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LEATHER DEVELOPMENT CENTRE

US/KEN/84/163

REPUBLIC OF KENYA

Report of the evaluation mission*

Prepared in co-operation with the Government of the Republic of Kenya,
the Government of the Federal Republic of Germany and
the United Nations Industrial Development Organization

United Nations Industrial Development Organization

Vienna

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* This document has not been edited.

SUMMARY OF IN-DEPTH PROJECT EVALUATION

PART A

Project Number: US/KEN/84/163
Project Title: Leather Development Centre

<u>Executing Agency</u>	<u>UNIDF Budget (\$)</u>	<u>Date project approved</u>	<u>Dates of evaluation</u>
UNIDO	922,895	17 July 1984	13-24 June 1988

<u>Government Implementing Agency</u>	<u>Government budget (K Sh.)</u>	<u>Date operations started</u>
Kenya Industrial Research and Development Institute (KIRDI)	p.m.	17 August 1985

I. Summary of project objective and outputs

The project objectives and outputs are somewhat mixed in the project document and consist in strengthening the Leather Development Centre within KIRDI in order to be able to produce finished leather and advise industry on improved tannery processing technology.

II. Purpose of the evaluation mission

This evaluation, in addition to the standard assessment of achievements against set objectives and outputs, is to analyze the capabilities of the Leather Development Centre for development and extension service work, both at a national and regional level and recommend possible changes and improvements needed for the Centre to act as an effective regional headquarters and be the base of the activities for the Regional Hide and Skins, Leather and Leather Products Improvement Scheme.

III. Findings of the evaluation mission

The impact of the LDC in the development of the leather industry is not yet felt. LDC is too integrated within KIRDI, not extension service-oriented and suffers from lack of funds for operating expenses. As a result, LDC is little known in industry. The premises for the pilot plant are basically completed, some equipment is missing but additional equipment is still needed to make it a viable production operation, even if at a pilot scale. Two of the project's outputs have been partially reached and two others not reached at all. Project design is skimpy and not adequate. The new CTA should be able to re-direct the course of the project to the actual needs of the industry.

IV. Recommendations of the evaluation mission

Related to LDC with support of the project

In general, the LDC should improve its linkages to industry and should be individualized as a separate unit within KIRDI.

Related to the project

- The project's duration should be extended for around six months to allow achievement of its outputs;
- An expert is needed for a period of one month to advise on the institutional set-up of LDC;
- A workplan for the project until its completion should be prepared by the new CTA;
- Additional equipment should be procured to allow complete production of finished leather and products;
- A tripartite project review meeting should be organized soon to act on the recommendations of this evaluation.

Related to the leather sub-sector

A better definition of responsibilities and co-ordination of activities between the different government and parastatal organizational units dealing with the leather sub-sector is needed.

Related to the proposed follow-up projects (regional and national)

- The present project should have completed its four outputs before the follow-up projects (regional and national) come on stream;
- The proposed follow-up project merit support by donors;
- Counterpart funds and facilities from the Kenyan institutions participating in the follow-up projects should be assured.

V. Lessons learned

RSI's should charge for services. Industry should be represented in their boards. Centralized RSI's tend to reach out only nearby industries. Counterpart funds for running expenses of RSIs should be assured.

VI. Evaluation team

Mr. O. Klötzer, Consultant, representative of the Government of the Federal Republic of Germany

Mr. O. Gonzalez-Hernandez, Chief, Evaluation Staff, representative of UNIDO

PART B (to be completed by UNDP Resident Representative and to be sent to the UNIDO Headquarters and the Government, together with the report.)

I. Report of the evaluation mission sent to:

(list names and affiliations of recipients and the date of the transmittal)

II. Comments of the UNDP offices:

(brief comments on effectiveness and relevance of evaluation, specifically the findings, recommendations and required follow-up)

PART C (to be completed by Executing Agency headquarters - backstopping officer - and sent to the UNDP Resident Representative and Regional Bureau for Africa within one month after receipt of the report and Parts A and B of this summary).

(Summarize comments on technical and managerial aspects of findings, recommendations and lessons learned.)

PART D (to be completed by the UNDP Resident Representative twelve months after the completion of the evaluation)

Follow-up taken place:

(Record and comment on any actions that have taken place as a result of or follow-up to the evaluation. Comment specifically on all recommendations made in the evaluation report.)

EXPLANATORY NOTES

The value of the Kenyan Shilling (K.Sh.) during the period of the project in terms of United States Dollars (US\$ or \$):

US\$ 1	=	K. Sh. 14.25	(July 1984)
		" 16.10	(July 1985)
		" 16.45	(July 1986)
		" 16.80	(July 1987)
		" 17.10	(June 1988)
		" 17.60	(July 1988)

LIST OF ABBREVIATIONS USED

AHITI	Animal Health and Industry Training Institute
BMZ	Bundesministerium für wirtschaftliche Zusammenarbeit (Federal Ministry for Economic Co-operation), Bonn, Germany
CKD	Completely knocked-down (kits for car assembly)
KBS	Kenya Bureau of Standards
FIRDI	Kenya Industrial Research and Development Institute
KITI	Kenya Industrial Training Institute
KMC	Kenya Meat Commission
LDC	Leather Development Centre
p.m.	Promemoria
RSI	Research and Service Institutions

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INTRODUCTION

The present project is a follow-up of project US/KEN/78/204 "Establishment of a leather quality control laboratory" which was funded through a special purpose contribution of the Government of the Federal Republic of Germany (FRG) to the United Nations Industrial Development Fund (UNIDF). The latter project underwent an evaluation in August 1985 which recommended the pursuing of the follow-up project but noted certain faults in the project design. It further stated that the project was underfinanced in relation to its objectives. However, by the time of that evaluation the follow-up project has been approved and field operations had already started. The Chief Technical Adviser (CTA) of the project under evaluation has been the same as in the previous project. However, in May 1988, it was decided to replace the CTA with someone who has more industry background.

The activities of the project were heavily centered around the establishment of new premises for the pilot plant. The laboratory established during the previous project remained at the old facilities.

Kenya is a significant producer of hides and skins but the potential of this raw material is not fully exploited. Several tanning units exist, from the most backwards to the most modern and sophisticated, but the bulk of output refers to semi-processed hides and skins (wet-blue and crust, to a lesser extent). It is estimated that 40% of raw hides and skins are exported, 50% are tanned into wet-blue and crust and only 10% processed into finished leather. Now that the latest tannery - the Leather Industries of Kenya at Thika - has started operations, the percentage of finished leather is expected to increase to around 25%. However, the unrecorded import of raw hides and skins - legal and illegal - from neighbouring countries makes these figures rather approximate.

With the Kenyan economic system being rather liberal, it is not surprising to note that the development plan (1984-1988) in respect of the sub-sector is rather indicative. Of particular interest is the abolishment of export duty on wet blue (and later on raw hides and skins) and the establishment of export incentives at various levels for various stages of processing, as well as the relevance given to manpower development.

