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**DEVELOPMENT PROGRAMME FOR THE LEATHER-BASED  
INDUSTRIES IN INDIA\***

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## I. INTRODUCTION

*This study evaluates constraints affecting the development of the leather and leather products industries, the characteristics of modern technology and the opportunities of development in situations of cultural interaction. The study uses the Indian leather and leather products industry development and the related development programme as a basis. For balanced and effective development, the paper introduces a planned change concept for development assistance and includes some specific ideas for development opportunity assistance in leather related industries. Special focus has been given to the shoe industry development.*

## II. SET OF INDUSTRIES

The leather and leather products industry can be characterized as a set of industries having its own technologies and types of products. The industry can be broadly divided into three *stages of manufacture*:

- i) Processing of raw hides and skins into semi-finished leather.
- ii) Processing semi-finished leather to finished leather.
- iii) Manufacture of leather footwear and other leather products from finished leather.

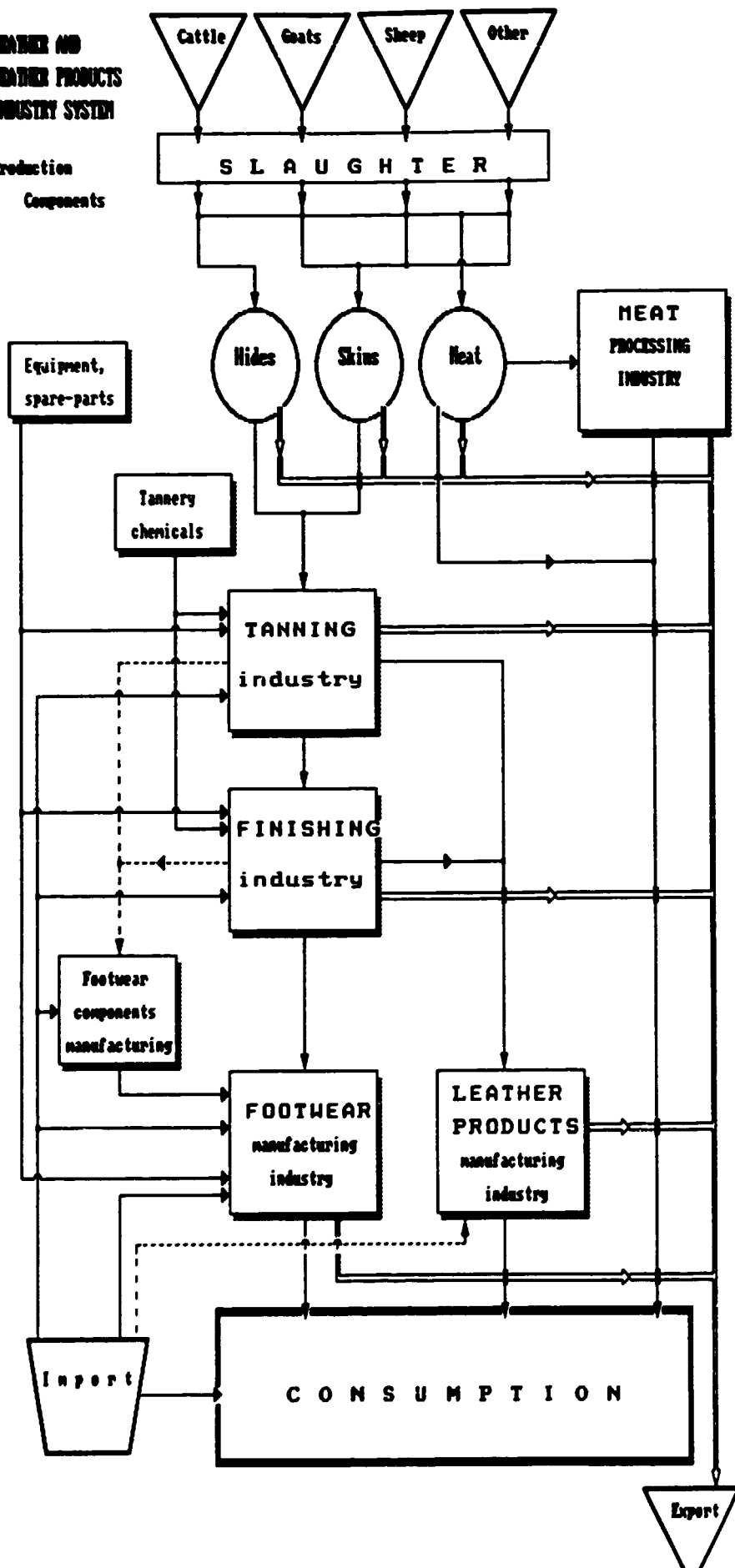
In the first stage of manufacture (i), the product output is a large variety of types of semi-finished leather. From the second stage (ii) the output is types of finished leather, and from the third stage, the output is leather products such as footwear, leather garment, leather gloves, leather goods, leather sporting goods, etc. An overview of the sectoral links and the leather products cycle is given in Fig. 1 and Fig. 2.

Each of these industries are served by large number of auxiliary industries producing:

- a) **semi-finished and finished leather auxiliaries:**
  - mineral and synthetic tanning agents, vegetable tanning extract, fat liquor, casein and resin binders, pigment dispersion, lacquer and lacquer emulsion and finishing auxiliaries, drum dyes, dye solutions;
- b) **footwear auxiliaries:**
  - textile and synthetic upper and lining materials,
  - leather, PVC, rubber, PUR, EVA, etc., soles, heels,
  - leather, cellulose, leather board, non-woven, etc. insoles.
  - toe puffs, shanks, stiffeners/counters, adhesives, and other components,
  - auxiliaries (e.g. threads, nails, reinforcing tapes, laces, buckles, decorations, zip-fasteners, adhesives, polishes, etc. finishing chemicals.
  - shoe lasts, moulds, cutting dies, hand and machine tools,
  - packaging materials and accessories;
- c) **leather goods auxiliaries:**
  - locks, zips, buckles, frames, fasteners, rivets, lining materials, etc.;
- d) **production equipment:**
  - tannery machinery (e.g. wooden drums, fleshing and splitting machines, drying units, shaving and finishing equipment);
  - equipment for leather products manufacturing (clicking presses, sewing machines, equipment for lasting, making and finishing);
  - transporters and conveyers.

**LEATHER AND LEATHER PRODUCTS INDUSTRY SYSTEM**

Production Components



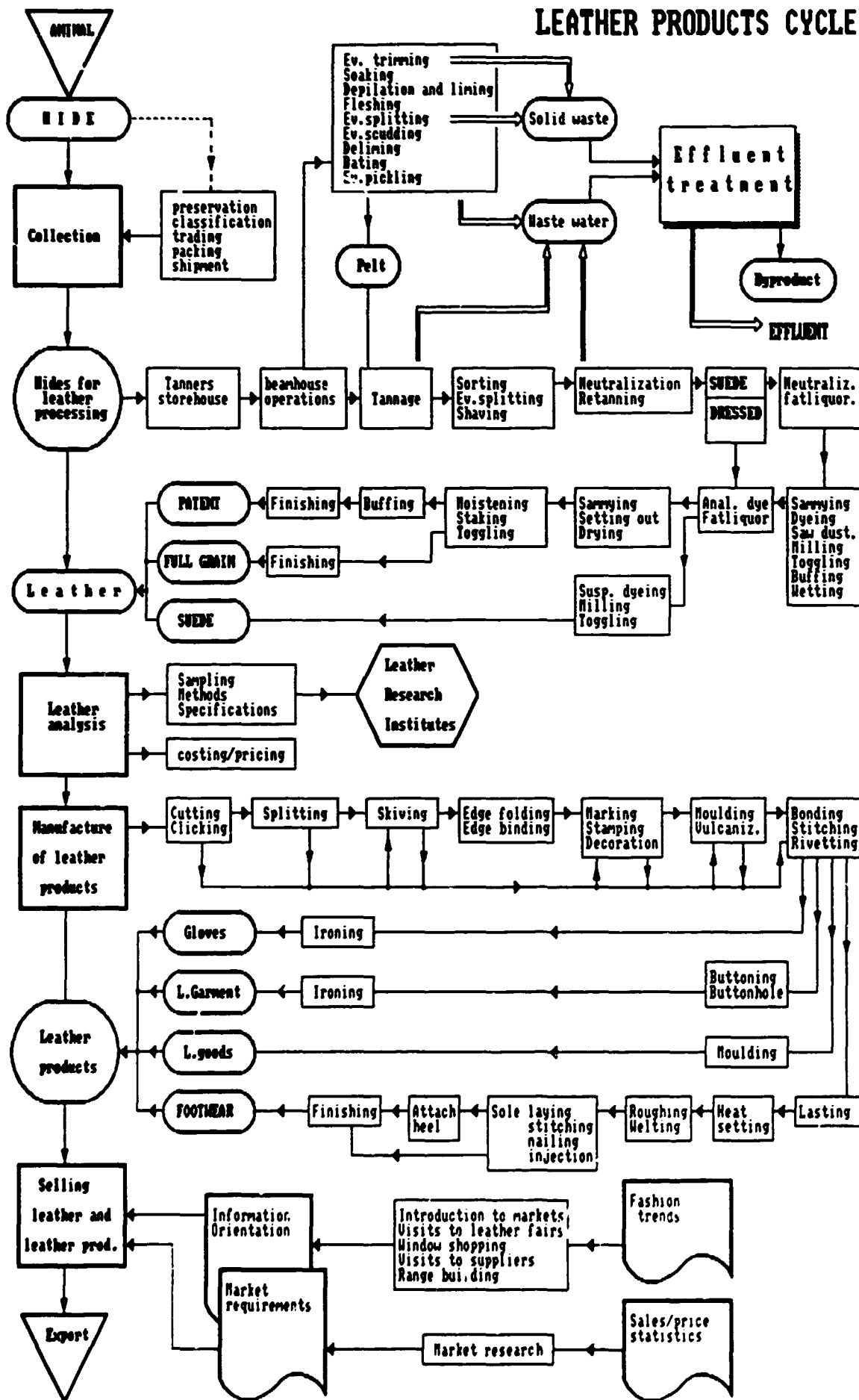
Purchasing	P O L I C I E S
Price	
Standards	

Tariffs	P O L I C I E S
Export	
Import	
For. exch.	
Taxes	

Export	P O L I C I E S
Import	
Exch. rate	
Taxes	

Subsidies	P O L I C I E S
Prices	
Taxes	

# LEATHER PRODUCTS CYCLE



### III. NEED FOR CULTURALLY AND SITUATIONALLY FIT MODELS FOR DEVELOPMENT

There is a need for *situationally fit models* for development. Characteristics of modern technology have an impact on cultures; but cultures and other situations also play a role in how technology is developed and/or implemented.

#### Characteristics of Modern Technology

The *first* set of characteristics of modern technology refers to its complexity. The high level of complexity originates from the need to integrate not merely a number of component parts in products, but also parts that are significantly different in nature and function.

*Secondly*, because of the systemic nature, technical systems frequently exhibit internal systemic complexities, and even when this is not the case, they are almost always intertwined with complex socio-technical and infrastructural support systems. From this systemic nature it follows that single elements of a technological system cannot function efficiently when isolated.

