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*Kenya.*

LEATHER DEVELOPMENT CENTRE .

US/KEN/84/163

KENYA

Technical report: Interim assessment of the project\* .

Prepared for the Government of Kenya  
by the United Nations Industrial Development Organization

Based on the work of M. Bérci,  
Chief Technical Adviser

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EXPLANATORY NOTES

Reference to dollars \$ are to UNITED STATES dollars.  
The monetary unit in Kenya is the Kenyan Shilling(Ksh).  
During the period covered by this report, the mean value  
of the Kenyan shilling in relation to the U.S dollar was  
\$ US 1 = Ksh. 17.00

a point (.) is used to indicate decimals.

A comma (,) is used to distinguish thousands and millions.

Abbreviations of Organizations

KBS Kenya Bureau of Standards

KIRDI Kenya Industrial Research and Development Institute

PISIE Politecnico Internazionale per lo Sviluppo  
Industrial ed Economico, Jesi-Ancona , Italy

SGS Societ  G n rale de Surveillance, Geneva

Economic and Technical Abbreviations

CTA Chief Technical Advisor

f.o.b free on board

sq.ft Square foot, trade unit of measurement for  
leather (1 sq.ft = 0,0929 m<sup>2</sup>)

Mention of firm names and commercial products  
does not imply the endorsement of UNIDO.

A B S T R A C T

The leather and leather products industry in Kenya is considered to be one of the most important of those industries which are domestic-resource based. Currently this sector is fairly developed if one considers semi-finished products only, but is poorly developed if one considers finished leathers and leather products. The strategy of the Government of Kenya aims at achieving the maximum added value which exists in the raw hides and skins. As one of the first steps in this direction a Leather Quality Control Laboratory and a small Pilot Plant up to wet-blue, now fully operational were established with UNIDO assistance.

As a further step, in consideration of the results of the first phase, the Government of the FRG decided to finance the second phase of the project which consists of setting up a finished leather processing pilot plant. When completed, the Leather Development Centre will have adequate facilities for research, demonstration and training for the sector in Kenya and in the sub-region, if requested.

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## I N T R O D U C T I O N

This project "Leather Development Centre (LDC)" is being carried out for the Government of Kenya by the United Nations Industrial Development Organization (UNIDO) using the special purpose contribution offered by the Federal Republic of Germany. The project was proposed at the completion of the project "Leather Quality Control Laboratory" which was also funded by the UNIDO and to facilitate continuity is considered as the first phase of the LDC. The first phase of the project is fully operational and is very much appreciated and utilized by the Kenyan Leather and Shoe Industry. The contributions made by the Kenyan Government to this project are described in detail in annex 1 part 2. (part 1 is describing the contributions of the Government during the whole of the first phase "Leather Quality Control Laboratory".)

The objective of the project is to conduct a systematic programme of applied research in the leather section and thereby support the Kenyan Government in implementing its strategy for the leather sector. The Kenyan leather and leather products industry is in a very active phase of development. The enterprises are now in the process of establishing leather finishing units and leather products factories which, however, lack the necessary know-how and would be very much assisted through a pilot plant which would provide services in applied research, quality control, feasibility studies and in training of technologists through seminars and demonstrations. At the same time no advanced quality control laboratory and national standards are in operation in the neighbouring countries, therefore, the LDC may be utilized as a pilot plant for establishing similar units and services in the sub region.

### Project Activities

The project proposed was submitted in April, 1984 and the project started in July, 1985 when the C.T.A. M. Bérci ( Hungary) was fielded. Both Mr. O. Klötzer (F.R.G.) technical evaluator and Mr. F. Schmel (Hungary) consultant in computer data processing were fielded in August , 1985 for one month. The CTA has been selected for the whole of the duration of the project for two months as first part of a split mission, total duration 16 months.

The objectives of the project are: to further strengthen the leather industry section of the Kenya Industrial Research and Development Institute and create a well-functioning LDC comprising of a quality control laboratory, a leather pilot plant, a R & D and extension services unit, a leather products design, and an information and standards preparation unit.

### Budgeting of the Project

After his fielding the CTA noted that the construction of the pilot plant building was about 90% complete. At the time of the preparation of this report (by the end of August) the building was practically ready. Thus the phasing proposed in the feasibility study as Alternative A ( page 46 of the Terminal Report) proved to be realistic.

There are two major differences between the phasing proposed in the feasibility study and that of the project document which reflects a gap between the realistic needs of the project and the facilities as given by the budgeting.



- a) The total equipment component which comply with the project needs was given as 560,300 US \$, meanwhile the project document provides only 327,832 US \$ . The difference amounts to 232,468 US \$, which makes about 40% of the equipment component.
- b) If the phasing remains as it is in the project document then the building in the new site will stay idle for about two years.

Considering the above, the Co-Manager of the project, Dr. R.O. Arunga, has already sent a request for re-phasing to UNIDO through the UNDP regional representative.

The CTA agrees with the request. In his view, it is possible to ameliorate point (b) if rephasing is accepted as proposed.

Discussions between Dr. Klötzer , evaluation expert, and the CTA, revealed some practical ways as suggested by Dr. Klötzer, for reducing the gap in point (a)

Firstly the garment and leathersgoods workshop (alternative (c), page 46 of the Terminal Report) " is in fact a logical continuation of the present project". Thus it can be placed in the last year of the implementation (1988) and/or it can be considered as a third phase of the project. In this way (see 56 of the Terminal Report), an amount of 104,000 US \$ could be shifted to 1988 or to the third phase, arrived at as follows:

50,000 US \$	Design equipment
24,000 US \$	Fellowship for garment leathersgoods
<u>30,000 US \$</u>	UNIDO Expert in design
104,000 US \$	

Secondly, the sophisticated rotary type spraying unit in the feasibility study can be replaced with the two guns parallel type thus saving 35,000 US \$. With spare parts this amounts to about 38,000 US \$. Thus a total of 142,000 US \$ savings are realised reducing the gap to about 90,000 US \$ instead of 232,468 US \$.

If the re-phasing of the equipment component is accepted, then the personnel component has also to be rephased.

In the view of the CTA, while the first phase is continuously working (laboratory and pilot plant up to wet blue), it is premature to make a detailed work plan for the second phase. Even the second fielding of the experts in 1986 can not be properly scheduled until the final decision has been taken on the above matter. In the meantime the schedules and activities as described in the project document can be used. If required, the CTA can draw up the work plan during the interim period.

## RECOMMENDATIONS

### Raw Materials

1. There is already a scarcity of raw hides and skins. It would be advisable for study to be conducted by experts (AHITI) on the collection of these raw materials with regard to import possibilities in the sub-region, while also considering the quality factor.

### Leather and Leather Products Industry

1. It is highly recommended that duties on chemicals and spare parts should be removed and that taxes on tanning and manufacturing machinery should be reduced.
2. In future, location of tanneries in the triangle Athi-River-Nairobi-Thika should be discouraged and investment in tanneries should be directed towards the Nyanza and Western Provinces where livestock production is highest.
3. A directory of all the existing tanneries, and approved and proposed projects should be compiled.
4. All sponsors of new leather projects should be compiled to register the projects with the Industrial Promotion Department of the Ministry of Commerce and Industry.

### Economic Aspects

It can be seen that the sector has responded quickly to the new situation introduced by taxation. In fact the experts expected significant decreases in raw materials exports in four to five years, but this will occur apparently in one to two years. It is therefore urgent that the production of finished leather and leather products should be encouraged.

1. It is advisable to introduce incentives for investors varying according to the degree of finishing of the manufactured products and the level of employment of the projected factory.
2. Top priority should be accorded to small modern shoe and leather goods factories.
3. The Chamber of Commerce and Industry should commission a study on the Inter-African marketing possibilities and later on the marketing possibilities among other developing countries and developed countries.