The present technical co-operation project was progressively inscribed in a wider scheme to develop the leather industry in Africa resulting from UNIDO's System of Consultations. This scheme, based on abundant raw materials in the region and limited know-how and facilities for processing, raised considerable interest from donors and recipients alike. This was one of the reasons for the evaluation, namely to "evaluate the capabilities of the Leather Development Centre and recommend possible changes and improvements needed for the Centre to act as an effective regional headquarters and be the base of the activities for the regional (programme)". The other reasons are the customary ones of assessing the attainment of objectives and production of outputs as well as to determine the relation of the project with end-users. The decision to conduct an evaluation was jointly made by the Government of the Federal of Germany (FRG) (Permanent Mission in Vienna and BMZ) and UNIDO and was welcomed by the Government of Kenya (KIRDI).

The evaluation mission took place from 13 to 24 June 1988 and was composed of:

Mr. O. Klötzer, Consultant, representative of the FRG Government and team leader, and
Mr. O. Gonzalez-Hernandez, Chief, Evaluation Staff, UNIDO, representative of UNIDO.

Mr. W.K. Ndegwa, Senior Industrial Development Officer in the Ministry of Industry, although not a formal member of the evaluation mission, accompanied the mission during several visits and interviews.

Mr. G. Felsner, the new CTA who arrived in Kenya early June 1988, accompanied the evaluation mission throughout which gave him an insight into the thoughts of the Government on the project and firsthand acquaintance with selected end-users and, at the same time, provided valuable guidance to the mission.

The mission was able to visit a number of prospective end-users of the project. A good cross-sample was selected and therefore tanneries of all sizes and levels were visited. Visits were made to tanneries in Kisumu, Nakuru, Thika and Limuru.

In addition to the briefing and de-briefing at UNDP Nairobi, the mission paid visits to Mr. K. Lidy, First Secretary of the Embassy of the Federal Republic of Germany to Kenya, Mr. S.N. Arasa, Permanent Secretary of the Ministry of Research, Science and Technology under which KIRDI is located and Mr. J. Gitau, Deputy Permanent Secretary of the Ministry of Industry.

The mission visited the Animal Health and Industry Training Institute (AHITI) which is under the Ministry of Livestock Development as well as training institutions.

On the last day, the mission presented its findings and recommendations in a meeting chaired by Mr. O. Yucer, the Deputy Resident Representative in which representatives of the Embassy of FRG, Ministries of Research, Science and Technology, Industry and Livestock Development and KIRDI attended (full list in Annex III).

The full list of persons met and related institutions and firms visited is on Annex II.

I. PROJECT CONCEPT AND DESIGN

A. Socio-economic and institution context of the project

The Development Plan of Kenya for the period 1984-1988 states, inter alia, the following:

"Industrial development has its own long-term goals of socio economic significance as distinguishable from immediate priorities for Plan period. Long-term goals include: diversification of national economy, accomplishment of rapid rate of economic growth, improvement in export performance, production of supplies required to support development in the primary sectors of economy, employment generation, production of goods and services to meet the basic human needs, development of a diversified technological base, dispersion of industry and equitable distribution of the fruits of industrialization."

"The main thrust of this Plan will be on the consolidation of the existing industrial base, motilization of domestic investment resource, establishment of continued confidence of foreign investors in the national economy, and expansion of the Kenyan entrepreneurship and industrial management base. Investment of public funds in equity will be restricted to new industrial projects of national significance. Priorities in the field of industrial consolidation will include balancing, modernization and expansion of existing enterprise so as to gain maximum production efficiency, product diversification, improvements in the capacity to export and establishment of backward linkages required to replace imported inputs."

"So as to diversify the geographical location of industries, investors and promoters will be encouraged to locate new industrial projects outside Nairobi and Mombasa. Emphasis during this Plan period will be on export-oriented, resource based and labour intensive industries. Promotion and development of producer's goods industries will be encouraged where the replacement of imported inputs is possible and economically viable. In the field of small and cottage industries, the emphasis will shift from capital intensive modern industries to skill based industries. Special attention will be paid to the selection and development of industries typical to the rural areas."

"The following order of priorities has been established to guide the operations of Development Financing Institutions, the Import Licensing Authority, the existing industrial enterprises and new investors in the private sector for industrial development during this Plan period:

- a) resources based, export oriented industries;
- b) export oriented industries based on imported inputs provided net value added is 25 per cent or more;
- c) balancing, modernization and expansion projects of existing individual enterprises;
- d) industries needed to support development in other sectors of economy;

- e) producer goods industries needed to reduce the import liability of existing industry;
- f) import substitution industries based on domestic inputs; and
- g) assembly industries based on CKD kits with 10 per cent or more local content."

"Private enterprises will continue to perform a key role in the field of industrial development. Decisions in the private sector will however be influenced and guided by Government policies relating to tariff, imports, exports and price designed to make a skilful use of these measures and means to achieve the objectives already mentioned."

In what concerns the tanning and leather goods industries, the same plan states the following:

"A step by step approach as outlined below will be used to develop the tanning industry:

- (i) All licenced slaughter houses will be equipped with modern techniques of flaying.
- (ii) Export duty on wet blue will be abolished; export compensation and import of tanning machinery equivalent to 10 per cent of the export earnings on wet blue will be allowed.
- (iii) Two large size wet blue plants will be established to process the hide turnover of KMC abattoirs."
- (iv) Once wet blue capacity is built up, export duty on wet blue will be re-imposed but tanning machinery value equivalent to 20 per cent of export earning will be allowed to be imported.
- (v) Once capacity to product crust is created, the rate of compensation on the export of finished leather will be raised.
- (vi) Subsequent to the creation of finished leather capacity export compensation on leather will revert to normal but that on footwear and leather goods raised.
- (vii) Manpower development will start from the very first step. Fellowships will be awarded for degree courses in tanning and diploma courses in specific fields of industry."

Because of its natural resource based character and its export orientation; the tanning and leather goods industry received high priority treatment. The livestock population of Kenya consists of an estimated 9 million cattle, 7 million goats, and 5 million sheep and an unspecified number of camels.

The recorded production of hides and skins for 1985-1987 in pieces is as follows:

	1985	1986	1987
Cattle and calfs	2,334,600	1,412,400	1,924,400
Goats	2,027,500	2,030,800	2,159,700
Sheep	1,415,400	1,457,700	1,339,600
Camels	6,400	3,200	8,200

Source: KIRDI

The export of raw hides and skins in wet blue, crust and finished stages for 1985-87 in Kenya Shillings is as follows:

	<u>1985</u>	<u>1985</u>	<u>1987</u>
Raw hides/skins	199,771,797	250,260,297	337,244,676
Wet blue	189,282,838	236,107,330	324,451,632
Crust/finished	47,047,962	23,176,264	35,733,462
Total	436,102,597	509,543,891	697,429,770

Source: KIRDI

The recorded production of hides and skins during the period 1985-1987 has been rather stable, the export of raw hides and skins and of leather in the "wet blue stage" increased in money terms as well as in quantity by more than 50 per cent. However, the export of crust and finished leather which used to be 11 per cent of the total export in 1985 did not follow the expansion and was down to 5 per cent of the total export in 1987.

