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SUMMARY OF THE DRAFT WORLD-WIDE STUDY OF THE LEATHER AND
LEATHER PRODUCTS INDUSTRY: 1975-2000 ^{1/}

Prepared by the

International Centre for Industrial Studies

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NOTES

In this study:

The term "developed countries" includes the centrally planned economy countries of Eastern Europe and the USSR as well as the free-market economy countries.

All dollar (\$) references are to United States dollars.

Billion means a thousand millions.

Leather area is expressed in ft² as this unit is the most widely employed in trade dealings.

* * * * *

INTRODUCTION

At the Second General Conference of UNIDO, held in Peru, March 1975, the Lima Declaration and Plan of Action on Industrial Development and Co-operation was adopted in which the role of industry was re-asserted as a dynamic instrument of growth essential to the rapid economic and social development of the developing countries, and in which a target was set whereby the developing countries' share of world industrial production should be increased from its present level of around 7 per cent to at least 25 per cent by the year 2000. The Declaration and Plan of Action was subsequently endorsed by the General Assembly of the United Nations at its seventh special session.

"Studies must be undertaken"

Among the mandates entrusted to UNIDO at Lima was one which stipulated that: "in order to give concrete content to the process of industrialization in the developing countries, studies must be undertaken and specific measures formulated in different sectors of industry, special attention being given to priority sectors". The Lima Declaration further drew attention to the need to promote agro-based or agro-related industries, in view of the basic complementarity between industry and agriculture.

The leather industry, one of the oldest in the world, one of vital importance to the developing countries, and one that obviously fitted the above description, was subsequently selected for study on a world-wide basis by UNIDO. Carried out by experienced consultants on the sector, with support from the staff of UNIDO, the study traces the development of the industry in both developed and developing countries, analyses its current production levels and makes projections to the end of the century. Both the Food and Agriculture Organization of the United Nations (FAO) and the United Nations Conference on Trade and Development (UNCTAD) have contributed to the study.

Need for "urgent consultations"

In the opinion of the authors of the study, the Lima figure of 25 per cent by the end of the century is "unrealistically low" for the leather industry. Even now, if the developing countries could convert the raw hides and skins they produce to fully finished leather articles, their output might represent some 40 per cent of the world total.

Nevertheless, expansion of this nature can only take place within the framework of co-operation between developed and developing countries. If the developing countries are to produce a greater share of finished articles, they must have greater access to the markets of the developed countries, and be able to concert with them mutually beneficial joint investment projects. If this is to be achieved, countries and groups of countries must consult and co-operate with one another for the common good. In this respect, the Lima Plan of Action called for the convening of

Urgent consultations, taking into account appropriate information with respect to the development of demand and supply, availability of production factors and their costs, the possibilities and conditions of investment and the availability of appropriate equipment and technologies, with a view to facilitating, within a dynamic context and in accord with authorities available to Governments, the redeployment of certain productive capacities existing in developed countries and the creation of new industrial facilities in developing countries. These consultations should in particular relate to industries processing raw materials exported by developing countries

Before meaningful consultations can take place on any industrial sector, however, in-depth knowledge is needed of its economic, technological, financial and human aspects, its relative position, actual and potential production trends, and its potential impact on the environment.

The present document contains a summary of the draft study prepared by the Sectoral Studies Section of UNIDO's International Centre for Industrial Studies with the purpose of providing the above information, including projected estimates of supply and consumption to the year 2000, as a contribution to the process of consultation. The third in a series of such sectoral studies featuring long-term projections, the draft will be distributed for comment to governments and other decision-making bodies and individuals throughout the world in October 1977. Naturally, the study, and its projections, will be revised periodically in the light of changing circumstances.

BACKGROUND

The leather industry is ripe for expansion in the developing countries for a number of reasons:

1. Those countries, while exploiting only part of their raw material, currently produce some 40 per cent of the total global supply of hides and skins; thus they are in a position to control the distribution of these materials, and the location of manufacturing capacity.
2. The technologies employed in leather and leather products manufacture are not unduly sophisticated, may be used by relatively small-scale units, and are certainly within the realm of competence of most developing countries. The possibility of using a step-by-step approach also facilitates developing country entry into this sector of industry.
3. The initial production processes are wet and arduous, and produce relatively large volumes of noxious effluent. This has led environment-conscious governments in many developed countries to impose stringent effluent-control standards which have, in some cases, restricted the production and expansion programmes of their tanneries and led to stagnation and decline. This need not occur in developing countries when the sector is expanded since it is less costly to install pollution-control equipment, or employ less polluting technologies, in new plants than to improve existing ones.
4. As a consequence of the foregoing, the last decade has witnessed a significant natural "migration" of leather sector activity from the developed to the developing regions of the world, and indications are that this pattern will continue, possibly at an accelerated rate. The migration has generally been marked by the establishment of new production units rather than the relocation of existing plant.

The rapid expansion of the sector in the developing countries, however, has not been based on any globally agreed sectoral development plan, and there is cause for disquiet on a number of points. For example, it is generally agreed that, world-wide, there is currently a significant over-installation of tanning capacity. While the demand for leather and leather products is buoyant, the supply of raw material is inelastic - finite, renewable annually with growth at less than 2 per cent per annum. Many new production units, therefore, operate at uneconomically low capacity utilization levels.

The leather and leather products industries of the developing countries have directed much of the increased production resulting from their expansion programmes towards the markets of the developed world, and have made significant inroads in some areas. Now, however, the developing countries complain that their export programmes are being restricted by tariff and non-tariff barriers, especially in the field of finished leather products.

The leather and leather products sector in the developed regions view the situation differently. They suggest that they are being subjected to unfair competition due to the incentives and government protection enjoyed by the sector in many developing countries. They further claim that the products from some developing countries are not compatible with established international quality standards and are lowering the prestige and image of real leather.

The leather industry is a by-product industry, dependent in most countries on the meat industry for its raw material. Thus the supply of raw material, hides and skins, is virtually inelastic. The increase in demand for hides and skins or leather is generally reflected by increases in prices. Over the last decade, however, the price of raw hides and skins has fluctuated erratically, making it difficult to quantify the potential value added obtainable from further processing.