Recommendations to UNIDO

1. It is advisable to liaise with the Government of FRG for the fund to be re-phased so as to avoid the building staying idle. The optimal case would be to have the revised equipment component by December this year and thus the equipment here by the middle next year.
2. If the case for re-phasing succeeds, a 6 months contract for the mechanical engineer will be enough, because all the machinery will be here within a short period. The remaining 3 months could be used for consultancy:
  - 1 month more for the computer
  - 2 months for promotion of the LDC in the sub-region.
3. The Land Rover should be handed over to KIRDI for use in the project, even in the absence of the CTA.
4. The money used by KIRDI for services which were planned as UNIDO contribution, should later be refunded to KIRDI.

Recommendations to KIRDI

New Site

- 1 Provide the new site with the services as agreed
- 2 Install the toggle dryer directly in its definitive place
- 3 Install simultaneously the star dryer and the spray unit at the new site and if services are available, start in December the finishing experiments.

Research Works

1. Collect finished leather samples with help of the KBS and make all the complete analysis.  
Based on the data start drafting the standard.
2. Check " D. Future Structure of the LDC" of this report and start activities which might be feasible right now.

I RAW- MATERIAL SUPPLY SITUATION

A. Raw hides and skins

Figures relating to the production of hides and skins are presented in table 1.

Table 1

PRODUCTION OF HIDES AND SKINS ( 1000 pieces)

	1981	1982	1983	1984
Hides	1,203	1,081	1,039.6	1,650.0 <sup>x</sup>
Skins	3,327	3,070	2,781.4	3,692.1
Goat	2,041 <sup>xx</sup>	1,783 <sup>xx</sup>	1,616.8 <sup>xx</sup>	2,126.9
Sheep	1,286	1,287	1,164.5	1,565.2

x : include calf and kids

xx : include calf

Sources: Ministry of Livestock  
Development, Veterinary  
Department, Kabete

Increased figures for both hides and skins does not indicate improvement of the numbers of livestock but of the off-take rate, which occurred because of the draught. In 1984 it was not unusual to see the animals collapse in the front yard of an abattoir before being killed. For example the cattle hide production in 1983 was 5,771,921 kg, an average of 480,993 kg/month ranging from 428,165 kg in March and 521,962 kg in September, whereas the production in 1984 was 8,566,549 kg, an average of 713,879 kg/month ranging from 510,721 kg in January and 897,066 kg in September. The same has occurred but less extensively with goat and sheepskins.

The quality of the commodities was consequently lower than in previous years.

Tanners however do not control the hides and skins market. Because of the continuously increasing demand the prices are firm and increasing despite the poorer quality.

Table 2.

PRICES OF HIDES AND SKINS (KSHS./KG )

		Cattle hides	Goatskins	Sheepskins
1983	Highest	13.25	12.80	7.00
	Lowest	10.10	9.85	5.20
1984	Highest	19.00	13.20	8.25
	Lowest	11.55	9.05	6.80
1985 *	Highest	20.30(March)	16.10(July)	13.15(July)
	Lowest	16.80(Feb. )	10.70(Jan.)	8.35(Jan.)

Source: as table. 1

\* Jan-July, Nairobi, only 2 grade

The exportation of raw hides and skin has drastically decreased because of the impact of the new export tax ( for raw materials from 20% the export tax increased to 40% with effect from July,1983). In 1984, 31.2% in volume and 32,8 in value was the exported quantity compared to 1983 (See later: Economic aspects, and annex No.II).

B. Auxiliary Materials

There was no substantial change in the auxiliary materials supply. Tanners are easily getting the import licences for tanning materials and dyestuffs. The duty taxes are still high:

- for tanning materials (code 32.03.00) duty tax 30%
- for dyestuff and pigments (code 32.05.019) duty tax 40%.

Taking into account 15% for transport from abroad (Europe, far- East and USA), the high material costs are weakening the competitiveness in the European and other markets.

The import duty on machines and spare parts is still 40%, but this has not caused any stoppages since most of the import licences were obtained in 1984.



II. THE LEATHER AND LEATHER PRODUCTS INDUSTRY

A. The Leather Industry

Figures showing the volume of leather production are given in table 2.

Table . 2

Production of Leather 1980 to 1984

	1980	1981	1982	1983	1984
Upper and light leather mill. sq.ft					
Hides finished	4.71	5.59	5.27	2.91	2.73
Hides semi-finished	10.79	6.22	6.18	5.67	11.79
Skins semi-finished	15.71	15.79	10.25	9.06	12.35
Heavy leather tons	214.6	156.2	180.5	156.5	183.4

Source: Central Bureau of Statistics

The production of semi-finished hides and skins has considerably increased from 1983 to 1984.

	1983	1984
Hides, skins, semi-finished mill.sq.ft	14.73	24.14

The increment occurred mainly with hides turned in to wet-blue. When the incentive of the new export tax started to work, most of the raw hide dealers contracted the tanners and changed their activity towards wet blue (1983 July: increase of the export tax on raw hides and skins from 20% to 40%).

TABLE 3  
CAPACITY UTILIZATION OF THE TANNERIES

Establishment	Hides			Skins		
	Wet-blue	Crust	Finished	Wet-blue	Crust	Finished
Alpha Rama	100,000	-	-	750,000	-	-
Aziz Din	-	-	10,000	25,000	-	-
Babar Tanners	250,000	-	-	-	-	-
Bata	-	-	200,000	-	10,000	-
Bulleys	-	200,000	100,000	2,250,000	375,000	375,000
East Africa Tannery	-	-	1,500	400,000	-	14,000
Garissa Tanners	?	-	-	-	-	-
Kamiti Tanners	250,000	-	-	240,000	-	-
Kitale Tanners	125,000	-	-	-	-	-
Nakuru Chrome Tanners	-	-	-	1,200,000	-	-
Nakuru Tanners	-	-	15,000	-	-	-
New Leather Market	-	-	-	200,000	-	-
Sagana Tannery	-	-	25,000	?	-	-
Rural Tanneries	-	-	7,000	-	-	20,000
<b>TOTAL</b>	<b>725,000</b>	<b>200,000</b>	<b>358,500</b>	<b>5,065,000</b>	<b>385,000</b>	<b>409,000</b>
<b>Total hides,skins</b>	<b>1,283,500</b>			<b>5,859,000</b>		
<u>Projected Capacity</u>						
Aga-Khan(New Leather project)	-	-	375,000	-	-	-
Kamiti Prisons	-	-	25,000	-	-	-
<b>Total</b>			<b>400,000</b>			

Thus the capacity utilization of the tanneries has considerably changed (see table 3.). Meanwhile the finished upper leather production has slightly decreased (from 2.91 mill.sq.ft to 2.73 mill. sq.ft).

It seems that by mid of 1986 the whole of the raw material will be transformed <sup>into</sup> semi-finished and finished leather. There have been some changes in the installed capacities:

Kamiti Tanners started in January 1985 with a new site for 250,000 hides a year, up to wet blue. Babar Tanners put to work the idle capacities at Athi River for 250,000 hides a year. Apha Rama at Athi River doubled their hides capacity by 50,000 hides per year. East Africa Tannery(Dandora) installed a new capacity for 400,000 skins a year up to wet - blue. Kitale Tanners started at the end of 1984 with their capacity of 125,000 hides wet blue a year. The total working capacity which was for hides wet blue 50,000 pieces only in 1983 has increased by 675,000 pieces, totalling 725,000 pieces a year. The wet blue skins capacity which was 4,665,000 pieces a year: (1983) is now 5,065,000 a year.

For ready finished leather only the "New Leather Project" of Aga-Khan came up and is ready to start by January 1986 with about 400,000 ready finished hides a year. So the total increase in hide capacity will be 1,075,000 pieces.

The above facts will have a big impact on the whole shape of the Kenyan leather production:

- a) The available hides for new capacities as it was shown in the Terminal Report of the CTA (first phase) were 913,000 pieces (page 20 of the cited report) will be covered, and the excess of the capacity will be about 162,000 pieces. For skins the excess capacity for wet-blue has increased by 400,000 a year. The production must have been covered by "non official" import of skins.

