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ASSISTANCE TO THE LEATHER
INDUSTRY*

SI/NEP/78/801.

NEPAL .

Technical report . /

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

Based on the work of Jo Lunden, expert in
leather industry

United Nations Industrial Development Organization
Vienna

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Explanatory Notes

The following abbreviations have been used in this report:

- EMG - His Majesty's Government
ISC - Industrial Services Centre
NIDC - Nepal Industrial Development Corporation
UNDP - United Nations Development Programme
FAO - Food and Agriculture Organisation (of the United Nations)
UNIDO - United Nations Industrial Development Organisation
- sq.ft. - square feet
Pc(s) - Piece(s)
R.p.m. - revolutions per minute
- Rs - Rupees
NC - Nepal Currency
IC - Indian Currency

During the period of the project the Nepal Rupee was revaluated against the US dollar:
from 1 US \$=12.5 Rupees to the present rate of
1 US \$=12.0 Rupees

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SUMMARY

A study of the Leather Industry in Nepal has been carried out during the period 17 March to 5 July 1978. At the same time technical assistance in the form of discussions and advice about processes, methods and machinery has been provided at visits to all existing and operating factories in the leather field.

The dominating factory, established by His Majesty's Government (HMG) in 1965, is Banbari Leather and Shoe Factory, Ltd. in Kathmandu. This is also the only tannery today to produce vegetable tanned sole leather and chrome-tanned shoe upper leather of cattle and buffalo hides.

The other tanneries, all in Terai - Biratnagar, Lahan, Birgunj (3 units) and Bhairawa - are only producing Wet Blue Goatskins for export. The Bhairawa tannery has also begun to make crust and some finished lining leathers. The goatskin Tanneries with one exception are 2-3 years old and therefore the buildings and machinery are in good condition.

Even if the wet blue goatskins have reached an acceptable quality level and are now obtaining more or less normal world market prices the productivity was found to be very low and the processes and methods were in many cases found to be out-dated and inefficient in all the tanneries. At the Banbari factory, which has to produce the more complicated, finished leathers, these conditions were very much in evidence.

The shoe factories all demonstrated the same lack of managerial skills and technical know-how as the tanneries. The productivity is very low in all plants. The cobblers - shoe making units of one or two men - produce on the other hand more shoes than the factories combined and usually of a higher quality.

The theoretically available hides and skins in Nepal are many times more numerous than those collected today. Due to restrictions caused by religious laws, traditional customs and eating habits, lack of knowledge about the material and obvious transport difficulties it will be a long time before even a greater part of these hides and skins could be gathered. Even so, a great many more - of hides probably two or three times as many - could certainly be collected with a little more effort.

There is a compelling need for outside assistance to the whole industry, from the treatment of the hides to the manufacturing of shoes. Such a project, which definitely must be a first concern in the rehabilitation of the leather industry in Nepal, is seriously recommended. Some new machines for both the tannery and the shoe factory are also suggested in order to increase productivity and quality.

To take advantage of the increased number of hides and skins, obtained through the intensified collecting activities, a new, primarily wet blue, tannery is recommended to be established.

A programme for financial and technical aid to the cobblers is suggested in order to give them the means to increase their production of leather shoes.

Finally, some administrative measures are suggested for discussion, the implementation of which should benefit the industry.

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I. INTRODUCTION

Background

The industry has two sectors in Nepal; (1) organized big and medium-scale operation. (2) non-organized small-scale operation. A few leather tanning and footwear factories, such as Bansbari Leather and Shoe Factory, Patan Shoe Factory and two more in Biratnagar, fall in the first category. The industry has considerable importance both in substitution of imports and earning foreign currency by exports. However, this industry has yet to develop technical expertise and management. Most of these industries are operating much below capacity and it is therefore very important to determine the reasons and their remedies. In the second category fall small operators both in tanning and leather garment production. It provides at the cottage level mass employment and the market is very rural in nature. It is very important to improve their traditional skill and quality of products.

The government wishes that a study be carried out concerning the optimum utilization of idle and under-utilized industrial capacity of the leather and leather product manufacturing industries, in order that appropriate recommendations for the revitalization of these industries can be formulated and necessary follow-up actions taken.

A FAO mission (Report of a HIDES, SKINS AND ANIMAL BY-PRODUCTS MISSION TO SELECTED COUNTRIES IN ASIA (NEPAL); Food and Agriculture Organisation of the United Nations; Rome, 1976) who visited Nepal in 1975, underlined the importance of the development in the sector, especially stressing the need of improvements in the treatment of the hides and skins and by-products utilization. Different projects were proposed to achieve such results.

In 1965 a Market Survey & Project Report for Leather was conducted by Beacons Private Limited, Bombay on behalf of Nepal Industrial Development Corporation (NIDC). The feasibility of a proposed vegetable and chrome tanning factory with a daily capacity of 50 + 50 cattle and buffalo hides was demonstrated, but the project was not implemented.

Five years later in 1970/71 a new, internal feasibility study of a tannery in Western Nepal was carried out by NIDC's Consultancy Services Division. In spite of a positive recommendation no interested party was found for the project.

The Trade Promotion Centre, which has shown much interest and concern about the exports of processed hides and skins, published in 1975, on the occasion of a workshop organized in Kathmandu, a commodity profile "Goat Skins from Nepal", Export Promotion Series B-5. Recommendations of short to long-term measures were elaborated, covering most of the activities inside the industry.

Official arrangements

The present project was authorized on 17 February 1978 and attached to Industrial Service Centre representing the Ministry of Industry and Commerce. Total UNDP contribution was US \$ 18,200. The project started 12 March 1978 and terminated 11 July 1978.

Objectives

The main development objective of the project is the rehabilitation of the existing leather and leather products manufacturing plants in the country.

The immediate objectives are evident from the duties of the attached Job Description (Annex I).

II. FINDINGS

The Tanning Industry

Rural, traditional tanning

The tanning of hides and skins in Nepal has been carried out for generations by local tradesmen, who usually also themselves made footwear and other goods out of the leather so produced. Most of these cobblers, concentrating on the manufacture of shoes, will today buy the leathers needed, either locally or, as is more usual, from India. In a few centres, Dailekh in the Eastern region being the most well known example, an old, traditional and very primitive vegetable tanning system is still in use. The dehairing of the hide is achieved by putting them in lime and water for protracted periods, which often are extended up to two months or more. The tanning is obtained by filling the unhaired hide, formed into a "bag", with bark and leaves from certain trees, known to contain active tanning materials, mixed with water. After 1 - 2 months the tannins have usually sufficiently penetrated the hide and, after drying and oiling off, the leather is ready to be made into also rather primitive, but by the population in the hills very appreciated types of footwear, locally known as "Dailekh Jutta" (Dailekh shoe).

Some 20 family-units in and around Dailekh are engaged in this type of production and a few more are scattered in the hilly areas.

It is obvious that even small changes in the procedure mentioned, e.g. the addition of sodium sulphide to the lime, which would reduce the dehairing time from months to a couple of days at the most, would constitute a tremendous step forward for these people. The staff of the leather section at the Department of Village and Cottage Industries, Ministry of Industry and Commerce, with whom these activities were discussed, have engaged themselves in the training of the Craftsmen and in updating the processes, a work that should have an immediate beneficial effect.

On the other hand, it must be realized that good or even fair leather cannot be produced in too small units. It can therefore also be argued that, after the opening up of the country through better roads and other transport means, these very small leather producing units will lose their importance and in time, as in other countries, are doomed to disappear. The notion, that these workmen at a later stage could form an experienced nucleus for a modern factory is unfortunately fallacious. Due to the differences between antiquated and modern methods and processes, which as a matter of fact often are quite contrary, it is easier to train completely unskilled labour than first having to "untrain" the supposedly skilled workers. In the end the question of the usefulness of updating the tanning methods of the rural cobblers depends on the time needed for the country to develop sufficiently the tanning industry elsewhere and to obtain a reliable and well-functioning distribution network. This time in spite of all efforts will probably be rather long and hence, what can immediately be done to improve the performance of the rural tanners should be done. It must, however, be accepted that these tanning activities later will have to be phased out.

Existing tanneries

All the plants in Nepal were visited and lengthy discussions about current problems and about means to improve the efficiency, economy and product quality took place. The fundamental characteristics of the tanneries now in operation as well as the most typical and important topics dealt with are reported in some detail below.

The tanneries did not, as might have been expected, develop out of the rural tanning activities described above. After having identified the need, the Bansbari factory was established by His Majesty's Government (HMG) as a deliberate step for the development of the leather industry. The other tanneries in Nepal were all started fairly recently

by persons connected with the hide and skin trade, who wanted to utilize these raw materials, primarily the goatskins, which were formerly exported in the raw state to India, in a more economical way.

1. Bansbari Leather and Shoe Factory Ltd.
Bansbari, Kathmandu.

Established in 1964-65 by HMG with financial and technical aid from the People's Republic of China the factory's leather department employs about 75 workmen and has a capacity to tan 80 buffalo hides into vegetable tanned sole leather and 100 cattle and buffalo hides into finished, chrome-tanned upper leather per day. The machines are with some reservations adequate for the intended capacity and with a few additions followed by an adjustment of methods and processes it should be possible to increase considerably the production volume. In the upper leather finishing department the need of more efficient drying and spraying equipment is, however, felt very much.

The leather factory has had many difficulties to overcome due to lack of proper know-how and managerial skills on all levels. The machines and other equipment have also suffered from insufficient or absence of maintenance, an area in which much has to be done in all factories of Nepal. During the first decade of operations the factory was incurring losses every year and an acceptable quality as well as satisfactory volume was not attained.

In order to overcome these deficiencies a renewed technical aid has been requested and obtained from China. A team of Chinese technicians has therefore since the end of last year again been working at the factory and some results have already been noticeable. The quality has improved and as to quantity 36,000 buffalo (23,000 pieces) and cattle (13,000 pieces) hides have been produced during the last 9 months compared to 23,000 hides for the whole of last year.

Due to the already well functioning technical assistance given by the Chinese team, this mission has confined itself to technical discussions of a more general nature, but still also informing about the developments in the field relevant to the Nepal Leather Industry.

2. Nepal Tanning Industries. NABI Enterprises,
Rani, Biratnagar.

This tannery, located very close to the Indian border, is said to be the oldest in Nepal, established some 15 years ago. In the early days vegetable sole leather was tanned there - the tan yard with all the pits are still remaining, but in a dilapidated building. Finished upper leather was also at one time produced, but the machinery for this production is now to a great extent rusted, broken-down and inoperative. Some of these machines are now not possible to repair, but others could certainly be saved although at a price. The maintenance at the factory is clearly below normally acceptable standard and it is sad that such a comparatively well equipped tannery cannot be kept up properly and utilized in a more suitable manner.