Historically, the tanning and leather products sectors have consumed virtually all the hides and skins produced by the world's meat industries, the balance of their demands being met by substitute materials. Currently, these substitutes are inferior to leather on both technical and aesthetic grounds; however, given the expansive research programmes being carried on in this substitute field, the situation may change.

Up to a decade ago, some 70-80 per cent of the leather produced globally was consumed by the footwear industry. In recent years, however, in the developed countries, there has been a swing towards the use of leather in garment manufacture, with the result that, in some areas, the volume of leather now going to the footwear industry is less than 50 per cent of the total supply.

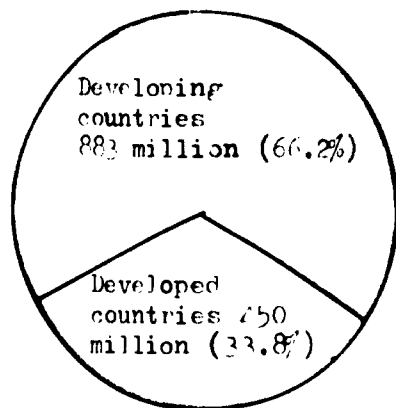
CURRENT GLOBAL SITUATION

Raw material: live animal holdings

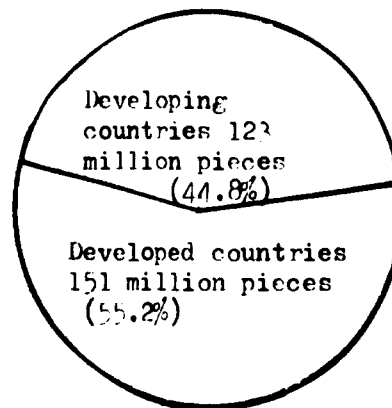
The major raw materials for the leather industry are the hides and skins of bovines (including buffaloes), sheep and goats. Pigskin has hitherto had limited application as a raw material, but that situation might change and large volumes of the material be made available to the tanning industry if the public could be educated away from its tradition of eating pigskin (as bacon rind etc.), or if government and health regulations were to be introduced prohibiting its consumption.

The "pie-charts" that follow have been prepared on the basis of data and information provided by the Food and Agriculture Organization of the United Nations (FAO) for the year 1975.

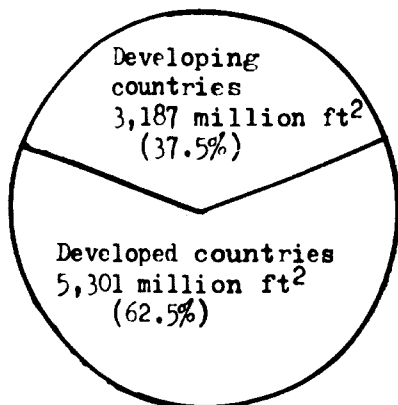
Live bovines



Annual production of calf and cattle hides

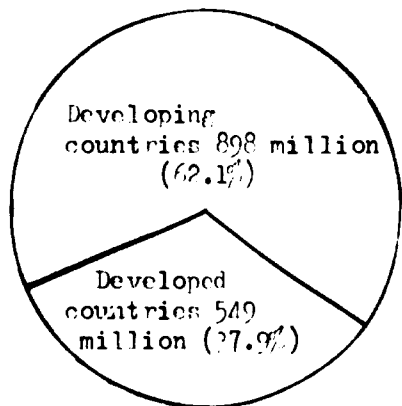


Estimated annual area yield of bovine raw material

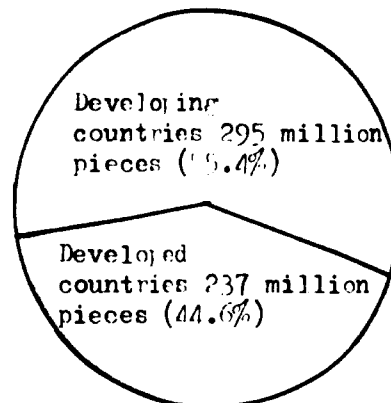


The low area yield in the developing countries, while due in part to the smaller size of the live animal, is much more a reflection of low offtake rates. A typical offtake rate in the developing countries is 8 - 14 per cent per annum, compared to over 25 per cent in the developed world.

Live sheep and goats



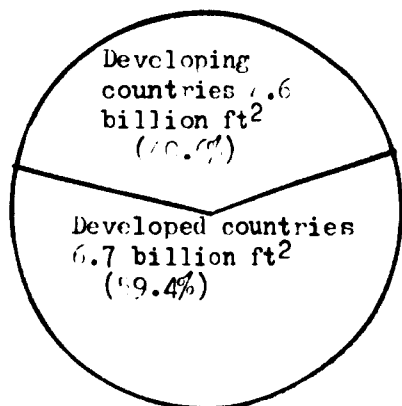
Annual production of sheep and goatskins



While the yield in sheep and goat is also lower in the developing countries, the difference is not so marked. Variations are mainly due to the smaller skins, but the offtake rate shows less disparity than that of the developed countries.

In total, the global yield of raw material from bovines, sheep and goat in 1975 reached an **estimated 11.3 billion ft²**.

Total production of raw material from bovines, sheep and goats



The above yields do not tell the full story, however, as the hides and skins in the developing countries, besides being smaller in number, show defects **resulting from** poor animal husbandry (brands, horn rakes, scars, scabs, ticks, thorn scratches, etc.) and yield lower quality finished products.

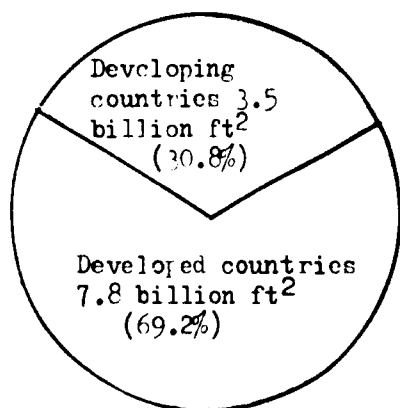
In addition to the raw materials discussed above, the world's tanning industries obtain a certain amount of pigskin from countries where this material is not consumed as foodstuff. While reliable data are not available in this area, it has been estimated that pigskins currently augment world leather supplies by 20 per cent, most of this increase being in the developing countries. If this estimate is correct, total leather raw material would equal 14 billion ft² per annum, of which the developing countries would have 47.5 per cent and the developed countries 52.5 per cent.

