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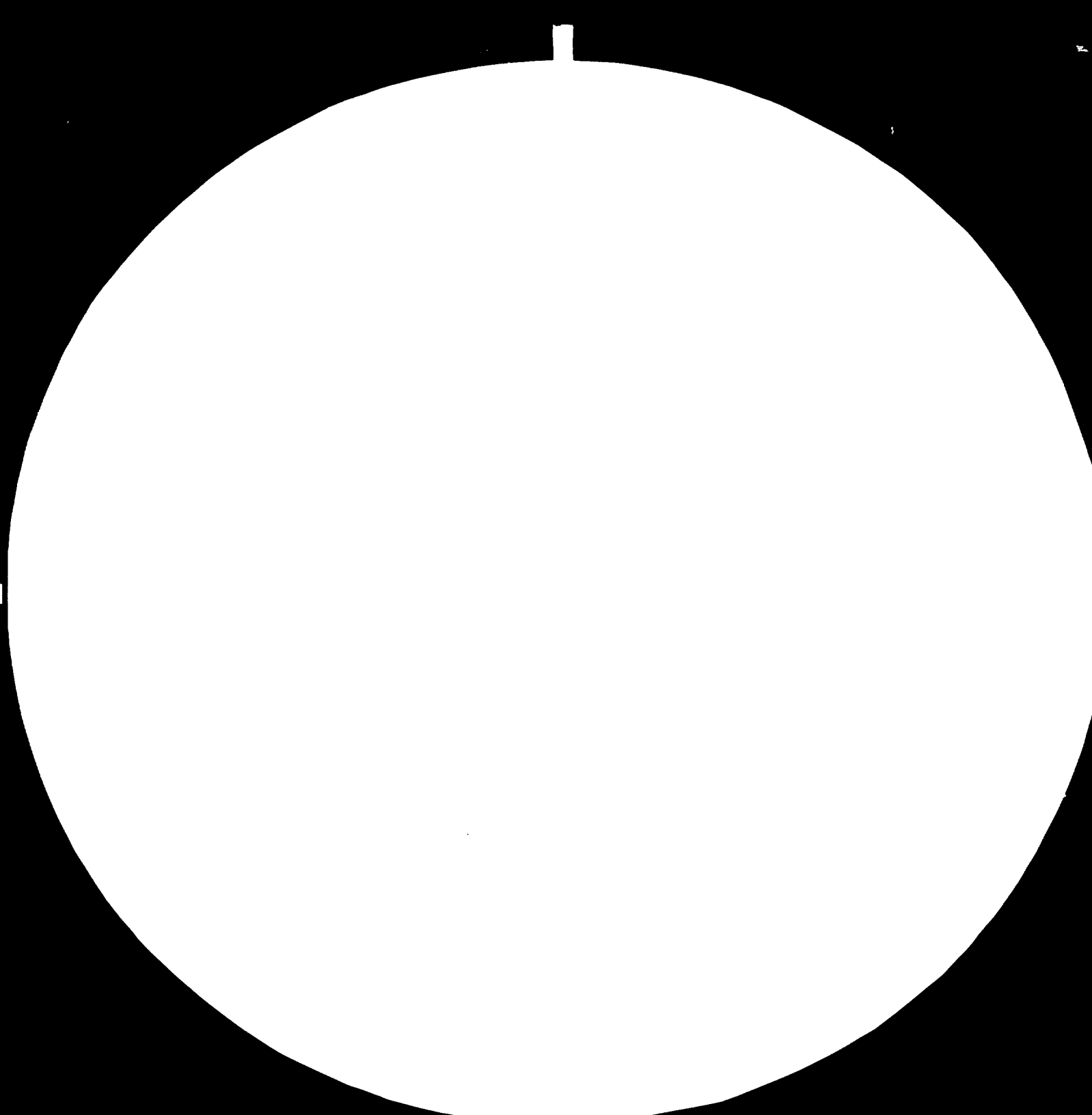

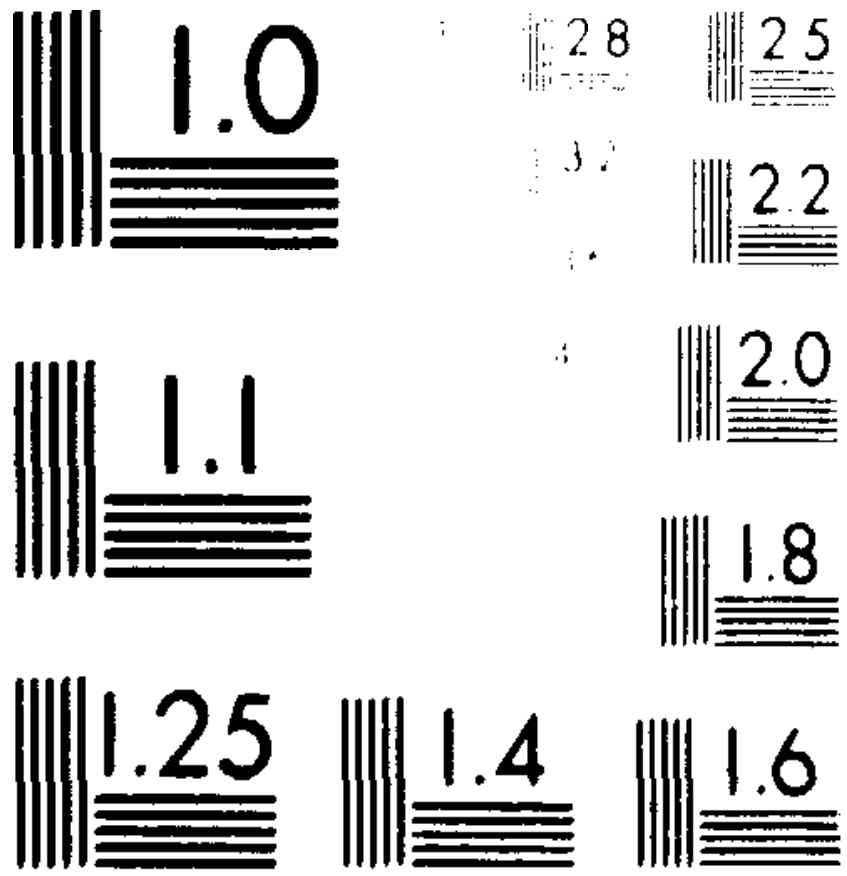

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LEATHER AND LEATHER PRODUCTS DEVELOPMENT

DP/ETH/78/001

ETHIOPIA

Technical Report: Assessment of the Assistance to the Shoe Industry of Ethiopia *

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

Based on the work of John W. Parkinson,
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United Nations Industrial Development Organization
Vienna

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INTRODUCTION

The Government of Ethiopia requested assistance to the leather and leather products industries under UNIDO project DP/ETH/78/001/B/01/37. The project started with the fielding of the C.T.A. in September 1979. In May 1980 the shoe technologist was appointed co-ordinator of the shoe group which comprised experts in the fields of shoe technology, shoe design and pattern cutting, and shoe machine maintenance. The C.T.A. left the project in September 1980.

UNIDO appointed the senior footwear adviser as consultant to elaborate a detailed work plan for the shoe group and to put forward a plan for the medium- and long-term development of the shoe industry. In addition to the job description by UNIDO the consultant was given on arrival in Ethiopia the draft terms of reference by the National Leather and Shoe Corporation under the Ministry of Industry.

This report presents the short, medium and long-term development programmes as requested in the above-mentioned documents. The suggested work plan to fit the work already performed by the shoe group and its counterparts is presented on pages 34, 35 and 36 of this report.

DRAFT OUTLINE OF TERMS OF REFERENCE

GIVEN CONSULTANT BY NLSC 3.10.1980

1. Assessment of the work so far performed by the shoe experts and coming up with concrete proposals. Studying the various reports by the shoe experts plus assessing the work started at Anbessa with the view of determining whether the project is moving in the right direction. If it is not, come up with a viable development programme and strategy for short, medium- and long-term implementation.

2. Independent of the work so far performed by the shoe experts, conduct a study of the shoe sector (both the Addis Ababa, Asmara plants and possibly the private sector too) with the view of:

   i) Determining the right technology, design and types of shoe with the right price range compatible with the purchasing power of the average Ethiopian.

   ii) Evaluation of the existing machineries and determine the additional types and number of machines required to attain the target set in (i) above. As long as the required quality could be attained labour intensiveness would be preferred to capital intensiveness.

   iii) Assessing the organizational set-up, quality of labour and supervisory staff,and advising on organizational changes; type of training required for the upgrading of labour and supervisory staff, etc., to attain the target set-in (i).

   iv) Taking note of the vast potential of hides and skins in the country and of finished uppers and lining thereof, assess the possibility of going into the export shoe market. To these ends, setting out short, medium and long-term development programmes and strategies.

3. Independently of the work performed or envisaged to be performed by the shoe experts, conduct a thorough study of the Anbassa Shoe Factory with the view of determining viable development programmes and strategies to be embarked upon for short, medium and long-term implementation so as to:

   i) Produce shoes with the right quality, design and technology compatible with the purchasing power of the average Ethiopian (say per capital income of 2,000 - 4,000 Birr/year).

   ii) Introduce production planning, quality control; material wastage control schemes, streamlining production; training schemes; incentive schemes; organizational set-up, etc. to attain the production criteria set-in (i).

FINDINGS

The purpose of the assignment was to evaluate the Ethiopian shoe industry, the work done by the shoe experts within the UNIDO project ETH/78/001/B/01/37 and to propose to the National Leather and Shoe Corporation a development programme for the development of the Ethiopian shoe industry on a short, medium and long-term basis.

The NLSC manages eight state-owned tanneries, six state-owned shoe factories and also administers twelve retail shoe shops which are attached to the shoe factories indirectly.

The only supporting industries to the shoe manufacturing sector are the tanneries and shoe lace manufacture. Production units for shoe lasts, synthetic unit soles, leatherboard or fibre board, adhesives (cements), resin rubber soling, steel shanks, tacks or rivets as used in shoe manufacture, synthetic lining and socking material, plastic or rubber heels and shoe finishes are not manufactured in Ethiopia.

There is an undetermined number of small private shoe making units but the majority could be classed as small-scale or cottage industry.

The six shoe factories which come under NLSC management are based in Addis Ababa and Asmara, three in each town. They are:

1. Ethiopian Rubber and Canvas Shoe Factory

   The production programme is canvas-uppered tennis shoes, basketball, boots and children's plimsoles. All carry a vulcanized rubber sole. They have their own rubber manufacturing unit.

2. Anbessa Shoe Factory

   Have a very mixed production of men's, women's, children's leather-uppered boots and shoes, mainly cement lasted construction, some veldtschoen construction, sandals, and a men's littleway lockstitch welted shoe with cemented leather sole. Most shoes carry a rubber unit sole or rubber sole cut from sheets. The rubber unit soles are provided by the Ethiopian Rubber and Canvas Shoe Factory.

3. Tikur Abaye Shoe Factory

Main production is army service boots with vulcanized soles, also civilian leather uppered footwear, with rubber unit soles. All compounds and rubber unit soles are produced in the factory's own rubber manufacturing unit.

