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**INTEGRATED PROGRAMME OF TECHNICAL CO-OPERATION
IN EXPORT TRADE PROMOTION WITH THE
GLO-PHOENIX NIGERIA LIMITED AND BORNO INVESTMENT CO. LTD.**

Technical Report: Production of Leather and Reptile Skin Goods*

Prepared for the Government of Nigeria

by

the United Nations Industrial Development Organization,
Executing Agency for the United Nations Development Programme

Based on the work of

E.C. Newman, Expert in the Manufacture of Leather Goods

Vienna, Austria
May 1990

* This report has not been cleared with the United Nations Industrial Development Organization, which therefore does not necessarily share the views presented.

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Mr. H.A. Jaiyesimi, of GLO-PHOENIX (NIGERIA) LIMITED, who accompanied me, as a UNIDO consultant, on all our visits, acting as interpreter, when necessary, and whose wealth of cross cultural experience enabled me to gather valuable information and most important contacts.

TERMS OF REFERENCE

1. The expert, in co-operation with GIO-PHOENIX (NIGERIA) LTD., will be expected to visit production facilities in Nigeria manufacturing leather goods, accessories and exotic reptile and fish skin goods, with a view to:
 - (a) Assessing the capacity and technical aspects of the production concerning, in particular, factory equipment;
 - (b) Evaluate the quality control programme being carried out in the factories;
 - (c) Critically assess the raw material input base for the manufacturing industry, including the capacity of existing tanneries to fulfil the raw material needs, in terms of quality and quantity;
 - (d) Examine the management aspects of the factories.
2. On the basis of the above, the expert will make proposals on improvements to be instituted in the factories in respect of each of the above-mentioned aspects, with particular emphasis on:
 - (a) Factory management;
 - (b) Quality control and maintenance;
 - (c) Training of technical staff;
 - (d) Organization of factory inputs, particularly raw materials;
 - (e) Utilizing of meat- and other by-products from the reptiles and fish;
3. The expert will also co-operate with the expert on export promotion and raw materials development in preparing a comprehensive study to enable the project promoters in Nigeria to mobilize the necessary investment financing required for the expansion and diversification of leather and reptile skin goods being produced by those factories, as well as their well improved quality to meet the demand of the export market. This is an important aspect of the Industrial Partners Programme for Africa.

SUMMARY

The study is based on a field survey which comprised of a number of visits to various parts of Nigeria to look at tanneries, small leather goods producers, leather suppliers, cattle markets, research institutions and Government offices with the purpose of promoting the export of the leather and reptile skin goods.

According to the 1974 Convention on "International Trade in Endangered Wild Species of Fauna and Flora", products extracted from or made of skin or species from the wild are prohibited in international trade. The only exemption are products bred in captivity. Nigeria is a signatory to this agreement. These skins, when used in leather goods, fetch a high price but it also takes a great deal of skill to use them.

It was soon discovered that there were no farms in place and it would take two to three years to establish them and, secondly, that, if the skins were available, there would need to be a sound manufacturing base of leather goods as there would be no advantage in using expensive materials on poorly made goods.

Although the study is concerned with reptile skins, it was felt that this would have to be done at a later phase of the project. It was first necessary to establish the manufacturing base.

To manufacture leather goods, the most appropriate leather comes from hides and not skins. It was first necessary to establish that there was a ready supply of finished hides. Visits were made to the major suppliers and research institutions. From this, it was clear that no regular supply was available.

On visiting Maidiguri, the major town in the North where hides come in from Chad, Niger and Cameroon, it was quickly established that there was an ample supply of the raw materials available. There was also a large tannery called NETTAL which had been closed and, if re-opened, could process these hides.

Further investigations showed that this tannery, owned by the Borno State Government, was seeking private investment and technical assistance to

re-open. It would therefore be in the interest of the project to bring this tannery up to the finishing stage and thereby guaranteeing a ready supply of leather for the future leather goods industry.

From the market research, it is clear that there is a ready made market for small leather goods in the United States, if these goods can be produced.

Once an established supply of leather has been organized, the next stage will depend on securing a sound manufacturing base. For reasons already stated in the report, it would be an advantage to start such an operation in Maidiguri, but will need capital investment and technical assistance. Finally, as the market develops, a sound base can be found to guarantee the use of reptile skins.

Recommendations

The project should be developed in four phases:

- (i) Research the United States market which has been done by GLOBAL MART INC. of Atlanta;
- (ii) Establish a supply of leather by restarting the NETTAL tannery with capital investment and technical assistance;
- (iii) Establish a leather goods factory on the model provided;
- (iv) Develop reptile farms to support the upgrading of leather products.

ASSIGNMENT INFORMATION

The mission lasted from 7 April to 28 April 1990.

The purpose of the assignment is to promote the export of leather and reptile skin goods from Nigeria to foreign markets, particularly to the United States of America, this being an integral part of the Industrial Partners Programme for Africa.

The objective of this report is to give a true picture of the present supply of leather available to assist the manufacturing industry, when it is ready for production. Another objective of the report is to give advice on the regenerating of production in the North of the country, which is seriously being under-utilized. The final objective of the report is to give suggestions on the type of factory which could easily be established to make leather goods with sufficient technical knowledge and investment, and how this could be linked with the possible marketing on exports to the United States of America.

Visits were made all over the country to the leading tanneries, research institutes, leather suppliers, abattoirs, small manufacturers and financial institutions. Meetings were also held with senior politicians to secure their support.

A timetable of these activities can be seen in Annex 5.

CHAPTER I - FINDINGS

1.1 RAW MATERIAL SUPPLY AND PROCESSING

The livestock population of Nigeria is estimated at 12.5 million cattle, 25 million goats and 12 million sheep. Raw hides and skins potentially available to the Nigerian leather industry were around 1.3 million cattle hides, 11 million goat skins, and 2.3 million sheep skins annually.

The major proportion of the livestock population of Nigeria lies in the hands of the nomadic Fulani who have to move from one ecological zone to another, depending on season, for adequate feed for their livestock. In the process of nomadism, adequate veterinary services, especially follow-up cases cannot be maintained. This results in a great proportion of the livestock having various disease conditions. It is generally known that the Fulani will rarely sell off healthy or productive livestock, hence many of the slaughtered animals at the abattoirs are usually not the healthiest.

When ever making leather goods, it is first necessary to establish the supply of raw materials. In most third world countries, there is a supply of leather which is normally finished to crust or wet blue. This makes them an exportable product. However, the main profit is made in finished leather and to progress to this state, good capital investment and technical knowledge is needed. There are a number of tanneries in Nigeria which finish leather for the footwear industry, but these tanneries have footwear investment from such companies as Bata. Preference is therefore given to their supplies, leaving little for the local market. With this in mind, Nigeria's Ministry of Planning has placed a ban on all exports of leather in order to guarantee supplies to local industries. This move is also designed to encourage the leather processing sector and create jobs.

1.2 REPTILE SKIN SUPPLY AND PROCESSING

It had been mentioned that we were interested in reptile skins and leather skin goods. The only tannery producing reptile skins of any quantity was NABEGU in KANO. Supply came from the reptile hunters who harvest them from the wild. It was rather erratic and all the costing was on area rather than on width. Having looked at large areas of the country, the possibility

of starting up reptile farms will have to wait for further studies. Farm locations are dependant on water and, as there was a serious shortage of water in many parts of the country, due to climatic conditions. Also other ecological environmental and scientific considerations are relevant. The exact choice and location will be the result of phase 4. It was therefore felt that we should first concentrate on establishing a supply of suitable leather for leather goods. Production of leather goods relies very much on hides rather than on skins. To my surprise, this is not common knowledge amongst leather suppliers and leather goods suppliers for the local markets.

A visit was arranged to the National Research Institute for Chemical Technology (NARICT) (formerly the Leather Research Institute of Nigeria) at ZARIA. The meeting with the Director and his assistant was very fruitful and co-operative and they were able to show us the work of the Institute. He confirmed that large quantities of hides were now being eaten as food and only one tenth of the supply was getting to the tanneries.

Mr. Norman I. Cutting, Chief Technical Adviser of the UNIDO project attached to the Institute, offered his assistance, where necessary. As it will be shown later, we availed ourselves of his offer and he accompanied us to Maiduguri.

Due to the insufficient data available, it was therefore decided to look at three major tanneries which were the finishers of leather, to see, if sufficient hides were available. All these tanneries were located in KANO.

1.3 INTERTAN LIMITED

This was a partially owned French tannery. It finished both hides and skins. Quality control was in the hands of a Frenchman, named Mr. G. Vinoche, who was able to maintain a basic standard of finishing which would be considered at the lower end of the market by European standards. Most of his problems stemmed from chemicals supply and the quality of hides and skins. He was prepared to supply us with some finished hides, if we requested them. It was also noted that the tannery was reducing its staff of foreign nationals,

so he and other members would be returning to France by August. Most of the finishing equipment needs to be updated.

1.4 NAJGU COMPANY

This tannery was partially owned by a Portuguese company with some Bata influence. It was nicely laid out with up-to-date equipment. However, it did not finish hides, only skins. These were for export. A number of reptile skins were supplied locally and finished, but would be of little use to the leather goods programme.