Current rates of leather manufacture in the developing countries

Levels of tanning activity vary greatly in the developing countries. Some countries fully process all of their raw material and import significant quantities from other developing countries, or from developed countries. Others export their raw material in semi-processed (somewhat raw) state. Again, while a number of countries process some proportion of their raw material to leather in various forms, a few have not yet commenced tanning, even though they have significant supplies of raw material. The following "pie-chart" shows estimated global tanning activity (bovine, sheep and goat) in 1975.

According to current estimates, the developing countries collectively obtain only 76 per cent of the potential value added from their raw material

Global tanning activity in 1975



(76 per cent effective utilization).

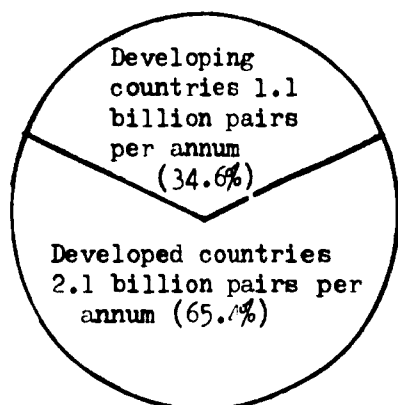
The full value added should be obtainable by complete on-the-spot processing.

There is obviously great scope for expansion in this sector, subject of course to such factors as means of production, quality of product and availability of markets.

Current rates of leather products manufacture in the developing countries

No definitive data exist relating to global production of leather footwear. Various authorities have made estimates, but their methodology has seldom been elaborated.

Estimated global leather footwear production



In the present study, a crude estimate of global leather footwear production has been made on the basis of bovine raw material supplies; it shows global production to be 3.45 billion pairs per annum.

In a selective analysis of production in the developed countries and some 36 developing countries, the

estimated volume of leather footwear production only, aggregated on a global basis, was 3.2 billion pairs per annum, the distribution of which is shown in the accompanying pie-chart. The two estimates are not irreconcilable, however, when wastage and use for other leather products are considered. No global or regional statistics are available for the manufacture of other leather products (e.g. handbags and travel goods), but it is suggested that, except in a few advanced countries in Latin America and Africa, production of such goods is generally at a low level.

Future raw material availability and tanning activity

The projections offered in this study for future hide and skin production are tentative. The simplest of them, however, based on a constant per capita consumption of meat (and subsequently hides and skins) to the year 2000, in the developing countries - with a linear trend being adopted in the developed countries - suggests that the developing world's share of hides and skins can be even greater than it is today. This is illustrated in the graph on the next page.

Future trade

In 1975, the developing countries were net exporters of hides and skins. Recently, however, their exports in this sector have been rapidly declining and by the year 2000 - if a linear trend is followed - they should be net importers and tanners of significant quantities of raw hides and skins from the developed countries. If this trend is realized, the developing countries, by the end of the century, will have raised their share of global tanning activity to some 65 per cent (from the 1975 level of 31 per cent).

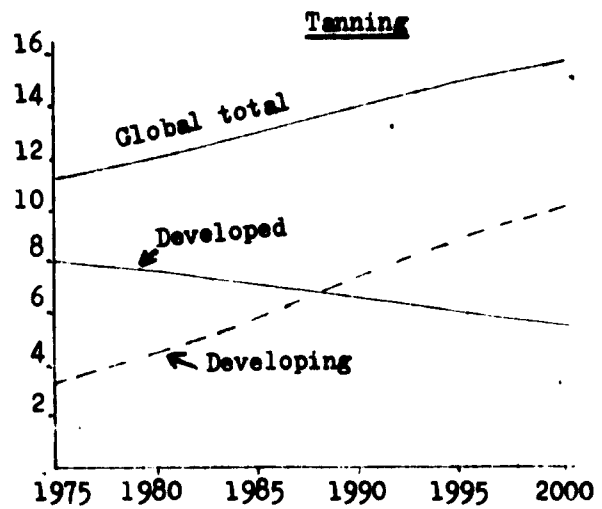
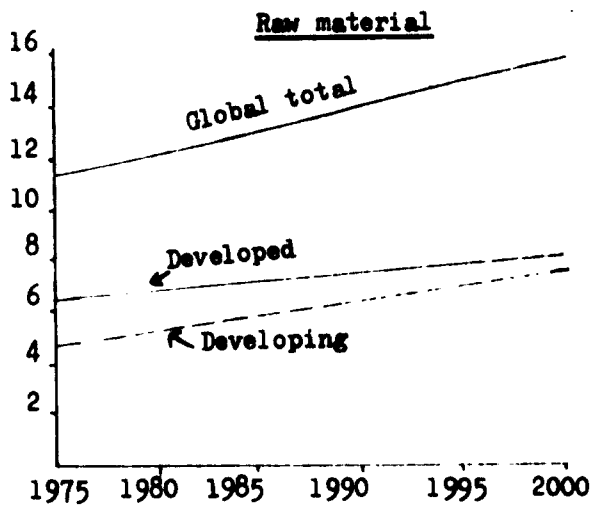
Thus, tanning activity in the developing countries from 1975 to 1985 should grow at the rate of 5.0 per cent per annum, and from 1985 to 2000 at the rate of 4.0 per cent per annum.

The estimated or projected totals of tanned footage of finished leather per annum would be (millions of ft²):

1975	-	3,491
1985	-	5,689
2000	-	10,250

It should be noted that the total footwear and leather production of the developed countries may not decrease because, instead of real leather articles, they will produce quantities of synthetic leather, textiles, rubber and other leather substitutes.

Projected production to the year 2000
(Billion ft²)



TECHNOLOGY; CAPITAL COSTS; VALUE ADDED

Leather production technology

Future production levels

There is no great difference in the technologies employed around the globe today to produce leather on a mechanized industrial basis. There may, however, be a minimum economically viable size of industrial tanning unit: circa 300/400 bovine hides per day (2.5 million ft² per annum). Limited economies of scale are available which suggest that unit capacity should be above the 1,000 hides daily input level, but entrepreneurial considerations negate some of the apparent financial advantages; thus, the majority of new tanneries cater for an input of 500-1,200 hides daily (4-10 million ft² per annum).