- b) The scarcity on ready finished leather will disappear by the end of next year when the Aga-Khan factory starts production. Other consequences of the changes will be shown later in this report (impact on marketing, prices, internal competition, etc..)

B. The Shoe and Leathergoods Industry

According to figures from the Ministry of Finance, Customs and Excise Department, Statistical Branch, the production of footwear was (in pairs)

	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>
Leather footwear	1,613,753	1,641,076	1,607,065	1,302,824	1,117,996
Non-leather footwear	3,046,437	8,570,302	8,444,033	5,889,686	6,818,816

The remarkable decrease in 1984 is still due to the problems with Tiger Shoe Co., where serious financial and management problems occurred in mid 1984. A recent visit has shown that they have not regained their former level and are working at about 20% of their capacity. The Bata Shoe Co. Ltd is still working at the same level but is having problems with hides collection reflected in the scarcity of finished leather. The smaller shoe enterprises could not be visited because of shortage of time.

The leathergoods factory "Leather Masters" is working with almost full capacity. This was the first modern factory of this kind. Although they started only last year, they are having small export contracts with the USA and England. The leathergoods factory Crook on Gold has also improved .

C. Quality Aspect of the Sector

There are no considerable changes except that because of the draught the average quality (even the intrinsic quality) of hides and skins has slightly dropped. The analysis carried out at KIRDI however did not show any major differences in the main parameters when compared with the previous years, neither in semi-finished or in finished leather.

One of the impacts of the increasing demand for hides and skins besides the increasing prices will be surely a further improvement of the collection system and of the quality itself. In the next year the competition in ready finished leather will improve as well and one can expect a corresponding improvement in that quality.

Kenya Bureau of Standards (KBS)

The cooperation with KBS is still very good. KIRDI Leather Section is actually the base for standardization of leather and leather products. Three drafts have been elaborated at KIRDI, two of them turned to be official Kenya Standards as reported in 1984. The draft "Specification for Bovine Crust Leather" was discussed two times by the Technical Committee and will be an official standard by the end of 1985. Meanwhile the Leather Section recently agreed with officials of KBS that 45 samples of ready finished leather (upper, lining and sole) be collected in September with the aim to draft the standard for ready finished leather.

It is important to note here that:

- a) the implementation of the standards is being carried out jointly by KIRDI and KBS staff for in the next 4-5 years KBS will not have trained people and facilities for leather analysis
- b) one of the tanners (Babar Tanners) has engaged KIRDI through the SGS (Société Generale de Surveillance) to check by analysing and grading export consignments destined for Italy and Yugoslavia for compliance with the Kenya standard for wet blue hides. The results have been accepted by the partners concerned.

- c) based on b) it seems that conditions are ripe for starting by next year a certification system by KIRDI (kind of Label or Markstamp which will also be presented for recognition to ITC.)

D. Statistical Data Bank

An attempt has been made to create an up to date statistical data bank using a computerised file management programme. Due to the inadequate and sometimes incomplete data available, only data compiled up to the end of the CETA mission and the most recent data have been stored. The local counterparts were instructed how to collect and verify the missing and the future data to up date the computerised database. The data collected so far and the structure of the data base are presented in annex no.III

### III ECONOMIC ASPECTS

#### A. Financial background and incentives

The conditions for investors are very favourable. A deposit of about 30 percent is required for the investment. The financing institutions also contribute towards the running costs. In the past, the export of raw hides and skins was restricted and a selective taxation system was imposed. In 1981, the raw hides and skins dealers succeeded in having the limits raised but not withdrawn. In 1983 the legal notice No.96 of Sales Tax Act came into operation on 1st July, 1983. The tax imposed as a percentage of the f.o.b value for our hides and skins increased from 20% to 40%, meanwhile the tax on semi-finished leather decreased considerably and the producers are getting export compensation up to 25%.

This incentive proved to be very efficient. It was the merit of the Kenya Tanners Association and of the experts involved that the raw hide dealers could not turn down the issue of this taxation system as they did in the previous years. However they will enjoy high profits, meanwhile the tanners started their idle capacities or funded new ones.

There was no decrease in the collection of raw material or in prices which generally could have been expected in similar cases, (Prices of raw materials 1983, 1984, 1985 Jan-July see annex No. IV). The action of the Government was economically and technically well founded for the bulk of the capacities was available but just idle. Most of the raw hide dealers made contracts with the tanners which on the whole were very flexible. They used to keep their few skilled workers when lower capacities and even when idle, while non skilled manpower is always available.

B Exports of Leather

Statistical data on domestic export of hides, skins, semi-finished and finished leather (code number 211 and 611) are shown in annex No.V Prices of the same are shown in annex No.VI. A self explanatory extract of this data was combined in annex No. II. The structure of the exportation has completely changed in one and half year. As seen, with an almost constant volume of the exportation (1984/1983 = 101,3%) the branch increased the value to 120,8% which resulted in to 31,518,306 KShs more added value. The component of chemicals as computed from the model experiments was 32.4%. If one deducts the corresponding amount (10,211,931 KShs.) from the added value, a increase of 21,306,375 KShs. for one year still remains.

To visualise more expressively the changes the rates of the semi-finished and finished leathers exported if one takes the exported raw materials as 100%, are shown below:

Table 4.

RATE OF THE SEMI-FINISHED AND FINISHED

Exported Quantities in Kg

Period	Raw Materials Kg	Semi-finished and finished kg	Rate of semi-finished finished (Rate = 100%)
1981	9,195,251	5,012,296	54.5
1982	7,685,065	4,574,288	59.5
1983	5,214,047	4,347,509	83.4
1984	1,628,908	8,061,234	494.9



## VI. KENYA INDUSTRIAL RESEARCH AND DEVELOPMENT INSTITUTE

### A. Personnel of the Section

There were no changes in the number of the staff in the leather section, but the skill of the members has improved and the commission works carried out in the absence of the CTA proved to be reliable. The recommendations of the feasibility study <sup>were</sup> followed by KIRDI and initiatives have been taken for training abroad. One graduate chemist left for Canada on 15th August, 1985 for two year for studies leading to an MSc. degree in Chemistry. Three staff members are waiting for clearance; 2 of them for Netherlands (Waalwijk), each 13 weeks for leather technology, one of them for Italy (Pisie) for leathergoods design for 3 months. If cleared, these three staff members will leave on 15th of September, 1985.

### B. Progress in 1984 - 1985

Three activities are shown here, which, among others reflect the progress achieved to date:

- a) The effluent analysis has improved, so far almost the whole branch is regularly sending samples to KIRDI ;
- b) It was very important to enter the international activity through the commissions of the SGS and using Kenya standards;
- c) The efficiency of the section as measured by its total income against the inputs of KIRDI to the project has increased from 6% (Jan-July, 1983) to 11% in 1984. This account does not include investments but includes personnel component (counterpart staff and support staff), and cash support, chemicals, stationery etc.

C. The New Site

The total inputs of the Government for the Phase II was (see annex No. 1 part 2):

161,400 KShs. for equipment (milling drum, spray unit, stardryer) 5,825,000 KShs. for building in the new site. The planned input (see infrastructure and building costs- page 6 in the Project Proposal ) was 5,317,000 KShs. As shown in the feasibility study, the moving of KIRDI to a new site started with the building of the Leather Pilot Plant. This has been completed with piping and wiring included.

A layout was left with counterparts in 1984. The detailed plan was made by a design consultancy firm and size and shape of the building correspond to the preliminary design as shown in the terminal report of the CTA. Minor problems have been noted and have been rectified like the lopsided placement of a channel, missing of a floor channel and missing of slopes on the floor of the wet site.

Although , it is not possible to move anything in the new site, until the services like electricity, steam and hot water and booster pump for cold water have been installed, some through UNIDO contribution which is not yet available.