The *third* set of intra-technological characteristics is that the machine - or system - has increasingly come to intervene in human interaction, having both psychological and societal consequences.

A *fourth* feature of modern technology is its tendency towards universality - ubiquity - and rapid global diffusion. This has promoted the demise of barriers between nations and developed global homogenization trends, but also opportunities for "catching-up" within amazingly short time spans.

The systemic nature of modern technology is characterized by the significance of procedural systems. The capability to manage through procedural systems has become a precondition for efficient processing. As this aspect becomes professionalized, there is a spin-off of new and emerging scientific specialties that are truly interdisciplinary, combining social, technical and humanistically based knowledge.

In order to survive in the global economic environment there is a need for various actors to promote technological change. In these development efforts one is up against a problem of handling the enormous complexity and variation found in technological, social and cultural forms. It is the imperative nature of each characteristic, and particularly their integrated, aggregate impact, which presents such formidable barriers to autonomous development and/or implementation of modern technology. Simultaneously these characteristics are themselves undergoing changes which enable newcomers to implement independent approaches in linking the characteristics, and thus challenge the dominance of the existing actors.

#### Culture and Technology

Any society has a basis of knowledge, of concepts through which people can order reality. This basis may be religious beliefs, moral expressions about what is right or wrong, ugly, beautiful, etc. These ideas or deeper concepts which people hold make up a system that is basic for people's ability to understand interact and communicate with each other. Each culture conceives and organizes reality in its own way. A particular culture's organization of reality is rational from its own point of view.

During the last few decades, American and European industries found it hard to understand the concepts of some competitive Japanese industries. It took years before industrialists in the West understood many of the sub-concepts of *Just-In-Time* or *Quick Response* manufacturing connected with *Total Quality Control*. When these sub-concepts - many of them originated in the West - were understood, they did not appear rational, as it needed further effort to understand how the sub-concepts did form the rational whole.



During this learning process, the Japanese invited Westerners to their factories and openly provided the necessary information. However, in this cross-cultural interaction, Westerners were captured by their learned concepts - deep in their minds - which made it difficult even for scholars to classify the reality.

This experience and similar experiences related to enterprise cultures have focused attention on diagnosing one's culture. Today, culture is understood as an active development process in its own right; the cultural context is seen as interacting and, in turn, affecting an on-going cultural reaction to technological and other developments. It is this active evaluatory relation to technology and development that is referred to as cultural critique or cultural/technological critique.

One can discern two interrelated factors in the driving forces of technology - the technological development per se, and the actor's response. It is argued that the forces of technological change and the various responses to this change, generate a dynamic process which is at the core of modern economic growth.

There are variations on how different cultures build up their industrial models, as technology is not received nor is it assimilated without one or the other form of culturally and situationally conditioned response in society. In fact, the human being is both goal and actor, the object and the subject of the total process of development, whether planned or unplanned. For this reason, the contemporary planning ideology gives emphasis to development within; people should be in a position to control their own destiny. The basic argument will be to stress the importance of linking technological development to the cultural context; of finding and implementing culturally and situationally fit models for development.

### Need for Interpersonal Skills

*Management* is defined as a process of working with and through individuals and groups and other resources to accomplish organizational goals. Many of the most critical problems in development are not in the world of things but in the world of people. Changes that take place in people are knowledge changes, changes in attitude, behavior, and group or organization.

Management is the achievement of organizational objectives through leadership. It follows that in discussing effectiveness one must recognize the differences between individual goals, organizational goals, leadership and management. Leadership ensues any time one attempts to influence individual or group behavior, regardless of the reason. Even within an organizational setting, managers may attempt to engage in leadership rather than management since they are trying to accomplish personal goals, not organizational goals. The result may be successful, but from the organization's point of view, ineffective. To be effective, organizations require their management personnel to have interpersonal skills.

Changes in knowledge are the easiest to make, followed by the changes in attitude. Attitude structures differ from knowledge structures in that they are emotionally charged in a positive or negative way. Changes in behavior are significantly more difficult and time consuming than either of the two previous levels. The implementation of group or organizational performance change (cultural change) is perhaps the most difficult and time consuming. This change in small organizations may take three to four years, in larger ones six to seven years: and management is responsible for administering this change.

Naturally, a foreign consultant in a development project has his personal goals and he originates from a different culture, having the ability to organize reality, based on his learned concepts. Even his attempted management, the attempts to have some effect on the behavior of others, having organization's goals in mind, may be based on wrong assumptions of reality in the particular situation... and cultural context. On this understanding, the development situation referred to earlier at the North Arcot District shoe industry was based on the organization of reality by the visiting foreign consultant. During his short visits he may not have been able to identify the core problems. His development suggestions may not fit the situation. The project at North Arcot District, for this reason, will need an organized cultural interaction as a base for diagnosis, development objectives and assistance programmes.

## IV. THE FOOTWEAR INDUSTRY DEVELOPMENT PHENOMENA

It is assumed that the development of the footwear manufacturing environment in the 1990s will be influenced by the following changes.

1. *Increased global competition.* The shoe industry becomes even more international. The industry will have and even greater tendency towards moving from one country to another in search of the competitive edge.
2. *Segmented market becomes more fragmented.* More variety and more unique, good quality products in demand. Fashion and business cycle in most market segments becomes shorter.
3. *Tighter delivery schedules.* Shorter production runs. Customers will be reluctant to take any inventory risks. Flexible and economical production systems. Customers and producers electronically linked to each other.
4. *Need to improve environment,* including working environment, and reduce pollution.
5. *Opportunities of new technology and manufacturing concepts.*
6. *Innovative business concepts.*

There will be a number of emerging technologies available for the shoe industry. The key innovations in the 1990s will be the greater use of information technology and emerging composite/polymer materials as well as concepts like *Just-in-Time (JIT)* or *Quick Response (QR)* manufacturing and business systems, including the *Total Quality Control (TQC)* approach.

The intense competition from imports in the 1980s forced footwear manufacturers in the Western world to turn to all the available means of reducing their costs. They succeeded to some extent. During the last two years the industry has come to realize that concentrating on cost reduction alone will not beat the tide of imports, as the manufacturers of some of the low cost countries are upgrading their products and are attempting to build brands.

Recent studies by SATRA (SHOE AND ALLIED TRADES RESEARCH ASSOCIATION) have shown that assuming one could, by automation, halve both the direct and indirect labour costs - using automated processes - the £10 shoe will still cost approx. £8.40. The maximum cost reduction available by this route, therefore, would be approximately 16 per cent, which is not enough for the price difference between imported and locally produced merchandise. This means that manufacturers in the high cost countries have to seek other competitive factors than cost.<sup>23</sup>

It is generally agreed that the JIT manufacturing concept will be to the advantage of the domestic footwear industry in the West. If locally produced footwear could be delivered to the retailers in smaller batches, more frequently and with shorter delivery times, it would contribute directly to import substitution. The need for retailers to carry large stocks will be reduced. Retailers can, for the same profitability, sell the products with lower "mark ups". It also follows that a happy additional benefit of JIT is faster market response through better forecasting; less idle inventory in the system cuts overall lead time - from raw materials purchasing to shipping of finished goods; marketing can therefore promise deliveries faster, can effect a change in the product mix or quantity faster, and forecast demand better since the forecast horizon is not so far into the future.

## JIT or Quick Response

JIT is a process concept having certain goals and "speeded up" improvement "mechanism" built into the system. The *JIT Cause - Effect Chain*, by cutting lot-size, triggers a chain reaction of benefits - including motivational, quality and plant improvement benefits.

It is typical in the JIT process that one thing leads to another. Committed workers carry their concerns - about defects, bottlenecks, slowdowns, breakdowns, work health and so forth - home with them. In Japan where the concept originates, employee peer groups even go so far as to organize themselves into so-called small group improvement activities (SGIAs); which is Toyota's name for what is also known as quality control circles. With day-to-day fire-fighting responsibilities clearly recognized and accepted by flexible line workers, the executives may sit back and plan strategy. Indeed, all reports are that Japanese executives do just that.

The total quality control concept is part of the JIT concept. TQC may stand alone - or may operate together with just-in-time production. In TQC, all plant personnel are inculcated with the view that quality control is an end in itself. "*Quality at the source*" is the slogan that characterizes the principle; errors, if any, should be caught and corrected at the source. The Japanese attack on bad quality, now over 30 years old, has led to widespread Japanese - and later elsewhere - use of quality control procedures. These range from zealous maintenance of plant cleanliness to use of statistics and fishbone charts showing causes and effects to quality control circles, to habit of improvement, placing responsibility for quality in the hands of the production department (and remove it from the quality control department), to worker authority to halt production lines to correct a quality problem.

The common belief often found in Western and third world industries is to have more of whatever money can buy. Actually, the JIT/TQC message is that one should try to get by with less: less setup time, less inventory, less inspection, less control, less paperwork and computing, less elaborate equipment, less specialization. In some respects, the worker in a JIT/TQC environment is like the craftsman of the pre-mechanized-factory era. Since the shoe industry is an assembly industry, the importance attached by shoe manufacturers to JIT/TQC production presents a formidable JIT/TQC challenge to material and component suppliers. This is particularly painful to suppliers producing soles, heels, etc., shoe components that are tied to shapes and sizes and need tooling (moulds).

Problems of leather supply - including delivery schedules, flexibility, and consistency material - have led some manufacturers to integrate vertically in order to control their own finishing. More often, they are developing closer relationships with just one or two main suppliers to develop the necessary communication and flexibility, and to enable the tanner to maintain the necessary levels of stocks. To meet present requirements for "Quick Response" orders, the supplier of leather is expected to reduce its processing time to 2-3 weeks (from the typical 6-8 week loop) for "Quick Response" orders. Within the industry, an ultimate target of 8-10 days for processing is now seriously considered.

Another method for quick response availability of leather is finishing cut components of leather in the shoe factory. When the colours have been spread on the leather they are cured by the application of UV radiation. This means that crust leather only needs to be kept in store in some colours, ready for final finishing to any colour. The concept claims genuine cost savings when the reduction of stock is borne in mind.

## Automation

Computer software capabilities have increased significantly in recent years. The memory size and speed of computers have risen while hardware costs have plummeted. Many different types of software has become available.

Computer data from a computer aided design (CAD) system, which contains the design details of a shoe style, can be used throughout the manufacturing process. Designs created in one country can be

transmitted to manufacturing facilities on the other side of the world in seconds. In the 1990s there will be further efforts and systems to link the CAD to computer aided manufacturing (CAM). This integration - including sales order processing, production planning and control, etc. - sub-systems, is called computer integrated manufacturing (CIM). Now when computer aided marketing systems emerge, the trade will be heading towards computer integrated business.

## Design and Pre-production Engineering in Footwear

The benefits of CAD, as seen by the industry, are: quicker response to fashion changes, better consistency and quality of pattern, personnel savings, reduced cost because of better engineering, and the potential of linking CAD with CAM.

Some of the important changes likely to occur in the 1990s are:

- greater use of 3D systems in computer aided design,
- moves to more widespread design and styling on the CAD screen,
- increased planning to be done at the pre-production stage, including pattern engineering, capacity planning, process sequence plan and tooling manufacturing schedule,
- NC last making from CAD data; this could have implications on fitting and last design,
- increased use of material utilization and labour costing systems.