Up to now Kenya has not made progress in obtaining the maximum value added possible from hides and skins. The material is exported mostly raw or with little value added (wet blue). The country is left with the pollution problems originating from the tanneries.

It is widely known that unrecorded quantities of hides and skins are unofficially imported. Only 15-20 per cent of the total hide production originates from mechanized slaughter houses. The installed tanning capacities are outstripping the raw material supply. However, in spite of this situation a good part of hides and skins collected are exported in the raw. The livestock industry is very well developed and the collection of hides and skins is generally well organized. The recovery rates are high with the exception of the north and north-east regions. The livestock herds were considerably reduced through the severe drought experienced in 1984-85. A recovery to the original level of 1983 being for cattle 11.5 million, 8 million for sheep and 6.5 for goats is taking place, supported by the improved weather conditions in 1986 and 1987. A new large upper leather tannery featuring modern equipment and machinery was commissioned in 1986. The leather produced is mainly destined for export to the European market. The shoe industry produces footwear of moderate quality and appears to face a shortage of good quality finished leather. Most of the footwear components are imported. The leather goods industry is not very well developed in spite of the flourishing tourist market.

The sub-sector in Kenya is far from homogenous. Tanneries cover the whole range from the most modern and sophisticated, including advanced effluent treatment, to the most backwards and artisanal. While the quality of skins and hides need improvement because of difficult collection in rural areas, incorrect branding and unskilled flaying and skinning, the quality is far above the Sub-Saharan African average.

Tutelage by the Government of this sub-sector is spread over at least three ministries, namely the Ministry of Industry which has a limited overseeing functions of the sub-sector which is wholly private; the Ministry of Research, Science and Technology which is responsible for KIRDI and its applied research and extension services to industry; and, finally, the Ministry of Livestock Development, through AHITI, which organizes two-year courses on hides and skins improvement and one-year courses on tanning and leather courses. The tanning and leather courses are being expanded to cover two-years. It has a small laboratory/tannery to support these courses.

Still in the area of training, the Kenya Industrial Training Institute (KITI) has, in Nakuru, a center for training craftsmen to produce leather goods, including footwear. KITI, which is under the Ministry of Industry, has been in existence since 1964. This tutelage appears to be presently under review. The courses are aimed at people already in the job. They cover approximately fifteen craftsmen for full-time one-year courses and there are plans to expand to cover up to 40 participants per year. During 1988, KITI started a programme of specialized courses for craftsmen who cannot stay away from their jobs too long. These courses cover eight weeks full-time and twenty-eight weeks evening sessions on design, upper-making or ladies products.

There is a Tanners Association of Kenya whose concern is mainly on employers' questions and has not been very active on substantive matters.

The issues discussed in this section have changed little since the project was designed. Noteworthy is the change of tutelage of KIRDI from the Ministry of Industry to the Ministry of Science and Technology in 1988, although this change has had no significant impact on KIRDI's mandate and operations.

The mission was not aware of any other external co-operation activities in the tanning and leather products industrial sub-sector.

B. Project document

The project document was prepared in the old UNIDF project proposal format which is rather skimpy. It is assumed, although not transparent, that the project is addressing the problem of the low degree of value-added and low level of quality in the tanning and leather products industry of Kenya.

The development objective of the project is, in our opinion, too broad since it aims at contributing to manpower and know-how development of the sub-sector in East Africa, while it should have limited itself to Kenya. However, the mission was informed that this was a condition imposed by the donor to approve the project.

The immediate objectives are mixed with outputs and there is no indication on how these objectives would contribute to reaching the development objective.

The project outputs and activities are clear, although the latter would merit more detail. No quantified targets or indicators were given.

The UNIDO inputs are covered but are insufficient in duration, manpower and equipment. This had already been noticed by the evaluation mission of August 1985.

It can be stated that the project was an appropriate response to the addressed problem, although during implementation it did not follow the expected direction of providing extension services to industry, notion which, it should be noted, was not transparent in the project design. The primary and secondary functions of the project were not stated in the document but upon its analysis they may be construed as institution-building and direct support respectively.

A workplan for the main activities of the project was prepared upon arrival of the CTA but it quickly became obsolete in view of the delays in the construction and fitting of premises and arrival of equipment. Besides, it was too oriented towards laboratory work and not enough to extension services.

Although the ultimate beneficiaries (end-users) of the project were not stated in the project document, it is apparent that these are the tanneries and leather products factories of Kenya. The way in which the project would reach these beneficiaries and how they would profit from the project were not clearly stated apart from reference to "recommendations to the industry".

II. PROJECT IMPLEMENTATION

A. Delivery of inputs

UNDP/UNIDO inputs (in US\$)

Budget Line	Descript.	Original Budget		Latest Budget (17.09.87)		Uncommitted Balance US\$
		m/m	US\$	m/m	US\$	
11-01	CTA	16.0	157,000	16.0	134,799	6,463
11-02	Tannery machinery eng.	9.0	90,000	9.0	75,000	11,373
11-03	Leather prod. designer	3.0	30,000	3.0	30,000	24,926
11-05	Short-term consultants	3.0	28,500	8.0	75,840	24,050
11-99	Total experts	31.0	305,500		315,619	66,812
15+16	Travel		-		5,500	- 614
18-99	Adjustments		-		694	2,615
19-99	Total personnel		<u>305,500</u>		<u>320,455</u>	<u>68,803</u>
31-99	Fellowships		64,000		50,722	18,306
32-99	Study tours		-		13,278	- 9,404
35-99	Group training		20,000		20,000	20,000
39-99	Total training		<u>84,000</u>		<u>84,000</u>	<u>28,902</u>
41-99	Expendable equipment		-		5,000	- 6,607
42-99	Non-expendable equipment		327,832		509,270	44,114
48-99	Adjustments					8,390
49-99	Total equipment		<u>327,832</u>		<u>514,270</u>	<u>45,897</u>
59-99	Miscellaneous		<u>10,200</u>		<u>4,200</u>	<u>1,584</u>
99-99	Project total		747,232		922,895	145,186
			=====		=====	=====

The main budget revision, undertaken in July 1986, was aimed essentially at increasing the equipment component from US\$327,832 to US\$464,545. The subsequent revision of July 1986 reflected lower costs for personnel and again an increase in equipment to US\$509,270. The increases in the budget for equipment were made to accommodate higher costs.

Short-term consultants were so far used in the following disciplines:

electronic data processing, effluents treatment and installation of machinery.