After a meeting initiated by the CTA on this matter, Dr.Arunga and later Board of the Directors, have decided to tender for the service facilities. These will be now ready in two months, but as this part of the budget was not given by the Government, arrangements should be made to reimburse KIRDI from project funds provided by UNIDO (FRG) funds. The amount in question is 64,000 US \$ (see page 85-List of equipment to be supplied of the Terminal Report)

From the equipment component of this phase, where 30,000 US \$ was allocated for 1985, for the moment only the computer has arrived. The project car (Land Rover) is expected at the end of October and in the view of the CTA should be handed over to the Government by a special authorization of the Property Control Board of UNIDO. The toggle dryer is expected by the end of this year and it should be placed in its definitive place at the new site.

At the moment it is premature to outline the scheduled installation for the machines not yet purchased.

D. Future structure of the LDC and terms of references for the staff

Only a simplified form of this point is being presented for three reasons:

- a) the field of activities for the Laboratory and Pilot Plant have been elaborated and fed into the computer. The same has been done for the most detailed data on the staff members and support staff.
- b) the future structure will widely depend on the definitive schedules of the budgeting (ex. training of the counterparts, kind of training of national partners, training abroad etc.)
- c) the workplan will also practically include this point.

Field of activities

1. Routine works (50% for commissions plus 50% for applied self initiative)
- II Laboratory
- III Leather testing
  - chemical analysis of leathers, hides and skins
  - physical and mechanical testing of leather
  - finishes testing
  - usual testing and grading of hides and skins, semi-finished and finished leather
  - effluent analysis
- 112 Leather components and products testing
  - chemical analysis of all components such as dyestuff, adhesive, lining and tanning materials etc..
  - physical and mechanical testing of shoes, uppers and soles (non-leather) etc.
  - physical testing of leathergoods, clothings, belts etc.

- 12 Pilot plant +(10% for commissions + 40% own research work +  
+ 50% rented works)
- 121 Processing of hides
- 122 Processing of skins
2. Applied research (80% own work + 20% commissions)
21. Overall analysis of Kenya finished leather for preparing of the standard draft.
22. Yearly repetition of analysis of wet blue, crust and finished leather to check the implementation of standards.
23. Yearly repetition of processing the Kenya hides and skins (20 skins and 6 hides from every province) for the model experiments.
24. Continuation of the Fungicide experiment based on the BLMRA system.
- 25 Other works (on dyeing, fatliquoring and finishing).
3. Extension services (80% own work + 20% commissions)
31. Advice in factory. Inspection of every tannery at least once a year. They should be provided with advice as needed. The activity is free of charge , unless it occurs on the tannery's request.
32. Collection of statistical                      Feeding of data in computer (Cooperation with the source and at KIRDI with statisticians Analysts for studies or on request.
33. Feasibility studies.
- Own initiative: Study on improvement of the rural tanneries.

Commission on request

34 Promotion of the services in the sub-region

4. Training

4. KIRDI STAFF ABROAD- NENE COLLEGE  
- REUTLINGEN  
- WAALWIJK  
- PISIE(Italy)  
- CIBA GEIGY  
- STAHL

42 KIRDI STAFF: by inviting European professionals on  
bilateral basis

43 Training of national staff: Organisation of  
seminars plus  
demonstrations

(Syllabus will be prepared next year)

44 Training of international staff. Second step,  
after the promotion of the services in the sub-region.



GOVERNMENT INPUTS TO THE PROJECT PART II SECOND PHASE (LDC)

1. <u>EQUIPMENT</u>	<u>KSHS</u>	
Purchases in the interim phase		
for finishing Milling drum		
Star dryer	161,400	
Spray unit		
2. <u>BUILDING and PILOT PLANT new site</u>	<u>5,825,000</u>	
TOTAL		5,986,400

## ANNEX NO. II

IMPACT OF THE INCREASE OF EXPORT TAX ON RAW HIDES AND SKINS

## Exported quantities and values

COMMODITY	Quantity, kg	Value, KShs.	Quantity, kg	Value, KShs.	Volume %	Value %	1984 - 1983, balance of	
	1983	1983	1984	1984	1984/1983	1984/1983	Volume, kg	Value, KShs.
1. RAW HIDES AND SKINS	5,213,987	70,904,291	1,623,908	23,289,748	31,2	32,8	-3,585,079	-47,614,543
2. PICKLED + WET-BLUE	3,943,937	55,662,638	7,370,801	117,103,268	186,9	210,4	+3,426,864	+61,440,630
3. CRUST + FINISHED	403,632	24,907,496	690,433	42,599,715	171,1	171,0	+ 286,801	+17,592,210
4. TOTAL	9,561,556	151,474,425	9,690,142	182,992,731	101,3	120,8	+ 128,586	+31,518,306

Total added value for 1984= 31,518,306 KShs.

- less chemicals(-32,4% of it) 10,211,931

Netto added value for 1984= 21,306,375 KShs.Changement of the structure of volume

	Structure in %	
	1983	1984
RAW (1)	54,5	16,3
SEMI-FINISHED + FINISHED (2+ 3)	45,5	83,2



COMPUTERIZED STATISTICAL DATA

Personnel

Personal No.: Updated :  
 Surname : First name :  
 Other names :  
 Maiden name : Marital st. :  
 BIRTH - dd: mm: yy: Place:  
 Nationality : Sex :  
 Name of w/h.: No. children:  
 ADDRESS Str: Country: Zip:  
 City:  
 BENEFICIARY : Relationship:  
 Address :  
 NEXT OF KIN : Relationship:  
 Address :  
 SCHOOLS - Basic : Middle :  
 High : University:  
 Qualification :  
 Previous employer:  
 First employed - publ. serv. - dd: mm: yy: Post:  
 - to KIRDI - dd: mm: yy: Post:  
 Present designation - dd: mm: yy: Post:  
 Division: Section:  
 Left KIRDI - dd: mm: yy:  
 JOB group : SALARY (ksh/month):  
 Next increment - Month : Amount (ksh/month):  
 LEAVE (days) - Entitled: From last year: Taken:  
 Remarks :  
 Evaluation:  
 Evaluated by: Date:

Inventory: Equipment

Inventory No.:		Updated :	
Equipment :			
Type:	Mark:	Subclass:	Size:
Manufacturer :			
Supplier :		Country of origin:	
Component No.:		Machine No. :	
Used with :			
Accessories :			
Volume (mm) - Width:		Depth :	Height:
Mass/Weight (kg) :		Features:	
Purchased (yy/mm/dd):		Installed (yy/mm/dd):	
Maintenance schedule - Check:		Overhaul :	
(yy/mm/dd) --> Last - Check:		Overhaul :	
Original price (Ksh) :			
Depreciation (%):		Present value (Ksh) :	
Division/Section:		Responsible:	
Remarks :			

Library (1)

Catalog No.:	Inventory No.:
Author(s) :	
TITLE - Original:	
TITLE - English :	
Volume :	Language :
Publisher name/address:	
Published in (city) :	Country :
ISBN :	Pages :
Bibliography :	Size (cm):
Year:	
Price - Currency :	Amount :
	Ksh :
Borrowed by:	Section:
	Date:
Remarks :	

Library (2)

Catalog No.:

TITLE - Original:

Language:

TITLE - English :

Publisher:

Country :

No. of issues/year :

First issue available - Year:

Volume : No.:

Last issue received - Year:

Volume : No.:

Missing issues :

Price - Prescription/year -- Curr. unit:

Amount : Ksh:

- Single issue -- Curr. unit:

Amount : Ksh:

Prescription renewed until:

On :

Through:

Borrowed issues (yy/No.,person,section):

Remark:

Standards

Catalog No. :

Standard No.:

Class :

Country :

TITLE - Original:

Language:

TITLE - English :

Prepared by :

Submitted by:

Issued by :

Year :

Year :

Replaces :

Pages :

Media/source:

Section :

Remarks :

Capacities

COMPANY -- Name :

. -- Address:

Owner :

No. of employees:

Products:

Capacity:

Output :

Recorded in :

Brand names :

Co-operation :

Erected/based:

Reconstructed:

Technology:

Remarks :

Analyses Data

Ref. No. : Job No. :

Client :  
Material :