Over the past few years increased emphasis has been placed on the importance of good pre-production engineering. Much of the planning, specification and organization should be done at this stage so that the footwear can have a relatively smooth passage through the factory.

## CAD/CAM

Machinery in the JIT environment should offer the manufacturers the following features:

- easy setting
- minimal tooling requirements for different models,
- reduced skill requirements for faster training,
- CAD links.

CAD links have been used to produce graded paper patterns, but the major force over the past few years has been to extend the use of CAD data into other parts of the pre-production and shoe manufacturing processes. CAD data is used to produce interactive lay plans on both leather and synthetics for production computer controlled cutters, such as water-jet cutters. This data is then used to control the path of the cutting head. On computer controlled cutting presses, the data controls the positioning of the press knife.

CAD is also commonly used to generate tool paths for milling out computer stitcher pallets as well as defining the stitch path on the computer stitcher itself.

Current problem for a number of companies using computer stitchers is that misshapen upper parts result in a variable distance between the edge of upper and the stitch path, as the uppers have been cut by press knives. The latest development in computer controlled stitching machines are said to overcome the problem.

Many machinery suppliers have concentrated on CAM developments in the last three to four years and this is likely to continue to derive the full benefits of CAD and computerization. With the continuous development of new software, it is likely that more effective lay planning systems for leather will appear and this will increase the use of computer controlled cutting systems. There are also some sophisticated automatic stitching machines with easier programming systems.

Computerized roughing and cementing machines are already on the market and during the 1990s one will see them more directly linked to 3D CAD systems.

Computers are having inroads in cutting:

- a) *Computer controlled cutting presses.* Material savings are making these systems cost effective. Press cutting, however, requires investment in knives; needs long runs to be economical.
- b) *Computerized tangential knife, water jet, laser and reciprocating knife cutters.* These cutters do not need expensive tooling. Their cost effectiveness is based on material economy. For quick response production, no lead time is needed for tooling, short style runs are possible. In leather cutting, however, clicker is still needed for aiding the computer in layout, but better programmes for layout are expected to be developed.

## Telecommunication

Telecommunications in the footwear industry will be of great importance in the 1990s. With shoemaking becoming increasingly international, electronic data interchange (EDI) is likely to feature prominently at some stage in the shoeman's way of communicating with suppliers and customers around the globe.

Enterprises will be electronically connected with each other. The future of the footwear market would seem to be worldwide footwear sourcing strategy where designs are produced in one country but manufactured in other and transferred by EDI. Not only manufacturers, but some major footwear retailers are now installing quick response systems and if footwear manufacturers wish to sell to them, they will have to have computer links through telecommunications. Designs will be prepared on screen, telephoned through for approval and the patterns then transmitted through the telecommunication link to whichever factory has been selected to manufacture the goods. Patterns and specifications, sales and purchase orders, inventory and capacity information can be transferred, and if automation is in use, production control data for robots and automated equipment is transferred.

## InterCIM's key contribution

SATRA's *InterCIM* Initiative - the bringing together of CAD and machinery suppliers and footwear manufacturers to develop standards for linking CAD systems with CAM machinery - has produced an agreement on three standards covering CAD/CAM and CAD-cutter links. This means that the foundation is laid for shoe manufacturers to be able to link CAD with CAM machinery from different suppliers, knowing that the equipment will be compatible and interchangeable. The early standards are already being used for links between CAD systems and computer controlled stitchers.

## Automated handling and robotics

Over the last few years machinery makers have added automated handling devices to shoe machinery. Examples include automated insole and sole preparation, transfer arms between lasting and heat setting conveyers, automated making lines and the automatic loading and unloading of injection moulding machines.

Robotics loading and unloading the work pallet prior to stitching was recently demonstrated. The use of true robotics, however, has been mainly confined to the roughing and injection moulding operations, but a project being sponsored by the French Footwear Manufacturers Federation and partly funded by the EEC under the BRITE project, the objectives of which are:

- to reduce work in progress
- to reduce batch size to five pairs

- to eliminate cutting knives
- to automate preparation and closing operations where possible
- to make a system suitable for small and medium businesses.

Presently these aims are achieved by automatic removal of cut pieces after water jet cutting followed by precise placing of the components to allow automatic feeding into closing room operations.

### Group and Flexible Working

A significant benefit which has been found by using rinks in lasting and making rooms is that employees like the concept of working in teams: they feel more involved. Companies currently installing JIT manufacturing systems consider that it will make the factories more interesting places for people to work in.

### Computer simulation

Computer simulation is a management tool for improving existing processes and work-flow. It will undoubtedly make a large contribution to the "factory of the future". A whole day's production can be displayed during a relatively short time with the simulation models running up to 100 times real speed. Potential bottlenecks and inefficiencies can be highlighted, enabling management to make improvements to production methods.

### Materials

The possibility of a breakthrough in the near future in the development of new synthetic substitute shoe upper and lining materials cannot be ruled out. The new generation of poromerics from Japan, if it lives up to its promises, could pose a real threat to the use of leather footwear. The new type of material are now being used in trial quantities in Italy and elsewhere. It is claimed that this could be used to replace leather in men's uppers. The manufacturers of these materials, for example, are now marketing two kinds of synthetic leather with a texture similar to real leather. This is manufactured by composite kneading of ultra-fine powdered collagen fibres, vinyl chloride resin and urethane, in combination with a new special leather processing technology. The company claims its product has qualities previously unique to natural leather: texture, colour, moisture absorbency and radiativity are maintained, while durability and workability of plastics is added.

Whether or not such a breakthrough occurs in synthetics for shoe uppers, one can be confident that advances in synthetics will continue to reduce the proportion of leather used in shoes, in particular in soles, socks and linings. Synthetic materials are easier to work with in the shoe factory, especially with rapid, automated production systems, and involve less waste.

Another area in which technical development is likely to be significant is in the upgrading of low quality leather or splits with a grained surface coating. There is a water-based PU emulsion film on the market. It is said to be ideal for women's shoes and sandals as it is further developed for use in men's shoes. Shoe makers are also showing interest in the development of a permeable, micro-porous surface coating for leather which not only confers desirable characteristics such as scuff resistance but also retains some of the leather substrate's ability to transmit water vapour.

### Need to Link the Technological Development with the Situation

The path of technological progress, particularly in an industry such as footwear, or for that matter in other leather products, is difficult to predict. One point is certain. Technology developments to assist manufacturing will increase but each company, to compete successfully, will need to embrace them as part

of their carefully planned overall business concept, strategy. Companies (or groups of companies) must develop an operational business plan which will embrace factors such as superior quality, professional marketing, good product design, high level of managerial skill and staff development. The immediate, situationally and culturally fit model(s) for development appropriate in another cluster, like in the one of the North Arcot District shoe industry, will certainly need a different approach than in the artisan cluster.

The systemic nature of modern technology cannot be understood or applied without learning the concepts and details of the procedural systems of the technology. Alone the JIT/TQC implementation using conventional technology, as first Japan and later the West have found, needs large scale, continuous training on all levels and functions of the organizations.

Many aspects in the technological as well as trade development are of imperative nature. Quick response needs of the market will create JIT and related high-tech implementation needs. Increasing labour costs - also the case in developing countries - and decreasing investment costs of modern technology will gradually make it viable. Some investments will be imperative for enterprises to stay in business. However, not all investments will be for computer hardware or software. Much of the investment will be needed in the "soft side", in concepts and systems build-up, in the learning process.

For example, a cluster of thriving artisan shoe manufacturers - let us say in Bombay - already exporting through middle-men, may need to organize new telecommunication links with customers. Some machinery, like traditional splitting machines or even computer controlled water-jet cutters for cutting economy, could be installed in the facility centre(s), to serve the artisans. However, the artisans, who are still operating manually, in order to survive in the export environment, will also need other aspects in their quick response environment; quick response/JIT shoe materials and components industries in the cluster, quick response design service, quick response customs, new enterprise registration and other government services, and financial services, quick response government development support forms, as well as quick response, dynamic training and consulting services for the emerging needs.

## V. NEED FOR A PLANNED CHANGE PROCESS

### Need for Development

*"Transfer of technology"* and *"transfer of knowledge"* have become one of the most central concepts in development co-operation between industrially developed and less developed countries. Sometimes it is not understood that the process in question does not involve merely a "package" of structures, skills and knowledge which can simply be moved to the country. In development situations there are factors which must be developed through learning, factors which are just not "given". Many of these factors tie to culture, such as a person's conception of himself as a social being, and its effects on the organization of work.

*"Transfer"* denotes a unidirectional process whereby one party owns the knowledge and the other party receives it. A less egocentric approach would have acknowledge other systems of knowledge. Any process in which learning takes place is one of mutual learning. The expression "exchange of knowledge" for mutually agreed goals and appropriate approaches would be a more fitting term. This is particularly important in conditions in which learning takes place within a culture contact situation like in assistance projects.

The effects of the impact of technology on a society may be generally acclaimed, but they may also be opposed - and acclamation and protest can have quite different social carriers as their main advocates. Invariably, in the course of its cultural appropriation in a given society, technology introduces problems of a social or cultural nature.

In the past, economic development was thought possible without having to interfere with people's cultures. If socio-cultural factors were at all relevant, they were seen as obstacles to change, people having conservative ideology, people not being "mature". Today the planning ideology is not that developing countries should opt for somebody else's models and process of development, but rather, there should be development within. This implies that development should be based on what is there, on existing socio-cultural structures, and that there is a need to learn and understand these structures from the start. The same applies to structures of enterprise cultures as technology is not received nor is it assimilated without one or the other form of culturally conditioned response in the receiving enterprise or its part.

It has been observed that competitive advantages in the world are "in the air" rather than on the ground. They are based on attitudes rather than natural assets. Britain's passion for gardening - leading producer of gardening tools. Italy's passion for style - makes Italy a centre for design excellence. Once competitive advantage emerges, it generates various kinds of infrastructure: suppliers, complementary industries and also research.

It is argued that the forces of technological change and the various responses to this change, together generate a dynamic process which is at the core of modern economic growth. For needed development one's aim should be to understand the society (enterprise, cluster of enterprises, region, etc.) on its own premises. The place to start should be to aim at development from within the society and self-realization for the people. Competitive advantages could be found and developed in the process.

As stated earlier, not only technology but also culture can be seen as the development object in its own right. The basic argument will be to stress the importance of linking technology related development policies and their implementation to the socio-cultural and situational context through the exchange of knowledge and ideas. The basic problem is to find models for development for achieving the situationally appropriate linkages.



## Process Consulting

Some development assistance projects - assisting industries or other organizations - tend to face a betrayal of purpose through power struggles, intrigues, self-seeking attitudes, lack of confidence, lack of public accountability, or ineffective participation in decision making. Energy and time for these development projects are consumed by trying to sort out the problems. Even foreign consultants may be involved in this behavior, rather than directing energy for establishment of mutually agreed goals and approaches. A consultant is a specialist in his/her field, but may not have been trained as suitable models for development. The frustration in the new situation that the expert finds hard to cope with, may lead to this type of behavior and subsequently is a vicious circle.