The training of KIRDI staff through the project (fellowships, study tours and on-the-job training) can be stated as follows:

Post	Location	Duration
B.Sc. in place (future leader of section)	Nene College Diploma in Leather Techn.	12 mo.
4 technicians (staff in place)	Leather Technology Training at KIRDI by UNIDO expert	12 mo. each
	Short fellowships with CIDA-Stahl or BASF*	12 mo. each
5 new technicians: 1 mechanic	Erection and maintenance of machines (training at KIRDI)	12 mo.
2 chemists	Laboratory testing and technology training at KIRDI	continuous
2 chemists	Testing and technology training at KIRDI	2 X 6 mo.
	Leather goods design in Italy	2 X 6 mo.

* Only one took place so far.

The amount of group training foreseen in the document was aimed at the East-Africa sub-region, the mission was informed, since this was not stated in the project document. This training has not yet taken place and it may not take place in the context of this project since courses for the Kenyan industry should merit priority.

It should be noted that this equipment is sufficient for demonstration purposes and for the production of a small number of samples from bovine hides and sheep and goat skins. However, it is not sufficient for common production services and needs as well as to be complemented for the development of Nile Pearch leather with the following:

- one throughfeed shaving machine, 1500 mm working width;
- one hydraulic sammying machine, 1800-2000 mm working width (good reconditioned machines will serve the purpose);
- one wooden tanning drum, 1,5 m diameter;
- one wooden lining drum, 1,5 m diameter;
- one small experimental drum for fish skin processing, 10-15 l capacity.

This equipment is estimated to cost around US\$ 200,000.

It should be noted that the phased arrival of equipment over the whole life of the project was caused by the staggered way in which funds were made available to the project. This has caused delays in the completion of the pilot plant which affected the whole project. Substantial delays are accounted for in the shipment of equipment from the suppliers until it arrived at Mombassa harbour.

Government inputs

In the project document, the following inputs were foreseen:

	<u>Phasing</u>	<u>K.Sh million</u>
Appointment of counterparts (2 BSc chemists, 9 technicians, 2 clerks typist, 2 drivers)	(1984) 1985 1986	1.536
Provision of local transport for counterparts	as above	0.100
Fellowship travel fees	as above	0.070
Infrastructure (breakdown part of the leather section)	1985	1.853
Start construction of bldg. at the new site, incl. pilot plant and design workshop	1985 2nd half	1.853
Placing and erecting the "dry" machinery at its designated site (staking, buffing, ironing, spraying, measuring machines) - equipment transport and clearance fees - installation (all the machines)	1985	0.285 0.192
Moving of the rest of the machinery to its designated site	1986 1st half	
Moving of the laboratories	1987	
Operating costs of facilities - fuel and car maintenance - chemicals, stationery	(1987) 1985 1986	0.350 0.150
	<hr/> 1985-86	<hr/> (8,000)

Counterparts and infrastructure, albeit with some delays, were provided in accordance with the plan. However, little or no working capital was awarded. This fact drastically limited the capability of KIRDI to procure fuel, and raw materials and of providing local transport for counterparts which contributed to a serious limitation on "out of KIRDI" activities. The counterparts were found by the mission to have adequate qualifications and the training imparted on them by the project contributed to their becoming potential good professionals in their respective fields.

B. Implementation of activities

The LDC (and the project) has, to a very large extent, concentrated on the erection of the pilot plant and in training of counterparts to operate the facilities. As the scheduled availability of funds did not allow for early purchases of equipment, as it should have been the case, it took too long to get the pilot plant operational.

The LDC is still fully integrated in KIRDI and has no organization of its own with separate accounts, budget, etc. Plans to organize the LDC as a profit centre within KIRDI have not materialized. Under the present organizational structure there is no incentive to reach at least a partial self sufficiency of the LDC.

The training of counterparts was intensive and mostly done overseas. As the pilot plant is not fully operational, part of the local training was given in a private tannery in Kenya.

Advisory, extension and consultancy services were rendered only to a limited extent in and around Nairobi and mostly by the international experts. The participation of national staff is limited because there were no counterpart funds to pay for their travel expenses.

The common production facilities made available through the pilot plant are of great interest to the industry and may become an important source of income for the LDC, once the pilot plant is completed and starts production. As of October 1987, the following jobs had been completed:

- 430 pieces of skins (crust): re-wetted, staked, toggled, buffed, plated, printed and measured;
- 400 sides (chrome-crust): measured;
- 100 sides (wet-blue): splitted;
- 98 sides (vegetable tanned): splitted in 4 pieces;
- 10 sides (dry crust): splitted.

Training and demonstration seminars have not been held and no syllabi, manuals and other training materials have been elaborated.

The LDC hesitated to promote its services within the industry possibly because of a certain feeling of incompetence.

III. PROJECT RESULTS AND ACHIEVEMENT OF OBJECTIVES

A. Outputs

The expected outputs as stated in the project document were:

- "a) a well designed Leather Development Centre consisting of a fully equipped pilot plant to produce finished leather of bovine and caprine origin, including a design workshop for footwear and other leather products."

At the time when the evaluation took place the pilot plant was not yet operational. A few machines had not arrived yet but were in transport to Nairobi.

The Tannery Machinery Engineer post (11-02) should be extended until 29 September 1988 because of the late arrival of machinery. He may be also needed to install the additional equipment suggested by this evaluation.

Utilities need further improvement (water, telephone, compressed air) because of faulty construction. Steam was not yet available.

The building, erected on the lowest point of the area, has been flooded several times after heavy rainfalls. Mud and rainwater may reach a level of approximately 30 cm inside the building. Plans have been made to improve the drainage system and need speedy implementation. The access road to the site can be passed only by a Landrover or similar vehicle.

Tools for the design workshop for leather goods have arrived. The expert is expected to come in August.

This output has been partially reached.

- "b) Trained staff of all categories capable of operating the LDC facilities for the benefit of the leather and leather products industry of Kenya as well as for the benefit of other countries of the region."

Well trained staff for the laboratories and for the pilot plant is available. Further training needs of the staff of the pilot plant can only be identified after the pilot plant has started working. Plans for additional fellowship training abroad should be postponed until training needs are fully ascertained. These needs should be included in the workplan to be prepared by the new CTA.

This output has been partially reached.

- "c) Recommendations to the industry for improved tannery processing, designed to improve the quality of crust and finished leather. On request, recommendations for other countries of the region on organizing and rendering quality control services."

Recommendations were given to a limited extent only by the laboratories of the LDC, since the pilot plant is not fully operational.

Laboratory Commissions 1985-87

<u>Year</u>	<u>No. of Commissions</u>	<u>No. of Samples</u>
1985	62	272
1986	43	223
1987	34	172

In the first six months of 1988 the activities of the laboratories nearly came to a standstill due to lack of funds and defect equipment. There was hope to start such activities as of 1 July 1988 which is the beginning of the new fiscal year.

The following standards have been drafted for the Kenya Bureau of Standards (KBS) under the previous project US/KEN/78/204:

- Standard specifications for wet-blue from bovine hides;
- Standard specifications for wet-blue from goat and sheep skins;
- Standard specifications for chromed crust leather.