4. Ethiopian Shoe, Asmara

Production is men's, ladies' and children's leather uppered footwear with rubber unit soles, moccasins with littleway lockstitched leather soles, canvas tennis shoes with PVC injected soles, all plastic (PVC) injected footwear. Again this factory has its own rubber manufacturing unit for rubber soles and a PVC granulating plant to produce PVC pellets.

5. Dahlak Shoe, Asmara

The production is leather uppered men's, ladies' and children's shoes with PVC-injected soles and imported rubber soles, canvas uppered string lasted tennies shoes and sneakers with PVC injected soles, and all plastic (PVC) shoes and sandals. All PVC is granulated and produced in pellet form in the plant.

6. Eritrea Shoe, Asmara

The production is leather uppered boots and shoes for men, ladies and children: leather strapped sandals; main bottoming material is rubber made in the factory's rubber department in unit soles. Ladies' shoes have imported P.U. units. Moccasin style footwear is also made with imported PVC units.

Of the six factories four have rubber departments, two have PVC granulating plants for providing shoe bottoming materials (soles). Very little leather soling is used but if the export of footwear is to develop, sole leather will have to be made available in various thicknesses.

The canvas uppered footwear is a type of footwear in great demand, and expansion of one plant is already underway. From the quality and production angles of this type of footwear the patterns need checking, especially the cutting dies being used to cut the uppers.

The weak link in the shoe industry is the leather uppered footwear. The main problem appears to be the lack of knowledge by both technical and general management in the advancement made in the last two decades, in the techniques used in present day shoe manufacturing to meet the demands of the world markets for quality and style. This applies to each of the five plants producing leather uppered footwear. The products are similar to each other.

Production of the PVC shoes and sandals is the same as in any country and is in great demand on account of the price range. This is understandable as from a technical standpoint only PVC pellets and an injection moulding machine are the necessary ingredients.

The methods of construction used in the factories follow the same pattern especially on the cement lasted principle which constitutes the major part of their productions. The method used is the pre-cementing of the insoles and uppers with a neoprene cement, on the heel seat lasting some tack, some cement. The reason for mentioning this is that the lasting and making section of a factory is the key to the quantities of shoes produced,and to production planning.

All other sections such as cutting uppers, cutting insoles, counters, toe puffs etc., closing uppers and finishing, cleaning, boxing, are all geared to the quantity produced in the lasting and making section.

An important issue which affects the shoe factories is the quality of the leather being used. On examining some of the hides and skins in one factory the cutting value showed a 30 to 40 per cent unsuitable area for making into shoes. This must be classed as wastage and accordingly ffects the ex-factory price of the shoes.

All shoes are styled in accordance with shoe last shapes. Most lasts seen are outdated. This is a problem in all factories except the army service boot production.

Marketing and Sales

According to information gathered, the marketing of the leather uppered shoes from the factories is being carried out in an individual way. Two factories, Anbessa Shoe and Tikur Abaye Shoe, both have retail outlets in Addis Ababa, while Anbessa also has retail shops in Jimma, Nazareth, Dire Dewa, and another one planned at Wollo.

In Asmara, the three factories based there have a joint retail shop in Asmara and a warehouse in both Addis Ababa and Asmara. Private shoe retailers are also supplied by all factories.

The marketing structure of the shoe industry is generally the basis for correct production planning in the factory. Programming of a shoe factory production is based on seasonal advance orders placed by warehouses and retail shops for the various styles and designs.

UNIDO Project

The project is for the integrated development of the leather and leather products industries, from the improvement and grading of raw hides and skins to the finished leather products both for local and export markets.

As stated earlier, the purpose of this assignment included a specific and detailed work plan for the shoe group of the project. To do this it is necessary to assess the work carried out since the project started in September 1979. It should be fully understood that this report contains the views of the writer and what he considers UNIDO experts should aim at in order to achieve the objectives set out in the project document.

The duties of the experts are set out in condensed form in the project document and elaborated more in detail in separate job descriptions. On arrival in Ethiopia the NLSC gave each expert a detailed work plan to be followed. Each of these work plans were within the expert's field of activities. The reports and correspondence of the experts to UNIDO and the NLSC have also been read, and a good background of the work done has been obtained. It is very unfortunate that the Chief Technical Adviser's efforts to co-ordinate the work of the shoe group were unsuccessful and was repatriated after completing the first year of his assignment.

Since May 1980 the shoe technologist has been the co-ordinator of the shoe group, and while it appears from reports that much better progress has been achieved since then, there are, however, still certain difficulties in the co-operation between the experts of the shoe group.

There is no question about that the project is moving in the right direction and the work of the hides and skins expert and the leather manufacturing expert is quite effective in this context. However, there is a tremendous task in front of the NLSC and the leather and leather products industries. In the writer's opinion Anbessa is only a part of the task facing the UNIDO shoe team, and further on in this report the problems in Anbessa will be highlighted.

The work done by the shoe technologist, also acting as project co-ordinator, has been thoroughly looked into. The detailed planning both he and his counterpart at Anbessa have done, involving every section of the factory, is at the stage of being ready for implementation. The general manager of Anbessa has requested an economy line of men's shoes, also a children's range, to fit a low price bracket. The design expert was requested by the project co-ordinator to design an unlined shoe of similar construction as Hush Puppies, a well known brand of footwear made in about twenty countries around the world. However, at the time of the writer's visit the design was not yet ready made.

This was discussed with the writer who advised the co-ordinator that, as the design expert's contract was near its termination, the co-ordinator who has experience in this field should go ahead himself and produce his own design.

It is felt that the management can confidently implement the production changes and recommendations which the technologist and his counterpart have been working on and that the Anbessa Shoe Factory will then show a marked improvement by March 1981.

Independent of the Anbessa Shoe Factory, on visits to the other five factories with the shoe technologist, spot checks and on-the-floor advice has continuously been given. These included physically altering patterns and following it through to show the improvements, advising on moulds, compounds and machinery always for the betterment of products.

The designing of footwear is a creative job. It is often classified to be part of high fashion branch. This does not apply to Ethiopia. Emphasis is put on a variety of footwear within the lower or medium price range in the immediate future.

In reviewing the activities of the shoe designer and pattern cutter as specified in the project document and in his job description and in the work plan given to the designing expert on his arrival in Ethiopia by the NLSC, the results achieved must regrettably be considered as modest. It was noted that these were regrettably not at the expected level.

It would have been necessary during the first three months of assignment, while planning and arranging for training courses, to obtain sample lasts from all factories including Asmara and, as stated earlier, make designs and patterns of slip-ons, gibsons (derby front), tie-ons, stitch downs (veldtschoen) and sandals and then pass them on to the factories with the usual instructions which accompany a new design concerning materials, threads, linings, thickness of materials, etc. for sample shoes to be made. However, this was apparently not done by the expert, but if carried out, a strong impact would have been created. This post terminates in December 1980, and it is felt that when the proposed training centre commences in 1981 the training of designers and pattern cutters, including practical training in making the designs into a shoe, it would greatly assist the shoe industry. For this a training specialist in upper making should then be recruited.

The work done by the shoe factory machinery maintenance engineer could not be properly assessed since the only report so far on file is one on the centralization of rubber production units, and various memos on the three Addis Ababa factories on matters such as air compressor situation at Anbessa, advice on new vulcanizing machines for the Rubber and Canvas and Tikur Abaye factories and assessment of Gissila Shoe Factory (closed down).

Even considering the fact that the expert has had a two-week leave and a six-week unpaid home leave for family reasons and that this is his first UNIDO posting, a six-month report showing his activities should have been submitted.

While it has been agreed that the shoe factories have good repair and maintenance staff on basic mechanical machinery, the increased use of pneumatics, hydraulics, electronics and automatics in shoe machinery means that training for future needs is necessary in those areas. The good mechanics who are available should receive the required training. Regular check systems for preventive maintenance on machines, cutting dies and equipment need to be established. The UNIDO shoe technologist is advocating that specialized post bed machines be installed in factory closing rooms. These machines need careful adjustments, and maintenance staff will need instruction on these types of machines.

The expert is working on a centralized planning of machinery and equipment for factories within the NLSC so as to monitor machine maintenance in the shoe factories, in accordance with the duties stated in the project document, but advice, assistance, systems and methods are also necessary in the production units and should not be left unattended.

Occasionally the shoe machinery maintenance expert has been requested to assist in problems with the tanning machinery and he has been able to solve some problems successfully. However, the expert should not get too deeply involved on the tannery side. UNIDO, Vienna should be urged to contact West German or Italian tanning machine manufacturers for an engineer on a secondment basis as soon as possible. He must have managerial ability to institute systems for local personnel to follow.

In assessing the work done by the shoe group, and despite the set-backs experienced and the difference in some of the team's personalities, the project is on the right course. At present, the shoe technologist seems to be the key person and can be confidently entrusted with further co-ordinating the project acitivities in the shoe sector. The shoe technologist is very ably supported by his counterpart Ato Alemayehu. The shoe technologist is an exceptionally well experienced shoe man, from design through all sections including marketing, and works very hard at showing UNIDO and the Government that the shoe side of the project will be a success.

Shoe Sector of Ethiopia

As in any country whose aim is self-sufficiency in footwear one must take into consideration the types of footwear being manufactured throughout the world particularly if the country's aim also includes exports.

Materials, associated industries, machinery, technical management, work force and marketing are all important factors. The variety of different types produced and the purposes for which they are made cover a tremendous field. However, of all leather uppered footwear being made today, it is estimated that approximately 70 per cent are constructed on the cement lasted process with stuck-on unit soles of one kind or another. This pattern has developed since the 1950's and the associated industries in chemical products have improved the adhesives used, from rubber solutions, latex, neoprene, poly urethene to thermoplastics.

The development stage of the Ethiopian shoe industry has remained on the level determined by their machinery which mainly originates from the 1960's and early 70's. The lasting is carried out by precementing with neoprene, and all other sections are affected by the technology designed for this production method.

The price of footwear cannot be determined by the techniques or design of footwear alone. The cost of the materials for the upper and sole, cost of labour, overheads and taxes are all factors involved in determining the price range of finished shoes. This means that irrespective of technology and design, if expensive leathers and components are used, the cost of a finished shoe must be higher than if cheaper materials would have been used. Accurate costing systems to pinpoint wastage of materials, especially in leather cutting, are very important. Having taken particular notice of the leathers supplied and used, also the methods used in the cutting rooms, this problem definitely affects the price of the Ethiopian shoe. Wastage by cutters and very poor cutting value of the leathers supplied to the factories can be altered by closer supervision in both tanneries and shoe factories.

The pattern followed in all leather uppered footwear factories is to fully line, irrespective of the weight of upper leather. Even in service boots, one factory fully lines a chukka (ankle height) boot while another factory lines the full quarter of a calf length boot.

With a leather of 1.6 to 2.0 mm with good texture, and well filled, no forepart lining in a shoe is needed, provided the toe puff is of suitable quality. The pre-heating on a steamer, before the toe lasting and pulling-over machine lasts the upper, is the only additional operation necessary. There is also no need to fully quarter-line a shoe made of this weight of leather. A half-lining or a counter pocket will give equally good results and save materials. These techniques can be applied to men's, children's and ladies' medium-grade shoes and will result in reduced cost.