1.5 GREAT NORTHERN TANNERY

This tannery is partially owned by Bata and produces both hides and skins for footwear industry. Mr. L.W. Hutchinson, who was in complete control of the tannery, gave us his opinion on the supply of hides. He was not prepared to consider us as a receiver of finished hides, but would allow us finished skins, as he had a little spare capacity. On looking around the tannery, which was very over-crowded, most of the equipment was old, with little or no regard for health and safety. There seemed to be a definite lack of co-operation from Mr. Hutchinson, who seemed to be giving us information which was contrary to what we had already seen from our visits and conversations at the other two tanneries.

From the visits of these three tanneries, it can be confirmed that there would be insufficient supply of finished leather to support a leather goods industry. Therefore we should look to Maiduguri as a possible supplier.

CHAPTER II

2.1 MAIDUGURI NETTAL NIGERIA LIMITED

Maiduguri has a cattle market and a slaughter house which is supplied by cattle coming from CHAD and CAMEROON. It also houses a large tannery built in 1980 with a capacity to produce 200,000 hides a year. However, this is not working at this present time. Therefore we decided to investigate if it could be restarted.

It is also the Nigerian Government's wish to de-nationalize its industry and encourage private investment. Prior to our arrival, the Borno Investment Company, which is situated in Maiduguri, has been in discussion with a group of private bankers to see, if it was possible to restart a tannery and footwear company called NETTAL which, at the present moment, is completely state-owned.

Mr. Hakeem A. Jaiyesirimi and myself had a meeting in Lagos with members of the Nationwide Merchant Bank and the Borno Investment Company Managing Director, Mr. I. Bangalu, Borno State Government, with a view to establish the present situation regarding the assets of NETTAL and its possible privatization. It was therefore necessary to travel to Maiduguri to confirm the true position.

At Maiduguri, we visited NETTAL, first to look at the footwear company. We were greeted by Mr. Usman Tomsu (an ex-student of mine) who has been trained both in England and Italy under a UNIDO scholarship. To my surprise, the footwear factory had been closed down the previous month for lack of money. It was well equipped with seven automatic conveyor belts and machinery. The factory was built in 1980 and still had a large amount of machinery which had never been used. The original cost was over £2 million. Much of the equipment there was still very valuable, but there was a shortage of parts and many machines had seized up from lack of use. Although the expected capacity of the factory was large, it was unbalanced in that the cutting outweighed the production. The factory had been producing shoes up to a third of its capacity which, at its height, reached 120,000 pairs but had dropped down to 13,000 at its closure.

Further discussions also told that there were five operatives who had received training by UNIDO in Italy and had now been put off work. In order to save the equipment from falling in to further decay, I made immediate recommendations that a skeleton staff be used to keep the machinery in order and start a small production line which could be self-financing. If this was not undertaken, it would be difficult for private foreign investors to be found.

2.2 BORNO HIDES AND SKINS SUPPLIES

Nguru and Maiduguri has a cattle market which is also supplied by the neighbouring countries of TCHAD and CAMEROON. Butchers visit the market and buy the cattle for slaughtering. These are then taken to the slaughter house which charges the butcher a fixed cost.

Once the animal has been slaughtered, both the meat and the skin are returned to the butcher. Most of the skins and hides are bought by middle men who supply the tanneries in KANO. The value depends very much on how good the selection is. Many of the animals purchased in the market are transported alive to LAGOS, for there is a heavy demand for meat, including the skin, in the South.

At present, they slaughter approximately 2,300 hides per month and 9,000 skins. After some discussion with several representatives of the slaughter house, we established that more hides were easily available and that any extra meat that this might produce could be used. If demand became very high, there was always the possibility of a canning factory.

Local Leather Merchants

A meeting was set up with a number of local leather merchants who very much controlled the supply of raw hides in Maiduguri. To my surprise, we were able to see large supplies of dried hides immediately available for purchase. These local merchants could supply up to 600 hides per day without seriously affecting the supply to the other tanneries. One reason why they were especially interested was that they would not have to pay to transport the raw hides to the South. At one merchant, there was a stock of over 3,000 hides which contradicted all the information we had been given so far that there were no hides available. It was therefore evident that supply related to price.

2.3 TANNERY

This was a very large building complete with a number of drums and tannery equipment. A limited amount of wet blue processing had been carried out but much of the machinery had not been used. Some of the equipment there

had been bought second-hand from the Sudan, other pieces of equipment had several parts missing. Many of the machines needed a complete overhaul by trained technicians. The State was packaging the footwear factory and tannery as complete unit. The footwear section is at present capable of being operational. At a reasonable capacity, this could not be said of the tannery in its present stage. My suggestion was that the tannery should be organized to the stage of wet blue, to gain enough finance to proceed to finishing at a later date.

We then sought the advice of Mr. N. Cutting of the Leather Research institute who came to Maiduguri to look at the tannery and was of the same opinion. This project being of the utmost importance, a meeting was sought with the Borno State Governor, Colonel Lawan Maina, and the State Commissioner, Mrs. Wahir Mishelia, to seek their assistance in obtaining their approval to restart NETAAL. At this meeting, they declared their public support for our endeavour and gave instructions that we are to receive full co-operation from all concerned.

Problems facing the tannery

Although the tannery had been built by an Italian company, they had left before it became operational. A number of attempts had been made to use part of the tannery but it had never been fully operational.

The three and four metre drums had been sited very high and would be impossible to hand-load. It was therefore necessary to load by fork lift truck. There was some doubt as to whether the three trucks which the tannery had purchased could reach this height. These trucks had not been used for some time. They needed new tyres and batteries and servicing and the third had been working but needed a new tyre and the battery charged. It was likely that this truck could be used to start the wet blue processing. All the drums were tested and started. One major problem is that, as most of the drums had not been used, the wood had shrunk and any water would leak out. These drums would have to be soaked in water for several weeks for the wood to swell. This could be assisted by the use of sawdust. The rest of the machines necessary to the wet blue stage were tested and found to be working.

One machine which should be included in this should be the splitting machine. Unfortunately, several parts had been removed and never replaced. As this was an old machine, it would be cheaper to buy a new one. A major benefit from splitting is that extra value can be obtained from the leather by using the under split for cheaper goods, and secondly, that by splitting, it will reduce the cost of finishing, if this process is done by another company. Many companies at present are just shaving the leather down which is costly in time and material.

Power Supply

The national power supply is rather erratic in the summer months with no notice of power cuts. A stand-by generator was available but, again, the battery was flat and we could not operate it. Again, this has to be looked at as all the processes depend on electricity.

Effluent Plant and Water Supply

On the original plans of the tannery, it showed that an effluent plant had been installed. This was not true. A large pit had been dug to take the effluent which would soak away into the ground. At present, the pit could cope with 3 to 4 months processing of wet blue. After this, it would become a hazard, as it was not very far from the local village. The smell and the water would soon attract health problems.

Originally, the water supply was to rely on a number of bore holes. These were not working, so water was coming from a deep well power pump sited near the river which had dried for some time, but a deep well had been sunk. This pump relied on electric power and, as there were a number of power cuts, the village water supply was being cut off. It had a generator, but due to electrical problems and flat battery, this was not in use. Water could be pumped to the tannery which had a tank able to hold four days of supply. I think, it will have to be the tannery's responsibility to see that the reserve generator for the water works, as water is a main life line to a tannery.

Leather Finishing

There are enough machines to finish leather, but, unfortunately, many of these machines are not working. One such machine is the vacuum drier. Here, parts of the machine were removed and the mechanic has never brought them back. The spraying machine also needs an overhaul. For these machines to be in top working order, it will be necessary to employ a foreign counterpart who can service the machines properly and fit new parts.

Leather Research Unit

Finishing is an exact science and needs the advice of experts, when mixing the chemicals and testing the finish. Most tanneries have their own laboratories for this purpose. The tannery being so close to the leather research unit, I feel that they would be in a position to give advice. Unfortunately, this small unit was not being used for the purpose it was set up for. Its present function was tanning wet blue for local suppliers. A number of skins were brought to the unit. These were converted to wet blue at a price per square foot. This was completely run as a commercial organization with the profits going to the Headquarters in ZARIA and was no service to the industry. Therefore, if the tannery is to start to finish its leather, it will need a research laboratory.

2.4 NETTAL SHOE FACTORY

The shoe factory was set up on 1980 with a production capacity of 1,000,000 pairs of shoes per year. Also imported at the same time was a large number of components, such as heels, soles and adhesive. Staff received training in the United Kingdom and Italy. The manager was trained in the United Kingdom for three years, followed by one year in Italy. There were five operatives trained in Italy for six months.

This was a joint programme with an Italian company which was to provide technical assistance as well as the machinery. Soon after the factory was built and the machinery installed, the Italians pulled out. The buildings and factory were well planned with provision for seven conveyor belts and a large clicking department. Production had begun with the help of local staff who, at their best, only reached 120,000 pairs of shoes per year, using only half of the machinery. This figure dropped to 13,000 at the close of the factory.

Problems Facing the Factory

Because large sections of the factory had not been used for some time, many of the machines have problems due to lack of use, especially dust in electric motors and machinery parts rusted together. Many machines had never been used and were placed in store. One such machine was an injection moulding machine which was worth a great deal of money but did not have the moulds. The cost of engineering these moulds today would be so expensive that it would be cheaper to scrap the machine. This also applied to many other machines. I understand that the Borno State Government wishes to privatize this factory and that an independent valuer had been used to assess the value of the machines and equipment.

