) was carried out in Ethiopia by an expert of the United Nations Industrial Development Organization (UNIDO), the executing agency. The mission lasted three weeks, from 12 March 1979 to 3 April 1979.

The purpose of the project was to explore ways and means of exploiting the country's available potential in the manufacture and marketing of leather goods, including leather garments, particularly for export.

Ethiopia has the largest resources of hides and skins of all African countries, and raw hides and skins constitute one of the most important items in Ethiopia's export trade, second only to coffee as a foreign exchange earner. However, although the European export market is believed to be promising, little is exported in a finished or semi-finished state. The possibility of exporting semi-finished leather is fully recognized, but the expert was required to examine whether greater benefits could not be achieved through adding value to semi-finished and finished leather by setting up further leather product manufacturing plants, including a leather goods and garment factory.

The output of the Ethiopian tanneries mostly goes to satisfy the demands of domestic shoe factories, whose shoes, and the few other leather products manufactured, are not exported. Since the opening of a new government-owned tannery in 1976, Ethiopia's tanning capacity has almost doubled so that plentiful raw materials are available for the development of a leather goods manufacturing industry.

As originally proposed, this project was to include a three-month mission in the following stages:

(a) An initial period of six weeks in Ethiopia to assess the existing situation and potential of leather goods and leather garment manufacture in the country;

(b) A visit of three weeks, together with a national counterpart, to selected countries in Europe to survey market reactions to products manufactured from locally produced leather and to analyse the demand for such products in foreign markets;

(c) A final period of about three weeks in Ethiopia to complete the study and make final recommendations for the implementation of the project.

However, it was not possible at the time for any one expert to carry out all three stages and the present report covers a three-week mission of an expert who undertook to carry out the first stage (a) of the proposed three-month project.

It is intended that the two remaining stages will be covered by follow-up missions by two further experts, a leather products and garment technologist, and a leather products and garment marketing expert. The terms of reference for those two experts, together with details of those parts of the project remaining to be carried out, are given in annexes I and II.

The expert worked in close co-operation with Ato Bacry Yusuf, head of the Planning and Research Department of the National Leather and Shoe Corporation (NLSC), who was the national counterpart.

I. FINDINGS

A. Background information

Raw material availability and supply

The livestock population of Ethiopia is estimated at 26 million cattle, 24 million sheep, and 18 million goats. Using estimated annual offtake (slaughter) rates of 7 per cent for cattle and an average of 35 per cent for sheep and goats, the estimated annual production of hides and skins is 1.9 million hides, 8.0 million sheepskins and 7.0 million goatskins. However, the effective supply, which means those hides and skins which actually reach the market, is given as only 819,000 hides and 11 million skins (sheepskins and goatskins together). The rest, some 1.1 million hides and some 4 million skins, are partly used in rural areas and partly unaccounted for (including those smuggled to neighbouring countries as on-the-hoof livestock or as hides and skins).

Actual utilization of hides and skins

During the fiscal year 1969 E.C. (1976/77), the quantities industrially processed within Ethiopia were 236,000 hides (or 29 per cent of the effective supply) and 3.1 million skins (or 28 per cent of the effective supply). The rest of the effective supply was exported in the raw state, namely, 583,000 hides and 7.9 million skins (sheepskins and goatskins together). The processing capacity of local tanneries, estimated at some 600,000 hides and about 7.8 million skins, was utilized in 1969 E.C. (1976/77) only to approximately 40 per cent. This means that some 60 per cent of available production capacity was left unutilized.

Market outlets

At present, exports within this sector consist of raw hides and skins, pickled skins, and hides and skins in wet-blue and crust state. Some ready-to-finish skins are also exported but there is no export of leather products at all. Ethiopia's annual earnings from the export of hides and skins are around Br 50-60 million in foreign exchange.

The demand of the domestic market for finished leather is still very limited. For the fiscal year 1970 E.C. (1977/78) the market's demand for leather footwear was estimated at only 1.8 million pairs, for which it is estimated that some 4.3 million square feet of upper leather would be required.

At present there is a shortage of raw material in the tanneries because demand for raw skins and hides in Europe has grown rapidly, and Ethiopia has met this need by increasing its exports of raw hides and skins. This is obviously commercially not as advantageous as exporting already processed goods. Hence, although there is a plentiful supply of raw material, the under-processing of this raw material is one of the problems the government wishes to tackle in the development of this national industry.

Steps have been taken to improve both the methods of collection and the quality of skins and hides, and because of this an expansion in total production is expected. This in turn means that greater attention will have to be given to marketing the processed hides, skins and leather products.

B. Existing leather industry

NLSC runs eight tanneries. Table 1 lists these tanneries, their location, capacity and the type of leather produced in each.