Another problem frequently relates to an overregulated economy in aid receiving countries. The "efficiency" of industries, public or private, in these countries is no more than myth. Businessmen with influence and good connections are innovative entrepreneurs who prefer to make profits by obtaining various kinds of favours and privileges from the government and not through efficiency. Government owned enterprises may not even be profitable and are kept running by government support. The result of these policies is that no immediate need for change is felt by the decision makers. Development ideas brought in by the project members - both foreign and local - are "accepted", but because of no real situationally felt need for change, active commitment is hard to find.

The third problem faced is that many of the economic actors, not belonging to the formal sector, have set up their businesses or enterprises outside the formal sector to avoid the set of government regulations. Much entrepreneurship and potential is found in this sector, but at times, they tend to be forgotten and left out from the development projects and related resources. As they are forgotten, they are linked in the development goals and strategy, although the input/output ratio of development results could be very favourable from the national economic point of view.

The fourth problem is related to the lack of a consensual decision-making process in the society. This has resulted in virtual failures of development projects because of the lack of coherence with crucial elements of the cultural context. For instance, in some countries the contradiction which exist between the central public authorities and a majority of firms or groups in society seems to undermine the possibilities for successful formulation and implementation of long-term development strategies.

The human resources in a cultural group consists of the local knowledge, skills, motivation, capital and a certain type of organization. The local organization has developed to provide solutions to various needs in the population. It has been developed and is being maintained through the behavior of the people. They have experienced that certain solutions work and others do not, so they will systematically channel their choices in the direction of what has been proved to work. For this reason, in both harnessing and generating of economic resources, a need from within must be felt, and this must be appreciated in light of direct involvement by the people concerned themselves. One of the core problems in a development situation is to find a model for development, appropriate in that particular situation, that aids in generating a "felt need" for change within the participants.

Organizations are complex social systems. Development assistance projects or programmes are also complex because there tend to be many actors, individuals and clients and interested groups - formal and informal - taking part in or influencing the work. The question is, how an organization and projects should be designed to foster relationships and common objectives between the various subgroups within them.

An organization and project (which is also an organization) cannot function unless its members consent to its operating system, and that this consent depends upon parties upholding the psychological contract between them. Frequently people identify with subunits, their self-esteem begins to be tied to its performance, and it becomes increasingly difficult for them to understand and empathize with the problems of other units or those of the organization or project as a whole. Increasingly they work for their own unit and become disparate or hostile to the other groups. An important part of the psychological contract, possibly the part that most determines the day-to-day behavior, consists of subgroup norms. Ultimately, person's basic sense of identity derives largely from face-to-face contacts with members of a subgroups rather

than from formal organizational rules or goals. Achieving greater integration, therefore, involves not only rational design of organization or project, but also psychological procedures to improve communication and mutual understanding among subgroups within the organization or project.

From technological imperative point of view, it is becoming increasingly clear that an organization's or project's health and effectiveness will depend ultimately upon its ability to diagnose, not only the "external" factors, but also its own behavior and problems and to develop its own solutions. The agents of planned change will necessarily be key managerial personnel, and the individuals will be required to take systems view of organizations, to diagnose the complexities of organizational problems, to utilize outside resources - when appropriate - to aid in the diagnoses and intervention, and to educate others to do so within the organization. All organizations face the problem of how to develop such attitudes and skills in their managers.

Behavior is only partially determined by whatever inner needs or motives we bring with us as members of a biological species, a far greater determinant is our learned motives and responses, which reflect our culture, our family situation, our socio-economic background, and the actual here-and-now forces within any given situation. In other words, our motives and needs are largely determined by our perceptions of the situation we find ourselves in, and those perceptions are themselves largely determined by prior learning. The question is, by who's eyes one is analyzing the situation. Equally, a foreign consultant has learned his inner assumptions in an other cultural context. By who's eyes is he analyzing the situation. For this reason, for any effective work to occur, there must be a certain degree of consensus on goals, basic values, and on a medium of communication. If personal backgrounds, values, or status differentials prevent such consensus or communication, the group cannot perform well.

Probably the most important dynamic factor influencing the integration of individual and organizational needs is the degree to which leader members develop sensitivity and skill in managing group process. For example, leaders and members need to learn:

- a) how difficult it is to really listen to another person and to empathize with him or her;
- b) how lack of respect and mistrust can arise from failure to listen;
- c) how in early life of the group, members are likely to be preoccupied with individual needs for identity, security, attention and status, and thus fail to be able to pay attention to the needs of others;
- d) how preoccupation with the emotional needs early in the life of the group makes it very difficult to work constructively on a formal task;
- e) how premature structuring of the group or premature leader pressure for group output can lead to shallow solutions because the group is not psychologically prepared to work on the task;
- f) how group task and group maintenance factors have to be balanced in the life of the group for optimum task performance; and
- e) how different decision-making styles, such as voting or seeking consensus, create more or less effective task solutions.

These and many other kinds of problems are chronic to any group, but members and leaders are often unaware of the problem and of the fact that through training such problems can be overcome.

To be effective managers of change, managers - or for that matter consultants - must have more than good diagnostic skills. Once they have analyzed the demands of their environment, they must be able to adapt their leadership style to fit these demands and develop the means to change some or all of the other situational variables. These skills, it has been documented, can be improved by attending leadership training, by learning to use the *Situational Leadership Model* developed.

As managers are learning more about groups and individuals and how they work, they are also learning how to provide training opportunities within the context of the work organization itself by having longer, structured off-site meetings, group-process-oriented consultants attending key meetings, and the likes. What has been found to make such activities successful is the focus on task process - the information

gathering, problem solving and decision making functions - and the avoidance of the interpersonal issues except where there is clear evidence that such issues are hindering effective work performance.

Acknowledging that every organization system has multiple functions and also exist within an environment that provides unpredictable inputs, a system's effectiveness can be defined as its capacity to survive, adapt, maintain itself and grow, regardless of the particular function it fulfills. For this an organization (as well as a project) needs a well-functioning adaptive coping cycle:

1. Sensing a change in some part of the internal or external environment.
2. Importing the relevant information about change into those parts of the organization that can act upon it, and digesting the implications of that information.
3. Innovating and changing business and manufacturing processes inside the organization according to the information obtained and creative ideas produced, while reducing or managing undesired side effects in related systems, and stabilizing the change.
4. Exporting new products and services, which are more in line with the originally perceived changes or opportunities in the environment.
5. Obtaining feedback on the success of the change through further sensing of the change of the external environment and the degree of integration of the internal environment.

This organization coping can be a planned change process. The following assumptions underlie the model:

1. Any change process involves not only learning something new, but unlearning something that is already present and possibly well-integrated into the personality and the social relationship of the individual.
2. No change will occur unless there is a motivation to change, and if motivation to change is not already present, the induction of that motivation is often the most difficult part of the change process.
3. Organizational changes such as new structures, processes, reward systems and so on occur only through individual changes in key members of the organization; hence organizational change is always mediated through individual changes.
4. Most adult change involves attitudes, values and self-images, and the unlearning of present responses in these areas is initially inherently painful and threatening.
5. Change is a multi-stage cycle similar to the adaptive coping cycle previously reviewed, and all stages must be negotiated somehow or other before a stable change can be said to have taken place.

In the JIT/TQC approach mentioned earlier, Japanese have included processes that support the adaptive coping and are in accordance with the planned process model. These concepts are now widely used in the world. There are also a number of techniques for various situations, developed and used by consultants, to serve the same objectives. These are called process consulting methods for creating multi-stage, participative change cycles. Managers and consultants, trained to use these methods, are in a position to act as change agents by structured but flexible and innovative ways. The strategy is to involve the individuals and groups directly in helping to create, select or formalize the new methods for obtaining the desired goals.

## The Indian Leather Industry Programme and Process Consulting

If we accept in the forthcoming *Integrated Indian Leather-based Industry Development Programme*, the assumption that individuals, groups and organizations as a whole are best thought of as complex dynamic systems, and if we accept the second assumption that "health" or effectiveness must ultimately be defined by some kind of ability to cope effectively, it follows that the role of the change agents, managers and consultants, is to help the system improve in its inherent capacity to cope. This assumption leads to the introduction of a process consulting concept, in which the role of the managers and consultants is to help the organization to diagnose itself, to select its own coping responses, and to determine its own progress.

Assistance consultants of the *Integrated Leather-based Industry Development Programme*, in addition to giving information, should help the organization that takes part in the programme surface inconsistent goals and strategies. It should not be the role of the consultants to influence the project or organizations toward one or the other of those goals per se, because clients basically want to promote a self-image of being able to help themselves; only the client knows what kind of remedial action will ultimately work; and the skills of self-diagnosis and coping are the most important things to learn.

For the efficiency of the *Indian Leather-based Industry Development Programme*, the projects included in the programme, as well as other leather related foreign assistance projects, will have to be co-ordinated to avoid waste of resources. The process consulting approach can be used as a "tool" in the co-ordination.

Furthermore, the *Integrated Programme* could aim at creating a "snowball" effect, in which each project will help to establish further projects throughout the Indian subcontinent, using nationals as consultants. These additional projects could be run in research, training and other institutes, in enterprises that are not mentioned in the programme document - and each of these "snowballs" may start further leather related "snowballs" rolling. For these aims, Process Consulting Concept is a suitable frame model for development, as its underlying concept is "development from within" and the involvement of local personnel as change-agents offers an opportunity to have large development results by comparatively small foreign development assistance input.

One of the first steps in the process will be to identify the changes in the business and other environment, and create and agree on a concept of the future Indian leather related industries. This step could be followed by more detailed concepts of each industry and project, then working out the opportunities and development gaps as well as related development goals and strategies, and to agree on action programmes and quantified results. The programmes will include feed-back cycles and jealous but flexible sticking to the objectives, resource allocation and time tables agreed. The crucial part of the process is to involve all the relevant actors, not only from the industry and assistance organizations, but also the government agencies, research and training centres, etc.

The concept presented in Annex I could serve as an example as how an intuitive concept could be constructed.

## VI. THE INDIAN LEATHER AND LEATHER PRODUCTS INDUSTRIES

### General

The population of India is estimated at 820 million and is currently increasing at an annual rate of 1.8 per cent. Employment generation, therefore, is a very important task for the Government and the leather sector offers much potential in this respect.

India is far better off than it was in 1985 because per capita income, adjusted for inflation, has grown 3.7% annually. That is what one is seeing in the middle-class consumer boom. All consumer products categories have been growing at a double-digit rate. The "green revolution" of better farming methods has increased rural income, and Indians living abroad have been sending more money home.<sup>19</sup>

The leather and leather products industry has grown rapidly during the 7th Five Year Plan period. It is estimated that the value of the industry's output has grown from Rs.16,700 million in 1985-86 to at least 40,000 million. The sharp increase in the value of exports from Rs.5,840 million in 1984-85 to 18,000 million in 1989-90 has been the major factor accounting for this growth rate. It can be seen that the annual rate of growth of exports for this period has been an average of 42%, placing leather and leather products manufacturers fourth in rank amongst commodity exports from India. Although the rate of growth of the domestic sector cannot be verified due to lack of authentic data, it is estimated that this sector has been growing only at the rate of 16% per annum in value terms.<sup>1</sup>

This sector provides employment for around 1.4 million persons mainly from the weaker section of society, of which nearly 600,000 persons are employed in flaying and recovery of hides and skins. Over 700,000 people are employed in the cottage and small scale industries, which are engaged in the tanning and finishing of leather and in the production of leather footwear and other leather products. Less than 100,000 individuals are employed in the medium-and large-scale sector, mostly in footwear units. It is estimated that during the 7th Plan period, modern factory employment has increased by at least 50,000, especially in the export sector. This labour - both skilled and unskilled - is comparatively inexpensive. However, labour productivity is generally low<sup>1</sup>.