If the plant is to be sold as a going concern, a very accurate assessment will be required to its capabilities, if it is to attract private investment. An immediate problem was to keep the factory running with a small group of staff before the rest of the machines became useless. It was agreed with Mr. I. Bangalu, the Managing Director of the Borno Investment Company, that I should look at the plant with the Manager, Mr. O. Tomsu, and the mechanic.

Several days were spent starting up the production line and checking the machines and listing those that were not operative. My recommendation was that there was the possibility of getting three lines back to full production, by changing certain machines around, and that one line should be put into operation immediately to keep the factory operational. This would require 20 workers who could be self-financing by selling the shoes on the local market until a decision is made to re-invest for a larger production, which would also retain those workers who were trained overseas. These suggestions have now been put into operation after obtaining the support of the State Governor and the Managing Director of the Borno Investment Company.

CHAPTER III

3.1 LEATHER GOODS POTENTIAL

There are very few leather goods produced in Nigeria in an organized manner. Those that are produced are synthetics. Problems come from the lack

of finished leather being available, a shortage of proper equipment and technical knowledge.

A number of visits were made to small companies to look at their products. Although they were able to obtain a supply of finished leather in small quantities, the major problem was the lack of technical knowledge relating to construction and the types of equipment needed to assist them.

Most of the hides that are finished are used in the shoe industry and any surplus of finished leather tends to be skins. However, this is not the material most suitable for leather goods. Most people prefer to import their goods. From statements already made, it can be seen that it will be necessary to establish a proper supply of hides in a finished state and that this would be best achieved by restarting the NETTAL tannery in Maiduguri.

Although production of wet blue can be done almost immediately, a major assistance programme will be needed to take it to the finishing stage. If this help is forthcoming, then there should be ample supply of the right leather to produce leather goods.

Many of the machines used to produce leather goods have come from the footwear industry and even if the NETTAL footwear company is restarted, as suggested, a number of machines will become surplus to requirements. It would therefore be sensible, once a leather supply has been established, to take some of this equipment, together with some new equipment, to establish a unit to produce small leather goods and to use it as a basis for a training centre. NETTAL has a number of suitable buildings on site which would be suitable for this purpose.

3.2 MARKET RESEARCH

From studies already undertaken, it can be seen that there is a good chance to export a variety of mixed products to the United States, concentrating on small leather goods which are not subject to rapid changes in design as the demand for leather sales is increasing every year.

Enclosed in this report is a suggested programme for such a factory which could be easily sited in Maiduguri with its present buildings.

CHAPTER IV

4.1 PROFILE OF INVESTMENT FOR LEATHER GOODS FACTORY

1. Choice of manufacturing base and siting

- Ambient conditions and seasonal factors - influences and effects on plant process and suitability of equipment to be installed
- Facility of access
- Availability and reliability of utilities - type, quality
- Locating with reference to labour, supplies and suppliers, accommodation, social services, local and regional regulations and facilities

2. Premises

- Manufacturing, production, storage space - floor areas, height, access to installations and work areas
- Overhead lifting equipment
- Administration and communications services - space, telephones, etc.
- Canteen and sanitary facilities
- Heating/cooling needs, air compressing installations and lines
- Security - internal and external
- Effluent discharge facilities/requirements

3. Staffing pattern requirement to cover functions of

- Planning
- Purchasing
- Production technology
- Chemical technology
- Manufacturing and maintenance
- Sales
- Accounting and reporting
- Administration
- Welfare, sanitary and cleaning

4. Considerations of productive capability

- Factory area
- Quantities of raw material and availability - local and imported
- Number of workdays annually, shifts, capacity utilization
- Number of distributors/concessionaires/entrepreneurs
- Staffing pattern (managerial, supervisory, skilled, semi-skilled, unskilled)
- Quantities and availability of water, power
- Effluent treatment requirements - treatment and disposal
- Assessment and costs of training needs

5. Consideration of working capital calculations - physical/material

- Permanent raw materials stockholding requirement
- Spare parts and servicing materials

- Goods in process
- Stocks of finished products

6. Consideration of working capital - costs/financial

- Accounts receivable ? 30 days à cost of production
LESS depreciation & interest
- Local materials ? 20-30 days
- Imported materials & parts ? 120-150 days
- Work in progress ? 8-12 days à factory cost
- Finished stock ? 30 days à factory cost
PLUS general overheads
- Cash in hand 30 days wages & salaries PLUS 25%
- Accounts payable ? 30-45 days for raw materials &
(some) utilities

4.2 SUGGESTED PRODUCT MIX

This initial range will be expanded as the business develops. Items selected are chosen in consideration of economic factors of material content, manufacturing process, production and planning volume and continuity of demand and include, with recommended daily production:

	Per day
Wallets	300
Note cases & bill folds	600
Purses	225
Cheque book covers	150
Personal organizers	150
Passport cases	225
Key cases	300
Bags and cases	50

On the basis of average requirement of leather per item/daily production as listed above, one day's cutting will call for 4,700 ft approximately plus waste allowance of 705 ft - total daily leather requirement, say 5,405 ft approximately viz:

Item	Quantity	Leathers (ft)	Total (ft)
Wallets	300	2 1/2-3	825
Note Cases	600	1 1/2-3	1,500
Purses	225	1 1/2-3	375
Cheque Book Covers	150	1/2-1	225
Organizers	150	1 1/2-3	375
Passport Cases	225	3-3 1/2	735
Key Cases	300	1/2-1/2	150
Bags and Cases	50	10	500
Cutting/waste allowance			705
Total leather per day's cutting			5,405

The product mix and number of styles per product is necessarily kept flexible and monitored in order to conform with e.g. order book, supply and seasonal situations. Consideration of production economics must be kept in mind:

- (i) Minimum acceptable production runs
- (ii) In early stages of operatives' experience and efficiency with machines and operation sand with patterns, quick changes must be avoided;
- (iii) To break into a developed market investment in pilot trials of different products will be required;
- (iv) Minimum acceptable production run quantities must be established when selling, and lines which do not attract a sufficiently large order should be dropped except in very special cases.

Inter-relationship of the foregoing factors calls for constant monitoring and adjustment.

Leather product manufacturing does not call for any special type of building or utility facilities and most of the machinery can be used for most normal items of leather goods making. Thus, installed productive capacity is inherently flexible and adaptable to economically quantified volumes. However, there should always be kept a balance between larger items - handbags, folios and sports bags - and the smaller items - wallets, purses, "smalls" - in order to maximize areas of leather and utilization of off-cuts and residuals.

A broadly economic ratio is: larger items - 35-40%, smaller items - 60-65%.

Production mix-management and labour requirement

Managing Director	1
Accounts Director	1
Marketing Manager	1
General & Production Manager	1
Assistant Production Manager	1
Stores & Stocks Supervisor	1
Costing, Goods & Invoicing Clerk	1

Supervisors	3
Pattern Cutter & Sample Maker	1
Cutters	4
Machinists	6
Bench Hands	18
Packing, Delivery, Handimen	3
Unskilled Workers	2
Night Watchman	1
TOTAL	45

4.3 INITIAL MACHINERY EQUIPMENT

Cutting Department

	£
3 Clicking Press ATOM SE 15 (Ref No 1)	14,236.50
1 Hand Guillotine MERKEL	2,000.00
2 Splitting Machine CL 40 (Ref No 2)	20,500.00
2 Skiving Machine AV 2 (Ref No 3)	3,720.00
1 Grind Stone	60.00
4 Polypropylene Cutting Blocks £26 each	104.00
1 Large Table 10' x 4 local manufacture approximately	150.00
2 Work Benches 6' x 2.6 à £220.00 each	440.00
1 Set of Racks 4' x 3 shelved for work in progress* local manufacture approximately	150.00
1 Pattern Storage Rack* local manufacture approx.	40.00
1 Set of Leather Storage Racks* local manufacture approximately	100.00
2 Finished Work Storage Racks or Containers* local manufacture approximately	450.00
TOTAL	41,950.00

* Specifications to be decided.