Further activities on standardization under the present project have not been reported. There is the intention to transfer completely the work on standards from KIRDI to KBS.

Extension services by local staff could not be rendered not because there were no funds to cover the travel expenses of local staff but also because of a certain hesitation to promote and provide these services.

Regional activities did not take place.

This output has not been reached.

"d) A sample range of new improved quality leather products suitable for export to industrialized countries with complete technology package including graded pattern, technical specifications and pre-costing, ready to be delivered to the industry."

Work to reach this output has not yet started.

B. Achievement of the immediate objectives

If one takes as the immediate objective the establishment of a Leather Development Centre, which is responsible for a number of services to be provided to the industry as applied leather research and development, extension services and training, leather products design, information and preparation of standards, one has to say that the objective has not yet been reached. However, the evaluation mission is confident that this objective will be attained provided the recommendations made by this mission are followed.

With additional equipment (as mentioned under Chapter II.A "Inputs") an improved organization of a cost center type, adequate counterpart funds and an extension of the project's duration of six months, the project will reach its objective.

Within the framework of the existing budget, the following changes are recommended:

- Extension of the CTA's post (post 11-01) until 22 May 1989. (Post to be funded through a transfer from BL 11-50);
- Extension of Tannery Machinery Engineer post (post 11-02) for two months until 29 September 1988;

Beside additional funds for equipment, provisions should be made for four additional m/m to be used for the extended activity of post 11-03 "Leather Goods Expert".

The LDC must strengthen its relations with the industry and through more aggressive promotional measures.

Extension services and training throughout Kenya should be intensified as these are the most important activities to reach the development objective.

C. Contribution to the achievement of the development objective

As mentioned under Chapter I.B, the development objectives of the project should have been limited to Kenya. The sub-regional scope, while a valid one, should have remained outside this particular project.

The development objective of the project is stated in the project proposal as follows:

"The higher level objective of the project is to contribute to the manpower development in East Africa and to create appropriate know-how applicable in this subregion and, in consequence, to increase the foreign exchange earnings from the leather-based industries and obtain the maximum value added possible from the hides and skins, an important renewable natural resource in Kenya and in the neighbouring developing countries."

By the end of this century Kenya will have a population of about 35 million people. This represents an increase of 78% since 1984. The population will include a work force of 14 million people, 6.5 million more than in 1984. These future workers have already been born. To accommodate this workforce without a rise in the rate of unemployment, it will be necessary in the next fifteen years to almost double the number of jobs in Kenya.

While it is certainly too early to discuss the impact of the LDC on the leather and leather products sector as a whole, it is clear that the LDC, once it is operating as planned, can provide a lot of services to reach the development objectives. In the first phase of the existence of the LDC, when its efforts are focussed on improving the production of finished leather in Kenya, the creation of new jobs will not be large in number, as leather production is not labour intensive. In the second phase, however, when the leather is used in the production of leather products, the employment effect (especially in the rural areas) will be important and very much in line with the needs of Kenya. It is worthwhile to increase the efforts and funds put into the project in order to shorten the period of time which is needed to achieve these results.

Taking this development objective at the present juncture in a purely national context, the mission believes that the project, given an extension as recommended, will produce the expected outputs, achieve the immediate objectives and contribute to the development objectives as planned.

IV. CONCLUSIONS

The project under evaluation is scheduled for completion in December 1988. Presently only the quality control laboratory and the pilot plant up to wet-blue stage (both established under the previous project US/KEN/78/204) are fully operational in the new premises of KIRDI. Heavy rainfalls and the location of the premises resulted in the flooding of the pilot plant the day before the evaluation started.

The capacity of the pilot plant, when completed, will allow a small production of finished leather. If this is sold to the market it can be a source of income for the LDC which, together with the sale of services, can contribute to a partial self-sufficiency of LDC.

The LDC has no separate accounts, operating costs are included in the overall KIRDI accounts. However it is obvious that the income of the LDC has covered less than 5 per cent of its operating costs.

As could be noticed during visits to the leather industry, larger tanneries are often able to produce leather at least up to the wet-blue stage without outside assistance, while small and medium sized tanneries need help to improve the quality of their wet-blue product. In order to raise the quality of this semi-finished leather it is necessary to improve the quality of the raw materials as well.

The impact of the LDC on the development of the leather industry should be particularly felt on the production of finished leather. This is important in the context of employment generation since it is in the final stages of processing where labour intensity is higher. With the growing awareness of pollution problems, the whole tanning sector needs advice on effluent treatment immediately. The enterprises visited by the mission ask for training of supervisors and extension services, mainly of the trouble shooting type.

At the beginning of the project, the strategy of the Government of Kenya aimed at achieving the maximum possible added value of raw hides and skins, by processing of raw materials into finished leather, footwear and other leather products. A levy of 40 per cent of the export value (f.o.b.) of raw hides and skins was introduced. This tax was dropped in June 1986 and an increase of exports of raw hides and skins could be expected. This did not result in the lack of availability of hides and skins to the tanners. However, it has led, among other factors, to an increase of prices for hides and skins.

The LDC is part of KIRDI. KIRDI was under the Ministry of Industry until 1987 and is now under the Ministry of Research, Science and Technology. If this leads to a more basic research orientation for KIRDI as a whole, and of the LDC in particular, the expected impact of the LDC to industry may not materialize as expected.

Premises for a leather product design unit and tools for its operation are available. The expert is expected to arrive in August 1988. A standards preparation unit has not been started and, possibly, this activity will be transferred to KSB. A computer has been installed to store statistical information on the leather sector and process KIRDI's accounts.

The outputs indicated in the project document are as follows:

- a) A well-designed Leather Development Centre consisting of a fully equipped pilot plant to produce finished leather of bovine and caprine origin, including a designing workshop for footwear and other leather products.
- b) Trained staff of all categories capable of operating the LDC facilities for the benefit of the leather and leather products industry of Kenya as well as for the benefit of other countries in the region.
- c) Recommendations to the industry for improved tannery processing technology, designed to improve the quality of crust and finished leather. On request, recommendations for other countries of the region on organizing and rendering quality control services.
- d) A sample range of new improved quality leather products suitable for export to industrialized countries with complete technology package including graded patterns, technical specifications and pre-costing, ready to be delivered to the industry.

The mission found that outputs a) and b) have been partially reached while c) and d) have not been reached. The reasons are several and inter-related:

- The project design and the scheduled availability of funds did not allow for early purchases of equipment as it should have been the case. For instance, the original amount for equipment (Budget line 42-00) US\$ 327,832 was insufficient for the outputs to be produced. The project revisions which brought this amount to US\$ 509,270 came too late;
- The project design did not specify in detail the working relationship of LDC with industry and which training and information materials should be prepared;
- There were delays in the shipment and arrival of equipment purchased;
- There was not enough transparency in KIRDI's approach to servicing the industry. Promotion of KIRDI within industry was not sufficient;
- The previous UNIDO CTA had a more laboratory rather than industry orientation. This is now corrected.