Today the only production is wet blue goatskins and the machines for this purpose are adequate. The capacity is estimated at about 4,000 pieces a day, but at present this capacity is only partially used. The quality of the wet blues appears in the main to be good, although the grain seemed to be a little bit coarse. It was, however, pointed out that the products from the tannery had been fully accepted by all their customers. The management felt satisfied that their processes and methods were up-to-date and hardly needed improving and consequently the discussions covered only the general conditions of the industry and problems of the company in relation to these conditions.

The tannery produced its own power through a coal-fired boiler and connected engine. Furthermore, a big autoclave - now more or less destroyed - was earlier acquired for the purpose of digesting offale etc.. According to the management, HMG and the industry as a whole had shown very little interest in this venture, which therefore has come to nothing.

The management was, however, still very much interested in a closer cooperation between HMG and the other tanneries. Disappointment was expressed at the poor response to different suggestions, among which was the establishment of a "Leather Board", which could advise HMG on relevant matters and where problems of common interest to the tanners could be discussed and resolved.

- | | |
|---|----------|
| 3. <u>Everest Tanning Industry;</u> | Laban |
| 4. <u>Narayani Skin Tanning;</u> Parwanipur, | Birgunj |
| 5. <u>Nepal Hide & Skin Processing Pvt. Ltd.;</u> | Birgunj |
| 6. <u>Nepal Leather Industries;</u> | Birgunj |
| 7. <u>Nepal Leather Industries;</u> | Bhairava |

The last two tanneries belong to the same concern.

All these tanneries have been established in the last 2-3 years. Being constructed and equipped fairly recently they were all in good condition, although in some proper maintenance again already seemed to be overlooked, a fact that can mean a rapid deterioration of buildings as well as machines. It is to be hoped that the discussions about this problem will aid in influencing the different managements to take suitable action. Maintenance, including preventive maintenance, is always cheaper than the repair or rehabilitation work that otherwise later has to be carried out - or, as the case may be, the cost of writing off most of the fixed capital in a much shorter period than necessary.

The Lahen and the three Birgunj tanneries are very similar in size, equipment and operations. Their only product is wet blue goat skins and they are using almost identical processes. All have two paddles, 2 drums and a fleshing machine. In addition one or two of these factories also have a setting-out machine which, for the production of wet blue goatskins only, is of less importance. Each has a capacity of from 1,000 to 1,500 pieces per day. From a selector's point of view, i.e. disregarding the chemical and physical properties which can only be ascertained through laboratory tests, the quality of the wet blue goatskins produced was also very much alike from plant to plant and must in general be described as good and well acceptable, especially taking the character and condition of the raw skins into account. Originally, in the first phase of their operations, quite some complaints about the chrometanning were received, especially from France and Spain. After having taken corrective measures these complaints are not heard any more and the chemical/physical properties of the present production seem to satisfy all customers.

The visits to the factories and the discussions with the technical managers revealed, however, that many improvements - to some extent also having an influence on the quality, especially as to its consistency - could be effected.

- Generally the importance of keeping the processing conditions as nearly the same as possible from batch to batch was not fully appreciated. Such conditions are:
 - using specified and controlled weights of water and chemicals,
 - keeping the temperatures inside narrow limits (say $\pm 1^{\circ}\text{C}$), especially in bating, but also for example at the end of the chrome-tanning,
 - arriving at correct pH in the various stages, e.g. after the deliming, which should be tested with a phenolphthalein-solution as indicator,

- timing the different operations accurately, allowing the appropriate time for each chemical action, but neither more nor less.
- . Paddles are used for soaking and liming. Experiences from other countries indicate, that these operations are more consistently and at least as well performed in drums of slow rotation (2-3 r.p.m.). To change would, however, mean an investment in such drums.
- . All the factories were using excessive amounts of sodium sulphide - in some cases more than double the amount that would constitute an upper limit in most tanneries of this kind. Besides the poor economy the resulting high pH is likely to cause a swelling detrimental to the quality. The doubt, that lesser amount would not lead to proper unhairing is fallacious as has been proved in most other tanneries. The excessive swelling would instead make the removal of the hair roots much more difficult by closing the hair sack near the surface of the skin.
- . Chrome-powder was used in all the factories for the actual chrome-tanning, but none used the special advantages thereby obtainable for the process. In using, in this respect, fairly old methods more chrome-powder than necessary was used to obtain a satisfactory result, usually a "boil-test proof" leather as demanded by the customers.

One of the problems often encountered in the tanneries is excessive wrinkles, appearing from time to time in the tanned skins. In most cases it is impossible to identify one single factor as the cause of the phenomenon. If caused by the nature of the skin, which for example can change from season to season, the tanner has no possibility to eliminate them, but may of course aggravate the situation by unsuitable processing

methods. Most of the processes up to and including the chrome-tanning can adversely influence the situation and an excessive swelling in the liming, similar to that mentioned above, might very well be a heavily contributing factor. Other possibilities were discussed in detail and hints of how to identify the causes were offered.

Some factories had problems in keeping wet blue stock in good condition. With time discolourations and salt deposits appeared on the piles of skins, especially on the top and on the sides of the piles. This is no doubt caused by the uneven drying-out of the skins, which will force the liquor inside the skins towards the surface, where the dissolved ordinary and unfixed chrome salts will be deposited during the further evaporation of the water. Incidentally, the phenomenon also indicates a too high salt concentration in the pickle, badly fixed chrome during the tanning or insufficient washing at the end of the chrome-tanning. If gone too far, the skins must be put into a drum to be washed again, then piled and after a week or so wrapped in thin polyethylene sheets to stop further or too rapid drying-out. This should be done any time the wet blue goatskins have to be stocked for longer periods. It might not be necessary, however, if the excess water is removed from the skins, e.g. in a cammying machine.

Further advice was offered on several other points and in conclusion an outline of a fairly modern, efficient process for wet blue leathers, from liming to chrome-tanning was given and discussed in detail (Reproduced in Annex II; A chart demonstrating the sequences of operations and intermediate and finished products is also shown: Annex III). The main theme during the discussions was why a process was formulated in a certain way, which, it is hoped, will in the future help the management to make changes based on rational thinking and available facts and knowledge.

The Bhairawa tannery has 2 fleshing machines, one for small skins and one for big skins or small hides. Also, equipped with additional paddles and drums, its capacity to produce wet blue goatskins is estimated at about 3,000 pieces per day. Otherwise, what is said above about methods, processes etc. is also in general relevant to this tannery's wet blue production.

However, at the moment this is the only tannery in Nepal, that has ventured to process the goatskins further than to wet blues. In cooperation with a German leather factory they have started to produce crust for linings and finished suede for heel grips. To this end there are installed shaving machines, re-tanning/dyeing/fat-liquoring drums and setting-out machines in the wet department. A chamber for suspension drying has been built and this will later during the monsoon be steam heated for more efficient drying. Saw dust conditioning is used before the mechanical softening of the skins, which is performed on an ordinary jaw-staking machine. The necessary buffing and dust brushing machines (for the sueding etc.) are installed in a special room and for the final setting and drying a steam heated toggle drying unit is provided.

Most of the machines are quite new and are adequate for their purpose. The capacity of producing crust linings is at the moment about 1,000 - 1,500 skins per day, but with fairly small additions in machinery this capacity could certainly be increased considerably. Starting from the wet blue stock the retanning, dyeing etc. is performed according to specifications from the German company, which at least at present is the sole out-let for the crust as well as for the wet blue goatskins not treated further. In the future it is the intention of both partners that all the goatskins shall be processed to at least the crust stage. Due to the presence of the West German expertise for the retanning etc. only a few topics in this area, such as conditioning of the skins before staking, were discussed.

A substantial part of the skins will later be made into finished lining leather and for this purpose a new finishing plant has been erected. A hydraulic press, glazing machines, and a pin-wheel measuring machine are already in place and a 2-station spraying machine with appropriate drying sections was ready for test runs. With this equipment considerable quantities of finished goatskins, be it lining or shoe upper leather, could be produced. The bottle necks will be the plating (hydraulic presses) or glazing operations. The spraying machine should be able to spray some 4-5,000 skins per 8-hour shift (with 2-3 passages).

The German company is only interested in lining leather, but with the machinery now available and the know-how obtained great possibilities exist for the tannery also to move into the production of other types of leather, e.g. glazed kid, chevreau, glove and/or garment leathers. It will not be easy, but in the long run the opportunities are evident. The processes and methods for the production of these leathers were discussed in detail with the technical management during several working sessions.

The shoe and leather goods industry

Cobblers

Traditionally footwear of some kind has always been made in Nepal. The earlier mentioned cobblers of Dailekh and elsewhere have produced shoes since a long time. These shoes are of a rather crude design and execution, but they are filling an evident need. In contrast to the tanning industry the shoe making of this kind has a definite place also in the future development of the leather industry. Shoe-making does not depend for its quality to such an extent on a certain level of mechanization. As a result cobblers are today found in almost all parts of Nepal, although most of them in Kathmandu, making rather sophisticated types of shoes. As a matter of fact the

quantity of shoes produced by them also exceeds that of all the local shoe factories combined. It is estimated that in the Kathmandu area alone there are some 2-300 small units consisting of one, or in a very few cases, two or three cobblers working whole time. Many more are working at other jobs during the day or during the planting and harvesting of crops and making or repairing shoes in their off hours. From the number of cobblers and from other sources, as the volume of locally sold upper and sole leathers and imported shoe components, it is calculated that more than 75,000 pairs of foot-wear are produced annually by these small units.

Only a small number of the cobblers possess a sewing machine, which is the one machine that usually cannot be dispensed with. Those cobblers, who do not own a machine, will either borrow one, or buy ready-made uppers from a neighbour or from India. Also imported from India are all other shoe components, except for sole leathers and part of the upper leathers. A working paper on the financing of shoe-making (cobblers) in Nepal, is presented in annex VIII.

Shoe factories

Four shoe factories have been established in Nepal and one more has recently been started in Dharan. Almost all have suffered heavy losses forcing one to close down some time ago and others to operate under very difficult conditions. The latest available production figures are given in the following table.