Assembly and Making Department

1 Large Table 10' x 4 local manufacture approximately	100.00
3 Assembly Benches 6' x 4 1/2' à £220 each	660.00
4 Sewing Machines Adler 69/362 £2,500 each	10,200.00
2 Hand Folding Machines	900.00
1 Gold Blocking Machine	1,250.00
1 ABI Cementing Machine	1,650.00
2 Stud Press Machines £300 each	600.00
1 Eyeletting Machine	300.00
7 Complete sets of Hand Tools - see separate notes "Hand Tools Requirements"	
2 Sewing Machines SEIKO ISC	3,100.00
TOTAL	18,760.00

Packing Section

2	Cleaning Benches local manufacture approximately	100.00
1	Storage Rack for Packaging Materials local manufacture approximately	150.00
	TOTAL	350.00

Sample Making & Pattern Cutting Section

1	Sample Making Table local manufacture approximately	220.00
1	Sewing Machine SEIKO LSC (Ref No 8)	1,550.00
	TOTAL	1,770.00

General Service Tools & Equipment

8	"I" Boy Glue Pots £6.50 each	52.00
1	Full set of Crew Punches	117.62
2	Hand operated Staple Guns £7.50 each	15.00
1,000	Sewing Machine Needles No 100/Reverse Twist Point	175.00
1,000	Sewing Machine Needles No 90/Reverse Twist Point	175.00
1,000	Sewing Machine Needles No 110/Reverse Twist Point	175.00
100	Litres of Latex as recommended by machine supplier	849.62
100	Litres of PVA as recommended by machine supplier	250.00
100	Litres of rubber solution	250.00
18	Rolls Moire Silk £100 each approximately	1,800.00
2	No 11 Double End Race* £12 each	24.00
18	No 24 Screw Crease* £13.50 each	243.00
18	No 22 Solid Edge Creasers* £13.50 each	243.00
12	6 Way Punches £3.64 each	43.68
2	Sets of No 36a Hollow Punches 0-6 7 8 19 12 14*	85.20
3	Sets No 36 Wad Punches 3/8 1/2 3/4 7/8 1 1/8 1 1/4 1 3/8 1 1/2*	231.54
4	Wooden Mallets* £5.70 each	22.80
3	Pair End Cutters*	24.30
3	Pair Side Cutters*	20.70
2	Sharpening Stones* £3.00 each	6.00
	TOTAL	19,444.22

Hand Tool Requirement with spares (21 workers)

36	No 10 Clicking Knife Handles* £2.70 each	81.00
72	No 10a Curved Blades* 24p each	17.28
72	No 10b Straight Blades* 24p each	17.28
30	No 48 Round Headed Hammers* £10.50 each	315.00
30	12" Rulers (Steel)* £3.30 each	99.00
30	Pair of Scissors* £8.10 each	243.00
30	No 15 Wide Paring Knives* £3.60 each	108.00
18	24" Rules (Steel)* £4.80 each	86.40
30	53 6" Bone Folders* £1.20 each	36.00
	TOTAL	1,002.96
	GRAND TOTAL	84,276.80

* Examples taken from Taylor UK Catalogue - other suppliers may have stockists in country.

Supplies of the following will be required and may be sourced locally:

- Leather
- Sugar Paper
- Linings
- Foam
- Gold Strip
- Press Studs
- Rivets
- Inks & Stains
- 40" bonded nylon thread in assorted colours
- 60" bonded nylon thread in assorted colours

- NB:
1. Machinery and tool prices quoted are effective as at January 1990 and are subject to change on re-quoting.
 2. Prices for equipment, of local manufacture, are approximated.

4.4. LEATHER FOR LEATHER PRODUCTS

Handbags

(a) Types of leather

1. High priced merchandise - calf, goat, pig, reptile
2. Middle priced merchandise - hide, sheep, goat
3. Low priced merchandise - hide (doped & printed), split leathers, sheep

(b) General requirements

- Tannage - Chrome or chrome retan, substance 1.0 mm
- Substance - 1.0 mm
- Colour - Black, brown, navy & variety of shades co-ordinated with seasonal fashion colours
- Finish - Soft & supple; preferably full grain with a natural look. The top finish must withstand both wet & dry rubbing and possess "easy care" properties - this necessitates finishes based on metro-cellulose, polyurethane, or acrylic resins. A tactile smooth feel is required. The range of finishes will run through high gloss patent, glazed, semi-bright to dull and matt.

Flat leather goods (including dress belts)

(a) Types of leather

1. High priced merchandise - calf, goat, pig, reptile
2. Middle priced merchandise - thin hide, hide offal, goat, sheep
3. Low priced merchandise - thin & printed hides, hide split & offal; sheep

(b) General requirements

- Tannage - Vegetable, chrome, chrome retan
NB: for rigid construction articles the firmer vegetable tanned leather is preferable

- Substance - 0.6-0.8 mm dress belts 1.2-1.6 mm
- Colours - a limited range is generally used, e.g. black, dark brown & tan brown
- Finish - Attractive bright finish with a natural leather look; often supplied with 2-tone finishes, e.g. antique effects; reasonably fast top finish with "easy care" properties; may have to be supplied with a "moss back" for unlined goods.

Brief, folio and document cases, small luggage, "bord" cases

(a) Types of leather

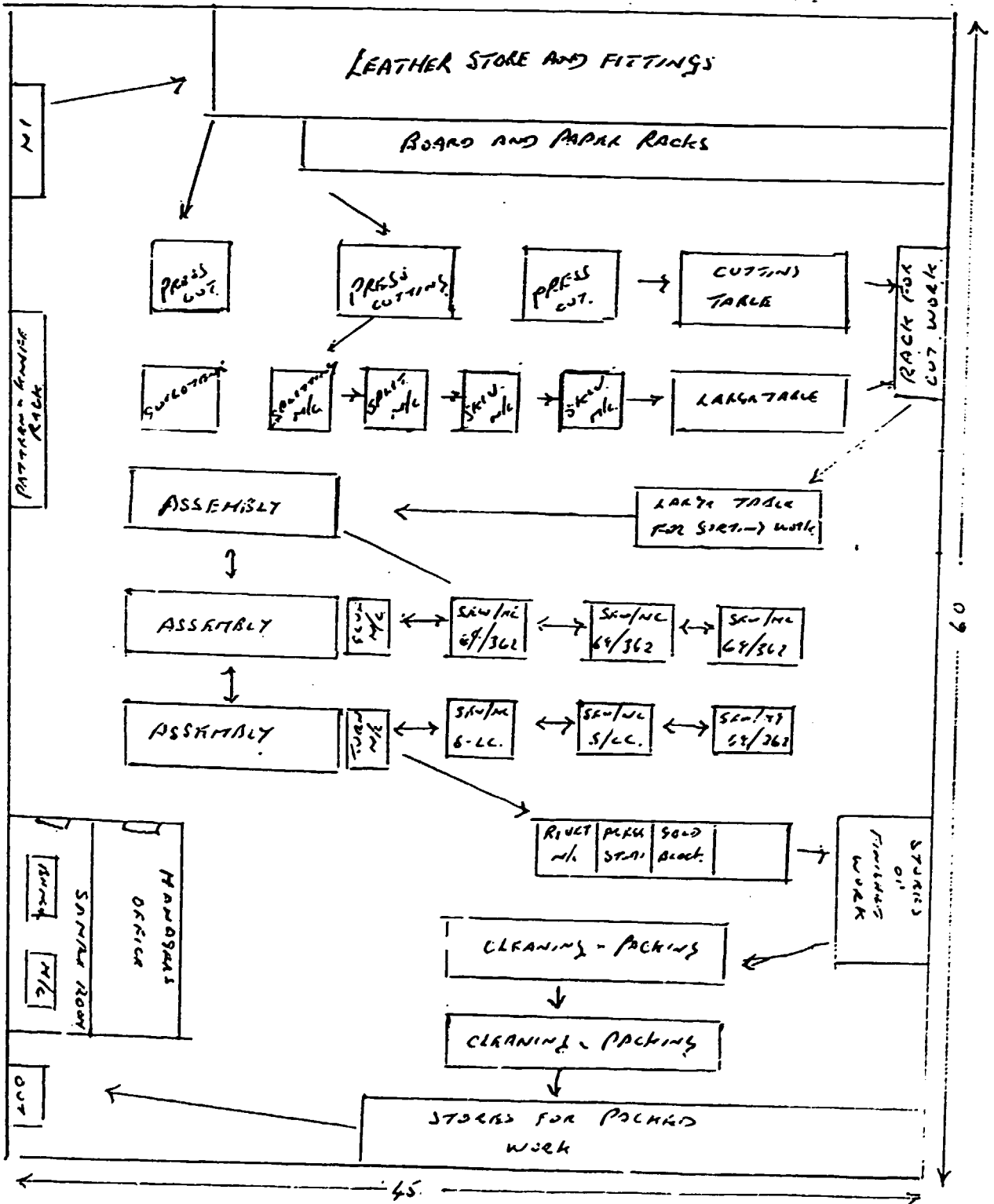
1. High priced merchandise - hide, pigskin, goatskin, reptile
2. Middle priced merchandise - hide, printed hide, hide offal (bellies), goat
3. Low priced merchandise - printed hides, hide splits, goat

(b) General requirements

- Tannage - (i) for rigid construction - vegetable or chrome retan;
(ii) for soft construction - chrome
- Substance - 1.2-1.6/1.8 mm
- Colour - Black, brown, antique, batik, brindle, mottled
- Finish - Aniline finish for high priced goods; pigmented & printed finishes for the remainder; top finish must be abrasion resistant & fast to water (rain) spotting; this necessitates use of lacquer type top-finishes.

4.5 FACTORY PLAN

Factory Plan for Small Leather Goods Production of 1,800 - 2,000 Pieces per Day - Approximately 3,000 ft (60 x 45) (layout not to scale)



NB: Factory must have 3-phase electricity supply and normal 2-phase supply for lighting and small machinery. Water supply required for cleaning and domestic needs.