In finding the types of shoes compatible to the purchasing power of the average Ethiopian, it is taken for granted that the all-plastic and canvas-uppered footwear is suitable. However, greater emphasis should be placed on the fabric sneaker type shoe. The same equipment, moulds and materials as used at Dahlak, Ethiopian Shoe and Rubber and Canvas Shoe Factories on the present production could be used but in mixed colours and for variation, in printed Duck-cloth, Curdory or Drill. The only requirement is new designs and patterns in various modern styles. Price-wise these shoes are equivalent to the tennis or basketball boots but are worn as dress casuals.

Another type of footwear which would be suitable for the rainy season in the towns and well worn in the country and hilly parts of Ethiopia is the water boot (plastic wellingtons). Produced very cheaply on the same type of machinery as the all plastic sandal and shoe, made in colours of all red, all blue and black for children and ladies and black for men. As the machines in Asmara are working to capacity it would be advisable to install in the Ethiopian Rubber and Canvas Shoe Factory confines a twelve-station PVC injection moulding machine. The pellets for this type of footwear can be granulated at Dahlak Shoe. The capital required for the purchase of the machine is the main obstacle, but an extra very popular cheap type of footwear would be available to the consumer.

In Asmara a number of persons are capable of looking after the technical running of the machine. One machine can produce up to 800 pairs in an eight-hour shift.

Leather-strapped sandals are not made in any large quantities, but with the tremendous variety of alternative designs and types for men, women and children the Ethiopian shoe industry is missing out on a type of footwear in the low to medium-priced range. In a medium-term development programme, a factory making sandals alone should be considered. The manufacture of strapped sandals is a very labour-intensive side of the shoe industry.

The UNIDO shoe technologist has done a lot of planning and work on the subject of producing closed shoes, sandals and footwear tc fit into all price ranges up to high-grade for export. Building a shoe range is a joint effort of:

Designer and Pattern Cutter
Sales Manager (who is the range builder)
Shoe Technician (Technical Manager).

Incorporated in and informed about these functions is the general manager of the factory who has the final say. This is the pattern followed in individual factories. Usually, the person in charge of stock (raw materials) is involved in obtaining specific materials.

As well as designs of uppers for improvement, the type of sole used plays a big part in the footwear production. The popular soles being used in footwear today are the thermo-plastic rubber unit sole, micro-cellular rubber cut soles, rubber units made with a semi-translucent appearance, a very light soling material named E.V.A. (ethyl vinyl acetate), PVC sole units, poly urethene, poly styrene units (used in ladies' sandals but do not bend), soles vulcanized direct to shoe upper and PVC injected direct to shoe upper.

Leather soles, due to the cost factor, are only used in higher grade footwear. The sole leather produced in Ethiopia does not have the thickness required for men's footwear and this is possibly why the shoe factories started their rubber departments for economic reasons and to avoid importing.

The rubber departments attached to the Ethiopian factories make rubber unit soles for their production with a black compound. This seems to be a pattern passed on for the last ten years, and change does not come easily. The recipes of the compound is fixed, yet in Eritrea Shoe rubber translucent unit soles were stored in the stock room. At some time this type of sole had been considered; when this was queried no one was aware of when they had been used.

The point here is that the rubber departments can compound different mixes to produce a far more attractive sole unit for various shoe designs. They can also produce micro-cellular and other forms of rubber, and the rubber chemist from Ethiopian Rubber and Canvas Shoe Factory should be consulted on these different types of soling material, in order to give the shoe industry alternative types of soling material to black rubber unit soles, as are in Ethiopia. In so doing, and together with eliminating certain unnecessary materials and components which are at present put into the conventional shoes being made, savings would be made all along the line. It is well known that, in making a leather uppered shoe, between 45 to 55 per cent of the ex-factory price is used on materials.

Machinery being used in Ethiopia

To evaluate the existing machinery it is felt that each factory should be evaluated, and it is assumed that in the short term they must continue to operate with the present machinery in the manufacture of leather uppered shoes. In the three factories producing canvas and PVC injected footwear which are all working to full capacity, installation of new equipment is a matter of availability of space.

The factories producing leather uppered shoes all work on a similar plant layout and similar types of machines for the manufacture of shoes for the civilian market. The methods used are based on the Italian shoe techniques. However, due to lack of qualified technicians the techniques have not moved along with the times, and a day-to-day planning of production showed that in one factory the operators stopped work and sat down because the day's quota was finished.

Every factory visited except Ethiopian Rubber and Canvas Shoe Factory has manually operated shoe tracks for moving the work from one operator to the next. The sad part about this is that every factory has old unused machines and equipment ranged alongside the tracks so that operator movement is restricted. The UNIDO team of the machine maintenance expert and the shoe technologist should advise the different general managers that these pieces of machinery not being used should be removed. Some are just broken down pieces of machinery serving no purpose except hindrance to the work flow.

Ethiopian Rubber and Canvas Shoe Factory

The machines in this plant can basically be put in three categories: the rubber mixing equipment, cutting and closing room equipment for canvas uppers and vulcanizing presses. As this unit has a good technical manager, most of the machines are in line for the production. Demand for the product exceeds the supply.

It is understood that ten new presses, a new travelling head cutting press and extra sewing machines are to be ordered so as to increase the canvas upper production in line with the extra vulcanizing presses.

There is also an extension to the building planned to house the closing department which will be moved and the space vacated used for the new vulcanizing presses. In the short term this factory seems to be well covered and, as stated in previous paragraphs, the technical manager is a capable person and well able to cope.

The small unit which makes unit soles for Anbessa needs attention. It has been making soles to fit the same lasts which have been in Anbessa for years. Any change in last shapes by Anbessa would affect this unit in that new moulds would be required. The alternative would be that Anbessa imports sole units to fit the lasts or an alternative soling material such as micro-cellular. While two presses are installed, only one is operational. These presses are steam-heated, but the plant has no steam boilers; it is piped in from the Ethiopian Tyre Factory. The steam supply is restricted so any increase in production is in obeyance.

Tikur Abaye Shoe Factory

The main production is army service boots, an item made to specifications. The working area in this factory is limited while the production rate is higher than in other leather upper shoe factories. Each department of the plant is working in cramped conditions, except the vulcanizing press section.

It is understood that this matter is at present being looked into by the NLSC, and the UNIDO shoe technologist will put forward proposals for the moving of the vulcanizing and making section of the army boot production.

The machinery in the cutting department appears to be able to cut sufficient uppers for the closing room. The cutting dies for upper leather should be made with double edged strip steel, and have size identification markings for accurate closing as recommended by the shoe technologist. It would also result in cutting the leather with the grain side up only.

The closing department is very cramped and the machinery is varied. The army boot line, where heavy duty machines are required is equipped with those machines which are required for the heavy operation.

In the civilian line there is the usual shortage of post bed sewing machines, as in other factories. This is not an urgent matter but when the budget for new equipment is proposed, special post bed sewing machines should take preference.

It is understood that ten new Necchi flat bed sewing machines in storage at Anbessa Shoe Factory will be transferred to Tikur Abaye

The reserve stocks of army boot uppers show that the performance from the closing department reaches its target.

The lasting and making departments for both army and civilian shoes are the main problem areas. In the army line the machinery used in lasting the uppers are tack lasters and side tack lasters, and this method is completely out-dated and one of the problems which it creates is that the tacks (nails) are clinched on the insoles. During wear they are apt to work loose and stick into the foot. Also they do not bed the upper to the insole and last. They have to be bedded with a pounding machine. Under the new lasting technology the pounding machine is not necessary.

It is strongly recommended that the tack lasting equipment be replaced with modern forepart pulling over and lasting machine with toe steamer, side lasting machine and a heel seat tack lasting machine. These machines would help to eliminate a number of irregularities which are seen in the present tack lasting system.

The transporter track for the civilian shoes is placed near to a wall, and this, together with the pieces of unused machines occupying space, restricts the movement of workers.

Basic machines for cement lasted footwear are there, but problems of machines not doing the work correctly were evident. The steam upper and toe puff softener were not working and the wipers on the forepart laster were not heated. This resulted in two workers finishing off the work that the machine should have done. Maintenance systems are definitely needed in this plant, independent of centralized control.

Eritrea Shoe Factory, Asmara

Of all the factories this one is more on the modern pattern, and the building is very suitable for shoe manufacture. However, the transporter track takes up almost half of the floor space while the upper cutting and rough stock sections (insoles counters, etc.) are cramped. Also the closing room, which is also spread out, could be condensed and be more effective if the machines were arranged between a work conveyor belt.

The track layout should be re-arranged and shortened so that the work flow isdone in a circular movement, up one side and down the other. The space which would be saved and the extra room gained by the intended removal of the upper cutting and rough stock sections to have more working are. The designing room should be housed upstairs.

This plant could be replanned to specialize in ladies' and men's footwear only and geared towards exports.

The closing room like all others lacks post bed machines. The UNIDO shoe technologistwho accompanied the writer took note of the operations and, in his work programme which must include a reasonable work time in Asmara, will recommend changes and advice on machines to be included in the next yearly budget. At present certain post bed sewing machines are to be ordered.

In the lasting and making departments a new machine which is badly needed is a heel seat tack lastting machine. The main reason is that this factory makes its own plastic shanks with an extended heel shape. The cement used in lasting does not adhere to the plastic, so, after side lasting, the shoe is handed over the track to two consol tack lasters, a machine which was originally used before cement lasting systems took over. The result is loose top lines, and sides and backs being baggy and not conforming to the last.

Certain machines again are cluttered around the track. Two very good Italian heat forming machines are not presently utilized but could be useful if export work is done. The maintenance staff should be organized to clear the track.

On the other hand a very effective improvised heating tunnel has been made by the mechanic, and it takes the place of a heat setting unit. This factory has the machines to suffice for the present production needs except for the heel seat tack laster and backpart moulder.

It was noted that this factory attended to more details than the other factories.

Dahlak Shoe Factory, Asmara

A factory of mixed productions. As stated earlier the all plastic footwear and the canvas uppered productions are in line with similar productions in any country.

In the leather uppered plant hand cutting is still carried out as in Anbessa. One piece of equipment which is badly needed by all hand cutters is wooden cutting boards. All cutters seen are using a piece of aluminium, and it does not need much imagination to consider the effect on a sharp-edged hand cutting knife pressing into aluminium. The result is that the knife is soon blunt and the leather torn instead of cut. On a section of the upper which shows the raw edge such as derby-stitched quarters or plain joints the appearance of loose fibres looks bad.

These end-grained cutting boards are not expensive, costing around 130 to 150 Birr each. With each board the cutter would be given a steel scrapper costing approximately three Birr, would scrap the knife marks off and oil the board with lineseed oil each weekend when he leaves work. This would be beneficial to the worker and his work. This has been discussed with the general manager of Dahlak.

As Dahlak has two closing rooms with mainly flat bed sewing machines the importance of special post bed machines was pointed out to the general manager who has stated his intention of including special post bed sewing machines in his budget.