Table Shoe production by factories in Nepal. (Pairs)
(Fiscal years)

Factory	1970/71	71/72	72/73	73/74	74/75	75/76	76/77	77/78
1. Bansbari	55972	63204	66117	71500	48957	45479	42455	36904
2. Nepal Ftw.BID	5878	1152	-	3044	5511	2332	4055	3795
3. Nep.Shoe,PIE	690	3453	13049	5938	11250	8384	6228	CLOSED
4. Denesh	3217	2172	4103	2012	4326	2994	2117	2932
Total	65757	69983	83269	82494	70044	59189	54855	43631

Source: Department of Industries +) 77/78: 9 months only.

1. Bansbari Leather and Shoe Factory Ltd. - Kathmandu

The shoe factory, established at the same time as the tannery, employs 125 workers and has a capacity today of about 200 pairs a day. The machinery is not very advanced and the training of the workers has been very inadequate. Just as in the case of the tannery the shoe factory has had enormous difficulties, due to lack of know-how, managerial skills etc. This has earlier shown itself in a productivity as low as 0.5 pair per worker and day as of last year only, i.e. the productivity (as well as the quality) was less than half of an ordinary cobbler, who easily alone will produce 1 pair a day. The losses, incurred every year since the start of the factory more than ten years ago, have also been very high. The renewed technical aid from China has already produced some results and, it is hoped, should put the factory on the right track. As in the case of the tannery, this mission has assisted only in giving advice in general terms.

2. Nepal Foot Wear Products (Pvt) Ltd.

Balaju Industrial District - Kathmandu

This shoe factory was established in 1963 by Nepal Industrial Development Corporation (NIDC) and HMG, Department of Cottage and Village Industries (DCVI). The factory was planned for a capacity of 75 pairs a day, a quantity that has never been approached. The machinery is in a very poor condition because of inadequate maintenance. After having incurred losses of about 380,000 rupees the company was sold to a private party. Neither the new management was able to run the factory properly and after suffering further losses of about half a million rupees the factory was closed down for more than a year. Five years ago the company was sold again, but also the new owner, working as General Manager, has had and has great difficulties. The reason is obvious: unfortunately there is an almost complete lack of the essential knowledge and experience necessary for the running of a shoe factory. No short-time advice, technical or economic, can reverse

the trend. To make this factory into a successful undertaking the company has to undergo a complete reorganization and a work training programme has to be carried out. Outside know-how has to be brought in.

3. Nepal Shoe Manufacturer.

Patan Industrial Estate - Patan

Due to technical problems and financial difficulties the owner of this factory had to close it down in the end of last year. No visit to the plant nor discussions of other possibilities have been possible to arrange, but it is understood that the problems were similar to those of Nepal Foot Wear Products.

4. Denesh Shoe Co. - Biratnagar.

The company has its own outlet for the shoe production as the proprietors also own several retail shops in Biratnagar and incidentally, this was the reason for starting the factory. About 20 people are employed and the production is some 15 pairs a day or roughly 5,000 pairs a year, mainly in men's shoes. The machinery consists of two sewing machines and one roughing (grinding) machine. The latter was home-made, but functioned quite well. Considering the rather poor equipment in the factory the shoes produced were surprisingly well made.

In the course of two visits many technical points were discussed. Advice was given how to improve several operations, such as cutting, skiving, sewing etc., as well as how to increase the productivity by organizing properly the materials flow and order of work.

The company complained about several matters in connection with the import of necessary raw materials. Almost all upper leather is imported from India and only the sole leather is obtained from The Bansbari tannery in Kathmandu. To process the papers for the Duty

Exemption on imported raw materials might take a very long time - in one instance it took nearly 8 months. The sales tax of 12% will in reality come to about 15% as custom duties etc. is added to the value before calculating the tax. In trying to produce chapals in Nepal was found the curious situation that the duty on finished chapals is lower than that on the raw materials with the result that imported chapals are sold at a lower price in Nepal than the raw material (components) can be imported at.

5. Nepal Chala Jutta Udyog.

Dharan Industrial Estate - Dharan

This factory, which occupies one building in the estate (managed by ISC, Kathmandu), was started by a local cobbler with the intention of producing about 1,200 pairs a year. There are two sewing machines and a grinding wheel, but at the moment no production was forthcoming. It was said that 2-3 persons were employed intermittently.

Leather goods industries

The artisans of Nepal produce many articles that contain leather, e.g. sheaths for the Khukri knives, kits for different purposes, straps, etc., but these activities have rarely resulted in an industry. Of some interest are, however:

1. Nepal Leather Works. - Kathmandu

This company employs about 40 people and produces a variety of articles such as suitcases, beauty boxes, brief cases, ladies' bags, gentlemen's kits, wallets etc.. The workmanship of the products is quite good, but as to productivity, costing and so on much is to be done.

Unfortunately, most of the covering materials used are not of leather, but plastics and textiles. The reason is really mainly the

lack in Nepal of suitable, finished leather. If such leathers had been easily available at reasonable prices the factory would certainly consume appreciable quantities.

2. NLT Leather Works.

Nepal Leprosy Trust, Eilsen Lodge - Kathmandu

This is a small factory, employing less than ten people and producing leather goods, such as ladies' bags, belts etc., mostly for the tourist trade. Some small export orders have also been executed. The leather obtained from the Bansbari factory is of inferior quality and really not quite up to what is needed. But still the products, taking existing conditions into account, are quite interesting. If more suitable leather could be found locally, the production could surely be expanded quite a lot. Technical assistance would then also be much appreciated.

Raw hides and skins

Characteristics and quality

All hides and skins in Nepal are from an international point of view both small and thin. The Cattle hides have an estimated average wet salted weight of only about 11 kgs. The average yield at the Bansbari tannery is 13 sq.ft. per hide or 1.2 sq.ft. per kg wet salted hide, which is an extremely low figure. This is certainly to a great extent due to the poor condition of most hides, necessitating excessive trimmings. Dry hides, with an average weight of about 7 kgs per hide, have a still lower yield or approximately 11 sq.ft., which again indicates hides of very poor conditions. Examinations of dry and wet salted hides after liming do indeed show that the damages to the hides are very extensive and that very few of them can be considered to be of good or even fair quality. Almost all the defects, that can be imagined, are present in abundance. Damages incurred during the life of the animals such as open or healed wounds, urine stains

and insect ticks are prevalent, just as are handling and flaying damages - scratches from dragging the animals over rough ground and cuts from the flaying knives in the fleshside - and just as are curing damages - hairslip, putrefied spots on the grain and sunburnt parts on dry hides - and so on.

The condition of the Buffaloe hides is better, although most of the defects mentioned above will be found also in this case. The average wet salted weight and dry weight are 22-23 kgs and 17-18 kgs per hide respectively. Most of the buffaloe hides are used for vegetable tanned sole-leather, but very satisfactory shoe upper leather can also be produced.

The Goatskins, as wet blue, range from 1.5 to 6-7 sq. ft. with an average of about 3.5 sq.ft.per skin. The grain is normally quite fine and the skin damages are not at all comparable to those on the hides. Still, roughly 25%, which is a fairly high figure, of the total number would not be accepted in the normal table run or in the first three selections, which usually constitute an export consignment.

As very few Sheep skins are collected, no reliable information concerning their characteristics and quality was available or could be gathered.

The collecting of raw hides and skins

In order to obtain a better utilization of the indigenous raw materials the export of unprocessed hides and skins is prohibited. To avoid infringements the collecting and processing is also regulated by HMG through a licencing system.

At the moment the Bansbari factory has a virtual monopoly on cattle and buffaloe hides. This is said to be necessary in order to stop abuse of licenses granted to small firms, which would process only a few of the hides and illicitly "export" the rest. Some tanneries have complained about the situation, but the management of

the Bansbari factory, which not only has the task of producing leather and shoes but also of aiding the industry as a whole, maintains that any tannery that can show a bona fide intent to process the hides to finished leather, will be granted a license to collect and produce.

Recently the Bansbari factory has reorganized and intensified the collection of the hides. Some 25-35,000 hides, of which 30-40% were cattle hides, were collected earlier each year, which was much less than the capacity of the tannery, estimated at 48,000 hides a year. In 1975/76 more than 54,000 hides were collected and this number has later been increased considerably. Since all the hides cannot now be processed, other tanneries have directly been offered hides to process, but at the same time a special permit to export the surplus has been applied for.

The collection has been organized in five regional centres with godowns and several smaller offices scattered throughout the country. According to some of these centres, transport and economy permitting, a manyfold increase of collected hides could be obtained.

The Goatskins are collected by the licensed tanneries described above. All have their own collecting chain, consisting of 10-15 small centres all over the country, but predominantly in Terai, where the great majority of the skins are to be found, although the slaughtering in other parts of the country are just as big or bigger. According to information received from the tanneries about a million goatskins have been collected during the last year, a figure, which more or less agrees with the export figures when rejects and stocks are taken into account. A certain percentage, difficult to estimate, but probably in the range of 20-40%, is Indian in origin, due to the fact that during this period it has been to the advantage of the private, small collectors to sell to Nepalese tanneries instead of to Indian. The long, open border, the free entry of both nationalities in each other's country etc. makes it virtually impossible for the authorities in both

countries to control absolutely the flow of animals or hides and skins. (In the case of buffaloes and buffalo hides the flow has been in the other direction). Hence, probably some 700,000 goatskins have been collected in Nepal.

Sheep skins have all the time been negligible - it is said that the skins are eaten with the meat.

Availability

The statistics in Nepal concerning the populations of domestic animals and the take off is very scant and often not quite reliable. Most of the estimates are reached by using old data to which are applied estimated growth rates. There are, however, some means to crosscheck the figures.

The National Agriculture Census conducted in 1961/62 by HMG, Central Bureau of Statistics, gave the following livestock populations:

1. Cattle	- 5,728,724	4. Goats	- 2,795,013
2. Buffaloes	- 2,004,646	5. Sheep	- 365,250
3. Horses	- 37,908	6. Pigs	- 285,767

In 1976 a Pilot Survey on Livestock Populations in 5 (D1 - D2) districts out of 75, also by HMG, Central Bureau of Statistics, gave the following result:

	<u>D1</u>	<u>D2</u>	<u>D3</u>	<u>D4</u>	<u>D5</u>
1. Cattle	89063	50002	75015	74134	63121
2. Buffaloes	23207	48260	15961	15822	19178
3. Horses	282	144	412	423	265
4. Goats	34798	39150	37959	64833	28891
5. Sheep	1607	5285	567	1855	8467
6. Pigs	1832	2193	556	10520	6958

D1 - Surkhet/Farwestern Region; D2 - Kaski/Western Region;
D3 - Bara/Central Region; D4 - Dhankuta/Eastern Region;
D5 - Solokhumlen/Himalaya Range;

Let D1, D2 and D4 represent 39, D3 21 and D5 15 similar districts and the following average population figures will be arrived at:

1. Cattle	- 5,300,000	4. Goats	- 3,100,000
2. Buffaloes	- 1,800,000	5. Sheep	- 270,000
3. Horses	- 23,000	6. Pigs	- 330,000

Of course this is not a very correct way statistically, but as a rough crosscheck to ensure the magnitude, which is important for the leather industry - not the exact number, it serves its purpose. The numbers agree in fact very well, considering the method, with those of the 61/62 census and hence, for the animals that are of interest here, the following population figures are accepted as rough, but sufficiently accurate estimates. (Note: In earlier reports the sheep population has been estimated at about 2 million, which must be a mistake. On the other hand, Mr Manta, Project Manager of Sheep, Goats and Wool Production - NEP/72/006 believes, that the number is more than a million, bearing in mind the concentration of the sheep population to certain districts and the difficulty of assessing wandering herds.)