Table 1. Annual production capacity of NLSC tanneries.
Leather sub-sector

Establishment	Hides (pieces)	Stage of processing	Skins (pieces)	Stage of processing	Location
Ethiopian tannery	360 000	Up to finishing	1 800 000	Up to finishing	Edgersa (Modjo)
Awash tannery	90 000	"	1 200 000	Pickle	Adais Ababa
Modjo tannery	-	"	900 000	Wet-blue and crust	Modjo
Ethiopian pickling	-	"	900 000	Pickle	Addis Ababa
Tannery of Addis Ababa	120 000	"	900 000	Pickle	Addis Ababa
Asmara tannery	-	"	1 200 000	Pickle	Asmara
Qey Bahir tannery	35 000	"	900 000	Wet-blue	Asmara
Combolchia tannery	-	"	900 000	Wet-blue	Combolchia
Total	605 000		8 700 000		

Source: NLSC.

The tanneries give a very favourable impression both with regard to production and to the quality of leather, which is acceptable for both domestic leather products and garment manufacturing, and for the export industry. However, despite the fact that the tanneries, and in particular the Ethiopian Tannery, are fully equipped to produce a good quality finished leather from cattle hides and sheep and goat skins, only semi-processed leather is at present exported. The obvious reason is that the Ethiopian leather industry has not sufficiently penetrated the sophisticated world export markets, although considerable efforts to boost the export trade have been made since nationalization in 1974.

It is reported that the consumption of finished leather by the leather shoe industry will grow to a level of some 7.5 million square feet by 1985. In addition to this, it is expected to implement a project for the manufacture of about half a million pairs per annum of ready-made shoe uppers, mainly for export.

The targeted production of finished leather within the tanneries should easily cover the present proposal to set up a leather goods and garment unit. The expert spent a considerable time inspecting the quality of finished leather at the Ethiopian and Awash tanneries. Findings are given in table 2.

Table 2. Size and quality of finished leather

Type of leather	Average dimensions of side or piece		Remarks
	Area (ft ²)	Thickness (mm)	
(a) <u>Hides</u> (bovine)			
Shoe upper leather	12	0.3-2.4	Good cutting value and good grain, mainly corrected, seen in black and brown colours. No problem in the production of several fashion shades. Suitable mainly for school bags, brief-cases, suitcases, belts and, with modifications in tannage and substance utilized, for handbags, key and coin holders etc.
(patent finished)	3-10	0.3-1.2	

Table 2 (continued)

Type of leather	Average dimensions of side or piece		Remarks
	Area (ft ²)	Thickness (mm)	
Vegetable tanned leather	10-12	varies, sold by weight	Unsuitable for leather goods unless produced at lower substance using better raw material.
Suede as hunting butts	14	1.8-2.2	Special types of handbags, belts and other fashion articles suitable without lining. No problem in production of fashion shades.
Splits	3.5	0.6-1.6	Ethiopian hides of thinner substance compared to heavier grain leather required by some markets. These splits should be used for industrial gloves and aprons, and the possibilities for garment production be explored.
(b) <u>Skins</u> (goat and sheep)			
Garment leather (mainly from sheepskin)	4.5	0.5-1.0	Finished leather seen mainly from lower end of wet-blue export line, (used for the local market). Grading seems to be rather strict and overall quality is suitable for the export market. Only nappa is produced but suede-side looked ideal for garment suede production. Fashion shades no problem. Seen in black, green and brown colours. Could also be used for handbags and similar items.

Table 2 (continued)

Type of leather	Average dimensions of side or piece		Remarks
	Area (ft ²)	Thickness (mm)	
Shoe upper leather (sheep and goat skin)	4.5 (sheep) 4.0 (goat)	0.8-1.6	Inspected mainly crushed-grain leather produced from lower end of wet-blue production as full grain, semi-aniline and some heavily covered. Consider quality good and ideal for production of various fashion shades.
Lining leather (sheep and goat skins)	4.5 (sheep) 4.0 (goat)	0.15-1.0	Very good quality. This material, if finished into various types of leather, could be used for the production of leather goods.

The prices obtained locally for these goods are given in annex IV.

Once the leather goods and garment unit is established, an important factor that the tanneries will have to consider is maximizing their efforts to meet fashion trends, including colours and types of finishes as well as maintaining a consistent standard of quality control.

Detailed test results carried out on various types of leather from different tanneries are given in annex V (A and B).

C. Existing shoe industry

Six shoe factories are operated under the direct control of NLSC. These are listed below, with their capacity on a single-shift basis and the types of articles produced.