If the tanning activity is export-oriented, or based in areas lacking entrepreneurial skill in the leather sector, or with an unskilled labour force, it is advisable to adopt a step-by-step approach to development, the steps being:

- . Production of wet blue leather (a primary form of semi-processed leather);
- . Production of crust leather (leather awaiting final surface colouration);
- . Production of finished leather.

Each step may require 2-5 years to consolidate. Some new installations which have ignored the step-by-step approach (though not on technical grounds) have yielded poor project results. Where the tannery is designed solely to meet domestic consumption, it is possible to leap-frog the intermediate stage, as market acceptability may be a simpler matter. New tanneries have the advantage that they can avail themselves from the outset of modern technologies to minimize effluent problems and thus be in a more competitive position than existing plant which may not easily be able to employ environmentally sound processes, nor have at their disposal sufficient area to process effluent to current requirements.

Capital costs

The fixed and total capital costs of new tanning units in the developing countries vary greatly, depending on whether the units are basically commercially oriented or designed as "prestige" projects. Some median capital requirement estimates for bovine hide processing in 1977 were:

Hide tannery (processing 10 million ft ² per annum)	Raw to wet	Raw to crust	Raw to
	blue		finished
	(Millions of dollars)		
Total capital throughput	3.1	5.4	6.7
Fixed capital	1.4	2.9	3.7

Economies of scale exist, but although "on paper" they appear significant, industrialists suggest that smaller units with improved product flexibility and quality control may be able to counterbalance the situation by increased value per unit of sales.

Few developing countries produce the machinery necessary for tannery installation. (Argentina, Brazil and India produce significant amounts, but are not yet self-sufficient.) Thus, for the majority of these countries, a large percentage of the capital required will need to be in foreign currency. In areas that have no machinery construction capacity or expertise, the foreign currency requirement may be as much as 52 per cent of the total capital.

Value added

In recent years, value added has declined as a percentage of raw material value owing to the steep rise that has taken place in the cost of raw material. In view of recent rapid fluctuations in hide and skin prices, the concept of a percentage uplift from raw material to finished leather will not yield consistent data. In a study carried out in 1972, value added and prices for East African low-grade grain upper leather were shown as follows:

	Ex-factory price	Value added per ft ²	Value added as per cent of raw material
	(US cents per ft ²)		
Wet blue	31.0	12.3	65.8
Crust	41.0	22.3	119.2
Finished	46.0	27.3	146.0

However, the cost breakdown of a medium to high quality finished leather in Argentina in 1977 was quoted as:

	<u>Per cent</u>
Raw material (hide)	56
Chemicals	15
Energy	3
Labour	9
Sales and overheads	17

This suggested value added to the finished leather stage of only 78 per cent uplift on the raw material.

In the developing countries, labour costs, even where extremely low, are often offset by the high cost of imported chemicals - suggesting lesser value added availability. It should be noted that the apparent value added is not always realized in economic terms, as foreign currency and chemical costs comprise a significant percentage of production costs. Data for 1977 suggest that chemical inputs (proprietary products) may cost:

	<u>US cents per ft²</u>
Raw to wet blue	6.67
Wet blue to crust	3.33
Crust to finished	5.33
Total (raw to finished)	15.33

With typical finished leather prices at \$0.80-1.20 per ft², the chemical input is certainly significant. Tanners in some developing countries, however, suggest that they pay appreciably higher costs for their chemicals; but this cannot be due to freight alone, and may result from either Government-imposed import duties or high trading margins extracted by local merchants.

Studies carried out in several developing countries suggest that, in view of the high cost of imported chemicals, and the cost of servicing foreign capital - often jointly well over 50 per cent of the value added - the production of leather, if not carried out economically and with technical efficiency, may result in less net foreign currency than might be obtained from exporting raw, unprocessed material.

Leather products

Future production levels

Variations in the technologies employed in leather products manufacture can be extreme. The developed countries use the most sophisticated technologies available, and in accordance with market demands, whereas the mode of production and the standard of products from the developing countries are strongly influenced by tradition. The modernization of these traditional production systems can only be achieved through step-by-step development.

While in the immediate future the developed countries will undoubtedly continue to dictate fashion and to produce sophisticated luxury items in the area of shoes and other leather products, the developing countries will increase their production of commodities and of traditional products.

In the case of footwear manufacture, the end products vary from simple, leather-soled toe-thonged sandals to sophisticated, closed, western-style shoes: consequently, capital costs for manufacture and value added for the final product are dissimilar. Capital costs for the production of many forms of leather goods (e.g. handbags), however, are negligible, only a roof and a few hand tools being required to manufacture.

For footwear manufacture, several levels of mechanization are possible, and economies of scale are available. At the fully mechanized level, it is reported that the capital requirements for the manufacture of 500 pairs daily of western-style footwear are:

Total capital: \$1,058,000 (\$2,126/pair/day)
of which
Machine costs: \$400,000 (\$800/pair/day)

A recently introduced low-technology range of machinery, suitable for upgrading artisanal production to mechanized form is less demanding of capital. Its capital requirements are reported to be only some \$20,000 per 200 pairs of shoes daily. This plant has certain limitations regarding labour efficiency, but while not suitable for large production units, it should prove a suitable stepping stone for countries wishing to mechanize their artisanal industry. A mean capital requirement may therefore be reckoned at:

Total capital: \$1,546 per pair
of which
Machine costs: \$280 per pair

Value added

Value added to leather and leather products manufacture varies with the style, quality and workmanship involved. In a typical situation, however, the upper leather for a pair of corrected grain upper leathered shoes would cost some \$2.00, compared to an ex-factory selling price of \$5.00. Thus,

\$1.00 of raw hide may yield
\$2.00 of finished leather, which may yield
\$5.00 of leather footwear (ex-factory)

Trade flow in leather products

The developing countries' share of the leather products market in the developed market economy countries approximately doubled during the period 1967-1975, and growth rate, in value terms, averaged 34 per cent. There are no indications that this rate is likely to decline as the trend in the developed market economy countries is towards increased imports.

Intra developing country trade, however, remains small - only 6 per cent of total developing country exports. This is an area which needs attention if the Lima target is to be attained.