4.6 MARKET TARGETS

Best potential targets for direct selling of typical leather products into EEC markets

Product	EEC market	Important direct buyers in order of priority
Travel goods handbags, small leather goods	France	1. Department Stores & Super-, Hypermarkets 2. Established manufacturers servicing specialist leather goods retailers, e.g. Le Tanneur
	West Germany	1. Department Stores, e.g. Kaufhalle 2. Mail Order Houses, e.g. Otto Versand, Neckerman
	United Kingdom	1. Specialized multiples, e.g. Salisbury Lawrence 2. Department Stores 3. Diversified multiples, e.g. Boots, Sainsburys 4. Mail Order, e.g. GUS, Grattan
	Benelux & Scandinavia	1. Department Stores, e.g. NK, EPA, ILLUM, Temple 2. Mail Order, e.g. Otto Versand, Neckerman
	Italy	Department Stores, e.g. UPIM Italy is largely self-supporting in finished leather goods, but, again, is increasingly a buyer of cut & finished components.

Ordering, selling handbags, travel- and small leather goods, delivery time scales, seasonal influences on sales volumes

Item	Order placing	Required delivery	Retail selling period	General sales volumes per selling period %
<u>Handbags</u>				
Unframed Casual styles	Oct/Nov	Jan/Feb	Apr/May-Jun	65
	Apr/May	Jul/Aug	Sep/Nov	35
<u>Handbags</u>				
Framed & classic	May/Jun	Jul/Aug	Oct/Nov	70-75
	Nov/Dec	Jan/Feb	Mar/Apr	30-25
Travel goods	Nov/Jan	Apr	May/Jun	60
	Jul/Aug	Sep	Oct/Nov	25
Fill-up and repair orders as required				
small, fancy, presentational items, brief & folio cases	Apr/May	Aug/Sep	Oct/Dec	70-75
	Dec/Jan	Mar	Apr/Sep	30-25

4.7 BASIC ASPECTS OF TRAINING

1. **Pre-implementation and Ready-up** - This period involves training of both technical management and labour. Special attention is necessary to training of supervisors and designers.
2. **Designer Training** - One skilled designer-pattern maker should be sufficient and will probably have to be imported for at least the time it will take to train up locally recruited talent for which overseas training in either Italy, France or UK must be programmed as early as possible. A list of suitable training courses or "fellowships" can be obtained. The design service of the enterprise must be to the highest standard.

Subscriptions to related fashion trade magazines and samples bought in developed countries are a good practical help in designer training.

3. **Supervisor Training** - Productivity and quality depend mainly on good, continuous supervision. A supervisor is needed for each major category of production, e.g. flat goods, frameless handbags, framed handbags, case goods (executive and "bord" cases, light framed luggage).

Courses on production supervision are available in the European countries, India; all the major machinery suppliers have some form of at-base or in-house training facilities.

4. **Operator Training** - This is usually organized in two stages (especially for sewing machinists). In the first stage, instructors must be trained either abroad or locally if facilities exist. In the second stage, the trained instructors using sill analysis and adaptability methods, will train the workers. Generally, one instructor will handle six workers who should be come efficient within 1-3 weeks.
5. **Re-training** - Initial training covers only a part of the product range per "set" of workers concentrating on standard operations. For the introduction of new lines and working methods, and for worker's performance improvement, regular re-training is essential. For this purpose, a specialist instructor should be available - possibly "doubling-up" with other duties in early stages.

6. Management Training - Technical control of factory operations: production, technological and technical development must have fully qualified staff. The time factor may cause recourse to special recruiting (head hunting) and the help of machine suppliers via "on loan" expertise and on site extended higher grade instruction.

4.8 OPERATING COSTS

Operating Costs and Physical Factors (in US Dollars)

CAPITAL COST

Building	125,000
Machinery	134,842
Training	5,000
Vehicles	55,000
Generator	10,000
Provision for 5% increase	16,492
TOTAL	346,334

PRODUCTION COST

1 years supply raw material	2,108,837
Salaries (local)	15,405
Overheads	9,000
Rent	6,700
Sundries	7,000
TOTAL	2,146,942

OPERATING EXPENSES

Administrative salaries	10,319
Selling	25,000
TOTAL	35,319

NON-OPERATING COST

Depreciation	35,000
Interest of 20% on capital cost	69,266
Interest of 20% on three months production	436,452
TOTAL	540,718

EXPECTED SALES PER YEAR

Wallets	588,000
Note Cases	1,058,400
Purses	396,655

Cheque Book Cases	60,025
Passport Cases	132,055
Personal Organizers	294,000
Key Cases	94,080
Bags	392,000
TOTAL	3,015,215
<u>PROFIT AT 15%</u>	452,282

RECOMMENDATIONS

TANNERY

- (i) Some technical assistance should be given to establishing the NETTAL tannery to go on from producing wet blue to finished leather. This help should be in the form of assistance on purchasing a new splitting machine and engaging an international service engineer for tanning equipment to look at the remaining machines and renew parts, where necessary;
- (ii) A proper effluent plant needs to be established as the present pit method is crude and will become a health risk after three months;
- (iii) There needs to be an establishment of a laboratory for the research and testing of finishes;
- (iv) The appointment of an expert to establish the finishing plant and train a counterpart;

LEATHER GOODS

- (v) An existing building in the NETTAL complex should be used to set up a leather goods unit on the size recommended in the report;
- (vi) Part of the existing equipment could be taken from the shoe factory to establish a training unit prior to opening the factory;
- (vii) An expert should be used to establish a leather goods unit over a period of two years and train counterpart staff;

- (viii) A leather goods designer should be employed over two periods of three months to establish a range of items for this unit.



Nabegu Co. Nigeria Ltd.

TANNERY DIVISION
 PLOT 9 W 11 12
 SHARADA INDUST. ESTATE
 PHASE 2

HEAD OFFICE:-
 SE Makina Outer Rd
 P.O. Box 1070
 Kano.

TEL
 336 2 304
 336 2 305
 336 2 306

OUR REF YOUR REF **13th March, 1990.**

Dear Sir,

UPPER LEATHER PRICE LIST FROM 13th MARCH 1990.

(1) GRADE A	=	₦11.20
(2) GRADE B	=	₦9.60
(3) GRADE C	=	₦6.70
(4) LINING GLAZED	=	₦6.00
(UNGLAZED LNG	=	₦5.70
(5) OSTRICH	=	₦10.50
(6) R1 DIAMOND AND R3 JAVA	=	₦12.10
(7) OTHER METALLIC COLOUR	=	₦10.75
(8) REPTILE	=	₦21.00

FOR: NABEGU TANNERY DIVISION

ALHAJI SAGIRU BABA NABEGU
 (ASST. MANAGING DIRECTOR).

PRICE LIST VALID FOR DELIVERY
MADE AS FROM 1ST MARCH, 1990

<u>GRADE</u>	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>	<u>V</u>
Sandal Leather Smooth	8.80	8.60	8.40	8.20	
Nappa	9.70	9.50	9.30	9.10	
Goat Upper Smooth	12.50	12.30	12.10	11.90	11.70
" " Print Table run	11.00				
Goat Lining Table run	8.50				
Nappa Print Table Run	9.50				

LOCAL

Sandal Grade V	8.40
Smooth Softy Sides Table run	8.80
Goat Upper Grade V	10.50
Econs Leather	6.10
Finished Splfts Local	5.30
Gloving Splfts Table run	2.50
Veg. Reject Goat	5.00
Upholstery Sheep	17.00
Reptiles Skins Finishing	2.80/pc.
Veg. Side	65.00/kg
Econs Low Grade	3.50
Cortina to Bata	8.80

itl/tae/90

[Handwritten signature]

Hand Tools Requirements Per Operative, Illustrations, Usages and Care

Cutting department	Making department	
1 Awl	1 Scissors	1 Paring knife
1 Clicking knife	1 Awl	1 Pair spring dividers
5 Blades curved	1 Clicking knife	1 Screw crease
1 24" ruler	5 Clicking blades	
	1 Bone folder	
	1 Hammer	
	1 12" ruler	

The tools required by the leather worker are of a simple type, and consist of at least two knives of suitable pattern for cutting and paring, together with the means of sharpening each; a 12" steel ruler of engineers' pattern and a 12" flat wooden ruler; a steel square of L shape,, the long side measuring 12" and the short side 6" inscribed with inches and fractional markings of eighths; one or two bone folders; at least one marking awl for piercing holes; creasing irons, scissors, "firmer" chisels of assorted widths for cutting openings in leather parts for the insertion of straps, locks, etc; hollow punches to make circular holes; a leather worker's hammer and a small hammer for rivetting; cutting pliers for shortening rivets; a pair of steel compasses; a hard wood rolling pin for the flattening of adhered parts, and certain special pliers and instruments for handbag framing.

Tools, especially edge tools, should be of quality as inferior steel tools are a source of trouble and delay and are more expensive in the long run than those of properly tempered metal. Soft knives require constant sharpening and probably cost the user more for sharpening materials than is saved in their purchase.

Rulers should be inscribed with the metric system of measurements as well as English inches and fractions of inches, as bag and purse frames of both English and Continental manufacture are measured in centimetres. Nearly all components of Continental origin are made to the metric system of measurement. Entrants into the industry should also familiarise themselves with fractional parts of inches. Fractional measurements of less than 1/10" are rarely required in leather goods making, but the worker should be able readily to recognise, and transfer from the ruler, measurements of 3/16, 5/16, 7/16, 9/16, 11/16, 13/16 and 15/16 inches as well as measurements involving eighths of an inch. A knowledge of the approximate English equivalents of the metric measurements in ordinary use for purses and bag frames is also useful.