Table 3. Single-shift production capacity of NLSC shoe factories.
Shoes sub-sector

(Number of pairs of shoes)

Establishment	Leather	Canvas	Plastic	Location
Anbassa Shoe Factory	1 200	-	-	Addis Ababa
Tikur Abay Shoe Factory	1 200	-	-	"
Ethiopian Rubber and Canvas Shoe Factory	-	2 000	-	"
Total Addis Ababa	2 400	2 000		
Dahlak Shoe Factory	800	1 300	3 300	Asmara
Eritrea Shoe Factory	1 200	-	-	"
Ethiopian Footwear Factory	300	300	1 300	"
Total Asmara	<u>2 300</u>	<u>1 600</u>	<u>4 600</u>	
Total shoes	4 700	3 600	4 600	

The shoe production from the above plants caters for domestic needs and still does not satisfy requirements in Ethiopia. It is expected that the demand for leather shoes will grow to three million pairs by 1985 which represents a 50 per cent increase on recent years. Shoes produced in Ethiopia are of good quality but do not meet the demands of markets abroad. This is partly due to a lack of awareness of fashion trends and also to an absence at present of the skills needed for the more sophisticated production line aimed at the export market.

NLSC shoe production is sold on the domestic market as follows:

- (a) All rubber, canvas and plastic shoes from the Addis Ababa and Asmara plants are sold through the Ethiopian Domestic Distribution Corporation (EDDC);
- (b) All sales of leather shoes from the Asmara plants are done through a wholesale distribution shop at Addis Ababa, catering for merchants and traders. Plans are underway to establish a retail shop at Asmara;
- (c) All Addis Ababa shoe plants have their retail shops in Addis Ababa which in addition distribute to merchants on a wholesale basis.

All the above kinds of shops carry some types of leather goods and articles that are produced within their own plants. In addition, a separate shop has been opened recently to sell all the leather products from the Awash Tannery Leather Goods Workshop.

D. Existing leather products and garment sub-sector

The present production of leather goods and garments is basically on a very small scale. It consists of the unit which is attached to the Awash Tannery and others privately owned in Addis Ababa and the Asmara area.

For this study, export possibilities have been closely looked into, the facilities that are available at the Awash Leather Goods Workshop were examined, and an analysis of their production was made. The expert also provided some of her own leather goods samples from which workmen prepared prototypes that were acceptable. The above workshop employs about ten people and has an annual turnover of birr 780,000 to 1,242,000, depending upon the product-mix they make. This workshop came into operation with the idea of utilizing the splits from the tannery for the manufacture of industrial gloves and aprons, and gradually developed the present production of various other items listed below.

Table 4. Production of the Awash Tannery Leather Goods Workshop (1978)

Item	Quantity (Number of units)	Approximate price per unit (Birr)
Bags	-	50
Coin purses	-	1
Briefcases	169	60
Wallets	297	12
Industrial belts	-	3
Key-holders	1	3
Belts	1 176	14
Industrial gloves	16 777	12
Aprons	24 967	28

The Awash workshop recently opened a new sales shop in the centre of Addis Ababa and this has become very profitable as far as leather articles are concerned. Similar products sold in other parts of Addis Ababa cost nearly 2 to 4 times as much.

The Awash workshop lacks proper production planning and the ability to adapt its product-mix flexibly to demand and maximum profitability. It would be essential to establish a proper industrial production line to produce leather goods for the domestic market.

The same is true for the production of leather garments for which there is an increasing demand in Ethiopia, both among Ethiopians and among the expatriate community. At present, this demand is catered for by small tailoring shops in Addis Ababa who ask high prices and have long delivery times.

E. The demand for leather goods in Ethiopia

A very useful survey carried out by NLSC's Planning and Research Department on production, sales, imports and exports of leather products reveals useful data for this study as indicated in table 5.

Table 5. The demand for genuine leather goods

(Number of pieces sold per year)

Item	1971	1972	1973	1974	1975	1976	1977	1978
Hand-bags	11 180	6 860	7 110	7 310	7 310	7 470	36 910	8 660
Flat goods	24 710	29 070	17 960	16 540	18 750	23 180	45 440	27 610
Belts	144 980	153 660	186 560	170 050	199 960	187 610	220 440	200 750
Industrial gloves	4 610	9 880	84 050	5 410	25 100	13 240	23 050	16 780

Source: NLSC.

Imports of non-genuine leather goods are given in table 6.

Table 6. Imports of major categories of leather and non-genuine leather goods

(Number of pieces per year)

Item	1971	1972	1973	1974	1975	1976	1977	1978 (Jan-Nov)
Hand-bags	131 110	355 765	113 942	42 914	201 546	32 717	730 267	587 188
Luggage	111 682	92 830	218 264	138 321	66 977	57 523	114 100	44 401
Flat goods	119 988	291 223	294 770	159 545	161 679	77 590	8 474	-

Source: NLSC.

The figures in tables 5 and 6 suggest that domestic production is insufficient to meet the growing demand for leather goods in the home market, and that increased production of finished leather goods in Ethiopia could replace many of the articles at present imported.