While the industry is predominantly concentrated in the private sector, a small share of it is occupied by central and state public sector undertakings.

### Government policy

The *Working Group for the Eight Five-Year Plan*<sup>1</sup> has produced projections for additional employment generation (also showing additional capacity) during the plan period (Table 1).

According to the recent UNIDO Industrial Development Review on India, there has been a boom in exports of leather and leather products from India with a distinct change in their pattern. Export earnings stood at Rs 988 million: in 1971/72, when semi-finished leather had a share of Rs 860 million or 87.4 per cent, finished products accounting for only Rs 36 million or 3.6 per cent, footwear and footwear components Rs 86 million or 8.7 per cent and other products Rs 6 million or 0.6 per cent. In 1979/80, aggregate exports had increased to Rs 4,244 million. The share of semi-finished leather declined to Rs 886 million or 20.9 per cent while that of finished leather had improved to Rs 2,660 million or 62.7 per cent. Footwear and other components accounted for Rs 476 million or 11.2 per cent and other products Rs 222 million or 5.2 per cent. By the end of the Sixth Plan (1984/85) total exports had risen to Rs 5,837 million, with the value of semi-finished leather at Rs 492 million (8.4 per cent), finished leather Rs 3,085 million (52.9 per cent), footwear and footwear components Rs 1,596 (27.3 per cent) and other products Rs 665 million (11.4 per cent).

Table 1

**ADDITIONAL EMPLOYMENT GENERATION DURING THE VIII-PLAN \***

No. items	additional capacity for the VIII plan (million)	no. of viable units	produc-tion man-agers	super-visor	shop floor work- pers- onnel	machine opera- tors	machine maint- enance	designer/ pattern makers	lab. analyst/ chemist	TOTAL
1. Closed shoes	118 pairs	394	788	7,880	78,000	19,700	3,940	1,970	-	113,078
2. Shoe uppers	24 pairs	27	54	540	5,400	-	-	54	-	6,048
3. Leather garments	1.25 Mpcs	83	166	664	4,150	-	166	332	-	5,478
4. Leather goods	28.75 Mpcs	320	640	2560	32,000	-	960	1,280	-	37,440
5. Finished leather:										
hides	115 sqft.	77	129	287	6,450	-	516	-	129	7,611
skins	125 sqft.	52								
		953	1,777	12,031	126,800	19,700	5,582	3,636	129	169,655

\* For the purpose of assessment of additional manpower requirements, formulae evolved by the Council for Leather Exports (CLE) and the Central Leather Research Institute (CLRI) have been adopted. These formulae assume a minimum capacity of the smallest viable unit for each product group and the corresponding complement of workman and supervisory levels necessary to run that unit on the basis of 80 per cent utilization capacity.

In the Seventh Plan period (1985/86-89/90), there was a boom in the volume and value of exports, and the unit value increased substantially because of greater emphasis on finished products. Exports have more than doubled between 1984/85 and 1987/88 to Rs 12,448.6 million, the share of the four groups being semi-finished leather Rs 500 million (4.0 per cent), finished leather Rs 4,400 million (35.4 per cent), footwear and components Rs 4,500 million (36.2 per cent) and other products Rs 3,048 million (24.5 per cent). Thus the target of Rs 11,500 million for 1989/90 - the terminal year of the Seventh Plan - had already been exceeded in 1987/88 and it is expected that these exports will rise to Rs 60,000 million by the year 2000.

The world market for leather and leather goods has grown rapidly. India's share of the shoe market has, however, been limited, as shown in Table 2 of the report of the working group.

Table 2

**ESTIMATE GLOBAL IMPORT AND INDIA'S EXPORT (1987)**  
(Rs in Crores - 1 Crore=10 million)

Products	World	India	Share (%)
Leather	6,000	558	9.20
Footwear	23,625	129	0.54
Footwear components	1,875	323	17.22
Leather garments	6,000	105	1.75
Other leather goods	9,000	130	1.44
Total	46,500	1,245	2.67

The Report of the Working Group<sup>1</sup> gives the following export targets for the *Eight Plan* (Tables 3 and 4):

Table 3

**PROPOSED TARGETS FOR EXPORT FOR EIGHTH FIVE-YEAR PLAN**  
(Rs in million)

	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95
1. Semi-finished leather	400.00	-	-	-	-	-
2. Finished leather	6,000.00	6,300.00	6,620.00	6,950.00	7,200.00	7,500.00
3. Footwear (20% p.a. rate of growth)	2,500.00	3,000.00	3,600.00	4,320.00	5,184.00	6,220.00
4. Shoe uppers/footwear components (15% p.a. growth rate)	5,100.00	5,865.00	6,745.00	7,756.00	8,920.00	10,258.00
5. Leather garments (15% p.a. rate of growth)	1,600.00	1,840.00	2,116.00	2,433.00	2,798.00	3,218.00
6. Leather goods	2,400.00	3,000.00	3,750.00	4,690.00	5,860.00	7,320.00
	18,000.00	20,005.00	22,831.00	26,149.00	29,962.00	34,516.00

Table 4

**QUANTITATIVE TARGETS FOR EXPORT OF LEATHER AND LEATHER GOODS**  
**IN THE EIGHTH FIVE-YEAR PLAN**  
(In million pairs or pieces)

	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95
<b>FOOTWEAR</b>						
a) Fashion shoes (closed)	6.95 prs ₹Rs 180/pr	8.33 prs ₹Rs 180/pr	9.47 prs ₹Rs 190/pr	11.5 prs ₹Rs 200/pr	13.3 prs ₹Rs 210/pr	15m ₹Rs 220/pr
b) Ladies shoes, horachis, ballerinas etc.	12.95 prs ₹Rs 85/pr	15.30 prs ₹Rs 85/pr	17.65 prs ₹Rs 85/pr	18.9 prs ₹Rs 90/pr	22.0 prs ₹Rs 95/pr	25m ₹Rs 100/pr
c) Others	2.35 prs ₹Rs 85/pr	2.35 prs ₹Rs 85/pr	3.50 prs ₹Rs 85/pr	3.5 prs ₹Rs 90/pr	4.0 prs ₹Rs 95/pr	5m ₹Rs 100/pr
<b>SHOE UPPERS</b>						
	12.75 prs ₹Rs 150/pr	18.92 prs ₹Rs 155/pr	21.00 prs ₹Rs 160/pr	23.50 prs ₹Rs 165/pr	25.50 prs ₹Rs 175/pr	27.75 prs ₹Rs 185/pr
	18.00 prs ₹Rs 120/pr	18.77 prs ₹Rs 125/pr	21.00 prs ₹Rs 130/pr	22.20 prs ₹Rs 140/pr	24.00 prs ₹Rs 150/pr	25.60 prs ₹Rs 160/pr
	10.00 prs ₹Rs 100/pr	5.86 prs ₹Rs 100/pr	6.56 prs ₹Rs 105/pr	7.40 prs ₹Rs 105/pr	8.50 prs ₹Rs 105/pr	9.3 prs ₹Rs 100/pr
<b>GARMENTS</b>						
	1.75 pcs ₹Rs 910/-	1.98 pcs ₹Rs 930/-	2.23 pcs ₹Rs 950/-	2.51 pcs ₹Rs 970/-	2.80 pcs ₹Rs 1000/-	3.06 pcs ₹Rs 1050/-
<b>LEATHER GOODS ASSORTED</b>						
	24.00 pcs ₹Rs 100/-	27.27 pcs ₹Rs 110/-	28.85 pcs ₹Rs 130/-	31.27 pcs ₹Rs 150/-	36.62 pcs ₹Rs 160/-	40.66 pcs ₹Rs 180/-

The targets are ambitious. Many problems will have to be overcome before the Indian leather and leather products industry can increase its share in the world market.

## Background

### 1. Livestock

India claims first position among livestock holding countries in the world. However, in view of the fact that the livestock population is increasing only at a rate of 1.2% per annum, the availability of indigenous hides and skins has been almost stagnant. Added to this, 9 million bovine hides and 9 million ovine skins are lost because the carcasses are not flayed. Thus, availability of raw material

has become one of the major constraints of growth. This has focused attitudes in the society to find ways to open this bottleneck which is presently already being experienced. India requires, as development imperative, both the national policy on slaughtering, in order to reduce indiscriminate slaughter, and a livestock building programme. There is also a pressing need for a better carcass recovery system, improvements in slaughtering, flaying and skin preservation practices, and an improved market system for raw materials. Tanneries need to adopt modern ways to increase the area yield of leather in leather manufacture and ways, such as polyurethan coating, to improve the quality of low grade leather and for use of splits to make artificial "grain" surfaces. There also appears to be possibilities of improving leather utilization in the clicking operation of shoe and leather goods production.

## 2. Leather Manufacture

There are approximately 1,080 tanneries in India<sup>1</sup>. Tanneries employ over a quarter million people and are located principally in Tamil Nadu (60%), Calcutta (25%), with other large concentrations in Kanpur, Bombay, Bangalore and Julundur<sup>17</sup>. Apart from under-utilization of installed capacity due to raw material supply problems and inefficiency, the most acute problem is the disposal of effluent and pollution of the water table. Furthermore, tanneries will increasingly face the ever tougher delivery requirements of the quick-response market environment and the need to upgrade quality assurance in many of the tanneries.

## 3. Pollution Control

Growing awareness of the ecological impact of industrialization has urged India to adopt new laws and regulations to limit the damages. Technological know-how to control pollution is developed and widely applied in industrialized countries, however, has disseminated only to a limited extent in India's leather industry. Approximately 75 per cent of the tanneries fall into the small-scale sector category and they are usually in clusters where common primary or complex treatment plants could solve the problem. An alternative might be a combination of common, primary tannery effluent treatment with municipality treatment schemes. At the same time, scattered, small-scale tanneries should introduce special pollution control processes. Today most of the small-scale tanneries do not practice any effluent treatment methods.

## 4. Shoe Uppers

Production of stitched leather shoe uppers in 1984-85 was 1 million pairs, by 1987-88 production had already reached 27 million pairs. Exports of uppers were valued at Rs 3,238 million in that year, a 34% increase on the previous year.<sup>17</sup> (More about shoe upper manufacturing problems and related development opportunities can be found in Chapter V).

## 5. Leather Footwear

Leather footwear production in 1985-86 was about 300 million pairs and the projection for 1989-90 was 440 million pairs. The value of leather footwear exports in 1987-88 was Rs 1,280 million, 59% up on the previous year's figure of Rs 804 million, which itself was up 143% on the previous year. Export pairage in 1987-88 was 15 million and the main markets were Canada, the USA and the EEC.<sup>17</sup>

Of footwear production, only 15% is fully mechanized and most of this production is based in Madras, Calcutta, Bombay and Delhi. The rest of the production is artisan type, the largest concentration being Agra. Altogether the industry employs about half a million people<sup>17</sup>.