Sample(s) : No. of samples :  
yy/mm/dd -- received: tested :

BOD (mg/l) : COD (mg/l) :  
Acid value (ml) : Iodine value (mg) :  
pH : Moisture (%) :

CONTENTS OF -

Nitrogen - ammon. (mg/l) :	- organic (mg/l) :
- Nitrite (mg/l) :	- Nitrate (mg/l) :
Chrome (mg/l or %) :	Acid with Cr (ml/l) :
Phosphate - ortho (mg/l) :	- total (mg/l) :
Sulphide (mg/l) :	Grease (%) :
Iron (mg/l or ppm) :	Copper (mg/l or ppm) :
Chloride (ml/l) :	Str. alkali (ml/l) :
Tannin matters (%) :	Non-tannin (%) :
Solid total (mg/l) :	- dissolved (mg/l) :

Other parameters :

General evaluation:

Remarks:

Analyses Data

Ref. No. : Job No. :

Client :  
Material :  
Sample(s):  
Date (yy/mm/dd) - rec. :  
No. of samples :  
- tested :  
Thickness (mm) :  
Tearing load (N) :  
- at 10 N/mm<sup>2</sup> :  
Stitch tear (N/cm):  
- pressure (bar):  
Temp. shrink. (°C):  
Finish adh. (N/cm):  
- (mg/h/cm<sup>2</sup>):  
- (min) :  
Water resist. (s) :  
- air (l/cm<sup>2</sup>/h) :  
- fat :  
- ash : pH :

Tensile strenght (N/mm<sup>2</sup>) :  
Elongation (%) - at tear :  
. - after 1 h :  
Lastometer - (mm) :  
Flexing resistance :  
Rub fastness (grade) :  
Water - absorbtion - (%):  
. - penetration - (%):  
Humidity (%) :  
Permeability of leather  
- water vapour (mg/cm<sup>2</sup>/h):

Contents (%) of - Cr2O3 :  
. - salt :

Other parameters :

General evaluation:

Remarks:





November	December	TOTAL	Mean	Range	Varian. %
473.9	517.1	5771.8	480.98	96.80	5.11
12.50	13.15		11.93	3.15	8.04
130.2	134.7	1520.4	126.70	22.30	5.03
12.40	12.80		11.54	2.95	7.84
94.2	102.5	1164.7	97.06	15.30	4.95
6.60	6.80		6.20	1.80	8.16
610.7	658.6	7366.7	613.89	93.75	4.07

November	December	TOTAL	Mean	Range	Varian. %
667.5	729.6	8566.4	713.87	386.40	20.87
11.55	12.30		15.76	7.45	14.63
174.6	195.2	2134.0	177.83	112.20	18.27
9.85	9.70		11.94	4.15	11.93
137.1	141.6	1578.8	131.57	78.30	17.91
6.90	7.40		7.66	1.90	6.54
849.0	932.2	10792.4	899.36	458.55	19.33

November	December	TOTAL	Mean	Range	Varian. %
0.0	0.0	0.0	0.00	0.00	EDIV/0!
0.00	0.00		0.00	0.00	EDIV/0!
0.0	0.0	0.0	0.00	0.00	EDIV/0!
0.00	0.00		0.00	0.00	EDIV/0!
0.0	0.0	0.0	0.00	0.00	EDIV/0!
0.00	0.00		0.00	0.00	EDIV/0!
0.0	0.0	0.0	0.00	0.00	EDIV/0!

# I N S T R U C T I O N

## STARTING AND TERMINATING THE IBM-PC MIKROCOMPUTER OPERATION

### To switch on:

1. Switch on the wall-socket.
2. Make sure that the two switches on the adaptor (distributor) are ON.
3. Switch ON the EPSON FX-100+ printer (the switch is on the left side); the green lights beside POWER, READY and the ON LINE button must come ON the control panel. If the red light happens to be ON beside the PAPER OUT, the paper must be checked.
4. Insert a diskette having DOS on its label in disk drive A: (the one on the left).
5. Switch on the IBM-PC microcomputer (the red switch is on the right side).
6. After a few seconds the blinking cursor appears in the upper left corner of the screen.
7. After about 20 second later a number of messages will appear on the screen, at the same time some noise should come from the printer.
8. Follow precisely the instructions given by the screen.

### To switch off:

1. Take out the diskettes from the drive. (Make sure that all the fresh information - if any - in the memory of the computer have previously been saved on diskette.)
2. Switch OFF the IBM-PC microcomputer (the screen becomes dark).
3. Switch OFF the EPSON FX-100+ printer (all the lights on the control panel go off).
4. Switch OFF the wall-socket (the low noise of the stabiliser disappears).
5. Cover the computer and the printer to protect against dust.

### WARNING !!

1. NEVER OPEN ANY OF THE EQUIPMENT.
2. DO NOT SWITCH OFF THE SYSTEM WHILE THE COMPUTER OR THE PRINTER IS IN WORKING.
3. TO USE THE SYSTEM BY UNAUTHORIZED PERSONS IS STRICTLY PROHIBITED.
4. IN CASE OF DIFFICULTY CONSULT WITH THE RESPECTIVE MANUALS AND/OR CALL AN EXPERT.

LEATHER PRODUCTS

Year:

(11)

\$ 1 = Ksh

Item	Subgroup	P r o d u c t i o n			E x p o r t			I m p o r t			App. consumption	
		'000 units	'000 Ksh	Ksh/unit	'000 units	'000 Ksh	Ksh/unit	'000 units	'000 Ksh	Ksh/unit	'000 units	'000 Ksh
<b>FOOTWEAR</b>												
Casual-street	leather			..			..			..	0	0
	substitute			..			..			..	0	0
	canvas			..			..			..	0	0
Sportsnoes	leather			..			..			..	0	0
	other			..			..			..	0	0
Sandals				..			..			..	0	0
Prot. footwear				..			..			..	0	0
Subtotal		0	0	..	0	0	..	0	0	..	0	0
<b>Household shoes/slippers</b>												
				..			..			..	0	0
Rubber/plastic				..			..			..	0	0
Other				..			..			..	0	0
Footwear total		0	0	..	0	0	..	0	0	..	0	0
<b>LEATHERGOODS</b>												
Suitcases/travel	leather			..			..			..	0	0
	substitute			..			..			..	0	0
Bags	leather			..			..			..	0	0
	substitute			..			..			..	0	0
Small items	leather			..			..			..	0	0
	substitute			..			..			..	0	0
Others				..			..			..	0	0
Le goods total		0	0	..	0	0	..	0	0	..	0	0
<b>GLOVES</b>												
	casual			..			..			..	0	0
	sports			..			..			..	0	0
	protective			..			..			..	0	0
Gloves total		0	0	..	0	0	..	0	0	..	0	0
<b>LEATHER GARMENT</b>												
	leather			..			..			..	0	0
	substitute			..			..			..	0	0
Garment total		0	0	..	0	0	..	0	0	..	0	0
<b>SPORTS GOODS</b>												
				..			..			..	0	0
<b>OTHER LEATHER PROD</b>												
				..			..			..	0	0

Blank or .. = no data available

LOCAL LEATHER CONSUMPTION

Year: 1984

\$ 1 = Ksh 12.5000

	Unit	Bovine	Camel	Split	Sheep	Goat	Reptile	Others	TOTAL
<b>SEMIFINISHED</b>									
Pickled	to.	-14.60	0.00	0.00	-11.83	-22.84	0.00	0.00	-49.27
Wet-blue	to.	-4828.50	0.00	0.00	-725.00	-1768.05	0.00	0.00	-7321.55
Crust	to.	-569.90	0.00	0.00	0.00	0.00	0.00	0.00	-569.90
Total	to.	-5413.00	0.00	0.00	-736.83	-1790.89	0.00	0.00	-7940.72
<b>FINISHED LEATHER</b>									
Shoe upper	'000 m2	151.29	0.00	144.51	0.00	0.00	0.00	0.00	295.80
Lining	'000 m2	5.17	0.00	0.00	0.00	0.00	0.00	0.00	5.17
Garment	'000 m2	8.94	0.00	0.00	0.00	46.99	0.00	0.00	55.93
Others	'000 m2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	'000 m2	165.40	0.00	144.51	0.00	46.99	0.00	0.00	356.90
<b>VEGETABLE TANNED LEATHER</b>									
For footwear	to.	183.36	0.00	0.00	0.00	0.00	0.00	0.00	183.36
Others	to.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	to.	183.36	0.00	0.00	0.00	0.00	0.00	0.00	183.36