The machines on the cement-lasted production lines are available for increased production. The daily production was stated to be 400 pairs with 180 workers. With two or three post bed machines added to the closing department it is quite feasible that, provided the factory has the orders and materials, the equipment can produce 800 pairs daily.

The injection-moulded sole machine should be more exploited with a greater variety of styles of shoes, while the heat setting unit on the track should be used on all cement-lasted leather uppered shoes. Also in this factory the track needs to be clear of unused machines and equipment.

From this year's budget it is understood that for the closing department the following machines are to be ordered:

Folding Machine
Eyeletting Machine
Two (2) Post Bed Stitch and Trim Machines
Two (2) Post Bed Vamping Machines
Double Needle Cording Machine
Double Needle Post Bed Machine 13 m/m gauge
Double Needle Flat Bed Machine 6 m/m gauge

For the rough stock department:

Marginal Roughing Machine for unit soles.

For the lasting and making department:

Backpart Pre-moulding Machine
Insole Tacking Machine
Heel Seat Tack Lasting Machine.

For the finishing department:

Wire Stapling Machine for shoe boxes.

For the canvas injection machine:

33 Sole Moulds a full range.

With these new machines and those already in plant the Dahlak Shoe Factory has sufficient machinery for short-term development and with the new moulds on new designs attempt the export of sneakers, etc..

The UNIDO shoe technologist is fully up-to-date with his plans and recommendations for Dahlak Shoe Factory. One item which is a little discerning is that a consignment of very attractive thermo-plastic rubber soles has been received and sample shoes on new designs have been made. The management was not aware that the techniques required for the bonding of this type of sole are different to that of ordinary rubber. A process of halogenation has to proceed the cementing of the soles for safe sticking of sole to upper.

Here again the UNIDO shoe technologist is fully aware and is making contact for supply of crystals, solvent and special brushes needed to halogenize the soles.

The PVC granulating plant in Dahlak is a very efficient unit, and for future expansion in products for which PVC is used this plant and the one in Ethiopian Shoe Factory can be of great value.

Ethiopian Shoe, Asmara

The factory, like Dahlak Shoe, has a mixed production: all plastic shoes and sandals, californian lasted, canvas sports shoes with PVC injected soles, men's and children's leather uppered shoes, and hand sewn moccasins. The factory has a small rubber mill for making its own rubber unit soles and a PVC granulating plant for processing PVC to be used for its canvas shoes and all PVC footwear.

The machinery, therefore, like its production is varied. The injection moulding machines produce according to the time cycle set by the mechanic. However, two machines , a ten-station injector and a six-station injector, are partly stripped down. The UNIDO shoe machinery maintenance engineer should be requested to check the ten-station machine, to consider whether it can become serviceable, and if so, it would mean another 600 to 800 pairs per shift of canvas footwear.

In the factory budget for new equipment, management requested new sole press and moulds for the making of unit soles. The production of shoes for which these presses were needed amounts to 250 - 300 per day. The expense involved in new presses to make that amount of units is not justified. The presses are without doubt very old and the moulds can only produce one pair at a time. For the intermediate and long-term development of the industry much thought should be given to the issue of rubber mills, vulcanizing presses and moulds for unit soles. A special study should be carried out concerning the correct type and size of this equipment in all the Ethiopian shoe factories now engaged in this type of production.

The canvas upper cutting is done on three presses, two very old swing arms, one with clutch drive, and an old travelling head beam press. The general manager is requesting a new travelling head beam clicking press from the budget.

The leather upper cutting is all done by machine. Three new clicking presses have been installed, and in all, nine swing arm clicking presses are in this section. With a production of 300 pairs a day only four presses should be necessary. Instead of buying a new travelling head beam press for the canvas upper cutting three of four "Atom" swing arm presses from the leather section should be transferred to the canvas section.

In the closing departments flat beds predominate as in other factories, and due to no technical advice being given more new flat beds are in transit.

In the leather uppered lasting and making department there are eight machines which serve no purpose and should be removed. Of the other machines, like Tikur Abaye, the forepart lasting machine wipers were not heated. Technical advice is badly needed in this plant.

Also included in this budget list were two lasting and pulling over machines and one littleway lockstitching machine. For a production of 300 pairs the lasting machine installed has a capacity of 500 - 600 pairs, so two new ones seems out of question. The same applies to the littleway stitching machine. Anbessa Shoe have a surplus of both these machines, and the answer, therefore, is transfer to Ethiopian Shoe.

In the same reciprocal way both Dahlak Shoe and Ethiopian Shoe have ample air compressors while Anbessa has two new machines, an "Astra" lasting and pulling over machine and a heel seat bedding machine, but not sufficient air supply to run them. Therefore, a transfer should be arranged.

In evaluating the machinery installed in the shoe factories, one has to consider the capacity of the equipment to produce a given number of shoes. It is also necessary to decide whether the technical know-how is available to utilize the machines to produce quality items.

The figures given by the Planning and Research Department of NLSC show that for 1978/79 the shoe production was:

Leather Footwear	1,404,527 pairs
Canvas "	2,237,472 "
Plastic "	1,392,449 "

In reviewing the number of workers and daily production from figures given by general managers, a daily production per person per day in the leather factories is shown as follows:

Anbessa	2.17 pairs per day
Tikur Abaye	5.71 pairs per day
Eritrea	2.12 pairs per day
Dahlak	2.22 pairs per day
Ethippian	2.29 pairs per day.

The machines and equipment which is in the factories plus that which is to be added through the 1980 budget, with the exception of Tikur Abay, could produce three times the amount of shoes or nearly four million.

The major proportion of the plants originates from the late 1960's. The cutting and closing departments can be up-dated gradually, through a short-term and a medium-term development. The machinery used in cement lasted construction (which every Ethiopian factory produces) follows a set pattern. After the back forming operation the following machines are needed:

Forepart Pulling-over and Lasting Machine
Side Lasting Machine
Back Seat Lasting Machine
Roughing Machine
Sole Attaching Machine.

Ancillary to these are steam heaters for conditioning and softening toe puff and vamp, heat tunnels for drying cement margin on lasted shoe, heat re-activators for pre-cemented soles and cemented upper margins, heat setting units for quick forming of the leather upper to the last.

Of the heat setting units seen none were being used, and of the steam heaters only two were in operation.

When considering additional or replacement machines and equipment it would be for the short-term:

a) Shoe lasts with appropriate sole units or soles
b) Specialized post bed sewing machines
c) Heated back forming machines for thermo-plastic counters
d) Toe puff fusing or printing thermo-plastic toe puffs
e) Steam heaters for use before lasting
f) Heat activators for re-activating precemented soles and uppers
g) Upper scouring machines with 100 mm wide scouring band.

In the intermediate and long-term plan replacement of machines, from present types of pulling-over and lasting machines and side lasters to machines fitted with thermo-plastic cement, should be considered. The same would apply to a change from solvent dipped counters and toe puffs to thermo-plastic types. This change would result in cleaner linings and uppers. Thermo-plastic materials have gathered momentum for the last decade and are well established in developed countries.

The stitch down or veldtschoen is another type of construction, and it is very suitable for children and men, made with 1.8 - 2.0 mm corrected grain side leather, suede splits, or suede sides, unlined and with soles from sheet rubber or specific unit soles. This is a suitable line for one factory. The Anbessa does run a line but the wastage is excessive.

Five key machines are required for this type of production:

Toe Form Flanging Machine
Back Form Flanging Machine
Side Wheeling Machine
Marginal Edge Insole Trimming Machine
Outsole Stitching Machine
Sole Attaching Machine.

The first three machines above give the quality content to veldtschoen, while this type of shoe can be labour intensive when made by hand; it is difficult to make quality products in light coloured leathers without these machines. For a future programme a line of these machines should be considered for one factory specializing in children's and youth shoe production.

Organization of the Shoe Industry

Marketing

This subject is without question a very important matter to the Ethiopian shoe industry.

The marketing of the finished leather footwear is done in an individualistic way. The factories in Addis Ababa have their own retail outlets,and the Asmara factories group their productions into retail shops in Asmara and Addis Ababa. The sales of all plastic and canvas footwear follow a different pattern due to its low price structure.

This present method of sales is considered as one of the main reasons for the lack of production planning in the factories, and the cause of excessive stocks of certain styles being held by some factories. In other words, just to keep production going, the factories keep producing styles which the sales outlets cannot sell as there is no demand by the public.

The marketing of footwear is a business in itself and,based on its knowledge of the consumer or public demand, it specifies the types and styles of footwear to be produced. Where a group of shoe factories is connected as in Ethiopia, thereis usually a range builder appointed,and that person is very often the sales manager (as stated on page 15). He usually has a general knowledge of shoe manufacture and the different constructions of footwear. He should also be able to forecast public demands.

The sales manager usually works from a central warehouse which stocks the footwear ordered from the different factories and which supplies the retail shops. Where there is a number of shops a retail shop manager is needed. He comes under the sales manager's supervision and is responsible for keeping the retail shops well stocked, well organized and should know how the stocks are moving so that replacement orders can be made to the factories, for specific styles.

This systems means that the factory must work to an order book which is the key to production planning in the factories. It also means that the factories have no dead stock, for although seconds or rejects are made, the warehouse sales system can take them and sell them cheaper at certain periods of the year.

Each leather shoe factory should present a range of sample shoes every three months to the sales organization (central warehouse), starting with twenty pairs. The sales manager, together with his retail managers, will select those which can sell and place orders. Delivery time to warehouse is normally six to nine months to give the factory sufficient time to obtain materials for production.

Certain styles of shoes such as children's veldtschoen sandals, men's derby boots, men's and ladies' moccasins and ladies' walking shoes with medium heel are continual sellers. There are others, such as plain strapped sandals for men, women and children which have been and will continue to be worn for years. It is these types along with the usual conventional shoes that are the bread and butter lines of the shoe industry.

The sales manager and retail shop manager will, by knowing the market, be able to advise and direct on what price ranges the public can afford to pay. This in turn makes the factories pay particular attention to their costings, prices they have to pay for materials etc., and in the long run force them to save on material wastage.

It is hoped that the NLSC will consider a change in the marketing system of the factories and retail outlets in leather uppered footwear. A smaller branch warehouse could be opened in Asmara as well as extra retail outlets, for it is understood that Asmara has only one retail shop attached to the factories. Annex I shows an organization chart for this proposal.

Factory Organization

The shoe factories under the NLSC portfolio have operated in the last five years with general managers appointed by the Corporation. While these persons have, from a business and academic viewpoint, a good background, they do, however, lack an in-depth technical knowledge of all the requirements of the shoe industry. They are also subject to being transferred after short periods.

Of the six factories only two, Rubber and Canvas Shoe and Anbessa Shoe, have technical managers. It is a well known fact that a successful technical manager must have a number of years experience on the factory floor, and be knowledgeable in the systems required in a shoe factory. In most cases they grow up in the shoe business, they are promoted in stages from learners, journeymen, foremen, supervisors into technical managers. The Ethiopian industry, due to the changes made in 1975, can be classed as comparatively new, and few persons with the required technical ability are available.