1. Cattle	- 6 million	4. Goats	- 3 million
2. Buffaloes	- 3 million	5. Sheep	- 0.3 million

The take-off or death rates of the different groups are also very difficult to estimate. It is a crime to kill cattle and therefore the deaths result from old age, sicknesses or accidents. Estimates of the death rates range from 10 to 20%. Accepting 15% would mean that about 900,000 cattle die annually. The same figure, 15%, seems to be more or less applicable also to the buffaloes as the take-off (slaughterings) for meat production, i.e. about 300,000 animals, to which some 30,000 buffaloes imported annually from India for the Kathmandu meat market, must be added. The take-off would be considered very low, if the

buffaloes were kept primarily for meat and milk production, but since their main purpose is for traction in agriculture and transport, the average age is comparatively high, resulting in a low take-off.

As to the goats, mostly kept as scavengers, a normal take-off would be in the range of 60-80 % , but since the slaughterings are governed more by other factors - sacrifices at festivals, feed availability, etc. - than by an optimum meat production considerations, a more probable figure would be about 50%, resulting in some 1,500,000 killings per year. A still much lower take-off from the sheep population is likely, since the main product in this case is the wool. About 75-100,000 killings are probable and thus, compared with the number of the other animals, the sheep, initially at least, are of less interest to the tanning industry.

With further developments in agriculture and animal husbandry the absolute take-off figures should increase considerably. This, however, is a very slow process and no great changes are anticipated in the near future. Theoretically the killings and deaths should also roughly correspond to the number of hides and skins available for processing. Unfortunately, for several reasons, this is not the case in Nepal:

- . Only certain people of low caste will flay dead cattle and very often the carcass will be destroyed unflayed. Or, the time between the death and the taking care of the body has been so long as to render the hide useless.
- . In remote areas there are no collecting of hides and skins and no knowledge of their value.

- . In the hilly areas, including the Kathmandu valley, the local people prefer to retain and eat the skins of the goats and sheep as well as the hides of the buffaloes. The hair or wool is burnt away leaving the hide or skin to be out up with the meat. Some say, that when and if local butchers realise the value of the hides or skins, this custom will disappear, but others express the opinion that the meat will loose much of its taste after removing the skin. A prohibition by law would probably be the only way to eliminate the practice and if this is possible is doubtful.

A big advantage would of course be if the slaughterings were carried out in regular slaughterhouses. The flaying and curing would be done under much more controlled conditions with a certain upgrading of the hides as a result. Even simple slaughtering halls, to which the slaughterings could be concentrated, would be preferable to the present uncontrolled conditions. It is understood, however, that for several reasons, religious, traditional etc. this will be difficult to accomplish and certainly will take a long time.

In the whole country there is at the moment only one slaughterhouse, which was built in Hetauda with Danish financial and technical aid. During the few last years the slaughterhouse, which was to be combined with a buffaloes, pig and poultry raising farm, has hardly been in operation, due to technical, managerial and supply difficulties. With renewed Danish assistance it has now started up again, but at a much lower production than installed. The designed capacity is 50 buffaloes, 50 pigs, 500 chickens and 300 ducks per day. At the moment only about 7-8 buffaloes and 30 pigs are slaughtered per week and it will be a long time - probably 2 years or more - before the intended capacity is arrived at. The buffaloe hides, which are the only ones of interest here, are all sold (the monopoly!) to the Bansbari factory in Kathmandu.

The tannery has established the price - at 1 rupee per kg hide - which from a normal market point of view is much too low, a fact that distorts the economic result from the slaughterhouse as well as the tannery. Normal prices should be agreed upon through negotiations between slaughterhouse and tannery or competitive biddings by interested parties should be allowed in order to rectify the situation.

Future possibilities

It can safely be said, that nothing would have a greater economic impact on the leather industry in Nepal, than a definite improvement of the over all quality of the raw cattle and buffalo hides and of the collecting of all types of hides and skins.

Although, as stated earlier, the statistics and estimates are very unreliable, accepting the figures arrived at, the following table will give an indication of the yearly gain theoretically possible (which all could be converted into foreign exchange, either by direct export or by substituting present imports).

<u>Type of Hides or Skins</u>	<u>Theoretically available 1000 Pieces</u>	<u>Collected today 1000 Pieces</u>	<u>Difference roughly 1000 Pieces</u>	<u>Approximate Value if in fair condition</u>
Cattle	900	20	880	44,000,000 Rs.
Buffaloe	330	30	300	54,000,000 "
Goat	1,500	750	750	20,000,000 "
Sheep	100	-	100	1,000,000 "
			<u>Total gain</u>	<u>119,000,000 "</u>

or approximately 10 million US dollars.

Including added value after processing - mostly to wet blues - the total gain would be approximately 175 million rupees or 15 million US dollars. In this evaluation due consideration has been taken of the occurrence of rejects both in hides and in skins.

The overseas export of leather from Nepal in 1976/77 was 55 million rupees out of a total overseas export of 360 million rupees, or roughly 15%. The theoretically possible addition of another 175 million rupees indicates the importance, that must be attached to these resources.

It is evident that in the short term only a fairly small part of this gain can be realized. On the other hand it is also quite clear, that without much effort many more hides and skins than at present could be collected. A new hide price policy with real incentives for the farmers to take care of the hides and skins must, however, surely be implemented. With due consideration of hide quality, prices much closer to the actual (world market) value should be established. A much larger hide processing could then be supplied with hides. The present wet blue goat-skin tanneries by contract have already a total processing capacity in excess of the theoretically available skins - their total capacity is roughly 3 million skins per year.

In the long term the opportunities are very great and all activities at improving the collection and the quality of the hides and skins should be encouraged. Several projects for improvements of livestock are under way, but in the case of handling, flaying, curing and collecting much is yet to be done. A technical assistance programme, e.g. executed by FAO/UNDP, should be seriously considered and an educational programme directed to the village panchayats^{1/} emphasising the economic benefits and showing the methods and the advantages of a slaughterhouse, even if rather crude, should also be contemplated.

The trade in hides and skins, leather and leather goods

The trade statistics in Nepal is not very detailed nor complete. Earlier the statistics of the overseas trade as well as the overland trade with China and India were published regularly, but in later years only the overseas trade has been recorded by the Trade Promotion Centre. Most of the trade with China is, however, included in the overseas figures and only the small and, compared to the total trade, negligible part taking place between Tibet and Nepal is not possible to ascertain,

^{1/} (Village) governing body.

while the figures for the trade between Nepal and India can be collected from Indian sources. In talks with the Custom Officers of the most important border towns, through which the greatest part of the trade is taking place, these figures have been cross-checked and generally found to be reliable.

Raw hides and skins

Before the emergence of the wet blue tanned goatskins as an export item the hides and skins trade was almost exclusively concentrated to India. And only a rather small part of the skins were at that time collected and traded. In 1967/68, for example, it is evident from the Indian import figures - although they are somewhat ambiguous - that only roughly 125,000 goatskins were traded, a figure which should be compared with the exports of wet blues of later years (1976/77 about 800,000). Today it is not permitted to export raw goatskins, nor hides for that matter.

Earlier, quite a few raw hides - cattle and buffalo - were also exported to India, and even in later years roughly 10-15,000 hides have been exported to India and China and some also overseas. Compared to available raw hides in Nepal the number exported is rather insignificant.

Wet blue goatskins

In later years the export of wet blue goatskins from Nepal has had a spectacular development in respect both of numbers and prices, which can be seen in annex IV. The table also indicates the most important countries of destination. Furthermore, the prices obtained, in rupees per skin, have been calculated and added to the table.

Earlier the prices were below those of the world market, but in recent years they have reached this level. In the future must therefore be expected fairly sharp fluctuations, which the international prices often experience. Already in the last half year of 1977 the average price has levelled out and in fact fallen slightly.

It is also evident that the higher prices have been an incentive to intensify the collecting of the skins. Part of the increase in quantity, however, must be attributed to Indian skins, which for economic reasons have been brought illicitly into Nepal, as mentioned earlier. A further increase in the quantity is without doubt possible, but will need greater efforts in the collecting activities.

Leather

The Bansbari Leather and Shoe Factory is at present the only factory in Nepal to produce finished upper and sole leathers. The upper leather is used by themselves in their shoe production, except for the quantity sold to local cobblers - in 1976/77 about 70,000 sq. ft. but the year before only some 2,000 square feet were sold on the local market. No upper leather is therefore exported. Instead the Bansbari factory as well as the cobblers are buying some quantities, almost exclusively from India. In 1976/77 the Indian export-figures indicate that in total about 50,000 square feet of Upper Leather or parts made thereof were imported to Nepal.

As mentioned, Nepal Leather Industries, Bhairawa, has started to produce suede heel-crip and crust lining leather from stock of wet blue goatskin. In the first six months of 1977/78 about 50,000 sq. ft. of such leathers were subsequently exported to the Federal Republic of Germany.

The sole leather, made of buffalo hides, is produced by the Bansbari factory in quantities that cover much more than the combined needs of the shoe factories and the cobblers. The surplus must therefore be exported and consequently no sole leather is imported.

Except for small trial lots sent to India and overseas, the sole leather has been exported to China, and further fairly big orders have recently again been placed with this country. The local need is about 50 tons a year and the surplus to be exported could be as large as 150-200 tons, if the tanning section produced at optimum, but until recently the output has been much lower. For the last five years the quantities sold have been the following:

Year:	<u>1972/73</u>	<u>1973/74</u>	<u>1974/75</u>	<u>1975/76</u>	<u>1976/77</u>
Tons:	108	30	38	191	202

Leather shoes

Except for shoes and sandals of special types, attractive mostly as tourist souvenirs, the shoe export from Nepal is totally negligible, although some trial orders, especially to China, have been executed.