The first task of a person essaying to make leather goods is to ensure that the knife or knives required are properly sharpened and in good order. The cutting knife most useful for general cutting purposes in fancy leather goods making is the shoemaker's heel paring knife, a wood-handled knife having a thin but not too flexible blade. Another pattern is the Swedish knife, a more rigid type without a handle, though usually a strip of leather is bound round the lower part to make it more comfortable to the hand. The clicking knife is a narrow-bladed think knife especially suitable when much fine cutting of curved outline is to be done. The heel

paring knife, however, provided it is kept to good shape by correct sharpening, meets the requirements of most classes of cutting, being adaptable for straight and curved outlines and for the general trimming of leather and other materials.

The strop or buff stick is the sharpening agent for this tool and is a handled piece of wood about 14"x2"x3/4" in thickness having a strip of medium grade emery cloth attached to one side and a strip of buff leather to the reverse side. Buff leather is not easily procurable at the present time as its primary use for military equipment has been largely replaced. It is a stout hide leather heavily buffed on the grain side, so leaving an open surface which for stropping purposes is filled with a mixture of tallow and fine emery powder. A substitute for buff leather can be made from a piece of stout hide well sand-papered on the flesh side and treated with the grease and emery powder composition.

To sharpen the cutting knife, the blade is first laid on the emery side of the strop in a diagonal direction so as to bring the whole length of the cutting edge in contact with the emery. It is then moved briskly up and down the length of the strop, the knife being held as flat as possible but care being taken to ensure that the edge is in continuous contact. The opposite side is then similarly treated, the angle at which the blade is laid being reversed in order to sharpen the entire length of the cutting edge. The strop is then turned over, bringing the leather side up, and the edge finished by drawing or stroking the knife edge from end to end of the strop, the knife and the direction being reversed to sharpen the opposite side. On no account must the knife be moved in a to and fro direction as on the emery side, or it will cut into the leather and spoil the strop.

The sharpening process should be directed to the removal of an equal amount of metal from both sides of the blade, so keeping the cutting edge in a direct line from the centre of the back and not to one side and also keeping the knife to a good shape during its gradual wearing down (see Figure). In this way the utility of the knife is preserved, the long portion of the cutting edge being available for cutting straight edges against a steel rule and the point kept in good condition for the free-hand cutting of curved shapes. This objective is obtained by holding the knife at an almost flat angle on the emery and applying even pressure. Holding the knife at considerable angle results in a rounded edge, which makes the cutting of materials more difficult, and incorrect pressure directed to sharpen the extremity of the blade only results in a square-ended knife which is useless for all purposes.

Emery cloth is a rather coarse abrasive and produces a slightly roughened cutting edge. An edge of this kind, however, is preferable for ordinary cutting purposes, the finely serrated, sawlike edge lasting longer than a smooth razor-keen edge. The cutting knife must be frequently sharpened during use as a blunt knife means hard work as well as indifferent cutting.

The paring knives used in the leather goods industry are specially made. They are larger, heavier, and less flexible than cutting knives, some being fitted with wooden handles. There is a choice of length, width, and thickness, and a knife is selected according to whether the leather usually worked upon is heavy, medium, or thin, heavy leathers naturally requiring a heavy, rigid knife.

Paring knives must be of first quality steel as they have to take a very keen edge, the latter being formed at an angle across the end of the knife and not along the side as with the cutting knife. The angle formed by the top edge and sides varies from 45° to 75° according to the desire of the worker. The smaller angle gives a longer cutting edge to a normal width of blade but results in a certain loss of pressure during use and may be found tiring for heavy

paring. A knife intended for heavy work is preferably shorter in length to save weight and the cutting edge nearly at right angles so that the maximum force can be applied.

The cutting edge of a paring knife is ground to a wide bevel on the top side but the back must be kept quite flat, a feature that must be observed and retained in subsequent sharpening. Sharpening is best performed by means of an oil-stone, the kind known as "washita" of fine "cut" being recommended. Paring knives may be sharpened by means of very fine emery cloth for rough paring, but for good results on ordinary leathers the oil-stone produces the necessary keen edge more effectively.

The knife is applied to the oil-stone, using only two or three drops of oil as a lubricant, and with the bevelled side down is pressed with the fingers of both hands up and down the length of the stone, the knife being held at an angle of about 30° and the cutting edge being kept in close contact with the surface. After a few motions it is reversed, and the back of the cutting edge is laid quite flat on the oil-stone and again worked up and down, pressure being applied with both hands. In order to sharpen the back of the edge correctly it is necessary to apply the knife at an angle, bringing the hands to the right hand side or the fingers will prevent the knife from being kept flat for the full extent of its travel. The stoning of both sides is repeated until, on being viewed from the end, the edge appears as a fine black line. A silvery line denotes bluntness or it may be due to a "wire" edge or burr which must be removed. The whole surface of the oil-stone should be worked over to avoid wearing a hollow or groove in one part; a hollowed stone will produce a curved cutting edge to the knife which is undesirable.

When a clean edge has been obtained, the knife is wiped free from oil and applied to the leather side of the buff stick. It is then drawn along the strop, using considerable pressure, in a direction away from the edge, first treating the bevelled side and afterwards the flat surface. At least a dozen strokes in each direction will be necessary to impart keenness to the edge, and care must be observed to avoid the cutting edge meeting the strop at a direct angle. An awkward reversal of the knife may waste all the previous effort expended and involve the re-stoning of the edge. After some use the original bevel becomes worn away and the knife must be re-ground on a grindstone.

The folder is a tool which requires some adaptation to suit it for its purpose of marking the flesh side of leathers for positions of turnovers and bends and for its general use in assisting the fingers in making-up processes. The type of bone folder available is supplied for use in the bookbinding industry and is rounded at both ends when purchased. For leather goods making, one end should be sawn off to an angle of 30°, using a fine wood worker's or metal saw. The sawn edge is then bevelled on one side and flattening the back slightly. Finally the edge and point must be smoothed off to prevent damage to the leather when in use (see Figure).

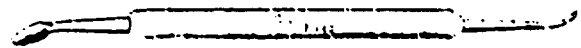
The large hammer belonging to the leather worker's kit is used principally for the setting of gusset folds and to obtain close adhesion of adhered surfaces after the assembly of certain articles. It should therefore be of good weight and have a smooth, hard steel, slightly domed face. The "joiner's" hammer is a suitable type but the handle should be shortened to 6" or 7" for convenience in handling. The striking faces of many so-called "leather workers" hammers are too much domed and besides being more difficult to manipulate on small areas are liable to bruise leather surfaces more than those which are nearly flat.

The hammering of leather parts naturally calls for much care and should be restricted, the rolling pin being utilised in its stead wherever possible.

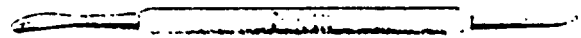
Scissors are employed for the roughing out of reinforcements and other purposes, and it is necessary that one pair should be of substantial make, having one square-ended blade and one pointed. An 8" size is generally suitable. an additional pair of 6" scissors for light trimming is desirable, and these should be of the type having both blades pointed so that they can be applied to inside corners and less accessible positions if necessary.

The remainder of the leather worker's tools are made especially for their respective purposes, and so should not require preliminary modification or special notice. Instruction in their application and use can be given when specialised items of fancy leather goods may become added into the range.

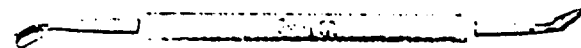
ILLUSTRATIONS OF HAND TOOLS QUOTED



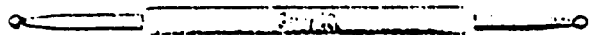
Large Diamond, Bent Tracer, N.P. Steel, Rubber Handle



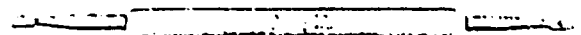
Small Modeller, Bent Tracer, N.P. Steel, Rubber Handle



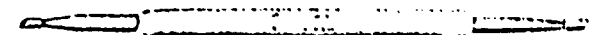
Spade Modeller, Small Diamond, N.P. Steel, Rubber Handle



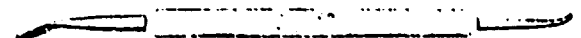
Double Ball Tool, N.P. Steel, Rubber Handle



Diamond Edge Creaser, N.P. Steel, Rubber Handle



Double Deerfoot, N.P. Steel, Rubber Handle



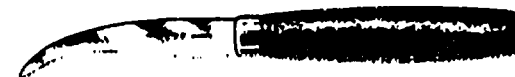
Small Diamond, Bent Tracer, N.P. Steel, Rubber Handle