Further studies should also be made into the possibility of expanding the proposed leather goods manufacturing unit to produce goods from artificial leather and synthetics which again would replace articles at present imported.

II. RECOMMENDATIONS

A. Leather goods manufacturing unit

This production unit should be set up as there is very considerable scope both in the domestic and in the export markets. However, the project requires careful assessment.

The expert recommends that, in the first stage, a leather goods and garment factory with a capacity of around 60,000 units per annum should be established.

A comparison of present imports with present domestic production might suggest that a factory with a larger production capacity would be feasible. However, this industry needs time to develop its own internal skills as well as its markets abroad and the initial stage should be approached cautiously. The recommended capacity of 60,000 units per annum would be realistic. The unit would be compact to control and could be used as a launching pad for later expansion into the export market.

B. Suggested product-mix

The following product-mix is suggested for the factory, based on the present supply and demand position:

Table 7. Suggested product-mix

Type of article	Production per annum	
	Thousands of units	Per cent
Handbags	9	15
Flat goods	12	20
Industrial gloves	30	50
Other leather goods	<u>9</u>	<u>15</u>
Total	60	100

Leather belts, seen as a major item produced and marketed in Ethiopia, should be taken as a separate, vertical production line. Leather garments are included under other leather goods above and it is recommended that three simple designs each for men and women would be sufficient to start with.

In arriving at the product-mix requirements, considerable assumptions are made which include the amount of leather used for the manufacture of various items as listed below.

Table 8. Amount of leather used for various leather goods

Item	Product-mix (per cent)	Amount of leather used (ft ² per item)
Handbags	50	10
Flat goods	10	0.5
Belts	30	0.3
Industrial gloves	10	2.0

Source: NLSC .

C. Raw material availability

The present consumption of finished leather in both industrial and small-scale units is about 4 million square feet from bovine hides. It is expected that this will grow to 7.6 million by 1985. Using the projections prepared by NLSC, the surplus availability of finished leather by 1985 will be 3.5 million square feet from hides and 6 million from sheep and goat skins. This clearly indicates that a major part of the raw material requirements for the leather products and garment industry will be available in Ethiopia.

However, the expert also studied the requirements for auxiliary materials such as buckles, locks etc., which are at present imported from France and Italy. As these materials constitute a significant part of the cost in leather goods production, the possibility of manufacturing these items locally should be urgently explored. The Handicrafts and Small-Scale Industries Development Agency (HASIDA) is one of the organizations that might undertake this.

D. Follow-up project activities

The present project

The terms of reference of this project originally envisaged a three-month mission in three stages, as described in the introduction. The present report is the result of a three-week mission in Ethiopia (plus one week in transit) which basically covers the first stage of the original project, involving an

assessment of the existing situation and potential of leather goods and garments manufacture in the country.

It is extremely important that there should be a follow-up to complete the next two stages of the original project. This would involve sending:

(a) A technical expert in leather goods and garments production for a period of four weeks beginning in July 1979;