If the proposed expansion in the shoe industry is to take place as planned for the next ten years, much greater emphasis has to be placed in up-grading on the factory floor level to find the types of persons suitable to take on the roles of foremen, supervisors, department managers and eventually technical or production managers.

The importance of a good technical manager is demonstrated in the case of the Rubber and Canvas Shoe Factory. This factory is organized and run most efficiently, and much of the credit, in spite of the simple production mix, is due to efficient technical supervision. This in fact proves the necessity for good technical management.

The quality of labour and supervisory staff in Ethiopian shoe factories is no different to that in any other country. Where there is a lack of leadership or authority at the top the human element takes over and there is an easing off of effort. All well organized shoe factories need work method discipline on the factory floor, and these usually come through the technical/production manager.

When the problem is technical the aggravation becomes more acute. One of the answers is training abroad, as is happening under the UNIDO project, but this is a long-term procedure, supplying only a few technical managers as compared to the numbers that will be required if expansion takes place as planned for the next five to ten years.

The general managers are all well educated and qualified persons who have the ability to assess situations and persons, otherwise one would presume they would not hold the positions. So in looking at the situation from a strategy angle it is felt that they can assist in building up a nucleus of potential technical personnel quickly.

It is proposed that the general managers make a number of visits on the factory floor daily to orientate themselves on the techniques and at the same time appraise the work force, particularly the supervisors and foremen, and change hands and key workers. While this cannot be rushed, within a month or two the general managers should have a reasonable idea of the quality of the persons who they consider suitable.

Then, after consultation with the NLSC and with their agreement, the persons recommended should be advised and informed of the intention for up-grading. Any up-grading so done should be on a temporary or probationary basis, while the general manager should record the performance of the person after up-grading for a three-month period.

If this is done and persons appointed, when the UNIDO experts visit the various factories for a prolonged visit which it is understood they will do, these persons are the UNIDO counterparts for that factory, and on-the-floor training should be carried out. It is admitted that periods are short but if enthusiasm is shown on all sides much can be achieved. It would also require a certain increase in wages for the persons selected, and that, plus the opportunity for further improvement in their positions in the factories, would be the incentive.

As stated in the previous paragraphs regarding sales organization the production pattern applied to most factories in developed countries is based on an order book, and it is from that book that planning is made. The order book should contain the following:

Date order received
Style number, pattern number, last number etc.
Colours required
Quantity ordered
Sizes required
Delivery dates requested by customer
Dates when the orders were finished.

From this book all data for production planning, materials requirement and necessary tooling-up for cutting dies etc. can be obtained.

Following this, day or work sheets are compiled from the order book (called plans in Ethiopia), then these day sheets are broken down to case lots. A case comprises a set number of pairs of shoes on a ratio of sizes as ordered by the customer, as for example:

Size	38	39	40	41	42	43	44	
Pairs	1	3	4	5	4	2	1	= 20 pairs.

This can vary according to customer requirements. The pattern, therefore, is:

Day sheet (plan) 1,000 = 50 case lots of 20 pairs.

The day sheets are made out in six copies, one each for cutting, bottom stock, closing, assembly, lasting and making and finishing and boxing departments, and contain the individual serial number of each case lot ticket with particulars of style of shoes in each case lot. There should be date columns for the entry in and the exit out of the department for each case lot.

The case lot tickets with the serial number contains all particulars as to style number, last number, types of leather (uppers and linings), method of construction, types of insoles, toe puffs and counters, soles and details regarding operations. All this is for the operator's information and is originally drawn up by the design section.

When a specific case lot enters the department, the foreman or supervisor marks the date on his day sheet, and when it leaves, he marks the date. By so doing a control can be kept on production. Also, after the different departments have passed through all the case lots on a day sheet it is handed in to the production office which issued them in the first place.

The last department is the finishing and boxing department, and by this system the shoes can be packed immediately into cartons in the regulated size range as ordered by the customer.

When the rough stock and cutting department supervisors make a material requisition order for individual case lots the store keeper makes out a cutting sheet with the name or number of the worker who will cut the leather or parts and the amount of material issued. When the case lot has been cut, the supervisor checks the saving or loss and hands the cutting sheet into the production office for scrutiny. As the amount allowed for a pair of shoe has already been prescribed by the costings made out when the shoe was designed as a sample, a check can be kept by the production office of wastage or saving by the individual cutters.

This system, as stated, is used in numerous shoe factories in Europe and U.K.. There are various deviations according to constructions but all are based on an order book. The UNIDO shoe technologist is fully aware of systematic production planning and all the facets of control that has to be applied. In the work which he has prepared organizational changes play a big part, not only for Anbessa Shoe but every leather shoe factory.

When evaluating the skills of the workers in the different departments it was noted that the hand and machine cutters of upper leather were reasonably skilled in the operation but did not understand the value of saving materials. In the closing rooms of Rubber and Canvas Shoe Factory, Ethiopian Shoe, Eritrea Shoe and Tikur Abaye Shoe Factory some of the taping and binding machine operators would make good training instructors. The otherwise reasonable performance of the lasting and making room operatives was hampered with badly fitting soles uneven patterns and the poor quality of materials. The supervisors are eager to learn and improve the production but need detailed guidance and supervision from the top management.

Private Sector

It has not been possible to visit any of the private shoe manufacturers but the footwear seen in some of the retail shops has been examined. The ladies' footwear were mostly strapped sandals with imported plastic unit soles carrying a high heel. While the styles were attractive the sandals lacked quality. They fill a gap in the varied types of footwear required but are not value for money.

The men's shoes were much worse both in styles and quality but it must be remembered that in the shoe trade if the public has the money they will buy the shoes they want.

From conversations it appears that there are numerous small units in Asmara. Again this is understandable by the link which the official shoe industry has to the Italian background. In Italy there are thousands of small or cottage units who are on sub-contract work for the large factory especially in upper making. The large factories cut the uppers and lasts and make the shoe. The small or cottage units stitch and make the upper. This pattern could be operated in the long-term future in Ethiopia when higher grade footwear will be made.

Short-Term Development

It is a natural tendency when countries have a large livestock population and likewise large hide and skin take-off to feel that with this raw material, local and export markets for leather products giving added value, revenue is automatic. In lots of cases the gap between the raw hides and skins and the finished products is not fully realised. The statisticians in the leather world

have worked out that in the process of utilization from raw to wet blue to crust to finished leather to finished leather products, the greater added value is realised in between finished leather and finished leather products.

In Ethiopia the first three stages - raw, wet blue and crust - have been exported. Finished leather has been sampled with no real success. What is important is that if the finished leather made has not been accepted as yet by the export trade, what are the chances for export of shoes made from that same finished leather. Exports usually require a quality leather and uniformity. This in turn needs hides or skins of a specific grade or quality which the tanner by experience knows will give him the quality leather with which exports can be achieved. Here again it must be emphasized that they do not necessarily need to be the number one grade.

At present the improvement of hides and skins comes under the Ministry of Agriculture; the collecting, grading and distribution as well as exports of raw hides and skins comes under Hides and Skins Corporation, a branch of the Ministry of Foreign Trade. Private hide and skin merchants are also involved in exports of raw hides and skins. The Ministry of Industry, through NLSC, processes and exports leather in pickle, wet blue and crust. It is understood that NLSC are to open collecting stations in different parts of the country, and this will be in competition to the hides and skins centres and the private merchants.

The involvement of three Ministries creates problems and the present policy defeats the aim of the country to obtain added value for its raw hides and skins. The better hides and skins are being exported raw, and the lower grades left for NLSC for the production of semi-finished leather for exports and finished leather products for the local market.

The Ministry of Industry too is requesting the tanneries to increase production, but this is difficult owing to the fact that most of the best hides and skins are being creamed off for exports in the raw state. This results in the tanneries in production of poor quality leather for the local shoe factories. Also, the tanneries' outputsof pickle, wet blue and crust for exports suffer expècially at times when the world hide and skin markets become depressed. Countries like Pakistan, India and Bangladesh flood the European countries with pickled skins, wet-blue hides and skins and crust leather with Government subsidies backing the tanneries.

This matter should be classed as priority,and the Ethiopian Government should consider legislation on export of raw hides and skins to allow the tanneries to obtain a better selection, and they in turn should react with producing a better quality of semi-finished leather for exports and a better finished leather for leather products production. To enforce this legislation the Government could apply an export tax on all hides and skins exports in the raw.

Before theshoe industry of Ethiopia can attempt to export quantities of footwear it is essential that they have the components, that is, the correct shape and width of lasts, quality leather and attractive well fitting soles. The basic export shoe is not a high grade ladies' fashion shoe or a men's high grade calf leather shoe with leather soles. Those exports are for Italian, Swiss, French and Spanish factories for inter-trade in developed countries. To break into those markets would require years of experience and advanced technology.

The basic shoe I mean is a moccasin with machine stitched plug, a jogging shoe, a Gibson shoe with quality leather, boys' good quality leather uppers with injection moulded soles or any other shoe type in a medium price bracket. But they must be produced in large quantities, have uniform appearance so that the first pair of a 10,000 pair order is the same as the 9,999th pair.

The way to exports is through the local population, producing shoes which they consider equal to those they could obtain on foreign markets, and then expand. A short cut can be made and that is to open up a modern equipped factory and manage it with well experienced technicians and allow the factory to import all materials. But I do not believe that short cuts work in the long run, imports will prove expensive and time consuming.

Advancement in the present shoe factories is basically attached to associated industries by which different types of leather, lasts, cements, unit soles of different types, insole brand and other components are easily available.

In the short term of two years the priorities and the UNIDO shoe group work plan should be based on the following issues:

1. Change over of the sales or marketing systems, as advocated in the previous pages, including the three-monthly sampling.

2. Action by the Ministry of Industry to propose to the Government that a more systematic control be put on exports of raw hides and skins to allow NLSC tanneries to obtain better quality hides and skins, to obtain greater added value on exports and better finished leather for factories.

3. Up-grading of finished leathers supplied by tanneries to the local shoe factories.

4. Pre-arranged programme of periodic visits by the UNIDO shoe group to each factory to assist in factory floor operations and in-plant training.

5. During visits by the UNIDO shoe technologist to each of the factories sufficient time should be allocated to introduce the system of three-monthly sampling of new styles of products and to carry out the following:

- Plan production according to an order book system and institute the organizational change to go with it.

- Recommend and assist in plant layouts so as to improve work flow.

- Recommend additional machines and equipment to up-date the productions, using the yearly allocated budget as proportioned by the Ministry.

- On assessing the types of in-plant machinery for the specific constructions of shoes being produced, advise and assist managements in clearing the flow lines by the removal of machines and equipment which at present is not being used.

- Brief and assist general managers on technical problems and, if the proposal put forward in this report on up-grading of supervisors, foremen and workers is accepted by the NLSC, assist the general managers in any selection for up-grading, taking into account the technical ability, experience and the personality of the persons involved.

- When the plan being formulated by the NLSC, listing all equipment held by the tanneries and shoe factories, is compiled, it will be possible to see where specific machines are being held and from where, if necessary, transfers of machines and equipment can be made. This planning involves the UNIDO shoe machinery maintenance engineer and the shoe technologist who can give valuable information in respect of future purchasing of machinery, and also be a big help in planning new factory machine layouts to obtain optimum production.