India's export of shoes is mainly based on customer specification. The manufacturers so far have not been able to create their own export brands. In fact, much of the modern marketing and design skills are lacking, although there are shoe manufacturers on their way to penetrating some of the market segments with their own brands and designs.

It is worth noting that there are not only mechanized shoe manufacturers, but some of the less mechanized artisan manufacturers that are manufacturing well made footwear for export. The high-tech phenomena in these artisan workshops seem to be starting from a colour photocopier and telefax for quick-response marketing communication. What is more, they claim to be more profitable than some of the larger mechanized units. The export marketing of small shoe manufacturers is mainly done through middlemen.

India's shoe manufacturers lack a competitive edge based on domestic competition. Competition is the basis of excellence; which is more easily generated in a domestic context; this means, companies need demanding customers, as the standards imposed by the toughest customers become a norm. India's home market is less demanding than the main shoe importing markets. As a result, many of the India's firms that begin to export are unconsciously spoiling their image and the image of the whole industry, by not being accustomed to the tough demand standards of the export markets. The present image profile, according to some exporters, include the following factors: "the Indian products and given services being inconsistent, lack of time sense, prototype and subsequent samples do not match, confirmed prices do not match with the price told, the shipping cargo can be laced to any vessel, shrinkage of rubbers, shoes are not pairs, sole bond open in wear, finishing methods give plastic look, etc." The established exporters, as well as the newcomers, are suffering from this conflict of business cultures and lack of knowledge and skills of the export newcomers.

In some Indian districts, the emerging shoe manufacturers (also the leather goods manufacturers) are experiencing lack of market outlets. The middle-man system for distribution, as well as for supplying raw materials and components, has not developed up to the wishes of the artisan manufacturers. The artisans are, for this reason, utilizing their capacity to low efficiency.

As the world shoe trade is rapidly moving towards ever more segmented, quick-response, just-in-time marketing and production, the infancy of India's footwear related auxiliary industries causes a serious impediment to the export efforts. Another impediment is the infancy of services available for general market and fashion information, design and applied technological research with extension services, as well as consultant type of services in planning, information, controlling, automation, productivity, etc. systems. Modern science based, leadership and group process models have hardly been adopted in the industry.

## 6. Leather Garments

Exports for leather garments have escalated in recent years. In 1984-85 about 200,000 garments were exported and the projected figure for 1989-90 was 1 million, with a value of Rs 1,500 million. In 1987-88, the value of these exports was Rs 1,057 million, up 70% on the figure of Rs 623 million in 1986-87, which itself was up 273% on the previous year.<sup>17</sup>

There are a number of problems faced by garment manufacturers. The first relates to raw material supply, which was highlighted earlier. The second problem relates to components used, namely linings, fasteners, zippers, etc. These have to be imported, highlighting the lack of a domestic supply. As is the case of footwear, there is a severe lack of design skills, marketing expertise, as well as in the know-how in other management and leadership systems.

7. Leather Goods

The value of leather goods exports in 1987-88 was 1,145 million, slightly higher than garments and also a healthy increase on the previous year. Ladies handbags are the major item. Production is still in artisan workshops. Saddler and harness exports amount to 10% of the value of leather goods. There are 70 manufacturers in all, the main centre being Kanpur.<sup>17</sup>

Because of the high demand for saddler, the saddlers claim to be able to double the volume of exports if they could finance a partial mechanization of the production; capacity increase by training saddler craftsmen is found to be too slow a process to capture the opportunity.

8. Leather Products Machinery

Only a few types of machines are produced for the footwear industry and the needs for machinery have to be practically fully covered by imports. Certain special engineering skills have been developed by a prototype manufacturing unit for shoe machinery in Madras.

9. Human Resource Development

Today 35 schools, colleges and institutions run vocational and certificate courses in India in the field of leather and leather products, the duration of which is anywhere from four months to two years. It is estimated that they educate a total of 1,800 trainees a year. Eight institutes graduate 180 students annually with a diploma in leather, footwear and leather goods technology, upon completion of two to three and a half years training. Five institutions provide higher level (diploma, four years) training in leather and leather products technology with a total intake of 65 students/year. Short-term (one to six months) courses are offered by five institutions, which train about 530 operators, maintenance technicians, leather and leather products technologists annually. The linkage among these training facilities is very weak or non-existent; their training programmes are not co-ordinated.

In view of the estimated 160,000 new jobs to be created during the next five years, and the identified need for 43,000 persons to be trained for designing, supervision, maintenance, quality control, etc. in the same period, the above-mentioned training capacity can barely cover one quarter of the requirement. The knowledge transferred through this training is generally out-dated, the level of instruction is far behind the up-to-date technology, discipline and knowledge required for passing examinations are also not solid enough.

In addition to these training needs, there is a most pressing need for refresher training of the present personnel in the industry; the need that is not only in the trade related technologies in the narrow sense, but includes also the area of management and leadership models and techniques.

10. Research and Development

The number of institutes/centres providing services in research and development, range building and product design, pattern engineering, consultancy in process technology and plant management, quality control, effluent treatment, investment analysis, and marketing for tanneries and leather products manufacturers is probably four to six. The largest such organization is the CENTRAL LEATHER RESEARCH INSTITUTE (CLRI) in Madras, which concentrates more on theoretical R&D and so far has, as compared to the needs, rather limited contacts with industrialists especially in footwear. Other institutes are mainly training oriented. There are no sources of information on fashion trends and marketing, on systematic basis for leather and leather products in India.

**11. Facility Service**

To provide machine time and practical opportunity of introduction of mechanized work methods for cottage-scale leather, footwear, and leather goods firms, there are a number of facility service centres in India. These facility centres, however, are few in number as compared to the needs; some of them, for various reasons, are not functioning well.

**12. Trade Goals & Strategy**

The information available to the Indian Government policy makers is limited, impeding rational policy decisions. There is no special agency or development commissioner in the Indian administration to provide strategy planning and co-ordination of the development efforts of the Indian Government institutes and the assistance projects of the international organizations in the leather and allied industries sector. Several ministries and government bodies, both at central and state government levels, are dealing with the sectoral development but in an unco-ordinated manner.

## VII. A DEVELOPMENT SITUATION MET IN THE INDIAN SHOE INDUSTRY

A UNIDO consultant assisted shoe upper and shoe manufacturers in the *North Arcot District of Tamil Nadu* in India. The consultant paid two visits to the North Arcot District. He gave advice to thirty factories, a few days to each. The following impressions of the consultant of the state of the North Arcot District are based on the shoe factories consulted and on the discussions in the organizations visited and in the seminars attended. The development situation in these factories vary from one factory to the other. It should be noted that the situation found in the district is different as compared to other situations observed elsewhere in the Indian shoe industry and in the world.

Observed situations in the shoe factories visited, as understood by the consultant:

### General impressions in the North Arcot District shoe factories

1. Many of the tanneries there have found an opportunity in manufacturing leather shoe uppers and shoes for export. Most of these products sold are for the industrial market (shoe factories) in export. There is no tradition in the district to design and sell shoes to home markets.
2. The shoe factories visited in the district are fairly new, having modern machinery and employing workers from villages and towns. Some factories have 100-150 workers or more, some up to about 1,000 workers. Entrepreneurs themselves are actively daily attached to the business.
3. High labour costs has forced much of the West European, North American and Australian shoe industries to close down their production capacity. Many of the factories are now purchasing leather shoe uppers and/or full leather shoes (job-work) from the North Arcot District. This is a way adopted by the foreign buyers to create added value for themselves, supported by their branded marketing efforts in the reseller market.
4. The European leather shoe market is becoming ever more fashion-conscious and fragmented. Because of this, the distributors are less willing to take inventory risks. In this situation, much of the European demand for uppers and shoes is shorter production runs and a larger variety of styles in the marketing programmes and in production. To meet this demand for quick response and flexibility will need more sophisticated planning, information, controlling, etc. systems to be introduced.
5. The United States and Canadian markets are more homogeneous than the ones in Western Europe. The American market buys bigger volumes of the same style or bigger volumes in the same order.
6. Much of the capacity of the district in both shoe upper and full shoe manufacture was idle during the second visit of the consultant. Still more capacity was emerging in the district. The sales order situation was, however, improving. Some factories had plenty of orders.
7. The factories were experiencing shortages of certain kinds of leather. Recently, as a result of the shortage, Indian leather prices had increased, but due to price competition, the shoe upper and full shoe export prices had not fully followed the cost trend.

Those enterprises having their own tannery were in a better position to supply leather to their own shoe units.

## Industrial (job-work) market of shoe uppers and shoes

1. There seems to be good demand for quality shoe uppers from those North Arcot District shoe factories that have a good quality leather supply and are properly reflecting the customer needs in terms of product quality, production capacity, price, delivery times, product changes and response to telexes and other customer queries and needs.

According to some export customers, the ones in the North Arcot that have become too bureaucratic were at a disadvantage in this phenomena; other firms have been able to fairly capably follow the quick-response needs of the market.

2. There was concern that because of more closures of shoe production in Western Europe and in North America the shoe upper demand may diminish. However, the entrepreneurs saw it likely that some newly developed footwear producing countries will emerge as shoe upper buyers.
3. The idle capacity of job-work in full shoe production may have been partly caused by the fashion change from moccasin construction to cemented shoe bottom construction. The North Arcot District manufacturers were large suppliers of moccasin uppers and shoes. Also a large American volume industrial buyer of uppers and full shoes ran into financial difficulties and delayed payments and considerably reduced purchases, causing idle capacity in the district. This situation and the more competitive market situation in Europe, emerged as price competition between the shoe factories, and a tendency to change suppliers by some customers.

Now the job-work customers change their supplier more frequently for price, delivery, quality, etc. reasons.

4. Some European industrial buyers of uppers are said to have directed more purchases to nearer South European sources, because of the ever shorter business cycle and quick response need. However, some other Europeans are buying more from the district and are seeing Indian factories as potential suppliers of leather shoe uppers and shoes. The latter opinion is partly related to the availability of hides and skins in India.

## Reseller market of shoes

5. Indian complete shoe producers to reseller markets in export have been moving down in prices because of the price competition that has emerged between Indian firms.
6. North America is very price conscious. Europe is also now moving in the same direction in the reseller market demand.
7. Some shoe companies in the North Arcot District have recently been building their export capabilities, in order to sell part of their production directly to the reseller market. These shoe makers are now learning the export marketing and product development skills by trial and error, as export marketing skills and the knowledge of these markets have not been available to most of the industry, because of the job-work tradition. The effort is also difficult as the shoe makers in the district have not been engaged in the home market so far. There is neither traditional design nor marketing capability in the factories, as the foreign shoe manufacturers as customers have been supplying the designs, specifications, much of the know-how and of course, sales orders.
8. Shoe components availability in India is still in its preliminary stages of development. This is found to be a serious bottleneck in the export efforts of full shoes to the reseller markets.

## Product quality versus productivity

1. All factories (both uppers and full shoes), that were visited, were producing good quality products according to the specifications given by their customers.  
  