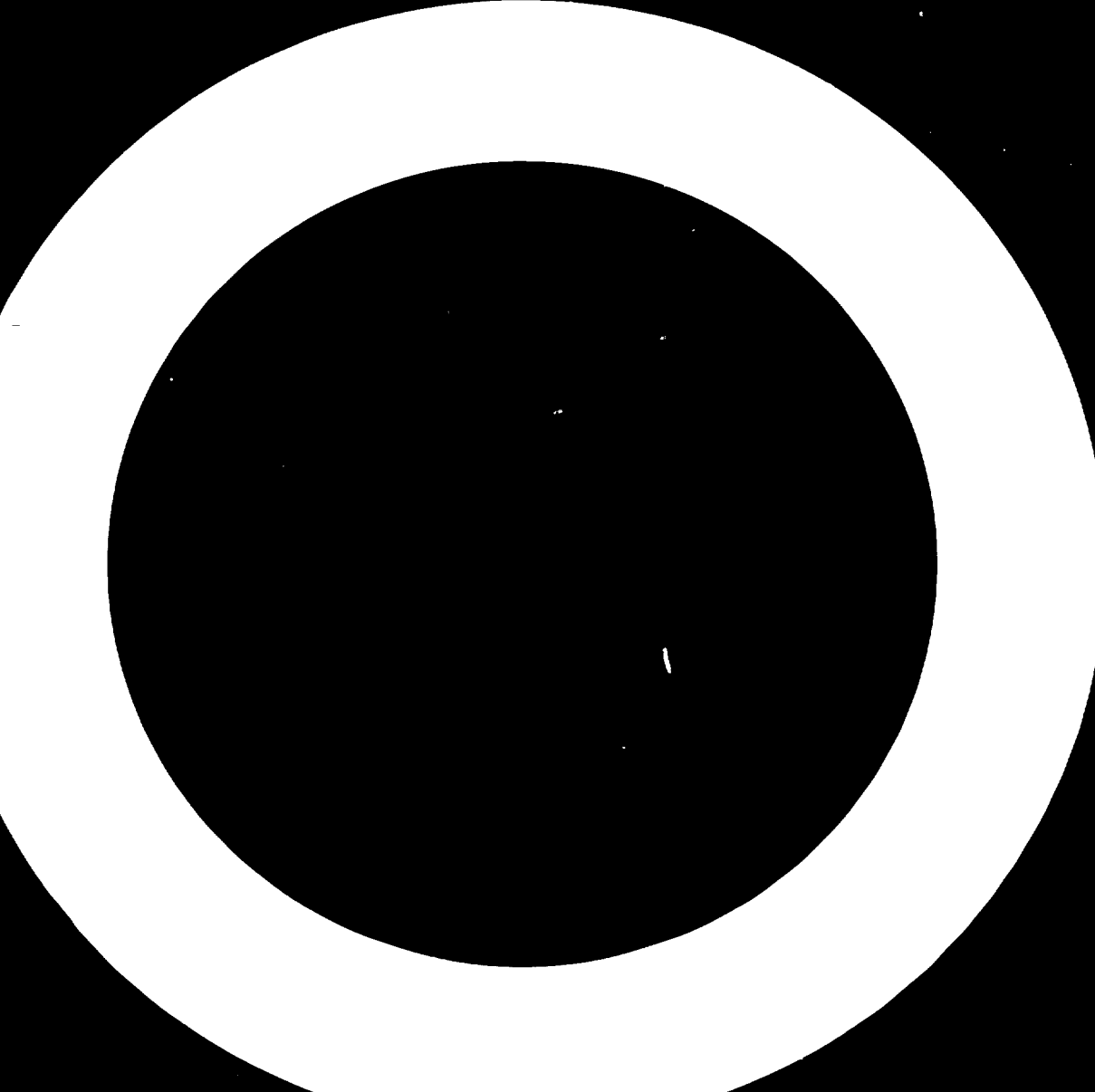
(b) A marketing expert in the leather goods and garments industry who would spend one week in Ethiopia and then, together with an Ethiopian counterpart, three weeks in Europe exploring potential markets and establishing contacts with machinery and equipment manufacturers with a view to setting up the leather goods and garment factory in Ethiopia.

Terms of reference for both these follow-up projects are given in annexes I and II.

Recommended training plan

Great importance should be placed on the implementation of a training programme for technical staff well in advance of the start of production at the proposed leather products and garments factory in Ethiopia. Details of the proposed recruitment and training of technical staff are given in annex III.

The training of junior technical staff could be carried out jointly in shoe factories and in the proposed NPC (National Productivity Centre) leather goods and shoes training unit in Addis Ababa, under the supervision of international UNIDO staff, as described in project ETH/78/00, "Leather and leather products development".



Annex I

JOB DESCRIPTION FOR FIRST FOLLOW-UP PROJECT

POST TITLE Leather products and garment expert (technical)

DURATION Four weeks

DATE REQUIRED Beginning July 1979

DUTY STATION Addis Ababa with travel within the country

PURPOSE OF PROJECT A follow-up to the mission carried out by the leather products and garment expert between 12 March and 3 April 1979 in preparing a pre-feasibility study for the establishment of a leather products and garment industry in Ethiopia.

The assistance is required to be extended for the preparation of a finalized report suitable for immediate investment decision, also taking into account previous studies carried out on the establishment of an integrated leather products and garment unit in Ethiopia for both export and domestic markets.

DUTIES

In close co-operation with the Ministry of Industry, the National Leather and Shoe Corporation, and UNIDO advisers, the expert will be expected to:

1. Complete the study carried out by the project SI/ETH/77/801 undertaken during March and April 1979 in preparing a pre-feasibility study on the leather products and garment industry in Ethiopia;
2. Analyse and recommend the best location for the plant envisaged, including plans for the most suitable site;
3. Prepare a complete factory layout, including machinery and equipment requirements for the targeted production of various types of product-mix, and advice on types and origins of above machinery;
4. Analyse the investment and working capital requirements, and make financial estimates (profit and loss, cash flow etc.) for a ten-year period;
5. Analyse the social cost-benefit of the project and indicate employment requirements classified by skill and capacity levels.

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

QUALIFICATIONS

Up-to-date knowledge of, and extensive experience in, the designing and manufacturing of leather goods including garments. Consultancy experience in planning and setting up leather goods and garment manufacturing plants would be desirable. Knowledge of machinery layout, work flow etc.