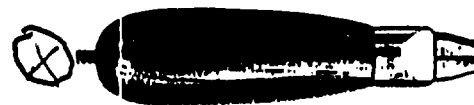
No. 9. Curved Clickers Knife



No. 9A. Straight Clickers Knife



No. 9B. Paris Curve Clickers Knife



No. 10. Extension Clickers Handle



No. 10A. Curve Clickers Blade



No. 10B. Straight Clickers Blade



No. 11A. Gauge Knife

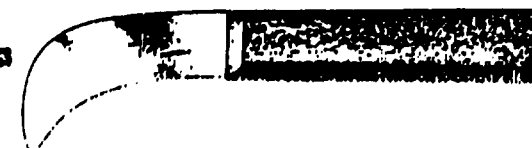


No. 11. Race Single End

Double End



No. 12. Incising Knife



No. 12A. Lino Knife



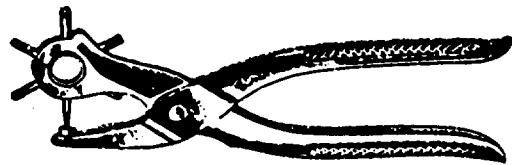
No. 13. Cutting Knife

Tools for *Jayco* the craftsman

Tools for *Jayco* the craftsman

Jarco

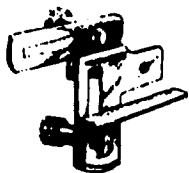
Jarco



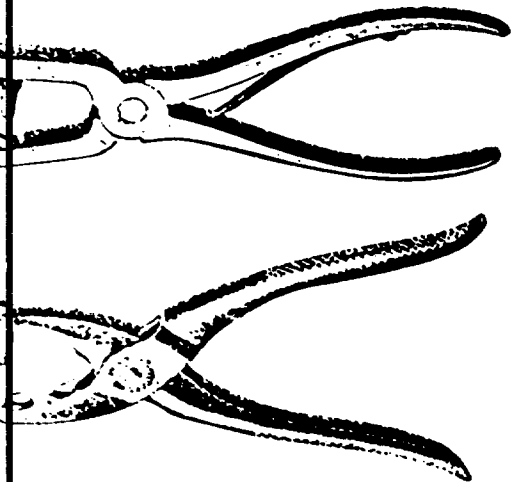
No. 32. 6-way Punch Pliers Extra Nipples

No. 33. Single Way Punch Pliers, Heavy Quality

No. 33A. Spare Punches
 Sizes 0 and 00
 " 1 to 6
 " 8
 (Push-in Pattern)



No. 34A. Gauge (also suitable for 6-way punch pliers)

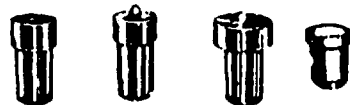


No. 34. Universal Pliers, handles only

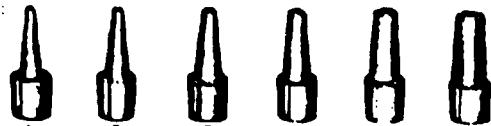
FITTINGS FOR UNIVERSAL PLIERS



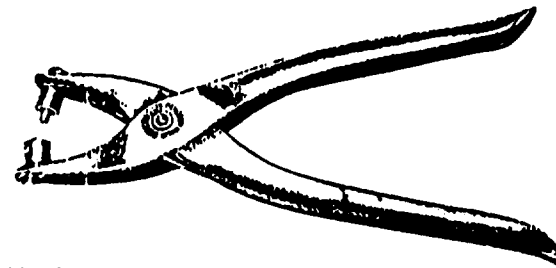
34B. Tools for belt and clapette eyelets



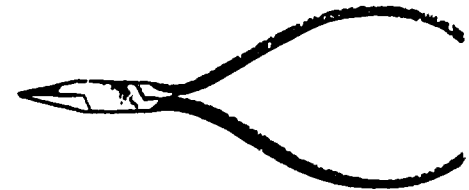
34C. Press Stud Tools for 3/3 Studs



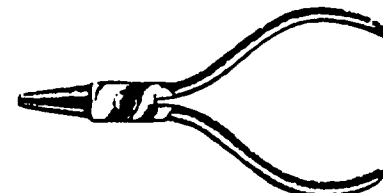
1 2 3 4 5 6



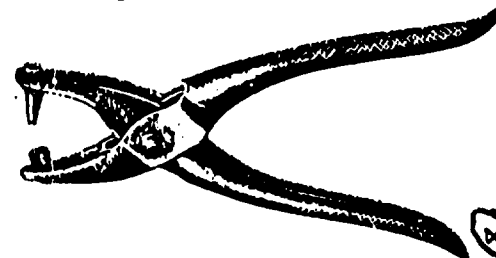
No. 34J. Combination Punch and Eyelet Setting Pliers



No. 34G. Fine Nose Pliers for Jewelry work



No. 34H. Round Nose Pliers 4"



No. 34F. Junior Punch Pliers
 Sizes: 1, 2 or 3



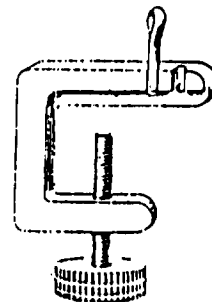
No. 36A. Best Quality.
 Sizes: 0-6, 7, 8, 10, 12 and 14.



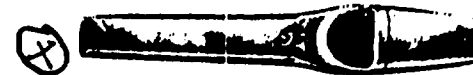
No. 36. Hollow Punches:
 Sizes: 0-6 7 8 10 12 14



No. 36B. Wad Punches:
 3/8" 1/2" 5/8" 3/4" 1" 1 1/8" 1 1/4" 1 1/2" 1 3/4" 2" 2 1/8" 2 1/4" 2 1/2" 2 3/4" 3"



No. 35. Upper Gauge for Punch Wad

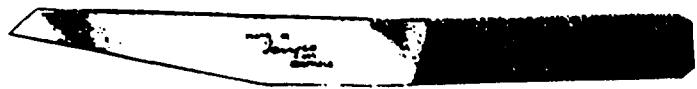


No. 36C. Crew Punches:
 Size: 33 34 35 36 37 38 39 40
 1/2" 3/4" 1" 1 1/4" 1 1/2" 1 3/4" 2" 2 1/4"

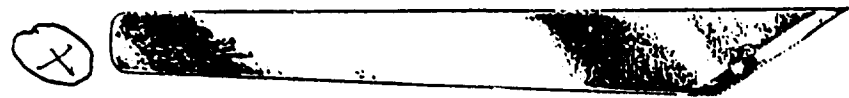
No. 36D. Oval Punches:
 Sizes: 17-22

KNIVES

Jarvis



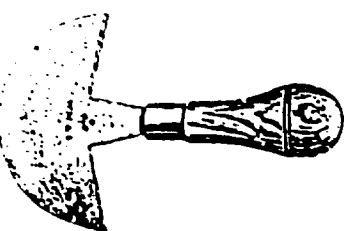
No. 14. Narrow Paring Knife



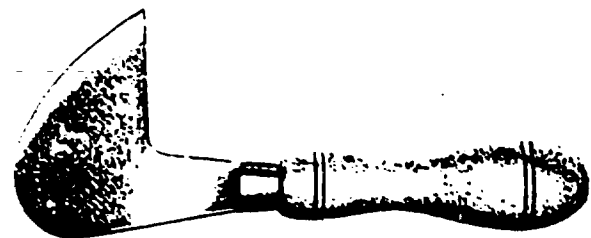
No. 15. Wide Paring Knife



No. 16. French Pattern Paring Knife



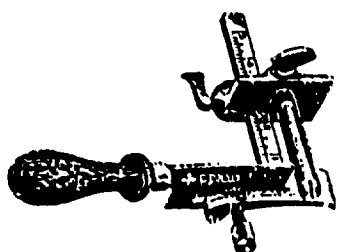
No. 17. Round Knife
Head Forged



No. 19. Best Saddlers' Single Head Knife



No. 18. Edge Shaves



CREASERS,
THONG TOOL
STITCH TOOL

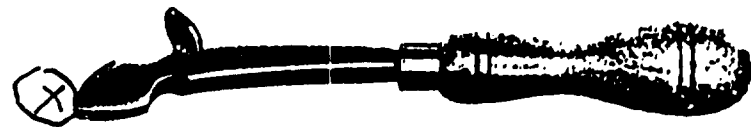
Jarvis



No. 21. Plain Creaser Light Pattern



No. 22. Light Double Creaser
No. 23. Light Solid Edge Creaser



No. 24. Screw Creaser



No. 25. Heavy Single Creaser



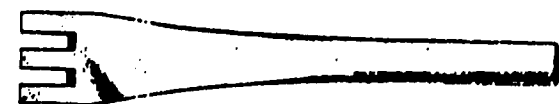
No. 26. Heavy Double Creaser



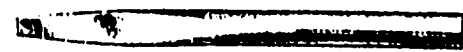
No. 27. Heavy Solid Edge Creaser



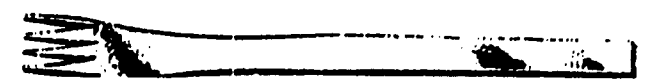
No. 28. Stitch Marking Wheel 8 or 10 to 1"



No. 29. Thonging Tool, 3-prong



No. 30. Thonging Tool, single prong



REGIONAL FOCUS: AFRICA

Leathermaking shows slow progress

Brief background to Africa's painfully slow progress to develop its leather industry. UNIDO's initiative should help considerably. As a continent it has a potentially very rich raw material resource. YILMA ADAMU reports.