.. = data are not available

LEATHER IMPORT

Year: 1984

\$ 1 = Ksh 12,5000

	Unit	Bovine	Camel	Split	Sheep	Goat	Reptile	Others	TOTAL
<b>SEMIFINISHED</b>									
Pickled	to.								0.00
	'000 Ksh								0.00
	Ksh/kg	..	..	..	..	..	..	..	..
Wet-blue	to.								0.00
	'000 Ksh								0.00
	Ksh/kg	..	..	..	..	..	..	..	..
Crust	to.								0.00
	'000 Ksh								0.00
	Ksh/kg	..	..	..	..	..	..	..	..
Semi-finished	to.	..	..	..	..	..	..	..	..
TOTAL	'000 Ksh	..	..	..	..	..	..	..	..
	Ksh/kg	..	..	..	..	..	..	..	..
<b>FINISHED LEATHER</b>									
Shoe upper	'000 m2								0.00
	'000 Ksh								0.00
	Ksh/m2	..	..	..	..	..	..	..	..
Lining	'000 m2								0.00
	'000 Ksh								0.00
	Ksh/m2	..	..	..	..	..	..	..	..
Garment	'000 m2								0.00
	'000 Ksh								0.00
	Ksh/m2	..	..	..	..	..	..	..	..
Others	'000 m2								0.00
	'000 Ksh								0.00
	Ksh/m2	..	..	..	..	..	..	..	..
Finished	'000 m2	..	..	..	..	..	..	..	..
TOTAL	'000 Ksh	..	..	..	..	..	..	..	..
	Ksh/m2	..	..	..	..	..	..	..	..
<b>VEGETABLE TANNED LEATHER</b>									
For footwear	to.								0.00
	'000 Ksh								0.00
	Ksh/kg	..	..	..	..	..	..	..	..
Others	to.								0.00
	'000 Ksh								0.00
	Ksh/kg	..	..	..	..	..	..	..	..
Veg. tanned	to.	..	..	..	..	..	..	..	..
TOTAL	'000 Ksh	..	..	..	..	..	..	..	..
	Ksh/kg	..	..	..	..	..	..	..	..
<b>TOTAL IMPORT</b>									
	'000 Ksh	..	..	..	..	..	..	..	..

.. = data are not available

LEATHER EXPORT

Year: 1984

\$ 1 = Ksh 12.5000

	Unit	Bovine	Camel	Split	Sheep	Goat	Reptile	Others	TOTAL
<b>SEMIFINISHED</b>									
Pickled	to.	14.60			11.83	22.84			49.27
	'000 Ksh	77.50			351.34	456.91			885.75
	Ksh/kg	5.31	..	..	29.70	20.00	..	..	17.98
Wet-blue	to.	4828.50			725.00	1768.05			7321.55
	'000 Ksh	65301.72			15953.00	34962.82			116217.54
	Ksh/kg	13.52	..	..	22.00	19.77	..	..	15.87
Crust	to.	569.90							569.90
	'000 Ksh	42033.00							42033.00
	Ksh/kg	73.76	..	..	..	..	..	..	73.76
Semi-finished	to.	5413.00			736.83	1790.89			7940.72
	'000 Ksh	107412.22			16304.34	35419.73			159136.29
TOTAL	'000 Ksh	107412.22	..	..	16304.34	35419.73	..	..	159136.29
	Ksh/kg	19.84	..	..	22.13	19.78	..	..	20.04
<b>FINISHED LEATHER</b>									
Shoe upper	'000 m2								0.00
	'000 Ksh								0.00
	Ksh/m2	..	..	..	..	..	..	..	..
Lining	'000 m2								0.00
	'000 Ksh								0.00
	Ksh/m2	..	..	..	..	..	..	..	..
Garment	'000 m2								0.00
	'000 Ksh								0.00
	Ksh/m2	..	..	..	..	..	..	..	..
Others	'000 m2								0.00
	'000 Ksh								0.00
	Ksh/m2	..	..	..	..	..	..	..	..
Finished	'000 m2								..
TOTAL	'000 Ksh								..
	Ksh/m2	..	..	..	..	..	..	..	..
<b>VEGETABLE TANNED LEATHER</b>									
For footwear	to.								0.00
	'000 Ksh								0.00
	Ksh/kg	..	..	..	..	..	..	..	..
Others	to.								0.00
	'000 Ksh								0.00
	Ksh/kg	..	..	..	..	..	..	..	..
Veg. tanned	to.								..
TOTAL	'000 Ksh								..
	Ksh/kg	..	..	..	..	..	..	..	..
<b>TOTAL EXPORT</b>									
	'000 Ksh	..	..	..	..	..	..	..	..

.. = data are not available

LEATHER PRODUCTION

Year: 1984

\$ 1 = Ksh 12.5000

	Unit	Bovine	Camel	Split	Sheep	Goat	Reptile	Others	TOTAL
<b>SEMIFINISHED</b>									
Pickled	to.								0.00
	'000 Ksh								0.00
	Ksh/kg	..	..	..	..	..	..	..	..
Wet-blue	to.								0.00
	'000 Ksh					25040.00			25040.00
	Ksh/kg	..	..	..	..	..	..	..	..
Crust	to.								0.00
	'000 Ksh	38517.00							38517.00
	Ksh/kg	..	..	..	..	..	..	..	..
Semi-finished	to.								..
TOTAL	'000 Ksh	38517.00				25040.00			63557.00
	Ksh/kg	..	..	..	..	..	..	..	..
<b>FINISHED LEATHER</b>									
Shoe upper	'000 m2	151.29		144.51					295.36
	'000 Ksh	54331.00		2184.52					56515.52
	Ksh/m2	359.12	..	15.12	..	..	..	..	191.06
Lining	'000 m2	5.17							5.17
	'000 Ksh	202.74							202.74
	Ksh/m2	39.21	..	..	..	..	..	..	39.21
Garment	'000 m2	8.94				46.99			55.93
	'000 Ksh	418.77				2356.00			2774.77
	Ksh/m2	46.84	..	..	..	50.14	..	..	49.61
Others	'000 m2								0.00
	'000 Ksh								0.00
	Ksh/m2	..	..	..	..	..	..	..	..
Finished	'000 m2	165.40	..	144.51	..	46.99	..	..	356.90
TOTAL	'000 ksh	54952.51	..	2184.52	..	2356.00	..	..	59493.03
	Ksh/m2	332.24	..	15.12	..	50.14	..	..	186.69
<b>VEGETABLE TANNED LEATHER</b>									
For footwear	to.	183.36							183.36
	'000 ksh	2785.75							2785.75
	Ksh/kg	15.19	..	..	..	..	..	..	15.19
Others	to.								0.00
	'000 Ksh								0.00
	Ksh/kg	..	..	..	..	..	..	..	..
Veg. tanned	to.	2785.75	..	..	..	..	..	..	2785.75
TOTAL	'000 Ksh	15.19	..	..	..	..	..	..	15.19
	Ksh/kg	0.01	..	..	..	..	..	..	0.01
<b>TOTAL PRODUCTION</b>									
	'000 Ksh	93484.70	..	..	..	..	..	..	123065.22