LANGUAGE

English

BACKGROUND INFORMATION

The livestock population of Ethiopia is estimated at 26 million cattle, 24 million sheep and 18 million goats. The annual production figures for hides and skins are estimated at around 2.5 million cattle hides, 9 million sheepskins and 7 million goatskins. Raw hides and skins constitute one of the most important items in Ethiopian exports, second only to coffee as a foreign exchange earner. Little is exported, however, in the finished or semi-finished state although export to the European market especially is believed to be promising. The existing tanneries mostly satisfy the demand of domestic shoe factories. Shoes and the few other leather products manufactured are not exported. A new Government-owned tannery was started in 1976. The annual production capacity of this new tannery is 360,000 hides, 1,800,000 sheepskins and 1,800,000 goatskins, which is almost double the previously existing tanning capacity in Ethiopia.

Although the possibility of exporting semi-finished leather is fully recognized, the present situation on the world scene suggests examining if greater benefits could not be achieved through adding value to semi-finished and finished leather in Ethiopia by establishing further leather products manufacturing plants, including a leather goods and leather garments factory.

Annex II

JOB DESCRIPTION FOR SECOND FOLLOW-UP PROJECT

POST TITLE	Leather products and garment expert (marketing)
DURATION	Four weeks
DUTY STATION	Addis Ababa with travel within the country and abroad as follows: (a) Initial period of one week in Ethiopia in August to evaluate the recommendations made by the leather products and garment technologist including final discussion with the government authorities on the actual project implementation; (b) A visit of two weeks, together with the national counterpart to selected countries in Europe, including the International Leather Fair (8 to 11 September 1979), to survey marketing possibilities and establish contact with machinery manufacturers etc.; (c) Final period of about one week at UNIDO headquarters in Vienna to complete the study and make recommendations for any necessary follow-up actions.
PURPOSE OF PROJECT	Together with the leather products and garment technologist, to complete the work on project SI/ETH/77/801 with particular reference to the marketing aspects of setting up a leather products and garment industry in Ethiopia, and to provide a clear understanding of these aspects to the national counterpart.
DUTIES	In close co-operation with the Ministry of Industry and the National Leather and Shoe Corporation, the expert will be expected to: 1. Follow-up on sample preparations which will be undertaken by NLSC Awash Leather Products Workshop, modifications and additional samples that may be required for the marketing mission to selected European countries; 2. Study and prepare final comments related to the technical report; 3. Carry out an extensive market study in Europe and establish contacts for the Ethiopian Government with possible outlets for the planned production of leather products and garments; 4. Prepare a final report giving findings and also evaluating the import barriers, regulations and tariffs of various countries which might import leather products and garments from Ethiopia. The expert will be expected to prepare a final report, setting out the findings of his mission and his recommendations to the government on further actions which might be taken.

QUALIFICATIONS

Up-to-date knowledge of, and extensive experience in, the designing, manufacturing and marketing of leather goods including garments. Consultancy experience in planning and setting up leather goods and garment manufacturing plants would be desirable.

LANGUAGE

English

**BACKGROUND
INFORMATION**

The livestock population of Ethiopia is estimated at 26 million cattle, 24 million sheep and 18 million goats. The annual production figures for hides and skins are estimated at around 2.5 million cattle hides, 9 million sheepskins and 7 million goatskins. Raw hides and skins constitute one of the most important items in Ethiopian exports, second only to coffee as a foreign exchange earner. Little is exported, however, in the finished or semi-finished state although export to the European market especially is believed to be promising. The existing tanneries mostly satisfy the demand of domestic shoe factories. Shoes and the few other leather products manufactured are not exported. A new Government-owned tannery was started in 1976. The annual production capacity of this new tannery is 360,000 hides, 1,300,000 sheepskins and 1,300,000 goatskins, which is almost double the previously existing tanning capacity in Ethiopia.

Although the possibility of exporting semi-finished leather is fully recognized, the present situation on the world scene suggests examining if greater benefits could not be achieved through adding value to semi-finished and finished leather in Ethiopia by establishing further leather products manufacturing plants, including a leather goods and leather garments factory.

Annex III

RECOMMENDED TRAINING PLAN FOR THE LEATHER PRODUCTS AND GARMENT INDUSTRY

Level of post	Number of trainees	Training to commence	Duration	Type of training
Technical managers				
Leather goods	2	June or July 1980	2 years	Diploma in leather goods production
Garments	1	June or July 1980	2 years	Diploma in leather goods with specialization in garment manufacture and cutting
Junior Technical staff				
Leather goods	2	June or July 1980	2 years	Technicians course in leather goods
Garments	2	April 1981	9 weeks	Leather garment cutting (tops)

All these recommended courses of training take place at:Gordwainers Technical College, Mare Street, Hackney, London E8 3RE, England.

Senior and junior operatives courses to be agreed and organized by NLSC when the leather goods and garment factory in Ethiopia is actually established.