Some factories, however, were facing high rework costs, because of the repeated frequency of quality failures in their production.
2. Productivity of labour, machinery and production space were on the low side or very low in many but not in all factories seen. Two factories were able to combine high productivity to high product quality.
3. The Indian Export Inspection Agency inspects shipments of shoe uppers or shoes. The Agency demands and controls certain inspection, testing, recording, etc. procedures in the factories. Some factories that have built an adequate quality system and have shown good quality performance, have been granted a certificate by the agency that allows the factories to ship their goods without outside inspection.
4. Material utilization in cutting of leather and some other materials was found to be low in most factories. One factory was very wasteful in clicking of leather. Only two factories out of thirty were clicking to high materials efficiency.
5. Only two factories have managed to reduce the internal failures (rework) to a small fraction of their production. These same factories are, at the same time, achieving fair or high labour, machinery and material productivity.
6. At the time of visit, some of the factories had rather recently been introduced, still being in the process of teaching basics to their staff and workers. It is understandable that productivity in these factories was still on the low side.

## Technology transfer

7. Much of the technology transfer to North Arcot District and Madras shoe factories has taken place from the foreign shoe manufacturers that are buying shoe uppers or full shoes. This transfer, however, has largely been limited to shoe making basics only, resulting in good quality products (made according to the specifications of the buyers), but lacking in concepts for achieving high productivity of machinery, labour, space and materials.

In the larger scope of technology, the transfer has not taken place in the marketing and product development knowledge and concepts for penetrating the reseller markets in export.

8. Some larger factories producing high fashion shoe uppers as job-work to the industrial markets are in vital need of somewhat more sophisticated planning, information, controlling, motivational, on-the-job training, etc. systems for coping in the ever more demanding business and production environment.

This conceptual gap in systems knowledge and skills is, at times, causing difficulties such as delays in meeting the delivery schedules, meeting required cost levels, etc.

Lack of planning, information, controlling, motivation, on-the-job training, etc. systems implementation may become detrimental to the ability of these firms to compete. Occupational health view in technology transfer has also largely been neglected.

9. Those factories that were already selling shoes to reseller markets in export were finding the almost non-availability of suitable domestic shoe components (heels, soles, insoles, etc.) and tools (lasts,

cutting knives, etc.) painful. This shortcoming in the infrastructure compels these factories to import many of these components. Delivery times of these components do not match the quick-response need of the buyers.

10. However, the rapid technology transfer already witnessed shows the ability and will of the North Arcot District footwear industry to learn. In this an entrepreneurial spirit has played a major role.

## Enterprise culture

1. Some of the manufacturers consulted were of the opinion that, high product quality, high productivity, and low rework frequencies cannot be simultaneously achieved. Because of this strong inner assumption in their enterprise culture, they appear to be content with their low productivity level and consequently do not see any reason to formulate their goals to improve this situation.

This characteristic of enterprise culture, that high product quality and productivity cannot be achieved simultaneously, seems to be a reflection of the narrow concepts learned in the technology transfer taken place from the foreign importers, of the difficulties faced when starting production by untrained labour, and of the narrow scope of knowledge the Indian shoe manufacturing training institutes have been able to give.

2. A few of the manufacturers that were already consulted during the previous mission, have understood that high product quality can be combined with high productivity. Two of these factories markedly improved their efficiency since the previous mission of the consultant by implementing some work methods and systems introduced by the consultant. Some other factories had not improved. In these, explanations were given such as: "because of the time constraint in dealing with customers and conducting the everyday business there cannot be found much time for improvement efforts." One manufacturer was afraid of the negative reaction of labour if new, more productive work methods were introduced.
3. Many of the North Arcot District shoe manufacturers that have their own tannery are receiving fair or good quality leather from their tanneries. In some other concerns the tanners and owners do not seem to listen to the views of their shoe makers in order to correct their tanning, etc. processes for better quality. This characteristics of enterprise culture seem to result in low quality leather, causing unnecessary high material usage in the clicking of leather in the shoe factories.
4. It was felt by the consultant, that in some, but not in all of the enterprises visited, the leadership style in enforcing the psychological contract from the leaders side on the personnel was characterized as an exercise of power and defending position, rather than an aim to seek for more legitimate authority through consent.

In this use of so-called authoritarian leadership style, in such everyday situations when it is not appropriate, the leaders may drive the employees to enforce their side of the contract (according to the circumstances) by quitting the firm, going on strike, reducing involvement in the work, having attempts to influence the situation on others (through unions), etc. ways available for them.

As the unions, because of these psychological circumstances, might be growing unnecessary militant, the enterprises seem to buy peace by a variety of allowances in pay. However, these frequent allowance increments and new types of allowances, as observed, were not tied to productivity improvement. Naturally, the allowances contribute to pay-increases, but do not solve the enterprise culture and leadership style related problem, nor do they motivate workers to productivity improvement in these enterprises.

The culture-bound authoritarian leadership style, that gives much weight to the hierarchical and functional dimensions of the organizational chart, but disregard the dimension of inclusion or

centrality (for positive, flexible involvement of people), is felt to be one of the most serious development problems in some organizations visited in the North Arcot District.

### Qualified personnel

1. The industry was experiencing a shortage of qualified and skilled personnel at all levels and functions of the organization.

Technical personnel as well as workers are attracted by higher pay to move to competitors. This causes wages and salaries to increase without solving the personnel and labour shortages.

An acute shortage of trained and experienced technical personnel for full shoe production was experienced, as many factories that had been making uppers were starting to make complete shoes as well.

Another acute problem appears to be in the shortage of effective managers, effective in the sense of not only technical and marketing skills, but also in human skills and conceptual skills. The managers had no training in modern leadership models, nor in planning, information, controlling, motivational, work health, productivity and quality improvement, training, etc. models. Concepts for cultural critique, to have an enterprise culture and leadership as a development objective, had not been introduced.

2. Training institutes training technical and administrative personnel for the shoe industry so not seem to be up-to-date in terms of numbers of persons trained and of many of the modern manufacturing methods and systems. This became evident to the consultant during the numerous discussions about technical and administrative problems and opportunities with factory personnel.
3. Although the machines used in the factories are modern (but not most sophisticated), most workers were not trained in productive work methods. Modern analytical training methods were not known to the manufacturers.

Many of the workers are illiterate. This should be a concern of the industry that in future, as labour costs increase, they will have to introduce more sophisticated production techniques.



## VIII. INTEGRATED PROGRAMME APPROACH IN THE INDIAN LEATHER AND LEATHER PRODUCTS INDUSTRIES

### Development problems at sub-sectoral (macro) level

<u>Problems</u>	<u>Causes</u>	<u>Evidence</u>
The objectives of the Eighth Five-Year Plan of India regarding employment generation and exports in the leather and leather goods sectors are very demanding and difficult to achieve.	The institutional and technical support the sector requires to grow is not available.	Observations made by the UNIDO experts and the Working Group for the preparation of the Eighth Five-Year Plan.
Indian leather products are meeting the demand of the lower end of the market which in turn provides low export income.	The quality and design of Indian leather goods is poor and their marketing has not been well organized.	Statistics revealing the low share of Indian leather goods in the world markets. Most of the exported items are of low value-added types.
Environmental damage caused by the leather processing industry.	In spite of government legislation, lack of awareness among manufacturers of need for pollution control and/or efficient technologies for that control.	Water around tanneries is often very polluted. Fertility of land is also affected.

### Problem identification

The Working Group on Leather and Leather Goods Industries for the Eight Five-Year Plan (1990-1995) and central and state governments have identified projects and accordingly applied for international assistance. Upon a specific request from UNDP, New Delhi, UNIDO fielded a team - composed of a senior international consultant and two national experts - to formulate an integrated development programme. On the basis of the findings and recommendations set out in the team's technical report<sup>11</sup>, it was decided to launch a large-scale leather and leather product industry development programme. The programme would cater to the most urgent needs of the sub-sector in a co-ordinated manner, and at the same time generate a follow-up stage by providing the elements for a coherent leather-based industry development policy for India.

### Problems addressed by the project

Within the last two decades considerable knowledge and some experience has been accumulated by the leather business leaders in the country. However, this knowledge and skill - both traditional and modern - are neither evenly nor widely disseminated. Furthermore, certain technologies which are well established and widely used in other countries (mainly industrialized), have not yet reached the Indian leather and leather products industries. The development potential of this sub-sector is enormous, but the

problems to be solved are substantial. The geographical conditions are also very complex. Such complicated situations also need special measures to assist the technical development. A co-ordinated approach is required to assist in solving the problems.

As a result of the study of the working group and the two field missions of UNIDO, the following problems have been identified:

1. Acute shortage of trained manpower

Tanneries and leather product manufacturing plants operating in India have an extremely limited source of trained personnel. The existing training facilities mainly teach obsolete technology. At the same time, not enough skilled specialists are released. Market and fashion information (guidelines, trends and statistics, etc.) and related services available to Indian manufacturers are neither reliable nor adequate. The institutional background of the leather-based industry which is accessible is scattered and has very little practical impact. All these facts verify the need - in terms of quantity and quality - for a human resources development programme, to be implemented as rapidly as possible with the assistance of appropriate institutional infrastructure.

2. Lack of design and product development within the country

The Indian newly developed export footwear sector has an almost total lack of product development, design and marketing capabilities. The new factories have been established in co-operation with some foreign partners who have supplied the know-how by providing plant layouts, machinery recommendations and sources for imported components but kept the product development and marketing in their hands. Therefore, these new factories have been quickly and well established but are presently only selling cheap Indian labour. In order to be able to move to a more independent position, new skills have to be developed. These skills include product development, marketing and brand identity. The project is expected to address these problems through some special actions.

3. Absence of the facilities within the country for manufacture of various components

There is urgent need for additional applied research activities in specific sectors of the leather footwear and leather products industry. Especially shoe last and component design and standardization needs attention. A foot measurement programme is badly needed to provide a base for correct orthopaedic design of shoe lasts. Applied research and product development are also needed in the areas of upgrading low quality leathers, improvement of various types of finished splits, and development of good quality harness leathers. Laboratory testing, tannery effluent treatment and extension services to small-scale manufacturers also need to be improved.

The same applies to shoe last and *shoe components manufacture*. Modern shoe manufacturing is a type of assembly industry and many components are not feasible to be manufactured by small and medium-scale shoe manufacturers. The shoe last is the base for all shoe engineering data and as long as modern plastic lasts and shoe components are not manufactured in the country, the local manufacturers must import the components with a resulting drainage of foreign exchange and long lead times in manufacturing.

4. Lack of machine-building capability

There is a lack of well developed support services and auxiliary industries for the footwear and the leather goods manufacturing industries. Only a few types of machines are produced for the footwear industry and the needs for machinery have to be practically fully covered by imports. Certain special engineering skills have been developed by a prototype manufacturing unit for shoe machinery in Madras. These skills could be further enhanced and could prove to be of great benefit

to the footwear sector, if further assisted. Especially the needs in the area of lasting and making machinery of the Indian footwear factories could be covered by domestic production of equipment of appropriate technology level. Lack of a sound marketing strategy is also evident.

#### 5. Problems with the tannery effluent treatment

The leather industry's image is often tarnished because of the ensuing environmental pollution. Any new or innovative approach to the development of the leather industry must overcome the existing drawbacks in the environmental area and steer its further growth methodically.