The tariff and non-tariff barriers that exist in all developed market economy countries are hindering the efforts of the developing countries to increase the degree of processing in the sector.

Total capital requirements for the leather sector to reach the level of activity projected for the year 2000; economic advantages

Leather production capital requirements

The authors of the UNIDO study estimate that to attain the activity levels projected for the year 2000, the developing countries will need to install the equivalent production capacity of 792 tanning units (10 million ft² per unit hide, and 6 million ft² per unit skin).

Half of this growth in capacity, however, may be in the form of expansion of existing plant. Furthermore, in some areas the tanning units may have smaller capacity throughput levels than the costed models without sacrificing efficiency. Expected capital requirements for the period 1975-2000 are shown on the next page (at 1977 price levels):

	Total capital required	Possible foreign currency required	Per annum
	(Millions of dollars)		
1975 - 1985	1,657.5	855.3	85.5
1985 - 2000	3,263.8	1,684.1	112.3
Total 1975 - 2000	4,921.3	2,539.4	

If tannery development is approached on a step-by-step basis, production being concentrated on "semi-processing" for the first 10 years or so, some appreciable part of the foreign currency requirement may be self-generated.

Leather products production capital requirements

Owing to the dearth of historic data regarding leather footwear production in the developing countries, no reliable projection can be made for the year 2000. It is unlikely, however, in view of the general lack of capital and expertise, that the developing countries' footwear sectors will keep pace with the relatively rapid rate of expansion of their tanning sectors. This may be aggravated by the market situation: the developed countries are objecting to current levels of imports of leather footwear and other leather goods from the developing countries, and quotas and barriers are being discussed with a view to controlling these levels.

Notwithstanding the above, three alternative hypotheses have been elaborated regarding the developing countries' share:

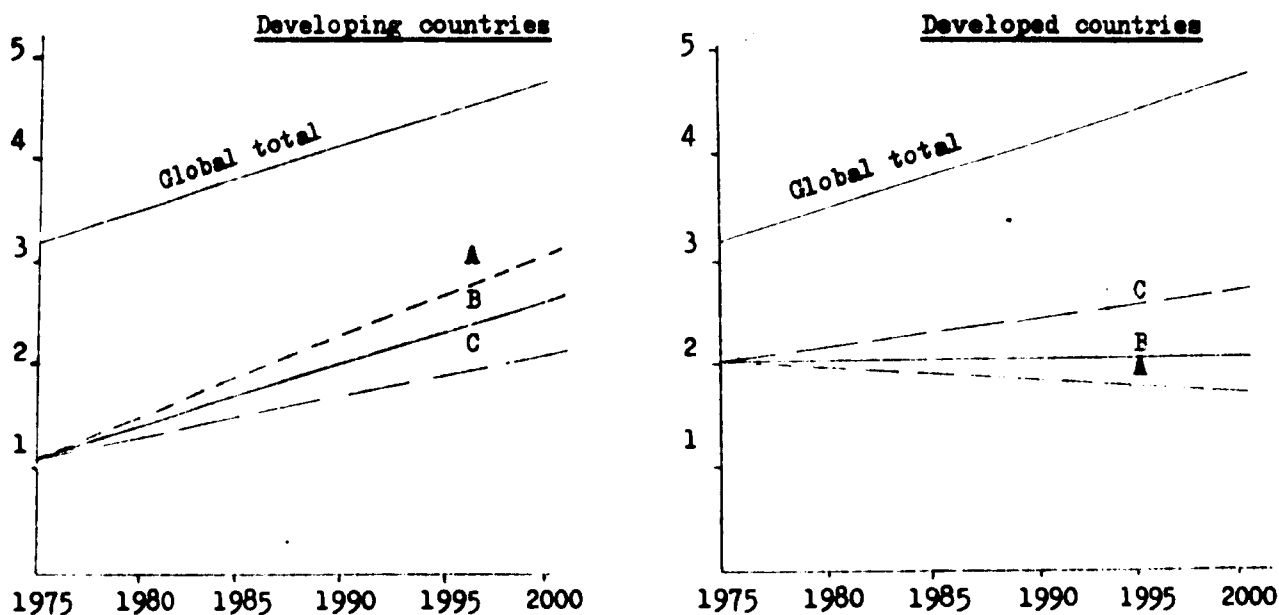
Alternative A suggests that by the year 2000 the developing countries will be converting to footwear and other products all of the leather produced by their tanneries (i.e. their indigenous material plus imports of raw hides and skins). This would give the developing countries a 65 per cent share in global production.

Alternative B sees leather footwear production of the developed regions remaining at 1975 levels. All increases in production would take place in the developing countries, which would give those countries a 56 per cent share in global production.

Alternative C suggests that by the year 2000 the developing countries will be converting to leather footwear and other products all of their indigenous raw hides and skins. This would give them a 45 per cent share in global production.

Projected leather uppered footwear production to the year 2000

(Billions of pairs)



Assumed annual growth rates (per cent per annum)

<u>Alternative</u>	<u>Developing countries</u>	<u>Developed countries</u>
- - - - A	+ 4.2	- 0.9
———— B	+ 3.6	-
- - - - C	+ 2.6	+ 0.9

Thus, increases in production in the developing countries from the 1975 base of 1,110 million pairs per annum could be:

Alternative A: 1,963 million additional pairs per annum

Alternative B: 1,556 million additional pairs per annum

Alternative C: 1,017 million additional pairs per annum

Developing countries' total capital requirements

The capital requirement to erect the facilities needed for the levels of production suggested in the three Alternatives would be:

	<u>Alternative A</u>	<u>Alternative B</u>	<u>Alternative C</u>
Additional annual production of leather footwear (millions of pairs per annum)	1,963	1,556	1,017
Daily production (millions of pairs)	7,852	6,224	4,068
Total project capital required (billions of dollars)	12,139	9,622	6,289
Total cost of plant and machinery (billions of dollars)	2,199	1,743	1,139
Year 2000: possible additional value added per annum (billions of dollars)	7,656	6,068	3,966
<u>Additional annual value added</u> Total capital required	63.1%	63.1%	63.1%
<u>Additional annual value added</u> Cost of plant and machinery	348.2%	348.2%	348.2%

It can be seen from the foregoing that provided the plant and machinery only are purchased with foreign currency, the returns may be rewarding.