The import of different kinds of footwear is on the other hand quite substantial. Annex V also indicates the most significant countries of origin.

In three years, from 1973/74 to 1976/77 the value of the total shoe import has grown from 4 to nearly 13 million rupees. Because the overseas trade statistics do not specify neither quantity nor shoe types it is impossible to establish accurately how many leather shoes are imported or their value. Further inquiries revealed, however, that comparatively few and surely not more than 100,000 pairs of leather shoes were included in those imports during 1976/77. Added to the roughly 275,000 leather shoes from India it is probably safe to say that more than 350,000 leather shoes are at present imported to Nepal and that this quantity is growing each year.

Other leather goods

As in the case of shoes, the export of leather goods is insignificant - valued at about 10,000 rupees or less per year and consists mainly of tourist souvenirs.

The import is more noteworthy, but unfortunately impossible to specify as to numbers and articles. Again in the three years from 1973/74 to 1976/77 the value has steadily increased from about 200 thousand to nearly 1.4 million rupees as shown in annex VI.

General considerations

For a discussion on the appropriate structure of the tanning industry in Nepal, the local leather consumption will be decisive. Similarly the local leather shoe production will decide the amount of leather needed. No special attention to leather goods is necessary here, since the amount of leather demanded by this sector is and will be very small compared to that needed by the shoe industry.

The leather shoe demand in Nepal will probably grow only slowly in the near future. The overwhelming part of the big increases of later years in the imports of footwear certainly consists of very cheap and simple types made of textile, rubber and/or plastics. These are covering the increasing need of supplying some basic kind of footwear to the great majority of the population. The present consumption of leather shoes, at least as to magnitude, can therefore be used as a basis for a discussion..

In rough figures some 125,000 pairs of leather shoes - 75,000 by cobblers and 50,000 by the shoe factories - are produced, while the consumption of upper leather is about 250,000 sq.ft. - 200,000 from Bansbari and 50,000 imported from India - figures which tally well, supposing a use of 2 sq.ft. of upper leather per pair of shoes (an average of the mixture of men's, ladies' and children's shoes).

It seems certain that a local shoe factory, reasonably efficient, should be able to compete with the Indian and overseas imports. The high fashion, high quality shoes will without doubt, in the beginning at least, be out of reach, as will another fairly great part because of its variety - a shoe factory needs some standardization of its production to be efficient. Still, some further 100-150,000 pairs of

leather shoes (with uppers of leather) or about the same number as the total production in the country today, should be possible to produce and sell profitably. This result implies a further production of 300-500 pairs a day.

The present difficulties encountered by the shoe factories are not caused by a lack of a market, but instead by not being able to compete with the import, nor even with the cobblers, in price, quality and styling. The comparatively high prices needed by the local manufacturers are caused mainly by low productivity, inefficient use of the raw materials and large overheads. If a new shoe factory was built to produce the amount mentioned as a target, this factory without proper technical, economic and general management, would soon find itself in the same situation. If, on the other hand, the factories in the Kathmandu area were reorganized, refinanced and subjected to a programme of balancing, modernizing and rationalizing, their combined capacity should be enough even for the increased production envisaged. With a few additional machines, such as a lasting machine with accessories and a light clicking machine at an estimated FOB cost, including spare parts, of 100,000 rupees combined with assistance for work training, production efficiency, styling etc., the Bansbari factory alone should easily be able to produce more than 500 pairs a day even without adding to the present work force. The other shoe factories need in the first instance only technical assistance for a complete overhaul of their operations. Such programmes would surely from a national economy point of view also present the most inexpensive way to attain a sufficient leather shoe production at a satisfactory quality level.

In addition a programme to assist the local cobblers in the purchases of raw materials and in investments in sewing machines and tools would increase their production capacity. Such a programme, also involving an attempt to create a cooperative, is under consideration

for possible financing by United Nations Capital Development Fund (UNCDF). The difficulties of reaching the cobblers and getting them to cooperate should not be under-estimated, but if successful, the scheme would undoubtedly improve their productivity and also the quality of their products.

As to the leather requirements there is an ample production of sole leather, more than enough also for the increased shoe production, if realized. About 80 % of current sole leather out-put must be exported. Just now the export is making a profit, but this would certainly not be the case, if the raw buffalo hides had been priced correctly. The hides comprise only about 12 % of total costs, which is an extremely low figure. Any further expansion of the sole leather production, except for the increase obtainable by a more efficient use of the present facilities, should not be contemplated. The surplus buffalo hides, that possibly would result, could be used to great advantage in making suitable shoe upper leather.

The local upper leather production is on the other hand not sufficient, neither from a quantity nor from a quality point of view, to satisfy the domestic shoe industry or the leather goods manufacturers. To meet only present requirements, the production of upper leather has to be increased by 50,000 sq. ft. from 200 to 250 thousand square feet per year and to some 500 thousand sq. ft. later, if and when the increased shoe production is a reality.

Simultaneously the quality has to be improved, since otherwise the greater volume would not be accepted. Still, half a million square feet is not a big yearly production from a tolerably well equipped finishing department. With the comparatively small changes suggested earlier, i.e. the acquisition of a 40-frame toggle unit and three large spraying booths with adequate spraying equipment at estimated FOB costs of 350 and 100 thousand respectively or in total 450,000 rupees, that department in the tannery of the Banbari factory, should well be able to produce the required amount and, with proper technical

assistance, reach an acceptable quality level. To divide such a small quantity on several finishing units would be a considerable waste of capital and would unnecessarily increase the manufacturing cost. A finishing department with a minimum of machines, which are required not the least out of quality considerations, should easily be able to produce 4-8 thousand sq.ft. per day or annually 1-2 million sq.ft. depending on processing methods.

The Bansbari factory - the only producer of sole and upper leather from hides - has been suffering in all its departments, in the shoe factory as well as in the tannery, especially from a lack of managerial and technical skills. When the Chinese technical team soon leaves Nepal, the factory must obtain further assistance, if the recovery begun is to continue. Besides technical and organizational problems the productivity is very low. Some type of pay incentives, e.g. piece work, which ought to be combined with an intensive work training, will have to be introduced. It is especially important, that the machines at least approach a normal production and not, as has been noted in several cases, deliver less than 20 % of the volume that should be expected.

In the discussion above no mention has been made of export of shoes or upper leather. The reason is, that it is unrealistic to believe, that it would be possible to do this for quite some time to come. Not until a modernizing and training programme has been carried out, and this will certainly take a few years, would such a scheme appear conceivable. At such a time the question of establishing new shoe factories and/or another upper leather finishing plant should be considered again.

The local demand for lining leather of cattle hides should be satisfied by the Bansbari finishing plant. Linings of goat skins are available from an existing goat skin tannery.

Coming to the tanning and retanning of cattle and buffalo hides for upper leather purposes the situation is different. The capacity of the Bansbari factory is evidently not enough especially if the collection of hides is stepped up. As pointed out, the number of hides theoretically possible to collect is very great and from a practical point of view an additional 50-100,000 buffalo and cattle hides could surely be collected annually starting almost immediately. A large part of the hides would then be collected in Terai, the transport costs to Kathmandu, especially of raw hides which are somewhat disagreeable to handle for longer periods, would be high and the necessity to enlarge the tannery capacity at Bansbari would create several problems.

Except for the number, which the Bansbari factory would need to increase its production of finished leather, the surplus must to begin with be exported as wet blue or, preferably, as crust. Finished leather, as explained, must be considered only as a later export possibility. If the tanning was made in a new tannery and if the Bansbari factory had expanded its finishing capacity as suggested, the latter factory could obtain for finishing the necessary number of tanned hides to satisfy completely the future local demand.

The circumstances described lead to the conclusion that a new chrome tanning factory for wet blue and crust hides should be established in Terai and, if the number of hides collected is increasing rapidly, a second unit could also be contemplated. It is hardly necessary to make an economic feasibility study for such a plant. Wet blue cattle hides, even of the low quality, that at least at first has to be expected because of the poor condition of the raw hides, have always a market, especially in Europe. The internal raw hide prices have simply to be fixed in such a way that they will make it possible to export at a reasonable return to a well-run tannery.

As to the marketing of the wet blue cattle and buffalo hides, a simple advertisement announcing their prompt availability in the European (especially Italian, British, German and French) leather trade journals would immediately bring in numerous inquiries. The prices that could be obtained, depending so much as they do on the quality, are impossible to estimate, but anyway, for the economy of the country it would certainly be better to tan and sell the hides than to throw them away. Incidentally, the Bansbari factory has already obtained licenses to establish one new factory in Hetauda south of Kathmandu and another one in Nepalgunj in the western part of Nepal. These tanneries would tie in well with what is suggested above.

A suitable annual capacity for a new factory of the type discussed would be about 100,000 wet blue (70,000 cattle and 30,000 buffalo) hides with an average wet salted weight of 15 kgs each. It should also be possible to process further to crust some 50,000 wet blues. Such a factory is outlined in some detail in Annex VII. The selection of a suitable site has to be investigated separately, taking into consideration the importance of having an ample and suitable water supply and of getting minimum problems with the effluent. Ease of transports and available external services are of course also to be taken into account.

As to the goatskins a well functioning trade in wet blues has been established. The tanning capacity is already much higher than the number of skins that could possibly be collected. The next obvious step from a national economy point of view would be to develop a trade in crust leathers and ultimately in finished leathers. The advantages would be obvious: added value and as a consequence increased foreign exchange earnings, but also better classification of the skins, less shipping weight, which might allow deliveries by air, and easier packaging.

There are, however, some aspects of such a new marketing situation, which have to be recognized. The further processing will sharply reduce the possibilities of utilization in the countries of destination, resulting in a smaller market to explore and more competition to deal with. The goat skins fetch very good prices as wet blues because they can be made into very high class fashion leathers in special finishes and colours and thereby still be profitable to the importing tannery. To accomplish this a close cooperation between tanner and customer and very short delivery and shipping times are necessary conditions, which are extremely difficult, if not impossible, to attain in this country. The methods used for the production of these expensive leathers are very sophisticated and the workers highly skilled. The further processing of goat skins is thus to be approached cautiously and with the understanding, that to reach an acceptable level in Nepal will require much time, great efforts, new technical know-how and skills and comparatively large investments.

One way of coping with these problems would be to organize joint ventures with tanneries in the industrialized countries, tanneries that could supply the technical know-how, impart necessary skills and, not the least, make available a ready market for the intermediate or finished products. One such cooperation has been established successfully and further similar ventures should be encouraged.