6. During 1981 the Shoe Design and Upper Making Training Centre, which was proposed in the DP/ETH/78/001 project document, should prove extremely useful for the shoe industry. However, from conversations with the project manager of the I.L.O. project attached to the National Productivity Centre, it became clear that the I.L.O. project includes a leather goods expert for this project. In the proposal revision for UNIDO project DP/ETH/78/001 a shoe design and upper making expert has been included. It seems that both I.L.O. and UNIDO are considering recruitment for the same post. As the UNIDO project has ordered specific machines and equipment for shoe manufacture, not leather goods, the expert to be recruited must be a specialist in shoe upper manufacturing, and the UNIDO shoe group work programme must be taken into consideration in this training centre.

7. The UNIDO shoe group, when recommending changes in plant layouts, should consider the specialization of certain factories of footwear for men's, women's and children's shoes. If these were in operation the factories would achieve longer production runs without having to re-tool and adjust equipment to cater for large men's sizes and small children's sizes in the same factory.

   The writer does not have sufficient in-depth knowledge as to the different styles passing through each factory the UNIDO shoe group has. This refers to leather uppered footwear. The Tikur Abaye plant would appear to be suitable for men's footwear only for both army and civilian work, the Ethiopian Shoe for children's, Eritrea Shoe for better quality men's and ladies' and, leading to export, Anbessa Shoe Factory and Dahlak Shoe mixed.

8. Another proposal in the UNIDO project document revision is the pilot plant for the manufacture of shoe lasts, components and unit soles. The shoe last is the basis of a shoe, the insole (component) is the foundation of a shoe, the unit sole is the modern method of bottoming a shoe in that it fits the shape of the shoe bottom when the shoe upper has been lasted to the insole. If the project revision is approved, the UNIDO shoe group and in this instance especially the counterparts from NLSC and all factories should be involved. The importance of shoe lasts on which shoe styling depends cannot be stressed strongly enough, for both export and local markets. They are the start of fashion changes in the shoe world.

9. In the short term, NLSC should be looking into a possible joint venture with an international chemical company for the manufacture of shoe cements (adhesives) and solvents and spray shoe finishes, at the same time considering the other industries which use adhesives and lacquers of one type or the other but which are mixed in the same way.

All the aims of the above suggestions should be completed within the short-term period.

Provided that the short-term programme is implemented successfully, it will result in the following improvements:

- The finished upper leather will be of better quality, greater uniformity,and varied types and colours produced to follow what is termed a character leather.
- Sole leather will be available with sufficient substance and flexibility to produce leather unit soles as required for export.
- The tanneries will be able to produce a combination tannage of vegetable and chrome to produce suitable leather in sufficient quantities and varieties for leather goods manufacture.
- The marketing and production of the shoe factories have been organized into a pattern where leather footwear is reaching the public in better styles, comparable prices, and sufficient quantities to satisfy the Ethiopian people.
- The UNIDO shoe group has been able to utilize the present machines and equipment with the minor additions required and that a consolidating period of twelve months has taken place.

Medium-Term Development

The main theme again should be to put Ethiopia into a more self-supporting position and further utilize the leather which is produced locally and which when manufactured into products and exported can earn much needed foreign currency.

It again must be emphasized that the tanning of hides and skins into leather is the intermediate stage and should lead to the achievement of exporting leather shoes and leather products.

The medium development programme should be three to five years as from now. By that time the workthat has been suggested in a short-term programme should have been implemented, and exports of shoes should have been started. The main issues which would arise and need consideration are:

1. The gradual replacement of the lasting equipment in the factories to more sophisticated pulling over and lasting machines with a hot melt cement (thermo-plastic) applied by the machine. Hot melt side lasting machines, and heel seat tack lasting machines. The reason for considering these machines in this phase of development is that the estimated price of these three machines amounts to approximately 120,000 Birr. This type of machinery has already replaced, in the European countries, the types now being used in Ethiopia. For quality export shoe trade they are necessary.

2. As follow-up to the shoe last and unit sole manufacturing pilot plant, and training of nationals on this new technology, consideration should be given to the starting of a full production factory for supplying shoe lasts, cut insoles, cut counters, cut toe puffs, unit soles of P.V.C., thermo-plastic, micro-cellulos and resin rubber, also leather unit soles.

   The rubber departments located in four factories could be rationalized to this factory to supply the rubber compounds for these unit soles. The presses and moulds would have to be replaced. At the same time a large variety of soles would be made available to the factories, locally made and quickly obtained.

3. A leather goods factory should also be planned to start production in the medium-term development. While a report was made by a UNIDO consultant in November 1979 on leather garments and included leather goods, it is doubtful whether the types and quantities of leather needed for the proposed unit would be available especially for export. It would be more advisable to start a small unit in the manufacture of what are termed flat goods in the report, - belts, wallets, purses, satchels and cases - items which are wanted by the local population. These are labour intensive items and provide good training for the more fashion or fancy leather goods.

4. Another type of factory which should be planned towards the end of the short-term period by the UNIDO shoe group is a leather uppered (or straps) sandal factory capable of making 1,000 pairs per eight-hour shift. This is another labour-intensive operation. No expensive equipment is required since lasting is all done by hand and the components used can all be cut in the factory.

The medium-term period should be used for consolidating that which has been done in the short term, and in planning for the long term. The UNIDO shoe group should be given the proposed development plan for the next ten years in which two leather uppered shoe factories, two leather tanneries (finished leather) and a leather goods factory are scheduled.

Long-Term Development

Provided they know of the proposed projections at an early stage the UNIDO shoe group can offer advice which would be valuable in gearing up and planning the present factories under the NLSC control.

It would also be advisable later on in the UNIDO project that NLSC request the shoe group together with the Corporation staff to draw up blue prints of plants to produce the estimated quantities as set out in the ten-year development plan. While alterations are bound to be made in this period the blue prints for these units would prove useful for future reference and for implementation of the plans. Required floor space, possible expansion, correct types of machines, capacity of machines, necessary manning required, assessment of material requirements, power requirements and site locations are all factors to be taken into consideration in these blue prints.

The success of exports of finished leather footwear from Ethiopia depends on the ground work put into obtaining the right type of hides and skins into the tanneries, the improvement by the tanneries to produce a good quality and uniform leather, and organization in the shoe factories, both technical and managerial, so that the shoes have the right style, quality and price and can be delivered on schedule.

A project of great importance to Ethiopian leather and shoe industries is the manufacture of leather board from tannery and shoe factory leather waste. All leather board or insole board is imported. The trimmings off tanned leather, the shavings from the shaving machines, and the waste from the shoe factories plus either natural or synthetic latex are the only ingredients required. Leather board can be produced in various thicknesses and used for insoles and numerous other uses for backing and stiffening especially leather goods. Thin goat or sheepskins laminated to leather board can make very attractive leather products. A feasibility study should be carried out on this towards the end of the short-term period to assess the amount of scrap leather available and the amount of board required, allowing for expansion of the shoe industry, to assess the size and cost of a plant.

Regarding exports of shoes, if the ground work is put in now, it is considered that by the end of the short-term period exports could be starting, and once exports are achieved it is essential to maintain quality standards for repeat orders.

Anbessa Shoe Factory

This factory must be classed as the problem child of the NLSC, and it is understandable that the Corporation is looking for quick answers on how this factory can be improved to some form of viability.

While it was requested that a study be made of this factory independent of the work done by the UNIDO shoe group it is felt that the work being carried out by the shoe technologist in this factory always covers this issue, and the writer supports the shoe technologist's method of approach.

The first impression on entering the production hall is that the building is not suitable for a shoe factory although the factory produced reasonable quality footwear when managed by Darmar Shoe. This, however, still does not alter the fact that poor floor space, the bad lighting and lack of ventilation all add up to a certain amount of difficulties, and the custom of locking one of the two entry and exit doors addsto this.

The types of shoes being produced cover a wide range and most of them have been in production for years. This is basically due to lack of production planning. The production charts show often single pairs, three pairs, or generally very small quantities which are being produced per shoe type in a month. This shows a lack of control system, and production planning is not being applied.

The problems which beset Anbessa seem to be in every section of the organization. It appears that from 1975 there has been a slow deterioration. To arrest this, drastic action will be needed. Most of the administration staff are not acquainted with the techniques of shoe manufacture so the main onus of the deterioration must apply to the technical side. The technical manager in charge of production has been in the factory for a number of years and has the technical knowledge of designing and making footwear. He lacks, however, the knowledge of modern methods.

There have been some difficulties in co-operation between the UNIDO shoe group and the technical manager who has not readily agreed to the suggestions of the UNIDO experts. For the benefit of the factory action is required to improve the co-operation. The counterpart to the UNIDO shoe technologist appears to have the technical ability but lacks experience. This should present no problem if a correct production planning system is applied. The problem which could occur is the labour force reaction.

Anbessa must, from a business point of view, be an uneconomical factory. The amount of surplus stock (classed as dead stock) and a large quantity of unsold shoes which reduce in value with time, and the continued production of unsaleable shoes just to keep the work force going, makes the financial side of Anbessa disturbing.

The general manager and the accountants are partly responsible for this situation. At the time of stock taking any unusual items should have been noted, and the present position must be an accumulation of things, or the lack of knowledge required for shoe factory administration and day-to-day running of retail stores. It would be advisable that a trial balance be prepared every month and a physical stock taken every three months, so a check can be made on the actual financial position at any time.

The marketing of the products should depend on the styles of shoes produced and not on the choice of the technical manager as at present.

While the subject 'Marketing' on page 26 refers to all leather uppered shoe factories, it is more relevant to Anbessa than the others because Anbessa has twelve retail outlets. Instead of these outlets getting what they want they have to take what Anbessa sends. All these retail outlets should be put under the control of a Central Sales Organization and sell shoes from all factories. Anbessa would have to work to specific orders from the Organization. In so doing an order book would be a necessity. They would also have to present new styles regularly.

To produce footwear with the right quality, design and technology tied to a price bracket should be carried out in team work between retail sales personnel, designer and technician in the factory. Unfortunately this factory's designer or technician still follow the old methods, and therefore no progress has been made.

The UNIDO shoe technologist and his counterpart are trying to move towards this goal, and one of their plans is to introduce an economy line of men's and children's footwear. The UNIDO shoe technologist has designed and made the patterns, and it remains to be seen what the sales results will be. This effort must be handled by the general manager in instructing the present pattern grader, technical manager and section supervisor to treat this trial as urgent. Without this authority the trials cannot be successfully carried out.

The way to learn how to produce shoes to a low price bracket is based on experience. Keen buying of material, increased production, and efficient management are all factors to be considered in this respect.

Production planning cannot be introduced into shoe factories unless the orders are correctly tabulated into an order book as explained on pages 29 and 30. Anbessa does use a day sheet (plan) system, but works in a ten-pair job sheet, sometimes ten pairs of a specific size, and others ten pairs of mixed sizes. There is no size marking which can result in mixed sizes so that a size 40 vamp can be sewn to a size 44 quarter or a 39 outside quarter being sewn to a size 43 inside quarter. One can imagine the mix up if this happens to the linings first, then when attached to the upper, the shoe is completely out of proportion. All cutting dies and hand cutting patterns should be size marked with small notches. The UNIDO shoe technologist advocated this without response.