As a consequence of outputs not being reached, the project's objective has not yet been reached. Provided the recommendations made by this mission are followed, we are confident that this objective will be attained.

The mission found the premises (both old and new) of LDC adequate. The equipment in place is adequate but it needs additions to complement the production. However it was found that the tensile testing machine has been out of order since six months because an electric motor has a defect. A substitute motor could have been purchased from the project's budget and air freighted to the project.

The pilot plant when fully equipped will be able to produce finished leather of good quality. The following equipment still outstanding has been ordered and is on its way to Nairobi:

- One ironing machine;
- One vibro-staking machine;
- One coating machine;
- One pump for the effluent treatment plant.

One reptile glazing machine is yet to be ordered.

The staff of LDC has received a substantial amount of training still to be completed with a few missing fellowships and in-plant training to be undertaken when the totality of equipment is installed.

The mission found that LDC is not too known in industry, particularly outside the outskirts of Nairobi.

The project suffered from inadequacy of counterpart funds for working capital for transportation and local procurement of expendables. Due to this fact, compounded by the move of certain equipment to the new premises and the breakdown of the tensile strength testing machine, the LDC stopped all activities except laboratory jobs of the chemical analysis type, since January 1988.

V. RECOMMENDATIONS

Related to LDC with support of the project

- In general the LDC should improve its linkages to industry. The Permanent Secretary for Science and Technology informed the mission that it was his desire to see the LDC more industry oriented, with which we totally agree.
- For this purpose a more aggressive effort in promotion is needed, through:
 - a) A demonstration workshop to selected industry participants utilizing the facilities already installed;
 - b) Another workshop for the industry at large when the pilot plant is completed;
 - c) The preparation and distribution of a brochure describing the services which LDC can render;
 - d) Undertake trouble-shooting tours to tanneries throughout the country;
 - e) The provision of short technical courses to tanners on specific matters deriving from the trouble-shooting above. For this purpose, training materials should be prepared for effluent treatment, leather finishing, chemicals, leather goods production, for supervisors of the industry, inspectors of the KMC, and instructors of AHITI.
- The LDC should be individualized as a separate unit within KIRDI. This approach could be extended eventually to the other units of KIRDI. The income from sale of products and services should be kept by LDC and contribute to its partial financial sufficiency (goal of 50 per cent), as already recommended by the evaluation mission of the previous project. In this connexion, a realistic price list for services should be prepared.
- The rain water drainage problem of the new premises should be solved. The problem will be particularly acute when the pilot effluent treatment plant is installed.
- The road access to the new premises needs improvement. Visitors should be able to reach the plant using a normal passenger car.
- The installation of utilities, particularly the steam plant, should be completed to allow the pilot plant to start production.

Related to the project

- The project's duration should be extended to allow achievement of its outputs. We estimate this extension to be around six months. For this purpose the CTA's extension needs a transfer to budget line 11-01 from savings from others particularly 11-50.
- An expert would be needed for a period of one month approximately in order to advise on the institutional set-up of LDC, to make it a cost center with a separate budget and in order to facilitate co-operation with other related institutional units in Kenya, particularly AHITI.

- A realistic and updated workplan to the project until its completion should be prepared. This should inter alia include a production plan for the LDC and a programme of promotional and training activities.
- The SIDFA covering Kenya should pay regular monitoring visits to the project in view of its national and sub-regional importance.
- Additional equipment as listed under Chapter II.A should be procured through the project in order to achieve full production at the pilot plant.
- A tripartite review meeting should be undertaken in Nairobi as soon as possible to decide, inter alia, on the recommendations of this evaluation, and decide on the work plan of the project until its completion. For this purpose the necessary budgetary allocation (around \$6,000) under budget line 16-00 should be made available.

Related to the leather sub-sector

- The mission feels that a better definition of responsibilities between the different government and parastatal organizational units dealing with the leather sub-sector is needed. For this aim, the proposed sub-regional and national products should contribute, as well as the recommendation below:
 - . The mission understands that a leather council/board is being proposed to advise the Minister for Livestock Department. We feel that the proposed council should have an inter-ministerial character, thus representing all Government institutions dealing with hides, skins, leather and leather products as well as of the private sector and should advise on the policies of the Government in this area as well as on the activities of the institutions referred to above.
- The mission found that the association of industrialists of the sector lacked representivity and aggressiveness. This should be corrected.

Related to the proposed follow-up projects (national and regional)

- The ongoing project in LDC should have produced its 4 outputs before the follow-up projects (national and regional) come on full stream. However, there should be no interruption between the present and the follow-up projects in order to assure continuity.
- The mission recommends that the proposed follow-up projects be supported by donors. They are based on a good concept and should improve the prospects of the leather sector in the sub-region.
- The same institutional expert as recommended under "related to the project" should be included in the regional project but with an adequate longer duration.
- Counterpart funds and facilities from the participating Kenyan institutions in the follow-up projects should be assured.

VI. LESSONS LEARNED

Research and Service Institutions (RSI) should charge for their services, at least to cover costs partially. This would also facilitate acceptance by industry.

Industry should be represented on the boards of RSI's to ensure that their services meet their requirements. Ideally, they should also have a financial participation in the institution.

RSI's, if not decentralized, tend to have difficulty in reaching geographically distant plants.

Projects dealing with RSI should ensure that sufficient working capital is available from counterpart funds to procure needed raw materials, ensure essential supplies and finance the mobility of counterparts.

ANNEX I

Tripartite In-depth Evaluation of

US/KEN/84/163
LEATHER DEVELOPMENT CENTRE

Terms of Reference

I. Background

The subject project is a follow-up to a previous UNIDO executed project US/KEN/78/240 "Establishment of Leather Quality Control Laboratory". This project was also financed through a FRG special purpose contribution to IDF. The project design is based on a "Feasibility study for the establishment of complete pilot plant for leather processing at KIRDI" prepared by the CTA of the previous project and officially requested by the Kenya Government through a letter from the Ministry of Finance and Planning dated 6 April 1984.

The immediate (project) objective is "to further strengthen the leather industry section of KIRDI and create a well functioning Leather Development Centre (LDC) which will be composed of the following units:

- Leather Quality Control Laboratory
- Pilot plant for the production of finished leather
- Leather Research and Development Unit with extension services and training facilities
- Leather products design unit
- Information and standards preparation unit".

The project's objectives and activities are very well in line with the national development strategy of the Government of Kenya, as referred to in the Sessional Paper No 1. of 1986 and the Development Plan 1984-88, paragraph 6.277 (Tanning and Leather Goods Industry). Further more the recently designed UNIDO sectoral programme for Africa entitled "Hides and Skins, Leather and Leather Products Improvement Scheme" has recognized the importance of the Leather Development Centre and has selected the Centre as the regional headquarters of the programme for the East African Region.