In addition to the value added yielded by leather footwear, the production of other leather goods - particularly from skins - could yield value added of \$1.16 billion per annum by the year 2000, at insignificant capital outlay.

The developing countries' total capital requirements, value added, and job opportunities if the projected levels of activity are reached by the year 2000 in the tanning and footwear sectors are shown below:

	<u>Alternative A</u>	<u>Alternative B</u>	<u>Alternative C</u>
<u>Total sectoral capital requirement</u>	(Billions of dollars)		
Total capital: 1975-2000	17.06	14.54	11.21
of which foreign currency requirement, plant and machinery may be	4.74	4.28	3.68
<u>Increases in annual value added over 1975 levels</u>	(Billions of dollars)		
Leather products	3.72	3.72	3.72
Leather footwear	7.66	6.07	3.97
Other leather products	1.16	1.16	1.16
	<u>12.54</u>	<u>10.95</u>	<u>8.85</u>

<u>Job opportunities</u>	<u>Alternative A</u>	<u>Alternative B</u>	<u>Alternative C</u>
		(Millions)	
Leather production	0.19	0.19	0.19
Leather footwear	1.57	1.25	0.81
Other leather products	0.35	0.35	0.35
	<u>2.11</u>	<u>1.79</u>	<u>1.35</u>

Thus, it is suggested that in the developing countries by the year 2000 capital inputs of \$11-17 billion (the foreign currency element being perhaps \$3.7-4.7 billion) could mean increases in value added in the leather and leather products sectors of from \$8.9-12.5 billion per annum, with increased employment for 1.35-2.11 million people.

There seems little reason why the developing countries should not raise their leather production activity from the 1975 figure of 31 per cent of the global total to some 65 per cent by the year 2000. In the leather footwear field, they could raise their share of global production from the 1975 level of 35 per cent to 45, 56 or 65 per cent, depending upon a variety of circumstances.

DEVELOPMENT STRATEGIES

Background

Given the fact that they hold 40 per cent of the sector's raw material, and that tariff barriers have been generally low in the last decade, it would seem that the developing countries should have been able to penetrate deeply into the international markets with finished leathers and leather products. However, although many countries have made great efforts to expand their leather sectors during the past decade, the results obtained have often been disappointing, notwithstanding the heavy levels of capital expenditure employed and the government incentives and protection provided.

In some cases, this poor development may be attributed to inadequate global liaison in the industry, but in others it may be the result of ill-informed, over-ambitious, and wrongly oriented government development schemes. Thus, if the Lima objectives are to be attained, a major priority must be the preparation of sound national integrated leather sector development plans, realistically attuned to both the domestic and the international scenes as well as to the industry's true possibilities.

The parameters which govern the development of any industry may be conveniently categorized under the broad headings of materials, markets, methods of production, money and manpower. A successful development strategy will depend upon the degree to which the requirements of each of these categories are satisfied in individual countries. Because of the differences in potential, no attempt is made here to specify a precise common line of strategy, but broad guidelines are presented upon which planning may be based, taking account of particular potentials and current stages of development.

Materials

Although countries that dispose of large volumes of hide and skin (e.g. India - 29 million hides per annum) have obvious production potential, volume is not the only criterion to be considered: the number of hides produced per capita is equally important.

On average, the developing countries produce 59 hides per 1,000 inhabitants, and some countries producing this amount have a thriving industry. In Argentina, which produces 12 million hides at a rate of 470 per 1,000 inhabitants, the industry is at a comparatively advanced stage of development. On the other hand, in Botswana, which produces 250,000 hides per annum at a rate of 400 per 1,000 inhabitants, the industry is negligible. Obviously, countries which differ so vastly cannot have identical development strategies.

Some countries are developing leather and leather products sectors which depend heavily on imports of raw material; basically, all they have to offer is cheap labour and expertise. This practice, in an era when raw material is in short supply, seems short-sighted. Imported raw materials should be considered an adjunct to local supplies, a measure designed to achieve economies of scale rather than a prime source.

Markets

Countries determined to develop their leather sectors would appear to have two major options open to them:

- (a) The development of the domestic leather and leather products industries through import substitution and/or through increasing the social well-being of the population by diverting increased leather and leather products to the home market;
- (b) The orientation of their leather sector to the export market in order to obtain maximum economic advantage. In some areas, this may be achieved by satisfying the bulk of domestic demand with leather-substitute materials and exporting the more valuable genuine leather.

The orientation of the industry will have a strong bearing on the rate of development, as there is little doubt that export-oriented industry will have to face international competition in regard to both quality and price, whereas domestic-oriented industry may well be able to produce at much lower technical levels and still find market acceptance.

Some development programmes have been based on the premise that initial production would go to the domestic market, but that as quality rose, efforts would be made to enter the international arena. However, this system rarely works as, once a local market has been obtained, the tanneries and shoe factories become relatively self-satisfied and reluctant to make the transition in technical and quality control necessary to enter international markets. On balance, however, it appears essential to have a significant domestic market for leather products if the aim is eventually to enter the international arena. In theory, the developing countries can be assured of a market, provided they can produce at internationally acceptable quality levels. If global demand remains constant, increased production of leather products in the developing world must mean a decline in leather exports to the developed countries; the latter's production of leather products must consequently decline, thereby yielding a market for the leather products of the developing countries.

Methods of production

Production techniques for leather and leather products vary throughout the developing countries, from purely artisanal to highly sophisticated; from the simple curing of hide for export to the manufacture of modern fashion footwear. Most countries, however, do not achieve the optimum value added, due mainly to insufficient processing or poor quality.

The development problems of India, which has a centuries-old tradition of tanning, mostly artisanal, are different from those of Argentina which boasts a modern, fully industrialized leather-processing industry. Common to both countries, however, is an abundance of skilled workers, technologists and entrepreneurs. Botswana, which today has neither tannery nor leather technologists, will face a different set of problems when developing its leather potential.

Nevertheless, the leather and leather products sectors are so well established in many developing countries and regions that the time may now have come for a different approach, and for international and other assistance to be devoted to the small number of countries which need strong support and assistance in the sector.