Orders for shoes are usually placed in size ranges, requiring more of the popular sizes, normally these sizes are grouped into children's, youth and maids, women's and men's. Production plannning requires this breakdown as does the fixed selling price. Anbessa has no specific size ranges. Again this has been pointed out, but no action taken.

The Anbessa Shoe Factory, according to production charts, produces 50 different styles every month. No systematic planning is taking place.

Quality control in footwear starts from the design and the instructions attached to the style of shoe by the designer. The function of the quality control is to see that the operators carry out the operations in the way the designer and the technical manager have agreed. It is basically a job for a person or persons who have a comprehensive knowledge of all sections of a shoe factory, so as to be able to pick out wrongly cut sections (wrong stretch or pippy grain in the vamp), dropped stitches, twisted lasting, over roughing and numerous other faults which appear in the production line.

In quality control work an amalgamated job of production-chaser is usually applied. If he, in his control, finds a choe or upper which has a bad fault, instead of leaving this shoe, upper or sole to continue, he takes it to the operator responsible, gets the fault corrected and puts it back immediately on the production line. This alleviates rejects or substandards in finished shoes. Quality control in shoe factories is purely physical checking with knowledge of the shoe production methods.

Standards are not set for a finished shoe; they are set on the materials that go into the shoe.

Material wastage control can be easily installed, but must be rigidly carried out. The main wastage in Anbessa is in upper leather cutting and rough stock (insoles, rubber soles and heels and components) departments.

After the day sheets are broken into case lots (ten to twenty pairs) for these two departments, requisitions for materials, upper leather, sheets or insole board, and rubber sheeting, for the quantity in the case lots are prepared. Previously the amount of material allowed for one pair of the style of shoe in question was being calculated and agreed upon.

The operators on cutting receive a cutting sheet. The maintenance of these records and adequate analysis of cutting results in one of the most important tasks for cost control in the factory. This is one area where the efficiency of the operative must be closely watched as the amount of good usable work depends on the operative's ability to save materials. The store keeper issues these sheets with all leather or material issued. When the case lot has been cut the department foreman or supervisor checks and initials the cutting sheet showing the amount cut from the issued leather and hands the sheet into the production office for recording. These sheets show the waste or saving (see Annex 2).

Streamline production is a matter of machine and department layouts. Anbessa, on account of the cobbled floor and general darkness, does not lend itself to efficiency. The factory definitely needs replanning and more roof lighting. Again the UNIDO shoe technologist has drawings for a first stage improvement. The building is being altered to allow more room for the rough stock . He also has plans drawn for a second stage to move the upper cutting and rough stock and closing room also to shorten the shoe tracks.

This second stage would make Anbessa into a streamline production unit, and the writer would endorse his plans. The question of removal of unused machines should be handled at the first changeover. The argument that some of the machines are used once or twice a year for unusual types of shoes is not valid. Production planning should be made only for three to four styles to be produced at the same time . Manufacture of any more styles simultaneously creates problems.

Training schemes: This has been written about earlier in this report. In Anbessa, however, with two shifts of over three hundred floor workers, there is a lack of work discipline caused through the inefficient supervision. The workers do not only need training; they also need stronger and more positive supervision.

Among the 700 workers there must be ambitious persons who want promotions and are willing to learn. They can learn more practical technology on the factory floor of an efficient factory than anywhere else. This factory is a case of where it is necessary to install a good technical management and where top management must get onto the factory floor in order to give the supervisors and foremen some encouragement and create the right working atmosphere.

The break-even point of the Anbessa Shoe Factory production has not been calculated, but, based on the observations in the factory, the writer is doubtful as to whether Anbessa is near the break-even point despite the low labour cost. The production in the factory is presently 2.17 pairs per worker per day, and this can be compared with a well organized European or U.K. factory producing ten to twelve pairs per worker per day,and with factories in other developing countries like Brazil, Argentina and the Caribbean, equipped with similar machinery, producing seven to eight pairs per worker per day.

It would not be advisable to start direct incentive schemes in the Anbessa Shoe Factory until the factory has been re-organized and the factory accounts show that the break-even point has been reached. Other methods than direct productive incentives, such as job classification combined with group bonus systems to motivate the workers, should be applied first.

Based on a fixed weekly wage a job classification scheme must be applied on skills needed. This applies to every department, and the normal practice is to put operators into grades of one to five, which carry a certain wage scale, some examples in the different departments in Ethiopia would be suggested as:

<u>Cutting Department</u>		
Hand Cutters	Grade	1
Machine Cutters	"	1 or 2
Lining Cutters	"	2
Stitch Markers	"	3 or 4
Checking + Identification	"	3 or 4
<u>Closing including Preparation</u>		
Skiving	Grade	1
Folding Machine	"	1
Stitch and Trim	"	1
Vamping	"	1
Moccasin Plug Stitch	"	1
Cording	"	2
Back Seam	"	3
Flat Stitch	"	3
Fitting Sections	"	3 or 4

Lasting and Making

Back Forming	Grade	2
Attach Insoles	"	3
Pulling Over and Lasting	"	1
Side Lasting	"	1
Heel Seat Last	"	2
Upper Rough	"	1
Sole Attach	"	1

These are examples which each factory has to assess. Once the weekly wages have been graded, the management cost accountant should find out the number of pairs needed to be produced, so that the factory's financial position is assured.

It then is a matter of decision what rate of bonus can be applied again for example on 100 pairs a shift and proportionally on 200, 300, 400 etc.. This bonus is to be applied to all employees including management.

After this type of system has been successfully implemented and put into operation, the next step would be to start the implementation of a direct piece work system. This would be based on the same job classification scheme and on careful time study of each operation of all styles in the production.

The re-organization of Anbessa should start at a more definite sales policy. The top management should take a far more active role on the factory floor, sales, accounting and purchasing. These are all vital areas in the industrial production of shoes.

It is recommended that to increase production and change the now fixed pattern, which it seems has been with Anbessa for a long period, the counterpart to the UNIDO shoe technologist should be appointed as technical manager. The UNIDO expert should be requested to train him into the authority. The writer is fully aware of the work done and the plans which the UNIDO shoe technologist has prepared for Anbessa with his counterpart. All the factors mentioned regarding Anbessa in NLSC terms of reference to the writer are being worked upon and ready for implementation. The UNIDO shoe technologist is advised to stay with and guide his counterpart, and all instructions for changes and alterations must come through his counterpart on the factory floor.

RECOMMENDATIONS

In summarizing the present situation in the shoe industry and in considering the aim of the country in the leather and leather products development it is recommended that:

1. The NLSC, through the Ministry of Industry, make strong proposals to the Government for greater control over the export of raw hides and skins, to enable the tanneries to obtain a better quality of hides and skins for processing into pickle, wet blue, crust and finished leather for added value in foreign currency.

2. The NLSC institute a central sales and retail organization for the production of all leather uppered shoe factories, and that the manager of this organization be classified as the range builder for the production of the factories.

3. A fully qualified, experienced technical expert in leather, shoes and leather products be appointed as chief technical adviser in charge of the UNIDO Leather and Leather Products project. The experts definitely need a leader, used to international aid projects with knowledge of UNIDO and UNDP requirements in the field.

4. The factories make an inventory of all shoe lasts held and in the next budget year replace with more modern shapes those which are out-dated. The UNIDO shoe group can advise on widths and shapes.

5. The NLSC consider the purchase of a twelve-station P.V.C. injection moulding machine to be housed in Addis Ababa (preferably Rubber and Canvas Shoe) to produce a low priced plastic coloured wellington for children, ladies and men. This type of footwear is wanted during rainy season, and is well suited for rough country wear

6. The rubber chemist based at Rubber and Canvas Shoe should be requested by NLSC to advise the leather uppered shoe factories management on change in compound to make translucent (gristic) unit soles, and also to prepare the background for the making of micro-cellular rubber.

7. The management of Tikur Abaye Shoe consider to change over from tack lasting the forepart and sides of army boots to a pulling over and cement lasting machine and side laster, both using hot melt (thermo-plastic), as well as new tack seat laster, for better quality army boots.

8. The hand cutters in Anbessa and Dahlak factories be provided with wooden cutting board for more efficient cutting of leather.

9. The policy advocating the up-grading of technical persons with experience and ability from the factory floor should be adopted as an immediate and temporary measure, until trainees from abroad return. UNIDO shoe group assist in this task.

10. The general managers should make routine visits to the factory floor for policy reasons, and should remain at one factory for at least five years, to provide continuity and be able to provide experienced management.

11. The UNIDO shoe group should assist in planning for the specialization of the factories to avoid excessive tooling up and adjustments which are required when a change has to be made (as at present) in switching production from men's to ladies' to children's. An organized central sales unit (as recommended in -2-) would assist in this matter.

12. The NLSC should seek a joint venture project in the manufacture of cements used in the shoe industry. Owing to these cements having a limited shelf life, imported cements as being used are often deteriorated due to length of time taken during shipment and damage to containers in transit.

13. The shoe factories are advised in the near future to adopt the use of thermo-plastic shoe counters and toe puffs to achieve clean quarter linings and shoe uppers. This is more important when suede on snuffed leather is used.

14. The NLSC should give great consideration to the eventual transfer of the Anbessa Shoe Factory to more suitable premises in order to benefit workers and in general all aspects of shoe manufacturing.

15. It must be realised that the way to exports of finished leather shoes and other leather products is built basically on the availability of a good quality leather with good shoe lasts and other components, these put together using up-to-date methods. This can be done in the short term, and consolidated and established in the medium term. During the medium-term period planning should be made for large expansion in the long term. Good quality finished leather in large quantities is the key, whether it be hide, goat or sheep.

16. The UNIDO shoe group should make a time table and include a month to six weeks in each shoe factory in order to re-organize the technical issues which are required to up-date the methods of production and act as advisors to the general managers. NLSC counterparts should accompany the UNIDO shoe group during these visits for training and orientation into the practical issues as applied in the shoe technology.