The project is nearing completion and most of the inputs have been delivered. Finalization of the project activities is planned to take place during the second half of 1988.

The evaluation of the project including the donor country participation was planned from the beginning and the letter of agreement from the Federal Republic of Germany dated 20 december 1984 stated in para 4.: "The Government of the Federal Republic of Germany intends to participate in the interim evaluation of the project envisaged by UNIDO. The necessary details shall be laid down in due course".

A technical evaluation mission of the project was conducted by an independent evaluator in August/September 1985. The evaluator was Dr. O. Klötzer (FRG), his report dated 6 December 1985 refers.

The tripartite in-depth evaluation is, therefore, undertaken as planned and agreed previously, in order to assess the overall achievements of the project, as well as to determine its relationship with the UNIDO sectoral programme for Africa.

II. Scope, Purpose and Methods of the Evaluation

The primary purpose of the evaluation mission is to:

- a) Assess the achievements of the project against the set objectives and expected outputs. This will include a re-examination of the project design;
- b) Identify and assess the factors which facilitated the achievements of the project's objectives, as well as those factors that impeded the fulfillment of those objectives;
- c) Examine to which extent the results produced by the project have contributed towards the building up of Government capability of supporting the leather and leather products industry through institutional and industrial support services such as training, quality control, product development and industrial processing.
- d) Evaluate the capabilities of the Leather Development Centre and recommend possible changes and improvements needed for the centre to act as an effective regional headquarters and be the base of the activities for the project US/RAF/88/100;
- e) Evaluate the pilot plant capabilities for development and extension service work both nationally and regionally.

As part of the above task, the mission will also review the following:

- relation of the project with end users i.e. tanneries and leather product manufacturers.
- future financing of the LDC
- problems related to the organizational set up within the sector with specific reference to AHITIS.

III. Composition of the Mission

The mission will be composed of the following:

one representative of the Government of Kenya
one representative of the donor country (FRG)
one representative of UNIDO

IV. Consultations in the Field

The mission will maintain close liaison with the German Embassy, the UNDP Resident Representative in Kenya, any local UNIDO staff, the concerned Government organizations, and the project's national and international staff.

The mission is also expected to visit various tanneries and shoe factories in the field, and establish close contact with end-users.

In addition to this the UNIDO backstopping officer is expected to be in the country and available for consultations.

Although the mission should feel free to discuss with the authorities concerned all matters relevant to its assignment, it is not authorized to make any commitments on behalf of UNDP or UNIDO.

V. Timetable and Report of the Mission

The mission members will receive a briefing at UNIDO headquarters. Upon arrival in Nairobi, the mission will be briefed by the UNDP Resident Representative, who will also provide the necessary substantive and administrative support. The mission will attempt to complete its work within 2 weeks (to be adjusted), starting in Nairobi on 13 June 1988. At the end of the mission, a meeting should take place where the mission will present its initial findings, conclusions and recommendations, and be ready to discuss these with senior Government officials, UNDP Resident Representative, as well as the German Embassy. (Headquarters debriefing to be added if required).

The mission will complete a preliminary draft of its report in Kenya and will leave behind a copy of initial findings, conclusions and recommendations with the German Embassy and the Resident Representative.

The final version of the report will be submitted simultaneously to BMZ (Federal Ministry of Economic Cooperation), Bonn and UNIDO Headquarters, within one month of completion of field work. After clearance by the two organizations, the report will be submitted to the Government of Kenya. Both the draft and the final report should follow the format given by the UNIDO Guidelines for In-depth Evaluation Reports (attached).

ANNEX II

List of persons met

Ministry of Industry

Mr. J. Gitau, Deputy Permanent Secretary
Mrs. S. Alambo, Assistant Director
Mr. W.K. Ndegwa, Senior Industrial Development Officer

Kenya Industrial Training Institute

Mr. D.L.A. Ochieng, Principal
Mr. C.D. Onchwati, Deputy Principal

Ministry of Livestock Development

Mr. J.M. Ngang'a, Deputy Director, Veterinary Services
Mr. E.N. Machanya, Assistant Director, Veterinary Department

AHITI

Mr. J. Barasa, Deputy Principal
Mr. G.N. Githinji
Mr. J. Mwangi

Ministry of Research Science and Technology

Mr. S.N. Arasa, Permanent Secretary

KIRDI (See Annex IV for full list of LDC staff.)

Mr. O.R. Arunga, Director

Embassy of the FRG in Nairobi

Mr. Klaus Lidy, First Secretary

Office of the Resident Representative of the UNDP

Mr. G.L. Pennacchio, Resident Representative
Mr. O. Yucer, Deputy Resident Representative
Mr. A. Gaffga, JPO

UNIDO Experts

Mr. K. Felsner, CTA
Mr. M. Iman, Expert in Intallation of Equipment

Bulleys Tanneries, Thika

Mr. S.M. Kiruthu, Consultant Manager (also Vice-Chairman, Tanners Association)
Mr. R. Kinya, Production Manager

Leather Industries of Kenya

Mr. K.S. Peerbhoy, Financial Controller

BATA

Mr. H. Mendoza, Managing Director
Mr. R. Legros, Tannery Manager

Afro Meat Co. Ltd. Kisumu

Mr. Mohamed C. Hassanali, Manager

Leather Masters Ltd., Nairobi

Mr. Idris Rupani, Managing Director

Kenya Industrial Estate Ltd.

Mr. A.M. Shikhule, Deputy Managing Director

Lake Tanners, Kisumu

Mr. A.K. Nderu, Director
Mr. Peter, Tannery Manager

Lake Tanning Co. Nakuru

Mr. P. Bagat, Director

ANNEX III

Final Meeting
In-depth evaluation of project US/KEN/84/163

LIST OF PARTICIPANTS

<u>NAME</u>	<u>DESIGNATION</u>	<u>ORGANIZATION</u>
1. Dr. K. Lidy	First Secretary	Embassy of the Federal Republic of Germany
2. Dr. Reggy	Undersecretary	Ministry of Research, Science and Technology
3. Dr. R.O. Arunga	Director	KIRDI
4. Mrs. S. Alambo	Assistant Director	Ministry of Industry
5. Mr. W.K. Ndegwa	Senior Development Officer	Ministry of Industry
6. Dr. E. Machanga	Assistant Director	Ministry of Livestock Development
7. Mr. G. Felsner	Chief Technical Adviser	UNIDO
8. Mr. C Klötzer	Consultant	F.R.G./BMZ
9. Mr. O. Gonzalez-Hernandez	Chief, Evaluation Staff	UNIDO
10. Mr. A. Gaffga	Programme Officer	UNDP/UNIDO
11. Mr. J.M. Muriuki	R/O Leather	KIRDI
12. Mr. H. Iman	T.M.E.	UNIDO
13. Mr. O. Yucer	Deputy Resident Representative	UNDP