Development decisions should be based on the sound evaluation of optimum value added in order to ensure that the appropriate technology is chosen. Further, in both the tanning and the manufacturing sectors, a step-by-step approach should be adopted to ensure that experience will be gained leading to production to international quality standards. This step-by-step approach, and the criteria for entry into a development programme, are shown in the chart on the next page.

1	2	3	4	5	6	7	8
DESCRIPTION	MATERIAL	SOURCE	PROCESSES	CAPITAL REQUIRED	TECHNOLOGY LEVEL	POTENTIAL VALUE ADDED	CRITERIA FOR ENTRY
1. Tanning of raw hides and skins	Raw hides and skins	Local, national.	Local processors. Export.	Low	Low	Low	The only requirement is a sufficient supply of hides and skins. In cases of an integrated abattoir tannery complex this step may not be necessary.
2. Tanning of wet blue	Cured hides and skins	Local, national. imports.	Export. National finishers.	Medium low	Medium low	Low	Where previous experience in tanning does not exist easy penetration of export markets can be achieved. Tariff barriers low or non-existent.
3. Retan and dry process (crust)	Cured hides and skins	Local, national. imports.	Export. National finishers.	Medium high	Medium	Medium	For countries with an established reputation as a wet blue exporter the transition to one of the crust forms is feasible. Tariff barrier lower than for fully finished products. Overcomes problems occurring in rapid changes in finish requirements in case of supply to remote markets.
Finishing	Semi-finished leather (wet blue or crust)	National semi-finished. imports.	National manufacture. Export.	High	High	Medium	Large scale efforts in this respect should be taken when it is planned to enter or expand leather product manufacture within the country. Tariff barriers for export are high and intermediate markets often require extremely high quality standards.
LEATHER GOODS MANUFACTURE (*)	Finished leather	National finishers. imports.	Domestic.	Low	Medium	Medium	This activity exists in most countries: basic skills are usually available but quality is variable. Improved marketability could be achieved by formation of cooperatives or other aggregations of effort.
4. Rural manufacture	Finished leather	National finishers. imports.	Domestic.	Medium	High	High	Feasible as the logical extension from the aggregation of artisan manufacture to the utilization of low cost machinery. It is an important step in progress from cottage to factory industrialization. Output can be substantial and requires a reasonably large input of finished leather. Existing capacity.
5. Semi-mechanized production	Finished leather	National finishers. imports.	Domestic. export.	High	Very high	High	The final stage should be commenced only with a substantial domestic market to enable the development of products to international quality standards for export. Tariff barriers usually high.
6. Fully mechanized production	Finished leather	National finishers. imports.	Domestic. export.	High	Very high	High	

(*) The steps listed under the heading refer only to footwear manufacture since this is the main market. Manufacture of garments, slippers, handbags, etc. requires high skill, but low capital investment. It is more variable, and subject to high tariff barriers.

Money

The study shows that for the industry to reach its full potential by the year 2000, total investment and production capital requirements may amount to \$2.5 billion for leather, and to \$12 billion for leather products. It is unlikely that this amount will be generated by the industry itself in such a short period. In most cases, alternative sources of finance must be found since few countries produce their own machinery, and this must be purchased with foreign currency. Where tanning is concerned, it is possible that a step-by-step approach, from export of cured material to finished leather, will reduce foreign currency requirements.

Because of the inelasticity of raw material supplies, and the increasing demand for leather goods, the industry should not have difficulty in raising capital: the major problem will be to decide on an optimum spread between available sources and its compatibility with national planning and socio-economic policies. Possible sources are:

1. Cash or local loans. This type of funding, which can usually be raised for expansion of existing plant, constitutes regenerated savings and loans from local banks against existing collateral.
2. National private equity. Such funds, either for existing plant expansion or for new plants, can be obtained through the issue of shares in the organization by the main entrepreneur to other individuals or bodies. This source is desirable in cases where it is preferred that only national finance be used.
3. National government support. Where the industry forms an important part of the national development plan, it is not uncommon for part or even all financing to be provided by the government. Support may be in the form of direct grant, subsidy, interest-free loans or other appropriate fiscal incentive plans.
4. International banks. Where commercial viability can be shown, where some national finance can be provided, and/or where the country is short of convertible currency, loans may be obtained from such bodies as the World Bank and regional development banks. Bilateral aid, perhaps the swiftest means of obtaining the large volume of assistance required, has not in the past enjoyed a good reputation in the leather sector. Projects tended to be ambitious, prestige-oriented, with over-specification of machinery and consequent high capital burdens.

5. Private international funds. Capital can be borrowed from commercial banks (many of which specialize in overseas investments) in the form of an equity holding, or as part of a partnership or joint venture agreement between entrepreneurs in developed and developing countries. The results of the past decade suggest that commercial joint ventures yield the best results. They are generally tailored to actual requirements and can offer real entrepreneurial experience as well as the necessary know-how and market intelligence. Joint ventures could well be coupled with relocation of industry.
6. Long-term contracts. Long-term contracts can also be arranged with governments or enterprises able to give assistance at all levels (machines, training, and skilled manpower) and which accept commodities by way of compensation.

With the decline of the tanning and footwear sectors in the countries of the Organisation for Economic Co-operation and Development (OECD) - marked by surplus capacity and the closure of large numbers of manufacturing units - scope exists for the redeployment of resources to the developing world. To some limited extent, redeployment has been arranged by machinery manufacturers who have reconditioned the machinery and exported it to the developing world. However, this has never been part of the consistent programme which should have been a major plank in the development programmes of trade, national and international bodies. Countries that have projects designed for them by machine manufacturers who have no responsibility for commercial viability, sometimes end up with projects entirely unsuited to their domestic conditions. When a tannery is due to close in Europe or North America, it may be preferable to transfer it "in toto" to the developing world. Such redeployment can be advantageous to both sides. The surplus production unit from the developed world would certainly receive a far better return for its plant and capacity than at present happens when it comes under the hammer at near-scrap-iron levels. More important, however, the developing country taking over the unit has the possible added advantage of being able to hire, for a period of time, some of the plant's redundant operational and technical management, as well as such key workers as splitters and sorters.

Manpower

Large numbers of technologists will be needed, for the expanded production envisaged for the developing countries, but even more important may be training: training oriented towards practical commercial technology rather than pure technology and science.