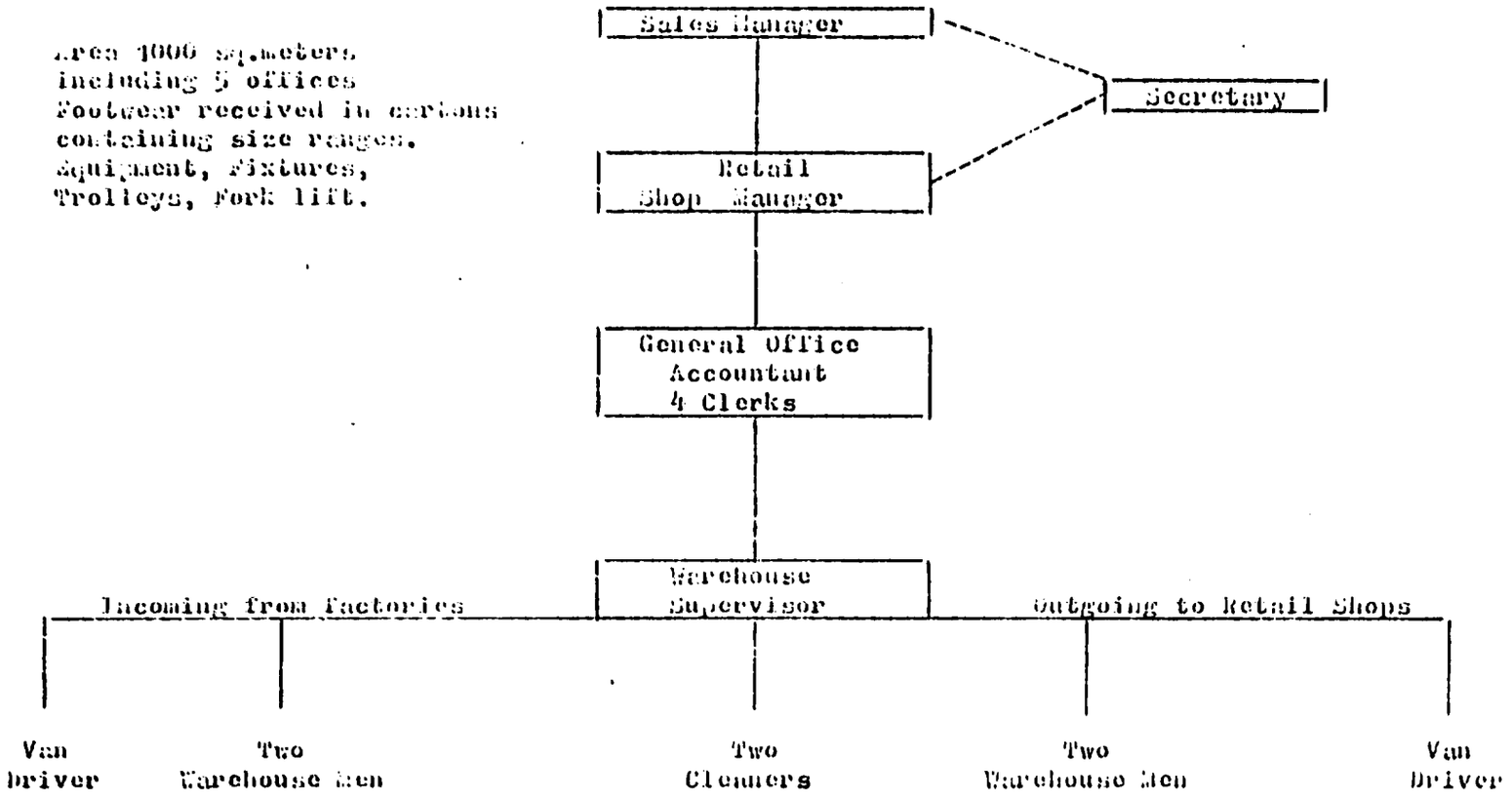
17. The NLSC should establish a sandal manufacturing factory for the production of about 300,000 pairs of various types of sandals per year. The UNIDO shoe technologist should be requested to prepare a suitable plant layout, recommend machinery and suggest proto-types for the production.

18. A pilot plan should be established for last and unit sole manufacture as requested in the draft project revision attached to the report of the tripartite review meeting held on 15 October 1980.

CENTRAL WAREHOUSE ORGANOGRAM

NLSC CONTROL

Area 1000 sq.meters
including 5 offices
Footwear received in cartons
containing size ranges.
Equipment, Fixtures,
Trolleys, Fork lift.



ANNEX II

DAY SHEET NO. 358 DATE ISSUED 8.3.7.

CONSEC. NO.	STYLE	PAIRS	SIZE	MATERIAL	DATE OUT OF D.T.			
					CUT	CLOSE	MAKE	FINISH
35001/1	73/47	8	6	Beige Keystone Leather	12/3	26/3	6/4	9/4
35002/1	"	10	7	" "	12/3	26/3	6/4	9/4
/2	"	10	7	" "	12/3	26/3	6/4	9/4
35003/1	"	8	8	" "	9/3	26/3	6/4	9/4
/2	"	8	8	" "	9/3	26/3	6/4	9/4
/3	"	8	8	" "	9/3	27/3	6/4	9/4
/4	"	8	8	" "	9/3	27/3	7/4	9/4
35004/1	"	8	8	" "	9/3	27/3	7/4	9/4
/2	"	8	9	" "	9/3	27/3	7/4	9/4
/3	"	8	9	" "	9/3	28/3	7/4	9/4
35005/1	"	8	10	" "	8/3	28/3	7/4	9/4
35006/1	"	4	11	" "	8/3	28/3	7/4	9/4

Column noting date out of Department completed daily from the daily production records.

ANNEX II

CUTTING SHEET

DATE: 3. 2. 73

DAY SHEET NO.	CUTTER	PATTERN NO. / STYLE	PRODUCTION	SIZE
397	..	4320	96 Pairs	6 - 11

	MATERIAL	REQUIRED	ISSUED	RETURNED	USED		GAIN or (LOSS)
					Amount	Per Pair	
UPPER	Hand Suede	200½ sq.ft.	240	1	139	2.49	(39) sq.ft.
LINING							
SOCK							
ARCH SUPPORT							
PIPING							
STAY							
COLLAR							
TOE-PUFF							
COUNTING							
EYELETS							
SOLE							

ANNEX II

COMPONENT CUTTING SHEET

ITEM: Insoles			MATERIAL: Insole Sheeting-Keystone PRICE: $5.76 Sheet		
DATE ISSUED	CUTTER	QUANTITY ISSUED	TOTAL COST B.C.$	NO. PRODUCED	COST PER ITEM (PAIRS)
22. 3.79	-	4 Sheets	23.04	110 Pairs	.209
24. 3.79	A	39 "	224.64	1164 "	.193
28. 3.79	B	16 "	92.16	406 "	.227
11. 4.79	B	22 "	126.72	565 "	.224

ANNEX II

LEATHER COSTING SHEET

STYLE: 4620 LEATHER: Sand Suede PART: Outside

DATE	OPERATOR: A			OPERATOR: B			OPERATOR: C		
	Pairs	Footage	Ft./Pair	Pairs	Footage	Ft./Pair	Pairs	Footage	Ft./Pair
5. 2.79	96	230	2.46	96	225½	2.35			
9. 2.79	96	219	2.28	96	227½	2.36	96	224½	2.46
12. 2.79	96	214½	2.24	96	226½	2.36			

SHOE TECHNOLOGIST

(Project ETH/78/001)

Jobs to be Undertaken by the Expert upon arrival at Duty Station.

A) General

i) Assess present production units in all aspects of footwear manufacturing including determining capacities and recommend towards improving productivity and quality standards.

ii) Assess the existing manpower availability, prepare long term training programmes and its implementation as both inplant and at NPC level and advising the NLSC for possible implementation of overseas training programmes.

iii) Assistance to NLSC on possible implementation of new projects related to both for domestic and export markets of shoes and shoe uppers from Ethiopia.

B) Specific Projects

i) Recommend the requirements of machinery at the NPC training workshop.

ii) Prepare training programmes for specific needs of the shoe sector as both inplant as well as at the workshop level.

iii) Study and recommend the implementation of possible rationalisation of product-mix to the best advantage of output capacity as well profitability refering to Anbessa and Tikur Abaye Shoe Factories. Anbessa has gone into second shift production in the last few months and Expert should provide this assistance on factory floor in improving the production flow, quality standards etc. as a case study to be undertaken as an immediate task.

.../-

iv. Evaluate present production technologies and prepare recommendations for any immediate modifications that may be required in improving the quality and output standard without much of investments and time required in the existing shoe plants.

v) Evaluate some of the projects in pipeline i.e. export shoes, shoe uppers and submit recommendation and possible assistance in its implementations.

vi) Present shoe industry has no qualified shoe technologists. Industry is basically run by the staff with a number of years practical experience background. One technician presently undergoing training at the Cordwaineers Technical College and expected to return back about July 1986. Expert will have to put in a considerable work on factory floor jobs. Expert will be expected to undertake a complete evaluation of shoe factories and will set priorities for a long term assistance programme.

vii) Among Asmara plants, Bhahlak Shoe Factory requires urgent technical assistance including implementation of an urgent training programme at the inplant level.

viii) General production planning, material utilisation as well as material purchases and its requirement planning is very poor causing considerable wastage in addition excess stocks at various plants. Considering shoe industry very much fashion oriented, expert will be expected to study each plants very closely and recommend necessary actions to be taken on existing stock and auxilliary material purchases of future items. In some cases number of items for various plants may be imported on centralised basis to avoid excess out dated stocks. Expert will be expected to look at some of the old auxiliary items and advise how best they can be used.

SHOE PATTERN CUTTING AND

DESIGNING EXPERT

(Project ETH/78/001)

Jobs to be undertaken by the Expert upon arrival at the duty station

A) General

i) Assess present production designs as well as suggest any changes that may be required. Consideration will have to be given to marketing aspects as well as rationalization of these changes to suit the production flow.

ii) Assess the designing facilities available at the plants including availability of manpower including training required to upgrade as well as train a team of designers for the shoe industry in Ethiopia.

iii) Assess the present production technology in view to changes in the designs both for domestic and export markets to be incorporated in particular emphasis to the higher output savings in production costs as well as designs that can be marketable. Prepare a detailed study in co-operation with Shoe Technologist, Shoe Machinery Engineer as a long term proposal for the sector.

B) Specific Projects

i) Study and recommend the possibilities of exports of shoes of uppers from Anbessa, Rubber and Canvas as well as Eritrea Shoe factories as immediate project including its possible implementation.

ii) Recommend the requirements of machinery at the training workshop.

iii) Prepare training programme for specific needs of the Ethiopian shoe sector as both inplant as well as at the workshop level.

iv) Study and recommend the implementation of possible rationalisation of product-mix to the best advantage of output capacity as well as profitability refering to Anbessa and Tikur Abay factories

.../-

v) Evaluate present designs produced with particular reference to market limitations in recommending above (iv).

vi) Evaluate some of the projects in pipeline i.e. export of shoes, shoe uppers and submit recommendation and possible assistance in its implementations.

vii) While undertaking above jobs, Expert to evaluate the overall set up of the existing industry, pipeline projects and priorities set for a long term assistance programme.

viii) Present set up of the shoe plants has almost no designing facilities or trained manpower available excluding Eritrea Shoe Plant in Asmara. Old designs have been in the production line with very limited modifications or changes made or colour combination or style. These limitations had a considerable impact on marketing shoe locally in addition to getting into exports which Ethiopian shoe industry has a great possibilities.

ix) Pattern cutting, grading and in particular knife preparation at individual plants is inaccurate and possibly expensive. Expert to study the possibility of having a knife preparation at the centralised basis for the whole of industry along the same line as centralised maintenance workshop.

Shoe Designing Expert will be assisted by Shoe Technologist and Shoe Machinery Engineer under the same project as well as Ethiopian counterparts in the existing plants.