Of the estimated world bovine population of 1.4 billion head, the share of developing countries is 69.4 per cent. Africa with 140.2 million head accounts for 10.1 per cent of the world bovine population. The output of bovine hides in Africa has in the last 25 years increased by 40.1 per cent from 125,000 tons to 175,000 tons. On the other hand, Africa's export of raw hides has dropped from 64,000 tons to 46,000 tons, indicating an increased use of the raw material by local tanneries. In fact, Africa's export of bovine leather increased by 67 per cent between 1976 and 1984.

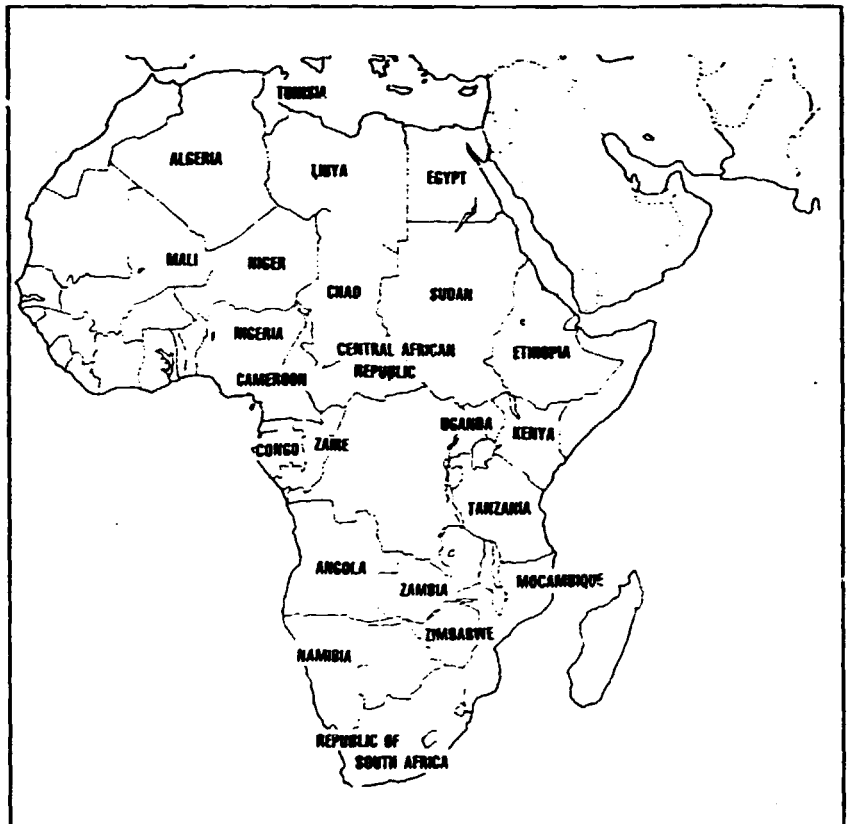
The world livestock population of sheep is estimated at 1.2 billion. Of this, developing countries account for 53 per cent while Africa's share stands at 11.7 per cent. Between 1960 and 1985 Africa's output of sheepskin grew from 17,500 tons dry weight to 28,100 tons. During the same period Africa's export of sheepskin dropped from 9,500 tons to 5,700 tons. On the other hand, the export of processed skins from sheep increased by 11 per cent between 1976 and 1984.

Top position

Africa, along with the Far East, commands the top position on terms of goat livestock population. Of the total 465 million world goat population, Africa's share stands at 131 million or 28.2 per cent. Output of goat and kid skins between 1960 and 1985 grew from 17,100 tons to 23,900 tons, showing an increase of 39.8 per cent. Here again, export of raw goat skins registered a decline from 9,700 tons dry weight to 5,700 tons, easily explained by increased exports of processed goatskins.

The ever increasing output of hides and skins indicates the growing awareness of Africans to generate substantial revenue from marketing the raw material. Secondly, while raw material exports are declining, processed leather exports are on the rise.

Livestock and the by-products of hides and skins in Africa are among others characterized by the following:



- Cattle are reared not for the production of meat but as draught animals and as measures of wealth. This has lent itself to low slaughter rates as the animal will not be slaughtered until its productivity on the farm has substantially declined. In cultures where cattle serve as measures of wealth and status, the off-take rate is even lower. The longer the animal is kept on the farm or in the grazing land it will be subjected to more branding, exposed to disease and thorns, all affecting the quality of the hide which in most cases cannot be corrected even by the finest tanning methods
- Of the total available hides and skins from slaughter, only a small proportion finds their way to the market. This is mainly because hides and skins serve as the basic inputs for the production of household items as the economy is not yet in a position to supply the countryside with modern alternatives. The absence, in many countries, of an efficient transportation and collection network can also be cited as yet another hinderance.
- Backyard slaughtering, which is still the most widely used practice in Africa, makes the task of quality improvement campaigns and collection efforts very cumbersome. Until recent years Africa served as an alternative raw material base for European tanneries since no industry of its own was in a position to develop. This relationship between Europe and Africa was the major cause for a number of quality improvement schemes carried out through bilateral and multilateral programmes. Presently, there is an appreciable effort to develop the leather industry of Africa. This was spurred by demand for leather goods from a growing urban population and by the ever increasing need of African countries to earn hard currency from processed leather of high value added.

OTHER AFRICAN COUNTRIES

Country	Production					Imports	Exports
	1984	1985	1986	1987	1988		
Afghanistan (1)			2.2	3.2		1.2	
Algeria	18.1	17.7				30.3mD (1986)	1.1mD (1986)
Botswana						1.8 (1987)	0.08 (1987)
Cameroon	(a)2.8	10.3		7.1		2.5b CFAFr (1987)	1.1b CFAFr (1987)
Congo (10)			0.5	0.2		0.008 (1987)	0.003m CFAFr (1987)
Egypt (a2)	58	65.3				0.02 (1987)	1.0 (1987)
Ethiopia			*14.2				
Ghana (4)						2.1 (1987)	Nil (1987)
Kenya	1.4	1.4	8.9	9.4		0.1 (1985)	0.1 (1985)
Madagascar (5)			2.6	1.7		245.1m FMG (1986)	640.7m FMG (1986)
Malagasy (6)					1.0	0.1 (1988)	0.003 (1988)
Malawi (7)		1.5	1.4		1.1	0.1 (1988)	0.001 (1988)
Morocco (8)	26.4		41.2			166.7m D (1986)	678.4m D (1986)
Nigeria (9)				38.4		0.1 (1986)	
Senegal	3.6	3.0	2.7	1.2		0.05 (1985)	4.2 (1985)
Sudan (3)						0.2 (1985)	0.008 (1985)
Zambia			2.8	1.8		0.4 (1986)	

(a) Leather footwear production figures only.

(1) There are 47 Factories with 1,754 employees

(2) Employees in the footwear industry = 19000
 No. of workshops = 6470
 Semi-mechanised enterprises = 60
 Fully mechanised enterprises = 10

(3) Main Import Origins are Saudi Arabia and Egypt, and Major Export Destination is Ethiopia.

(4) In 1986, there were 3 footwear manufacturing establishments employing 246 persons.

(5) In 1987 there were five footwear producing factories.

(6) There are 5 factories.

(7) In 1986 there were 5 firms employing 319 persons.

(8) There are 463 registered companies.

(9) Around 8 mprs are produced by the mechanised sector. In 1987, 33.9 mprs of synthetic uppered footwear and 4.5 mprs of leather uppered footwear were produced.

(10) In 1986 there was one production unit.

From: World Footwear Markets 1990 SATRA

ANNEX 5

PERSONS MET

Col. Lawan Maina, Governor of Borno State
Ms. Wahir Mshelia, State Commissioner for Commerce and Industry, Borno State
Mr. I. Bangalu, Managing Director, Borno Investment Company
Ms. Mathey-Boo, UNIDO Country Director
Dr. A.S. Mshelbwala, Director, Leather Research Institute
Dr. H. Jaiyesirimi, UNIDO Consultant
Mr. N.J. Cutting, Chief Technical Adviser
Mr. S.A. Ojikutu, Managing Director, Nationwide Merchant Bank
Mr. S.A. Liman, Deputy Manager, Nationwide Merchant Bank
The Director, Payo Leather Products, Los P.O. Box 1810
Mr. J. Ekyu, GLO-PHOENIX NIGERIA LIMITED, Lagos

COMPANIES VISITED

ALHAJI BOKAR MAINA, Shoe Exporter and Retailer
DALORI SKINS, Raw Hide Supplier
ALHAJI ABBA WAWA, Raw Hide Supplier
M. ZANNA MOH. SERIKI RATA, Head of Hides Dealers, Maiduguri
MAIDUGURI ABBATOIR
LEATHER RESEARCH INSTITUTE in Zaria
LEATHER RESEARCH INSTITUTE in Maiduguri
UNDP Lagos
NETTAL SHOE FACTORY, Maiduguri
NETTAL TANNERY
BORNO STATE INVESTMENT COMPANY
INTERIAN LIMITED, Kano
NABEGU COMPANY, Kano
GREAT NORTHERN TANNERY, Kano
Maiduguri Cattle Market
Nguru Cattle Market
NIGERIAN FOOD COMPANY, Nguru
PREMIER COMMERCIAL BANK