.. = data are not available



RAW HIDES AND SKINS

Year: 1984

\$ 1 = Ksh 12.5000

Unit	H i d e s			S k i n s			Other		TOTAL
	Cow/skip	Buffalo	Camel	Subtotal	Sheep/Lamb	Goat/kid	Game	Reptile miscell.	
Livestock	'000 heads			0.0					0.0
Slaughter	'000 heads			0.0					0.0
Off-take rate	%	..	..	..	..	..	..	..	..
Production	'000 pcs	119.1	1530.9	1650.0	1565.2	2126.9			5342.1
	to.			0.0	1578.7	2134.0			3712.7
	'000 Ksh			0.0					0.0
	kg/pc	..	..	..	1.01	1.00	..	..	0.69
	Ksh/pc	..	..	..	..	..	..	..	..
	Ksh/kg	..	..	..	..	..	..	..	..
Export	'000 pcs	15.9	160.1	176.0	30.7	113.5			320.2
	to.	95.5	1422.2	1517.7	21.5	56.7			1595.9
	'000 Ksh	2095.7	11226.6	13322.3	335.6	906.1			14566.0
	kg/pc	6.01	8.88	8.62	0.70	0.59	..	..	4.98
	Ksh/pc	131.81	70.12	75.69	10.93	8.00	..	..	4.98
	Ksh/kg	21.94	7.89	8.78	15.61	16.02	..	..	9.13
Import	'000 pcs			0.0					0.0
	to.			0.0					0.0
	'000 Ksh			0.0					0.0
	kg/pc	..	..	..	..	..	..	..	..
	Ksh/pc	..	..	..	..	..	..	..	..
	Ksh/kg	..	..	..	..	..	..	..	..
Apparent availability	'000 pcs			0.0					0.0
	to.			0.0					0.0
	'000 Ksh			0.0					0.0
	kg/pc	..	..	..	..	..	..	..	..
	Ksh/pc	..	..	..	..	..	..	..	..
	Ksh/kg	..	..	..	..	..	..	..	..

Export markets:

Import sources:

.. no data available

## ANNEX NO. IV

## PRODUCTION: HIDES AND SKINS

1983	Cattle Hides		Goat Skins		Sheep Skins	
	Wt (Kg)	Value per Kg (KShs)	Pieces(No)	Value per Pc (KShs)	Pieces(No)	Value per Pc (KShs)
JANUARY	470,907	11,60	128,079	10,75	106,862	5,75
FEBRUARY	468,432	10,45	134,231	9,95	93,729	5,20
MARCH	428,165	10,10	130,898	10,55	100,435	5,75
APRIL	473,079	11,25	126,708	10,70	100,627	5,80
MAY	475,047	12,30	117,638	11,65	99,075	6,35
JUNE	475,890	13,25	127,294	12,55	91,603	7,00
JULY	490,240	12,30	127,393	11,95	96,654	6,35
AUGUST	490,744	12,20	112,360	11,95	92,226	6,40
SEPTEMBER	524,962	11,85	126,541	11,40	93,556	6,15
OCTOBER	483,430	12,25	124,299	11,90	93,182	6,30
NOVEMBER	473,942	12,50	130,189	12,40	94,206	6,60
DECEMBER	517,083	13,15	134,676	12,80	102,516	6,80

1984	CATTLE HIDES		GOAT SKINS		SHEEP SKINS	
	Wt (Kg)	Value per Kg. (KShs)	Pieces(No)	Value per Pc (KShs)	Pieces (No)	Value per Pc (KShs)
JANUARY	510,721	13,85	140,628	12,70	106,231	6,80
FEBRUARY	545,072	14,65	158,375	12,80	113,283	7,15
MARCH	558,197	16,20	142,408	12,85	109,452	7,50
APRIL	606,114	16,30	154,415	13,20	119,665	7,50
MAY	601,244	17,95	164,922	12,95	112,300	7,95
JUNE	846,055	17,10	159,065	12,75	112,079	7,65
JULY	875,738	17,00	183,284	12,30	184,474	7,70
AUGUST	885,327	17,90	195,070	12,45	147,088	7,75
SEPTEMBER	397,062	19,00	213,292	12,30	146,868	8,25
OCTOBER	343,881	15,30	252,765	10,20	149,542	7,40
NOVEMBER	667,476	11,55	174,600	9,05	137,121	6,90
DECEMBER	729,642	12,30	195,190	9,70	141,641	7,40

## PRICES (KSHS) FOR NAIROBI 1985

	HIDES				GOAT				SHEEP			
	1	2	3	4	1	2	3	4	1	2	3	4
January	16.85	14.35	11.35	5.55	13.05	10.70	8.55	4.30	10.35	8.35	6.45	3.35
February	19.55	16.80	13.60	6.10	13.85	11.35	9.15	4.30	11.05	8.75	6.95	3.10
March	23.20	20.30	16.95	7.95	15.55	13.35	10.90	5.50	13.10	10.40	8.20	4.40
April	21.30	18.15	14.45	7.65	15.60	13.25	10.85	5.25	13.00	10.20	8.15	3.95
May	20.65	17.45	13.85	7.75	15.85	13.60	10.85	5.45	13.35	10.55	8.35	3.90
June	20.40	17.35	13.85	7.75	16.85	14.45	11.40	5.35	14.15	11.30	9.00	4.50
July	20.85	17.30	14.80	7.95	18.60	16.10	13.15	7.25	16.05	13.15	10.40	5.10

Source for page 1,2,3, Veterinary Service , Kabete

## ANNEX NO. V

## STATISTICAL DATA ON DOMESTIC EXPORT OF HIDES, SKINS, SEMI-FINISHED AND FINISHED LEATHER (211+611)

Code No		1981		1982		1983		1984	
		Kg	Kshs	Kg	Kshs	Kg	Kshs	Kg	Kshs
211	Hides and Skins	12,964,381	184,123,039	11,136,403	158,032,600	9,157,924	126,578,929	9,999,790	140,393,016
2111	Bovine and Equine	8,730,310	86,049,182	7,985,918	91,512,928	6,122,932	72,952,671	6,265,258	85,159,102
211-201	Dried	6,651,687	72,907,159	5,464,815	70,193,037	2,790,519	43,330,756	566,112	11,218,015
211-203	Wet Salted	798,727	5,246,609	739,503	7,241,749	1,199,915	11,508,909	856,064	8,561,872
211-202	Pickled	-	-	37,484	334,790	44,996	672,779	14,590	77,500
2111104	Wet blue chrome	1,279,896	7,895,414	1,694,116	13,743,352	2,089,503	17,440,236	4,828,502	65,391,715
2112	Calf and kips skins	15,200	248,002	2,678	44,210	4,993	104,730	95,532	2,095,711
211-201	Dried	1,263	8,388	2,678	44,210	4,993	104,739	32	1,192
202	Wet Salted	13,937	239,614	-	-	-	-	95,500	2,094,519
2114	Goat and kid skins	2,691,088	67,176,959	2,268,360	51,693,893	2,167,349	39,249,391	1,947,621	35,327,744
211-401	Dried	806,606	18,979,904	907,511	19,898,379	801,247	11,159,947	56,744	908,116
402	Pickled	-	-	-	-	32,827	1,941,409	22,937	456,908
403	Wetblue chrome	1,884,482	45,196,155	1,360,849	31,795,424	1,283,275	26,147,945	1,763,950	34,962,320
2117	Sheep skins without the wool	1,230,238	32,359,028	858,500	14,553,113	816,619	13,337,388	753,336	15,639,942
211-701	Dried	625,501	8,706,080	508,449	4,091,424	372,243	4,377,110	21,514	335,617
702	Pickled	-	-	10,749	1,506,534	51,418	1,551,223	11,826	391,343
703	Wet blue chrome	604,737	23,652,948	339,302	8,055,455	392,958	7,909,055	724,998	15,952,092
211600	Sheep skins with the wool on	297,530	1,298,438	12,108	116,075	46,131	434,830	32,942	170,417
611	Crust and dressed leather	1,243,166	41,277,141	1,122,950	34,030,094	403,632	24,907,496	690,433	42,599,715
6114(2 + 5)2+(12	Crust (undressed leather)	886,272	39,671,065	663,262	30,906,458	394,923	24,494,459	560,037	42,033,120
6114(1	Dressed leather	356,894	1,606,076	459,688	3,123,636	8,710	503,037	NIL	NIL
		(178,447m <sup>2</sup> )		(229,844)		(4,355m <sup>2</sup> )			

Source: Ministry of Finance, Customs and Excise Department, Statistical Branch.