The leather industry in Nepal is too small to justify the creation of an institute to train technicians of different levels or to carry out any general research and development (R&D) activities. The theoretical education in leather technology has to be obtained abroad, where for example several Indian institutions are giving many types of relevant courses. In Nepal itself these activities have to be carried out, if at all, by and in the individual tanneries.

On the other hand there is a definite need of some kind of quality control and testing facilities in the leather field. The Ransbari factory would again be the logical place for such a department, to serve not only themselves but also the other tanneries and shoe factories in the country. In organizing the technical assistance, which has been found absolutely necessary, the quality control and testing activities should also be included and appropriate equipment^{2/} should be obtained.

In connection with the marketing of leather export incentives have always been discussed. Earlier in Nepal there was a differentiated export bonus system, which was recently replaced by a flat bonus in the form of a higher exchange rate from export earnings (16 instead of 12 rupees per US dollar). As an incentive for the tanners to develop the trade in more processed leathers, crust and finished, many countries give a low or no bonus for wet blues, a somewhat higher for intermediate products and a rather high one for finished leathers. Such a system has often been successful and the introduction of a similar system in Nepal should perhaps also be contemplated.

The tanneries as well as the shoe factories need to import raw materials vital for the production. In many cases difficulties will arise, due to delays at the custom offices or in obtaining import licenses or from other causes, often of an administrative nature. A system, where the anticipated yearly need for such raw materials is early calculated and registered, e.g. with the aid of ISC, and a blanket license issued, which could be used immediately when necessary, would be of great help to the industry.

Due to the special conditions in Nepal the distribution of goods to different parts of the country is very difficult. For many cobblers it is easier to obtain leather from India than from the local tanneries. As the collecting of hides and skins is intensified, more collecting centres are established. But just as being a purchasing agent for a tannery such a centre could also act as a selling agent.

^{2/} Calculated to cost about 720,000 rupees.

Small stocks of sole leather, linings and upper leathers in different parts of the country would greatly ease the problems of the local cobblers in obtaining raw materials for their shoe production.

In discussing the lack of pertinent experience and skills of the managers, frequently being met in different enterprise, it ought to be pointed out the often occurring changes at the executive level. It is a great loss to a company when an executive, who during a couple of years has learnt to deal with the daily problems always appearing in a factory, suddenly is removed and replaced with a new man, who has to go through the same experiences again. At least in production units, where experience really counts, changes of this nature should be avoided, if not absolutely necessary. At the same time the importance of being a manager cannot be over-emphasized. The instructions to the general manager ought to be clear on this point. The objectives and expected results of a production unit should be clearly defined and the management made responsible for attaining them. But simultaneously, the management should also have complete authority to take prompt action and to make necessary changes in all matters pertaining to the activities of the company.

CONCLUSIONS AND RECOMMENDATIONS

The preceding discussion reveals the very great need that exists in Nepal to improve substantially the performances of the leather and shoe industries. It is also quite evident that this improvement can only be secured through a rather massive, outside technical aid of a fairly long duration. Consequently, it is recommended that:

1. a technical assistance project is formulated and implemented, e.g. by UNIDO/UNDP or any other appropriate international organisation. The project should supply the following experts:

1 leather technologist for 3 years.....	36 m/a
1 leather finishing specialist for 1 year.....	12 "
1 shoe technologist for 2 years.....	24 "
1 shoe designer for 6 months.....	6 "
1 maintenance and machinery specialist, 1 year.....	<u>12 "</u>
or altogether.....	90 m/a

The team, which should aid all the factories of the industry in re-organising, modernising and rationalising as well as in training the work forces, should be attached to Bansbari Leather and Shoe Factory, Ltd. in Kathmandu, whose management personnel would act as counterparts to the experts.

2. a physical and chemical laboratory with a small pilot plant is established at an estimated cost of 720 thousand rupees (60,000 US dollars) for the purpose of quality control and limited development work. The unit, intended to serve the whole industry, should also be located at the Bansbari factory, and should be put in commission with the assistance of the experts already enumerated. It would be convenient if the above proposals could be integrated into one project.

Aware of the tremendous opportunities offered by the great number of hides and skins theoretically available in Nepal, great efforts should be made to intensify the collecting and to improve the handling and treatment of the hides. To assist in these activities it is recommended that:

3. a hide and skin improvement specialist, e.g. from FAO, is attached at least for a year to the hide collecting department of the Bansbari factory and, if convenient, also incorporated in the project proposed above.

Bansbari Leather and Shoe Factory, Ltd. plays the most important role in these proposals for three reasons. 1) It is the biggest single tannery and shoe factory in the country and the assistance should have the greatest impact there. 2) It is a public sector enterprise given the task by HMG to aid in the development of the whole leather industry, including private companies. 3) From an institutional point of view, it would certainly provide the best conditions for the assistance project personnel to be successful in their work.

Realizing the importance of improving and increasing specifically the production of upper leather it is recommended that:

4. a toggle drying unit and spraying equipments, at an estimated cost of 450 thousand rupees, are acquired and installed in the finishing department of Bansbari Leather and Shoe Factory, Ltd.

Similarly, to fill the acute need of some new equipment to increase the shoe production it is recommended that:

5. a light clicking machine and a lasting machine with accessories are purchased - estimated combined cost about 100 thousand rupees - and installed in the shoe factory of Bansbari Leather and Shoe Factory, Ltd..

Being confident that already now many more hides could be collected than what is actually being done today and aware of the lack of tanning capacity for an increased number of hides, it is recommended that:

6. a new tannery to process hides into wet blues and partly into crust is established either in Hetauda or in Nepalgunj, contingent on a prior confirmation of suitable conditions primarily as to water supply and effluent. A processing capacity of about 100 thousand hides per year is suggested and such a tannery is described in some detail in Annex VII. If the hide collection is increasing rapidly a second tannery of about the same size should be contemplated for a second location. It is felt that for a project of this type international financing through easy developments loans should be rather accessible. For the planning and execution, and not the least for easy access to a foreign market, a joint venture with a European tannery would be the best solution. If this proves impossible the planning and executing body should work closely with the specialists of the assistance project proposed above. If no technical aid through a joint venture is forthcoming, the presence of such specialists is an absolute necessity for a successful implementation of the tannery project.

The cobblers in Nepal, producing more shoes than all the shoe factories combined, should be aided in increasing their production as much as possible. It is recommended that:

7. - a project to ease the financing of their purchases of raw materials and of their investments in sewing machines and tools is initiated, possibly also by inducing them to form a cooperative of cobblers.
- The Department of Village and Cottage Industries through its leather section carries out a programme of teaching those cobblers, who in certain districts also perform tanning of hides, more efficient processing methods.

Some administrative measures would be beneficial for the leather industry as a whole and therefore it is recommended that:

8. EMC studies the following points and, if not found in conflict with other policies, takes action to
- ease the difficulties of obtaining raw materials in time by allowing blanket import licenses, which could thus be used instantly when needed. The licenses should be based on statements of intent from the different companies, registered and checked by an authorized government agency, e.g. ISC.
 - provide incentives for the tanners to process the hides and skins further and so obtain greater added value, by giving an export bonus, which is differentiated according to the processing stage.
 - increase the efficiency in the leather and shoe factories of the public sector by yearly fixing the production targets and making the management totally responsible for attaining them. Necessary authority to carry out adequate measures must then of course be provided.
 - motivate the labour force to work more effectively by introducing pay according to work done (piece work payment). This is especially important for the operators of machines, the out-put of which must reach a certain level in order for the whole factory to be able to reach minimum targets.

Annex I

JOB DESCRIPTION

Post Title: Leather Industry Adviser

Duration: Four months

Date Required: As soon as possible

Duty Station: Kathmandu, with travel within the country as required

Purpose of the Project: To advise the Government on the rehabilitation of the existing leather and footwear manufacturing plants in the country.

Duties: The expert will be attached to the Ministry of Industry and will, in particular, be expected to:

1. assess the situation of the entire leather industry sector in Nepal and identify the problems actually impeding the successful development of the leather producing as well as the leather utilizing industries;
2. study problems associated with an advise on improvements needed regarding different aspects of raw material collection and procurement;
3. study the production process, available production facilities and capacities, including design capabilities, and possible other constraints regarding the optimum utilization of the facilities, and make recommendations for necessary improvements;
4. study the quality of the products presently manufactured and, if required, recommend improvements in the quality control system presently exercised;
5. study different aspects of management both in organized and non-organized sectors, as well as the financial status of these industrial sectors and possible existing financial constraints.

The expert will be expected to present a final report setting out his findings and presenting his recommendations for optimum utilization of plant capacities and for solving the various problems identified during his mission, in order that the Government might take the follow-up actions required.

Qualifications: The leather industry expert should have extensive experience in the leather industry field, and have previous experience in assessing the situation of the entire leather industry sector of a country.

Language: English.

Annex II

WET BLUE TANNING PROCESS

Drum operations - drum of 2-3 r.p.m. % on Soaked weight.

Soaking: Depending on cure until hide material well restored.

Liming, dehairing: 60 - 100 % water, 20-25°C
3 % lime powder
2 - 2.5 % Sodium sulphide dissolved in water, added
in two equal portions 1 hour apart.

Run 1-3 hours and then 5' each hour. Total time: 20-22 hours.
Wash. Discharge. Flesh and possibly Scud. Weigh: Limed weight.

Drum operations - drum of 6-8 r.p.m. % on Limed weight.

Deliming, bating: 60 - 100 % water, 35-38°C
1 - 1.2 % Ammonium sulphate; Run 10'.
Add for Hides: 0.5 - 0.7 % normal bate; Run 0.75-1.25 hours
Goats skin: 1.0 - 1.5 % " " Run 1.5-2 hours

Check that the liming is complete by putting a drop of phenophtalein solution on a cut of hide or skin. If red, add ammonium sulphate and run until colour has disappeared.
Wash 20' with water of 20-25°C. Discharge water completely.

Pickling: 60 % water, 20-25°C
5-6 % salt (NaCl)
a) 0.5 % Calcium formate; Run 10'; Add slowly through axle hole
1 - 1.2 % Sulphuric acid diluted 1:10 with water
or b) 0.8 - 1 % " " " " " "
0.3 - 0.5 % Formic acid diluted 1:10 with water
Run 1-2 hours. Stay over night - run 5' intermittently.
Early next morning run 15'. Add undissolved:

Chrome-tanning: 6 - 9 % Chrome powder, 26% Cr₂O₃, 33 % basicity; Run 30'.
Add slowly 0.8 - 1.2 % Sodium bicarbonate, dissolved in water 1:10,
during 1 hour. Run further 5-6 hours.
Check pH to be 3.5 and the temperature to be at least 35°C. If
necessary add hot water to reach this temperature and run 30'.
Discharge. Pile for 24 hours. If possible wring-out (sammy).