Annex IV

ETHIOPIAN TANNERY

PRICE LIST - LOCAL SALES

(Birr per square foot)

Type of product	Grade	Consumer's price	Dealer's price
Finished side (smooth)	A	2.20	2.09
	B	2.05	1.95
	C	1.90	1.81
	D	1.55	1.47
	E	1.10	1.05
	Sc	0.88	0.84
Finished side (embossed)	A	1.54	1.46
	B	1.46	1.39
	C	1.34	1.27
	D	1.22	1.16
	E	1.08	1.03
	Sc	0.77	0.73
Lining (pigmented)	A	1.19	1.13
	B	1.13	1.07
	C	1.02	0.97
	D	0.86	0.82
	E	0.68	0.65
	Sc	0.55	0.52
Lining (natural)	A	1.10	1.05
	B	1.04	0.99
	C	0.93	0.89
	D	0.77	0.73
	E	0.55	0.52
	Sc	0.44	0.42
Split lining (natural)	A	0.45	0.43
	B	0.43	0.41
	C	0.39	0.37
	D	0.33	0.31
	E	0.26	0.24
	Sc	0.22	0.20

Type of product	Grade	Consumer's price	Dealer's price
Split lining (pigmented)	A	0.68	0.65
	B	0.66	0.63
	C	0.62	0.59
	D	0.56	0.53
	E	0.49	0.47
	Sc	0.45	0.43
	Shoe upper (goat and sheep)	A	2.50
B		2.25	2.14
C		2.00	1.90
D		1.75	1.66
E		1.25	1.19
Sc		1.00	0.95
Black garment		A	2.65
	B	2.60	-
	C	2.55	-
	D	2.50	-
Brown garment	A	2.50	-
	B	2.45	-
	C	2.40	-
	D	2.35	-
Aniline garment		3.00	-
Semi-aniline garment		2.90	-
Suede garment (hunting bovine)	A	2.13	2.02
	B	1.98	1.88
	C	1.83	1.74
	D	1.60	1.52
	E	1.38	1.31
	Sc	1.07	1.02
	Full grain upper	A	2.35
B		2.19	2.09
C		2.03	1.93
D		1.65	1.57
E		1.17	1.12
Sc		0.94	0.90

Type of product	Grade	Consumer's price	Dealer's price
Two sides buffed sheep lining	A	1.12	-
	B	1.06	-
	C	0.95	-
	D	0.79	-
	E	0.57	-
	Sc	0.46	-

Annex V (A)

TEST RESULTS ON LEATHER SAMPLES

(Ethiopian Standards Institution, leather testing)

Property tested	Sample number, description and origin ^{a/}							
	1 AT S/LC	2 AT S/LC	3 ET S/LC	4 ET S/LC	5 ET S/LF	6 AT S/LF	7 AT S/LF	8 AT S/LF
Water content (IUC/5) (%)	13.3	13.5	14.2	13.6	13.3	11.1	11.1	12.5
Sulphate ash (IUC/7) (%)	6.9	6.7	5.2	5.2	4.7	4.7	6.5	6.0
Water-insoluble ash (IUC/7) (%)	5.2	5.1	5.1	5.1	4.7	4.6	5.3	5.6
Chromium oxide (IUC/8) (%)	4.0	3.9	4.7	4.7	4.1	3.7	3.8	3.9
Total loss by washing (IUC/6) (%)	3.4	3.3	0.3	0.3	0.1	1.4	2.8	0.6
Fat (IUC/4) (%)	8.2	7.7	4.3	4.1	5.4	10.7	10.1	6.6
Skin substance (IUC/10) (%)	69.9	72.9	76.2	77.9	72.9	67.0	67.0	74.4
Fixed tans (%)	14	11	14	13	17	17	16	13
Degree of tannage (tanning value)	20	15	19	16	23	26	24	17
Shrinking temperature (IUC/16)	All leathers passed boiling test							
Water uptake (IUP/7) (%)								
After 2 hours	98	105	58	132	119	96	85	84
After 24 hours	112	122	98	173	137	110	106	97
Tensile strength (IUP/6) (daN/cm ²)	249	261	300	84	234	380	379	286
Elongation at break (IUP/6) (%)	60.4	52.8	50.8	55.2	54.4	71.6	62.4	72.8
Stitch tear strength (DIN 53329) (daN/cm)	102	92	104	98	68	102	130	146
Bursting strength (IUP/9)								
Dome height (mm)	8.0	8.0	6.9	7.3	6.7	9.0	9.4	7.4
Bursting pressure (daN)	35.2	37.4	22.4	25.0	26.8	36.4	57.8	29.4

Flexing endurance (IUP/20)

(leathers 1-4)

(leathers 5+6)

(leathers 7+8)

Appearance after 50,000 flexing,
dry

unfinished

slightly damaged very slightly damaged

Appearance after 20,000 flexing,
wet

(leathers 5-8)
slightly damaged

a/ AT = Tannery of Addis; ET = Ethiopian Tannery; S/L = side leather; C = crust; F = finished.