ANNEX NO. VI

UNIT PRICES OF EXPORT COMMODITIES

Name	Code No.	1981	1982	1983	1984
Bovine dried hide	211101	10.96	12.84	15.53	19.81
Bovine wet salted hide	211103	6.57	9.17	9.60	10.00
Bovine pickled	211102	-	8.93	14.98	5.31
Bovine wetblue	211104	6.17	8.11	8.35	13.52
Calf dried skin	211201	6.64	16.51	20.97	37.25
Calf wet salted	211202	17.19	-	-	21.93
Goat dried skin	211401	23.53	21.93	13.92	15.00
Goat pickled	211402	-	-	23.43	20.00
Goat wetblue	211403	23.98	23.36	20.37	19.77
Sheep dried					
Skin	211701	13.99	9.82	11.76	15.60
Sheep pickled	211702	-	140.54(?)	30.16	29.71
Sheep wetblue	211703	39.11	23.74	20.13	22.00
Bovine crust	611402				
	611502	44.76	46.60	61.30	61.70
	611512				
Dressed leather	611401	4.50(?)	6.80(?)	57.75	

ANNEX VII  
**I N V E N T O R Y**  
of equipment, and programs left with KIRDI

**H A R D W A R E**  
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**IBM-PC Desk-top mikrocomputer** with 512 Kbyte RAM (operative memory), two parallel (Centronics type) and one serial (RS-232 type) serial ports, two double sided, double density floppy disk drives (360 Kbytes capacity each), mains cable, Guide to Operation  
Model: 5150, No. S/N 12288615150

**ARMONIC Green (monochrome) monitor** with cablest to the mikrocomputer  
Model: 5151002, No. 098544

**Keyboard** with 83 keys including decimal key pad  
Part: 1501105, No. 515X-55-99252 P2C

**EPSON FX-100+ matrix printer** with mains cable, ink ribbon, two extra ribbon, two extra covers for cut sheet printing, Operating Manual  
Model: P10FA, No. 021428

**ADVANCE Power Conditioner**  
Model: GT 650, No. SN 001383

**A C C E S S O R I E S**  
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50 pcs floppy disks (double sided/double density)  
10 pcs ink ribbon for the printer  
5 boxes fanfold paper (241 mm)

**S O F T W A R E**  
-----

**DIAGNOSTIC Compute Self-testing Program**

**PC-DOS Operating System** (ver. 2.1) - two diskettes (DOS and supplementary programs), User's Guide, Operating Reference Manual, with Quick Reference Guide

**SIDEKICK** (ver. 1.5) Desktop Organizer - one diskette, Owner's Handbook

**SUPERPACK**(ver. 4.2) Program Package - one diskette, User's Manual

**UCSD p-SYSTEM** (ver.IV.0) Pascal Language Package - five diskettes, User's Guide

**FORTRAN Compiler** (ver. 2.00) - three diskettes, Reference Manual with Quick Reference Card

**FORTRAN-77 for UCSD p-SYSTEM** - one diskette, Reference Manual

**pfs:FILE** File Management Program - one diskette, User's Manual with Quick Reference Card

**MULTIPLAN** Electronic Worksheet - two diskettes (Program and Tutorial), User's Manual with Quick Reference Card

**REGANAL** Program for Regression Analyses - one diskette, Instruction for Users (Computer printout)

**Various Databases** to run with **pfs:FILE** and **MULTIPLAN** - diskettes and Instructions for Users (Computer printouts)

**M A N U A L S**  
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**BASIC Reference Guide** (ver. 3.0) - one book  
**BASIC Handbook** General Programming Information - one book  
**BASIC Quick Reference** - one booklet  
**Beginner's Guide** for the UCSD p-System - one book  
**Assembler Reference** for the UCSD p-System - one book  
**Internal Architecture Guide** for UCSD p-System - one book

RECEIVED 8.9.1985

Arunga Arunga



## UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

UNIDO

11 March 1985

Request from the Government of the Republic of Kenya

## JOB DESCRIPTION

US/KEN/84/163/11-01/31.7.D

Post title Chief Technical Adviser

Duration Two months (first part of split mission, total duration 16 months)

Date required June 1985

Duty station Nairobi, with travel within the country as required.

Purpose of project To further strengthen the leather industry section of the Kenya Industrial Research and Development Institute (KIRDI) and create a well-functioning Leather Development Centre (LDC) comprising a quality control laboratory, a leather pilot plant, an R+D and extension services unit, a leather products design as well as an information and standards preparation unit.

Duties

Duties The expert will be attached to the Ministry of Commerce and Industry and will work at KIRDI. He will specifically be expected to:

1. inspect the civil works of the leather and leather products pilot plant within the new KIRDI premises and make modifications of the machinery layout/piping if required;
2. prepare final specifications of machinery and equipment to be requisitioned for the finishing section of the pilot plant;
3. assist the National Project Director in preparing a suitable organizational structure of the LDC and terms of reference for the staff;
4. prepare a detailed work plan for the project's implementation with tentative schedules of all important activities (installation of equipment, training programmes/fellowships, extension services, regional workshop, etc.)
5. review and assist in current activities of the quality control laboratory and the pilot plant.

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

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Applications and communications regarding this Job Description should be sent to:

Project Personnel Recruitment Section, Industrial Operations Division  
UNIDO, VIENNA INTERNATIONAL CENTRE, P.O. Box 300, Vienna, Austria



**Qualifications** The expert should have extensive experience in the leather industry and in the operation of leather technology centres. Previous UNIDO field experience an asset.

**Language** English.

**Background information** The strategy of the Government of Kenya aims at achieving the maximum added value which potentially exists in the raw hides and skins by complete processing of the materials into finished leather, footwear and other leather products. As one of the first steps in this direction a Leather Quality Control Laboratory was established with UNIDO assistance. The project US/KEN/78/204, Establishment of Leather Quality Control Laboratory, with a total UNIDO contribution of \$ 420.059 was funded through a special purpose contribution from the Government of the Federal Republic of Germany and became operational in May 1981.

The Chief Technical Adviser completed his first mission in October 1983 and in his report he submitted "A feasibility study for the establishment of a complete pilot plant for leather processing at KIRDI".

The laboratory and the pilot plant for wet-blue leathers are fully operational and with the relatively modest inputs the project has been able to establish a well-functioning industry-orientated laboratory which is very much appreciated and utilized by the Kenyan leather and shoe industry. A short follow-up mission of the Chief Technical Adviser took place in the third quarter 1984 by utilizing the uncommitted balance of the funds from project US/KEN/78/204.

Before project US/KEN/78/204 was established, strong opinions were voiced that the Kenyan leather and leather products industry not only needs a quality control laboratory but rather a complete leather technology centre with pilot plants. At that time the UNIDO substantive section and the leather consultants involved in the project design were firmly of the opinion that the technical assistance should be provided in stages. The first step should be the establishment of the quality control laboratory and during the implementation of this project the needs of a complete leather technology centre should be examined.

The main justification for the leather technology centre and the role of the pilot plant were clearly defined by the Chief Technical Adviser in his report on the first mission and in the feasibility study, and can be summarized as follows:

The Kenyan leather and leather products industry is in a very active phase of development. The enterprises which are now in the process of establishing leather finishing departments and footwear and leather products factories lack, however, the

necessary know-how and would be very much assisted through a complete pilot plant and demonstration centre which would provide the enterprises with services in applied research, quality control, feasibility studies, factory planning and in training of technologists through seminars and demonstrations of new improved production methods. At the same time, no advanced quality control laboratory and national standards are in operation in the neighbouring countries, therefore, the Leather Development Centre may be utilized as a pilot plant for establishing similar units and services in the subregion.