- Notes:
- 1) The high humidity often found in Nepal will cause many chemicals to absorb water. This has to be checked regularly and the percentages used must be adjusted correspondingly.
 - 2) An upper and lower limit in the percentages indicates that the optimum has to be found locally, but also that inside these limits the leather produced will still be of an acceptable quality.
 - 3) In the case of the chrome powder some customers prefer a high chrome content (boil test proof). A low chrome content is preferred by those who want to have wider choices for their re-tanning.
 - 4) If a paddle is used for the liming, the percentages have to be increased 25-50 %

ANNEX III

TANNERY PROCESSING CHART

(slaughtering - Flaying)

Fresh (green) hides and skins

(curing)

Wet-salted or Dried hides and skins

soaking dehairing liming FLESHING SCUDDING SPLITTING

Limed stock

deliming

bating

pickling chrome-tanning SAMMING

vegetable tanning

WET BLUES

SAMMING

SHAVING

neutralizing retanning
fatliquoring dyeing
SAMMING SETTING-OUT DRYING

fatliquoring
retanning
dyeing
DRYING

DRYING
greasing
stuffing
SETTING-OUT

CRUST CHROME LEATHER

CRUST
VEGETABLE
LEATHER

CONDITIONING

STAKING

(BUFFING)

READY TO FINISH LEATHERS

FLESHSIDE
BUFFING

BRUSH-coating SPRAY-coating
DRYING IRONING, PLATING GLAZING

DRYING
ROLLING

VELOUR
LEATHERS

FULL GRAIN or
CORRECTED GRAIN
CHROME UPPER
LEATHERS

VEGETABLE
UPPER
LEATHERS

SOLE
LEATHER

TRIMMING MEASURING, WEIGHING GRADING PACKING DISPATCHING

Note: Small letters, i.e. liming, mean: chemical added;
Capitals, i.e. FLESHING, mean: mechanical operation.

Annex IV

NET BLUE GOATSKIN EXPORT FROM NEPAL TO OVERSEAS COUNTRIES

Country of Destination	Fiscal Years					
	1974 - 75		1975 - 76		1976 - 77	
	Pieces	Rupees	Ru/Pe	Pieces	Rupees	Ru/Pe
China				3 810	647 854	170.1 +)
France	15 000	286 425	19.1	120 334	2 955 295	24.6
Fed. Rep. of Germany	64 931	1 560 312	24.0	313 055	13 371 342	42.7
Italy	56 175	1 143 288	20.4	49 836	1 617 620	32.5
Japan	-	-	-	48 051	2 129 233	44.3
Spain	-	-	-	16 000	723 520	45.2
U. S. S. R.	26 100	599 588	23.0	32 100	1 008 949	31.4
UK	102 390	2 161 049	21.1	45 591	1 132 524	24.8
Others	11 025	241 740	21.9	8 412	266 379	31.7
Grand Total	275 621	6 017 032	21.8	637 189	23 852 716	37.4
					334 490	20 308 176
					53 274 613	60.7

The first 6 months 1977 - 78 gave:

Source: Trade Promotion Centre.

+) Probably Buffalo Hides mistakenly reported as Goat Skins.

Annex V

THE SHOE IMPORT TO NEPAL

Shoes and Sandals not specified +)

Country of Origin	Fiscal Years			
	1973/74	1974/75	1975/76	1976/77
	'000 Rs	'000 Rs	'000 Rs	'000 Rs
China	26	600	1 518	5 473
West Germany	-	-	97	31
Hong Kong	0	22	22	25
Thailand	26	388	554	831
Others	20	63	366	729
Subtotal	72	1 073	2 057	7 109
India ++)	'000		'000	
	<u>Pairs</u>	<u>Rupees</u>	<u>Pairs</u>	<u>Rupees</u>
Leather Shoes	191	3 492	245	3 622
Other Footwear	64	405	22	188
Subtotal	255	3 897	267	3 810
Grand Total	3 969	4 883	8 090	12 885

+) Source: NEPAL OVERSEAS TRADE STATISTICS 1973/74, 1975-76 and 1976-77; Overseas Trade Statistics Unit, Trade Promotion Centre, Kathmandu. (Compilation)

++) Source: Monthly Statistics of the foreign Trade of India, Vol I, Exports & Reexports (March 1974, 1975, 1976 and 1977). Gov. of India; Director General of Commercial Intelligence and Statistics; Calcutta. (Compilation. Indian currency converted to Nepal currency).

Annex VI

THE LEATHER GOODS IMPORTS TO NEPAL
(Not specified)

Country of Origin	Fiscal Years			
	1973/74 '000 Rs	1974/75 '000 Rs	1975/76 '000 Rs	1976/77 '000 Rs
China +)	11	208	290	118
West Germany "	1	-	-	33
Hong Kong "	62	167	547	741
Japan "	29	3	12	9
Singapore "	5	17	4	44
Thailand "	68	114	243	278
UK "	-	20	7	40
USA "	-	-	-	43
Others "	1	8	1	81
Subtotal +)	<u>177</u>	<u>537</u>	<u>1 104</u>	<u>1 387</u>
India ++)	19	13	79	9
<u>Grand Total</u>	<u>196</u>	<u>550</u>	<u>1 183</u>	<u>1 396</u>

+) Source: NEPAL OVERSEAS TRADE STATISTICS 1973-74, 1975-76 and 1976-77; Overseas Trade Statistics Unit, Trade Promotion Centre, Kathmandu.
(Compilation)

++) Source: Monthly Statistics of the foreign Trade of India, Vol I, Exports & Reexports (March 1974, 1975, 1976 and 1977) Gov. of India; Director General of Commercial Intelligence and Statistics, Calcutta. (Compilation. Indian currency converted to Nepal currency)

Annex VII

TENTATIVE WET BLUE AND/OR CRUST LEATHER TANNERY

Designed Capacity and Estimated In- and Out-put

	In-put. Hides calculated as Wet Salted		Alternative I Wet Blues only	Alternative II Wet Blues and Crust	
	<u>Number</u>	<u>Tons</u>	<u>Out-put Sq. ft.</u>	<u>Out-put in sq. ft.</u> <u>Wet Blues Crust</u>	
<u>Annually:</u>					
Cattle hides	70 000	750	1 050 000	450 000	580 000
Buffaloe "	<u>30 000</u>	<u>750</u>	<u>1 200 000</u>	<u>800 000</u>	<u>390 000</u>
In total	<u>100 000</u>	<u>1 500</u>	<u>2 250 000</u>	<u>1 250 000</u>	<u>970 000</u>
<u>Daily:</u>					
Cattle hides	280	3	4 200	1 800	2 300
Buffaloe "	<u>120</u>	<u>3</u>	<u>4 800</u>	<u>3 200</u>	<u>1 600</u>
In total	<u>400</u>	<u>6</u>	<u>9 000</u>	<u>5 000</u>	<u>3 900</u>
<u>Land.</u> Square metres.			10 000	10 000	
(Expansion up to finishing anticipated)					
<u>Buildings.</u> Square metres.					
Factory building			1 200	1 800	
Office "			200	200	
Sheds			<u>400</u>	<u>500</u>	
Total Buildings			<u>1 800</u>	<u>2 500</u>	

Machinery. (Prices are for European machines including Spare Parts).

	<u>Alternative I</u>		<u>Alternative II</u>	
	<u>Wet Blues only</u>		<u>Wet Blues and Crust</u>	
	<u>Number</u>	<u>Estimated US\$ FOB</u>	<u>Number</u>	<u>Estimated US\$ FOB</u>
Drums, Ø3x3 m, 2-5 r.p.m.	6	51 000	6	51 000
Fleshing m/c, 2100 mm, heavy	1	29 000	1	29 000
" " " " , 1500 " , light	1	23 000	1	23 000
Drums, Ø5x5 m, 6-8 r.p.m.	6	54 000	6	54 000
Sammying m/c, 1800 mm	1	30 000	1	30 000
Splitting m/c, 1800 mm	-	-	1	38 000
Shaving m/c, 1200 mm	-	-	1	26 000
Drums, Ø3x2 m, 12-16 r.p.m.	-	-	3	24 000
Sammying m/c, 1500 mm	-	-	1	28 000
Setting-out m/c, 1500 mm	-	-	1	31 000
Toggle Drier, 20 frames	-	-	1	42 000
Measuring m/c, pin wheel	-	-	1	14 000
Miscellaneous equipment, handlift truck, scales, fans, tools, laboratory utensiles, tables etc.	-	14 000	-	15 000
Boiler	1	4 000	1	22 000
Truck	1	12 000	1	12 000
CIF - Costs	-	14 000	-	29 000
Machine installations	-	10 000	-	14 000
Installations (Water, electricity etc.)	-	8 000	-	8 000
Effluent treatment	-	<u>20 000</u>	-	<u>20 000</u>
<u>Total Machinery</u>		<u>269 000</u>		<u>510 000</u>
<u>or in Rupees IC</u>		<u>3 230 000</u>		<u>6 120 000</u>

Note to Machinery.

The prices for the machines vary inside wide limits. Some good Indian machines, for example, can be found at much lower prices and, carefully selected, this can bring down the machinery cost considerably - 25-50 % is not unusual. Reconditioned, second hand machines, that are just as good as new ones, can also be found, especially in Europe, where many tanneries have closed down. In a joint venture, the foreign partner should guarantee the functioning and quality of those machines and in such a case the machinery cost could be brought down still further. A 40-50 % reduction might well be possible.

Personnel.

	<u>Alternative I</u> <u>Net Blues only</u>	<u>Alternative II</u> <u>Net Blues and Crust</u>
	<u>Number</u>	<u>Number</u>
Staff and indirect workers.		
Managing director	1	1
Sales/Purchasing manager	1	1
Technical manager	1	1
Ass. techn. manager	-	1
Foremen	5	7
Accountants	2	2
Secretary	1	1
Typist	1	2
Mechanics	1	2
Electrician	1	1
Carpenter	1	1
Bricklayer	1	1
Guards	4	4
Driver	1	1
Production workers.		
Skilled	12	18
Unskilled	28	44
In total	61	86

Costs.