Annex V (B)
TEST RESULTS ON LEATHER SAMPLES^{b/}

Property tested	Sample number, description and origin ^{a/}									
	12 MT CS	13 ET LCS	14 ET CS	15 ET MCG	16 ET GCS	17 AT LCS	18 AT LFS	19 ET MFG	20 ET GFS	21 ET UFS
Hide substance (%)	68.1-79.2	59.3-68.0	68.4-78.8	66.5-76.7	62.3-70.8	59.9-69.9	56.9-65.8	62.0-72.6	58.3-66.0	65.8-75.0
Bound organic matter (%)	7.9-9.2	14.3-16.4	9.1-10.5	11.1-12.8	11.1-12.6	14.2-16.6	15.6-18.1	11.6-13.6	13.2-14.9	10.8-12.3
Leather substance (%)	76.0-88.4	73.6-84.5	77.5-89.3	77.6-89.5	73.4-83.4	74.1-86.6	72.5-83.9	73.6-86.2	71.5-80.9	76.6-87.3
Total loss by washing (%)	0.7-0.8	-	0.1-0.1	-	0.1-0.1	1.2-1.4	0.5-0.6	-	0.1-0.1	-
Chromium oxide (%)	3.7-4.30	4.9-5.63	3.0-3.46	3.1-3.58	3.5-3.98	3.2-3.74	3.3-3.82	4.7-6.4	3.7-4.19	2.4-2.7
Water-insoluble ash (%)	5.1-5.90	5.6-6.4	3.3-3.8	3.2-3.7	4.4-5.0	4.6-5.4	6.7-7.8	5.0-5.8	4.1-4.6	2.9-3.3
Fat (%)	4.3-4.90	7.4-8.5	5.3-6.1	5.5-6.3	10.7-12.2	5.7-6.7	5.8-6.7	6.5-7.6	12.3-13.9	7.3-8.3
Water content (%)	14.0	12.9	12.2	13.3	12.0	14.4	13.6	14.6	11.7	12.3
Degree of tannage (%)	12.2-12.0	24.0-24.0	13.0-13.0	17.0-17.0	18.0-18.0	24.0-24.0	27.0-27.0	19.0-19.0	23.0-23.0	16.0-16.0
pH in leather	3.9	3.8	3.9	3.60	3.5	3.4	4.3	3.4	3.8	4.1
Difference value	0.2	0.4	0.2	0.40	0.2	0.4	0.2	0.5	0.3	0.2
Stitch tear strength (daN/cm)	45.1	48.2	59.6	57.2	40.2	41.4	51.2	57.3	35.3	61.1
Thickness (mm)	1.1	0.9	0.8	1.4	0.6	1.2	0.9	1.5	0.6	0.7
Lastometer (bursting test (dome height in mm))	11.3	9.8	9.9	13.2	10.9	9.7	11.1	12.1	10.7	9.8

^{a/} MT = Modjo Tannery; ET = Ethiopian Tannery; AT = Tannery of Addis; CS = Crust sheep; LCS = Lining crust sheep; MCG = Mokasin crust goat; GCS = Garment crust sheep; LFS = Lining finished sheep; MFG = Mokasin finished goat; GFS = Garment finished sheep; UFS = Upper finished sheep.

^{b/} (-) between two figures in a column indicates the range of the test result.

Annex VI
PERSONS CONTACTED

Ministry of Industry

Tesfay Dinka, Minister of Industry
Woldu G/Michael, Head PPPD
Tessera Kifetew, Sector Co-ordinator, Leather

National Leather and Shoe Corporation

Yoftahie Kebede, General Manager, NLSC
Bacry Yusuf, Head, Planning and Research Department, NLSC
Mesfin Sahle, Head, Commercial Department, NLSC
P.B. Buit, UNIDO Adviser, Leather Manufacturing

Tanneries and Shoe Factories

Takele Jamberu, Manager, Awash Tannery
Abdulahi, Technical Manager, Awash Tannery
Solomon G/Medhim, Manager, Ethiopian Tannery
Teskaye Arega, Production Manager (skins), Ethiopian Tannery
Kidanu Chekol, Production Manager (hides), Ethiopian Tannery
Peterka, Czechoslovakian expert, Ethiopian Tannery
Getachew Desta, Manager, Modjo Tannery
Woldu Alemu, Technical Manager, Modjo Tannery
Bagashaw Endebelhatu, Manager, Anbessa Shoe Factory
Kalab Bekure, Technical Manager, Anbessa Shoe Factory

HASIDA

Bekele Tadese, General Manager, HASIDA
Aytanew Berham, Head of Industry Department, HASIDA