ANNEX IV

Personnel at LDC

POSITION	NAME	AGE	PROF. TRNG. (Place + duration)	With proj. since
Research Officer I	Mr. J.M. Muriuki	33	Chem. Nene, BATA 1976-79, 83-84 2 months	1982
Research Officer II	Mr. F.I. Okanga	33	Chem.(1976-79),Min. Water Dev. 1979-84 (old premises)	1984
Research Officer II	Mr. B.O.F. Odongo	30	Chem.,3 yrs, Nene 1978-81 1983-85, Min. of Live- stock 1981-1986	1987
Lab. Technologist I (old premises)	Mr. J.N. Kamau	36	Chem.,Training in Uruguay 1980/TNO 1985/PIS/1987-88	1980
Lab. Technologist	Mr. P. Langat	34		1983
Lab. Technologist I	Mr. J. Kitonyi	39	AHITI 1969-71 Uruguay 1980/TNO-1985/PIS 1987-88 (1972-80 with private industry)	1980
Lab. Technologist II (old premises)	Mr. J.H. Karani	37	Chem. 1974-78 Uruguay 1980, TNO-1987	1980

Support staff

Senior supp. staff

Mach. operator	Mr. J. Ndolo	42	BATA	1982
" "	Mr. M. Osumba	28	BATA, Bulleys	1983
" "	Mr. T. Ramogi	24	BATA	1986
" "	Mr. C. Atito	22	In plant at KIRDI	1987
" "	Mr. P. Lumbembe	28	" " " "	"

and maintenance

Administrative support

Typist	Ms. M. Bala	22	Locally	1982
Receptionist	Ms. M. Otieno	26	"	1986
General Work	Ms. J. Sagara	25	"	1986

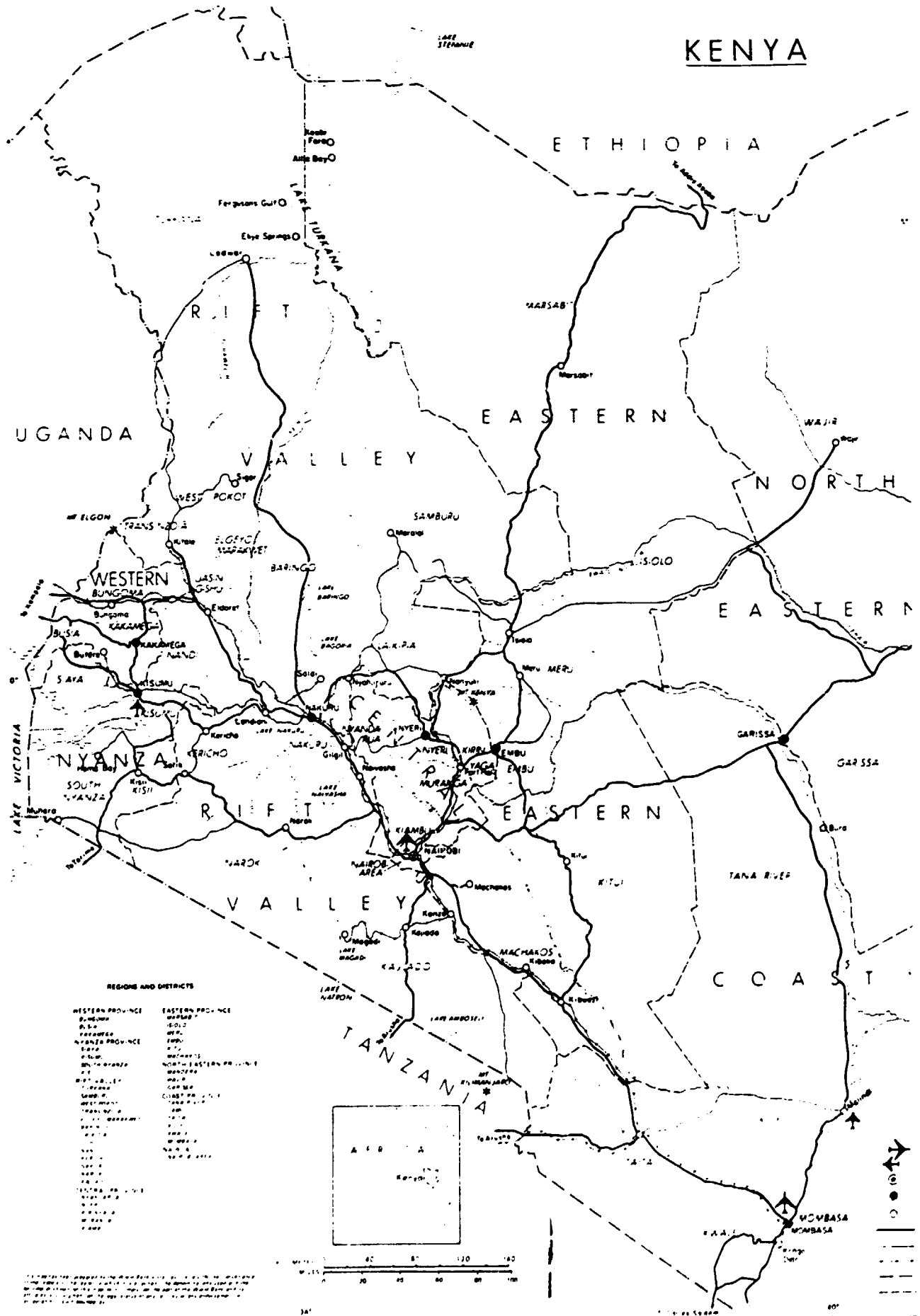
ANNEX V

Equipment provided by the project

	INSTALLED	PRICE (CIF)
Stainless steel drum	Jun 87	DM 22,217
Hydraulic combined sammying setting out machine	Jun 87	DM 128,760
Hydraulic bank knife splitting machine	Sep 87	DM 187,860
Jaw staking machine (reconditioned)	Aug 87	DM 18,000
Pneumatic Glazing machine	Jul 87	FF 104,400
Pinwheel measuring machine	Aug 87	DM 125,000
Hydraulic Ironing and embossing press	Jul 87	DM 32,500
Vacuum dryer	Jun 88	US\$ 31,020
Equipment for design of leather goods	Jun 88	US\$ 3,066
- do -	arr. pending	DM 64,700
- do -	" "	US\$ 3,500
- do -	to be ordered	US\$ 18,000
Rotary Ironing Machine	Aug 88 (forecast)	DM 70,475
Hydraulic vibratory staking machine	Oct 88 (")	US\$ 24,045
Roto laboratory	Nov 88 (")	US\$ 8,325
Peugeot station wagon	Jul 88 (")	US\$ 12,560
Desk top micro computer	Aug 85	US\$ 6,390
Land Rover	Nov 85	US\$ 9,606

ANNEX VI

The map of Kenya



1. The map is prepared by the Kenya Survey Department, Nairobi, Kenya, and is based on the Kenya Survey Department's maps and other available maps. The map is not to be used for any purpose other than that for which it was prepared.