No local costs, neither capital or construction costs nor salaries or wages, have been presented. Similarly no hide prices or hide collecting costs are supplied. To make a profit/loss calculation or to find the break even point, or in fact to make any type of economic analysis, relevant figures have to be provided at that time. Some other data, however, are necessary for such calculations. Although they often differ widely from factory to factory and from country to country, average figures, commonly experienced in similar tanneries are provided below. With these basic data the actual costs can be calculated when needed.

Chemical costs: Calculate

0.95 Rupee/sq.ft.	of Wet Blue Cattle Hides
1.05	" " " Buffalo "
1.55	" " Crust Cattle Hides
1.65	" " Buffalo "

Fuel consumption: If only Wet Blues are produced there is no fuel consumption. The hot water needed is heated electrically. Otherwise calculate

0.05 Kg Fuel oil/sq.ft.	of Wet Blue Leather
0.11 " " "	" " Crust Leather

Electricity: Calculate consumption according to

0.07 kilowatthour/sq.ft.	of Wet Blue Leather
0.15 " " "	" " Crust Leather

Needed Effect from transformer in kilowatt is about $\frac{1}{3}$ of the daily consumption (at full capacity) in kilowatthours.

Packaging and Sundry costs: Calculate 0.1 Rupee/sq.ft. Leather.

Depreciation: The following percentage are commonly used:

Buildings	5 %
Machinery	10 "
Office equipment and Vehicles	- 20 "

Water. Calculate

15-20 litres/sq.ft. of Leather. To cope with eventual expansion some 200-300 cubic metres per day should be available.

Working Capital.

In Nepal the following stock seem to be needed:

Chemicals for 6 months

Hides " 4 months

(Hides: Collecting - 4 weeks, Raw stock - 2 weeks, In process - 2 weeks and Finished/Sales - 4 weeks.)

Sales.

As mentioned, it is very difficult to estimate the quality of the hides collected above the present number and consequently to estimate the prices obtainable. The average (taken into account probable rejects etc.), minimum export prices should, however, not be less than:

0.26	US \$	per sq.ft.	Wet Blue Cattle Hide Leather
0.37	"	"	Wet Blue Buffalo Hide Leather
0.35	"	"	Crust Cattle Hide Leather
0.48	"	"	Crust Buffalo Hide Leather

Annex VIII

WORKING PAPER ON THE FINANCING OF SHOE-MAKERS (COBBLERS) IN NEPAL

Preamble

In the Kathmandu area alone there are some 200-300 small units consisting of 1, or in a very few cases, of 2 or 3 cobblers working whole time. Many more are working at other jobs during the day or during the planting or harvesting of crops and making or repairing shoes in their off hours. From the number of cobblers and from other sources, as the volume of locally sold upper and sole leathers and imported shoe components, it is calculated that more than 75 000 pairs of footwear are produced annually by these small units.

This is a figure which is appreciably higher than the combined production of all shoe factories in Nepal.

The import of shoes and sandals from India, accounting for about 70% of all shoes imported to Nepal, is at the same time still high; for April 1976 to March 1977 the figures are:

<u>Type</u>	<u>Number of pairs</u>	<u>Value in IC Rupees</u>
Rubber footwear	1 710	11 266
Others, sole and upper of rubber or plastic	1 182	13 275
All leather shoes, closed toe	176 626 ^{a/}	2 646 422
All leather shoes, open toe	81 878 ^{a/}	830 556
Leather-soled footwear, NES	10 000 ^{a/}	149 587
Rubber-soled footwear, canvas	46 517	333 567
Rubber-soled footwear, upper leather	7 355 ^{a/}	69 209
Rubber- or plastic-soled footwear, NES	16 615	71 958

Source: Monthly Statistics of the foreign Trade of India, Vol. I, Exports and Reexports, March 1977, Gov. of India, Director General of Commercial Intelligence and Statistics, Calcutta (Exports to Nepal).

^{a/} Or roughly in total 275 000 pairs of leather shoes.

From this, and also from numerous interviews with the cobblers who state that they have no difficulties whatsoever in selling their shoes, it is quite clear that the local market can absorb substantial increases in the local shoe production, if price and quality all comparably to the Indian import. The quality of the shoes already produced by the cobblers is generally good and competitive. The prices are, however, higher than those for exported shoes. It has to be taken into account though, that the locally produced shoes in general are more fashion-directed and thus more complicated than most of the imported shoes, which usually are mass produced and of a more simple design. A price competitive edge could surely be obtained by a better materials purchasing system and a more efficient production organization among the cobblers. An investment programme for the benefit of the cobblers, which would also induce them to co-operate, should be very helpful in attaining these goals.

Remises/assumptions

United Nations Capital Development Fund (UNCDF) is interested in promoting investments and in supplying working capital at grass-root level.

The shoe-making units of 1 or 2 workers (cobblers) are thought to be such a group of small businessmen to who financial aid should mean lower raw materials costs and a possibility to expand their production.

The financing funds should be used exclusively to supply easy loans for working capital to or investments by individual cobblers or a registered collective of the same.

The money will be put to the disposal of HMG for this special purpose.

The monitoring of the funds could be delegated to one of HMG's agencies, e.g. ISC, NIDC, Department of Village and Cottage Industries or the Bansbari Leather and Shoe Factory.

The actual granting of the loans should be made by a body composed of the cobblers themselves, e.g. by the board of a co-operative, and such a decision should be executed without undue delay or red tape.

The initial project should cover the Kathmandu area, later to be extended to other parts of Nepal.

Prerequisites

An ISC study to show that a co-operative is feasible and that the cobblers or a substantial part of them are interested in such a venture.

Formalization

A co-operative is formed comprising at least 50 individual cobblers, a board is elected, HMO appoints the monitoring agency and establishes the rules for awarding the loans.

Purpose

The loans can be granted to:

- (a) Individual cobblers for investments in

Buildings, machinery such as sewing machines and tools;

Working capital to buy leather and other materials used in the shoe production, e.g. rubber sheets, textil linings, threads, shanks, nails, laces, eyelets, adhesives and polishes and auxiliaries such as lasts and design patterns;

- (b) A co-operative for the establishment of a service center with the aim

To act as a purchasing agent, collecting and combining the individual requirements, finding suitable sources and making the actual purchases for later distribution;

To function as a work-exchange center, possibly equipped with some machinery, which can be hired by the members or used for prefabrication of subassemblies of shoes.

Capital needed

Assuming raw materials financing for 8 weeks and a materials cost of 25 NC Rs per pair, the capital needed for the total present production would be $\frac{8}{30} \times 25 \times 75\ 000 =$ 300 000 NC Rs

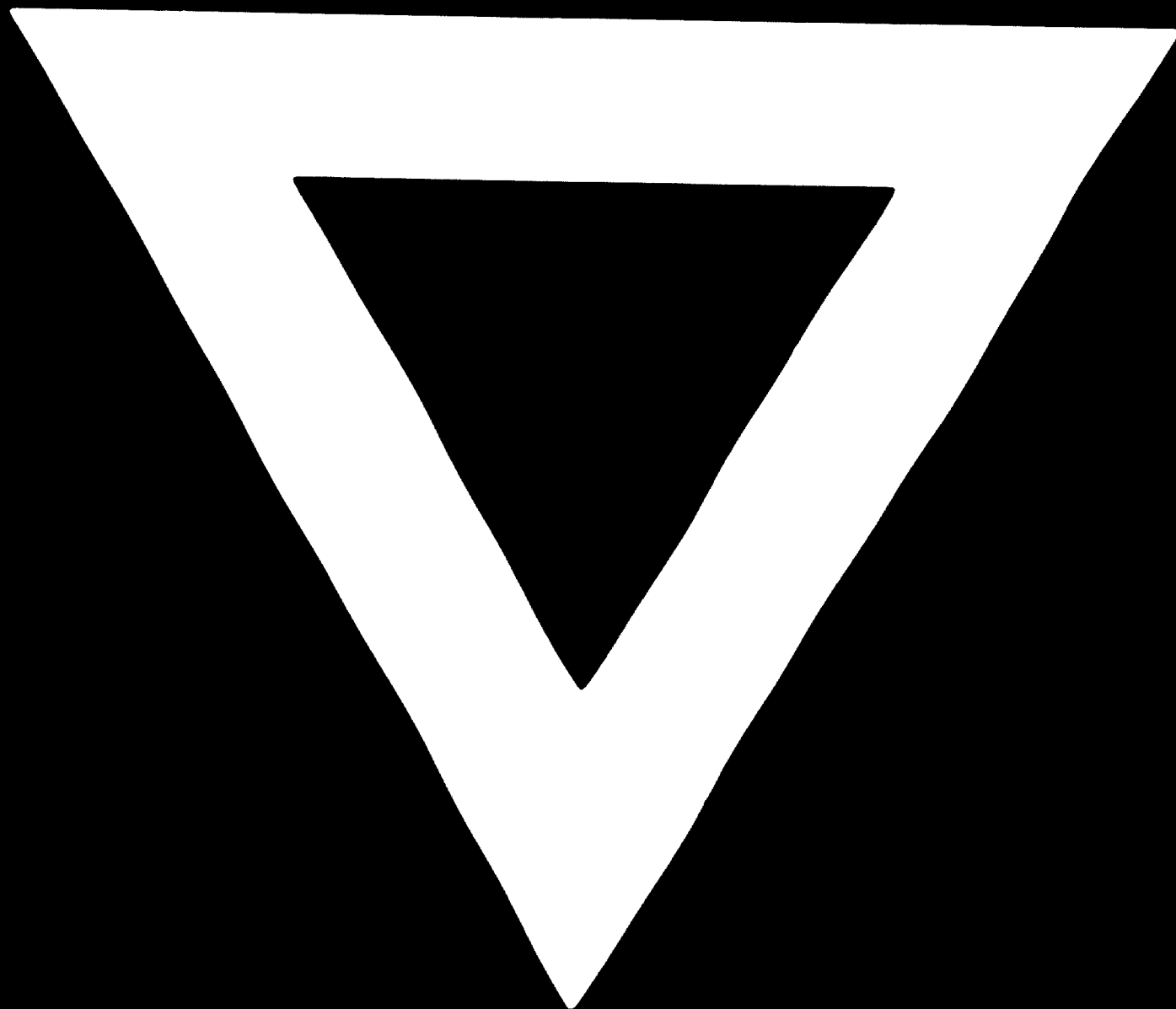
Investments in, say 20, sewing machines & 6 000 Rs = 120 000 NC Rs

Other investments of the same magnitude, say 180 000 NC Rs

In total 600 000 NC Rs

or in \$US 50 000

C-104



80.02.19