Because both the leather and leather products sectors use technologies which combine traditional arts with modern science, it is possible to install top-grade plant and machinery, specify a technological process, and still obtain poor-quality results, owing to the heterogeneity of the raw material and the need for skilled supervision to overcome daily problems. Entrepreneurial skills are needed even on the shop floor, to decide whether a raw hide or skin has the potential to make a first grade garment or lining leather - with perhaps a 100 per cent difference in the final product value. Similarly, in footwear manufacture, an operative must be able to decide whether a leather is suitable for use as the vamp, where it is visible and heavily flexed, or whether it should be employed in a less conspicuous position. These basic skills are not readily available in new projects; thus the justification for gradual step-by-step development. Where the step-by-step approach has been ignored, the result has often been inferior products with a poor market reputation. Such a reputation is not easily changed, and while this may not be considered a serious matter where the domestic market is concerned, it still leads to consumer preference for imported products.

Current training facilities appear to be sufficient to provide technologists to satisfy the estimated growth rates, but more emphasis needs to be placed on training for slaughter, curing, transport systems, business management and marketing. Training of this type, which should be bolstered by in-plant courses, is probably best carried out at regional rather than national centres.

International considerations

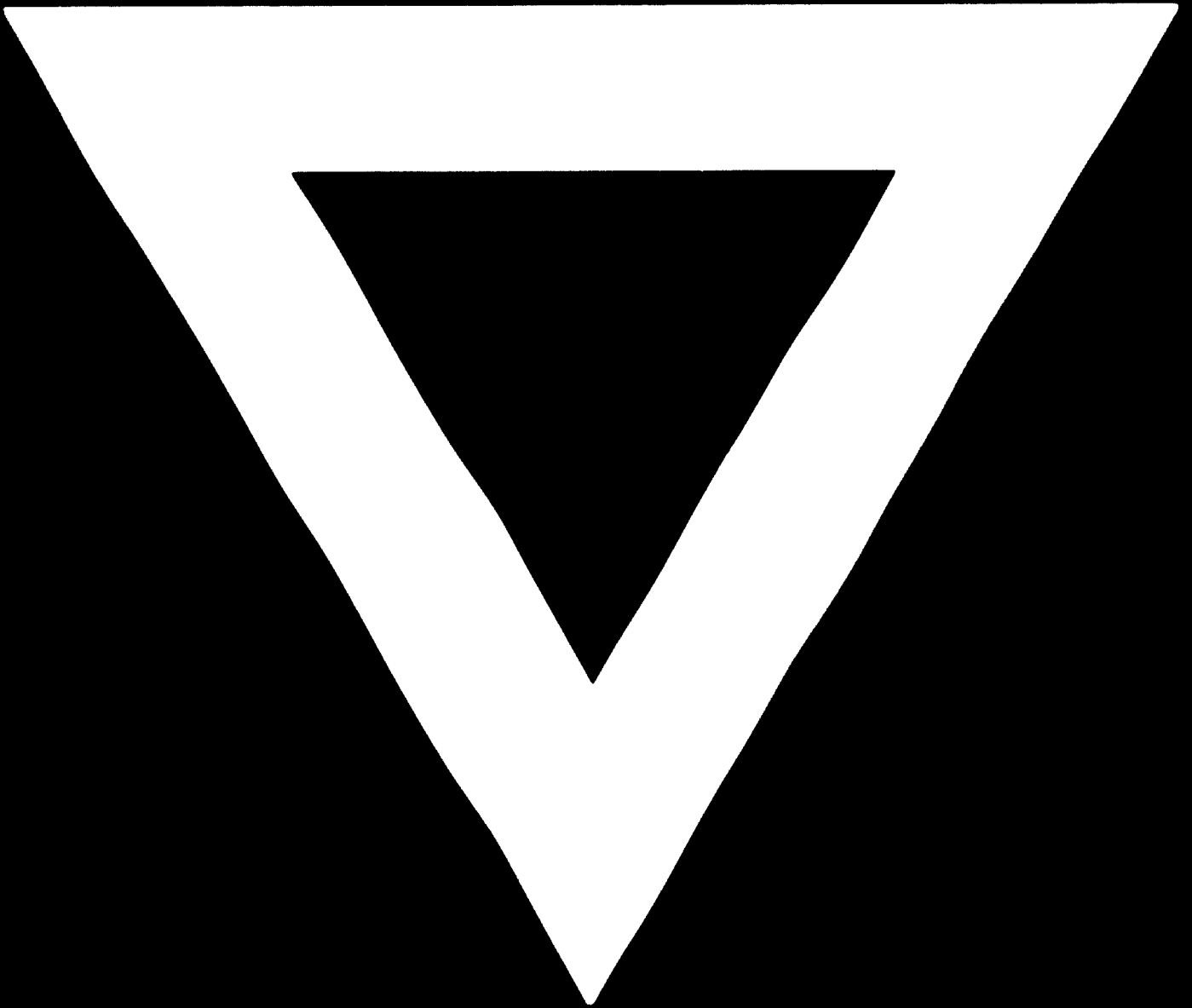
Despite the weak development of the sector in the last decade, the share of the developing countries already exceeds 25 per cent of world production. Therefore, the concept implicit in the Lima Declaration of maximum possible production should be the governing criterion for sectoral development. To achieve this, a radical new approach is needed. Current narrow chauvinistic policies must be overcome if a basis for the harmonious development of the global leather and leather products industries is to be established and if the hurdles that will undoubtedly appear are to be surmounted.

At present, no international organization exists which is competent to liaise between the tanners of the developed and the developing worlds, or which could assist in the rational deployment and harmonious development of the global leather industry. In 1976, the International Council of Tanners (ICT) considered widening its activities to embrace the developing countries' leather sectors. At present, however, ICT membership consists only of some 20 developed countries and three or four developing countries.

Another major shortcoming of international assistance is that nowhere can developing countries obtain, rapidly, unbiased advice relating to project proposals and feasibility studies. Some mechanism must be evolved to fill this void. Given the great differences that exist in the stages of advancement of the developing countries, it may well be that no one harmonious policy is possible - but it is imperative that an international mechanism or platform for the leather sector be established. This mechanism would have the further task of developing, as a matter of priority, a sound sectoral statistical base, the need for which, although long known, has been keenly felt in the preparation of the present study.



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