There are approximately 1,080 tanneries in India, mostly in the small- and medium-scale sectors, concentrated predominantly in three regions. The Tamil Nadu State leads with 60 per cent of the installed capacity, followed by Calcutta with 20 per cent and Kanpur and the North Eastern region with 15 per cent, while the rest is scattered throughout the country.

In order to easily draw the large quantity of water required, most tanneries are located near river banks; for example, the Ganga river system in Uttar Pradesh, Bihar and West Bengal and the Palar river system in Tamil Nadu. Approximately 75 per cent of the tanneries fall into the small-scale sector category and they are usually in clusters located at the outskirts of populated areas. It is estimated that there are about 50 clusters in the country, of which 16 are located in the State of Tamil Nadu. Most of the small-scale tanneries do not practice any effluent treatment methods.

The quantity and composition of effluents discharged varies from process to process, tanneries to tanneries, and from time to time. The average amount of effluents discharged per kg of processed hides and skins is as follows:

i)	Raw to wet blue:	20-30 litre/kg of raw weight
ii)	Raw to finishing:	30-40 litre/kg of raw weight
iii)	Wet blue to finishing:	20-25 litre/kg of wet blue weight
iv)	Raw to E.I.kip:	25-30 litre/kg of raw weight
v)	E.I.kip to finishing:	50-60 litre/kg of E.I. weight

Around 1,700 tons of hides and skins are processed daily in the country, discharging a very heavy litrage of waste water, which goes into the rivers/streams, spills over the land, percolates down to the subterranean waters, or flows into the sewage.

In order to promote the establishment of common effluent treatment plants for clusters of tanneries, the Government of India has introduced a centrally sponsored scheme for financial assistance under which a total investment of Rs 60 crores (US\$ 35 million) is expected to be apportioned in the following manner:

- i) Central Government Rs 15 crores in the form of a grant
- ii) State Government Rs 15 crores in the form of a grant

The balance will be financed by the tannery owners and financial institutions.

#### 6. Lack of a well defined and well co-ordinated development policy

The number and range of development project ideas introduced by various Government agencies, both at federal and state levels, reveal the lack of co-ordination in the sector as well as of a well-established and integrated (technical) development policy in India. Such policy is badly needed and should cover the entire leather processing and leather products manufacturing industry in the country. It has to place special emphasis on the full utilization of the available (raw) material base, marketing, environmental protection and training. Some aspects of the leather scene have not been studied sufficiently, thus relevant data for profound planning are still missing in this field.

## IX. DEVELOPMENT ASSISTANCE CONCEPT

### Some Development Assistance Opportunities

Some development opportunity areas commonly found in the leather related trades are in the following:

#### 1. Leather Availability Opportunities

- a) Improve the entire methodology of approach of hides and skins and animal by-product recovery and access to the market.
- b) Introduce better methods for improving the quality grades of the low end leathers, as well as methods of artificial grain for split leather.
- c) Have wider application of methods for better area and substance yields of leather in tannery processes.
- d) Train leather product designers for material saving approach in product design. Train and motivate cutters to use better cutting practices. Introduce systems for setting standards for leather usage in cutting, as well as introduce relevant payment-by-result systems for cutters. When economical, use emerging automation in cutting.
- e) Introduce leather board in large scale to insoles, etc. leather product components. This will make it necessary to increase leather board manufacturing in the country concerned. Find ways to use chrome leather shavings and scrap in the leather board manufacture, as the vegetable tanned material now in use will be in short supply.
- f) Use more textiles and synthetics in leather products. Enhance these auxiliary industries in the country concerned.

#### 2. Pollution Control Opportunities

- a) In tanneries, introduce environmentally cleaner technologies including chrome recovery and recycling.
- b) Introduce effluent treatment methods suitable for local conditions.

#### 3. Design and Product Development Opportunities

- a) Train for shoe and leather goods manufacture the best design talent in the country concerned, designers that have already been trained at art or design institutes.
- b) Establish design service studios to serve leather product factories.

#### 4. Marketing Development Opportunities

- a) Establish market and fashion information services for both export and domestic marketing needs for shoe and leather goods and related industries. Provide the same information to the local shoe and leather goods distributors as well as to the press, to help the quality of local demand to become more fashion conscious (indirectly helping the industry become more competitive in export).
- b) Segment the marketing training need in order to give marketing planning, etc. systems training to all managers, administrators, technicians, etc. Establish specialized marketing training courses, such as for export personnel (not only salesmen but export secretarial staff also). The courses should be tailor made for the needs of various types marketing/export and other personnel.
- c) Establish consortium, etc. marketing set-ups for export and domestic marketing.

## 5. Research & Development/Technology Transfer Opportunities

- a) Formulate shoe and leather goods research and development as well as technology transfer priorities and strategies, basic and applied, from their:
  - immediate and
  - long term benefits point of view.
- b) Collaborate with foreign research and training centres for help in clarifying the goals, roles, strategies and resource needs of the research institutions as well as for other development opportunities. Involve foreign assistance organizations in this effort.
- c) Give emphasis not only to larger, but also to the cottage and small sector needs in improving work methods, materials and machinery, for higher product quality and productivity. The cottage and small sector is important, because the main volume of production, skills and entrepreneurship in many countries lies there.
- d) Place emphasis on footwear and leather goods related auxiliary industries development.
- e) Create technology transfer systems for speedy spreading of appropriate (high- or conventional) technology to needy segments of the rural, semi-urban and urban industry. These transfer systems should be designed to suit the trade needs, having investment, import policy, etc. aspects worked out. As technology development in the footwear and leather goods industries is presently rapid, monitor the development in each special technology field to assess the maturity of the technologies for various situational needs. Involve development assistance organizations (using expert teams) in this monitoring.
- f) In the research institutes, for the shoe and leather goods including their auxiliary industries, provide not only material testing services but also provide services like fashion related technology services, product quality related problem solving services, plant processes evaluation services from quality, productivity and profitability point of view, frequently publish quality related (down to earth) leaflets on topics that need to be known by the manufacturers, design and/or modify (preproduction activities, etc. related) computer software, and CAD/CAM and automation know-how services.

## 6. Training Systems Opportunities

- a) Enhance industry involvement in planning and conducting training courses. Also involve the trade related government agencies, the trade unions, etc.
- b) Build alliances between different training institutions, leather related and other, to utilize the specialized know-how and skills that cannot generally be made available in the country.
- c) Enhance and/or build some training institutes to become instructor trainers for other institutions. Frequently retrain trainers of the institutes and factories in modern technologies, training and consulting methods.
- d) Create environment for hands-on learning by introducing training-cum-production methods.
- e) Give opportunity for problem oriented learning for better internalization of subjects through "see and feel" experience.
- f) Segment and analyze the training "market" and adopt common but flexible syllabi according to the changing needs of the market.
- g) Have flexible syllabi to cover the total needs of an industry. Include study-credit accumulation opportunities for students. Also have shorter courses for immediate needs and training flexibility.
- h) Formulate clear national training standards for various types and levels of vocational competence. Let students take exams in a respected foreign or local institute(s) for better recognition and for feed-back for the training institutes themselves.
- i) Involve training institutes in active extension (consulting) services in different aspects of the trade and industry needs. Extension service will also serve as important feed-back and learning medium to the institutes.
- j) Establish facility service centres for semi-mechanized small industries to have "see and feel" opportunity in modern technology.
- k) Use foreign training and research institutions, when possible, as sub-contractors in formulating the roles and in building up the capabilities of the institutes.

- l) Design economic systems by which the training institutes can be kept functioning well even after the United Nations or other foreign assistance is completed. Training-cum-production in connection with innovative "ownership" and marketing arrangements with the industry (associations) could serve the purpose.
7. **Industrial Cluster Development Opportunities**
    - a) Have number of leather and leather product factories situated in clusters for crucial cross-fertilization between the companies. Have auxiliary industries as well as marketing and other services included in these clusters.
    - b) Give great emphasis to the local auxiliary industry development in the clusters.
  8. **Machinery development opportunity**
    - a) Have machine prototype centres to build prototypes for leather and leather product industries.
    - b) Purchase machine drawings and specifications from Western machinery firms now closing down their operations.
  9. **Strategy Formulation Opportunity**
    - a) Formulate goals and strategy for the leather and leather products trades development, as the need for the formulation is normally immense because of the size and complexity of the opportunity, and the constraints and imperatives of the trade and technology might not be well known and understood by the decision makers for sufficient and balanced government and other policy decisions.
    - b) Formulate goals and sub-strategies also in each leather related industry. Based on this, each geographical district and its institutes could formulate its own development goals and strategies as well as related programmes; (see an example of strategy in Annex II).
    - c) In the goals and strategy formulation, use modern strategy planning models and process consulting methods to ensure that the total business and manufacturing system and its imperatives and opportunities, the potential of the local skills development will be considered and internalized and co-ordination, and involvement in government and other bodies will be achieved.
  10. **Assistance organizations involvement opportunity**
    - a) Have development assistance experts (including persons from both industrial and developing countries) in specialized teams to monitor technological and other changes from a development assistance point of view and suggest necessary changes in the assistance.

### **Complex Nature of Development Situations**

In the Indian situation, the leather and leather products industries have grown considerably during the past decade. Much industry related knowledge and skill has accumulated in the country but is not well disseminated. There are opportunities, but also problems in further employment generation and exports that are demanding, complex and difficult to achieve. The institutional and technical support the industry requires to grow is not adequately available. The level of quality and design of the products vary and their marketing has to be improved. Many auxiliary industries must be developed. Also the environmental damage caused by the leather processing industry is painful to society. There is a lack of awareness and knowledge among the manufacturers of efficient technologies for pollution control.

Almost any development problem faced, not only the one in India but elsewhere, is complex. The complex problems met are not only about understanding the character and imperative nature of modern technology in a situation, but also about problems as how to integrate the following components in a culture and situation. The system components that are to be integrated for improved performance are:

- a) *Structure*: organization, management systems,
- b) *Knowledge*: technical, administrative, human process, systems,
- c) *Non-human resources*: equipment, software, plant, work environment,
- d) *Human process*: values, attitudes, norms, interactions,
- e) *Strategic positioning*: business / markets, technology, social policy, resources, environmental change.

Integration of the components for better performance in a development process is tied to the culture and situation of both the client organizations and the assistance organizations. This situational nature of developments does not make it possible to construct general model for development. The best one can have is to select a general concept for development.

The general concept for development in complex. Cultural interface situations is the general concept of planned change process for improving the inherent capacity of coping of client organizations, groups and individuals. In the process, the aim should be to integrate the situational components for better performance by including concepts "development within", "exchange of knowledge" and adaptive coping cycle, as mentioned earlier. Process consulting can be a innovative "frame model" in this learning and innovation type of process. Other models, such as models of strategy formulation, marketing planning, production planning, situational leadership, quality control, CAD/CAM models, network analysis, capital-outlay models, situational leadership, etc., can be used in the process as component models in the process consulting situations.

## Role of the United Nations or other Assistance Organizations

The Indian example shows that development of any country or trade is not "static" as regards to the solutions. The leather and leather product trade in India has grown. But the industry, as a result of this development and as result of changes in business, technological, social, etc. environment, is facing problems, but is also finding opportunities of a different nature than before. These new types of problems and opportunities are natural because any development is dynamic. It creates new forms. These new forms need new solutions. Although it should be noted that older problems and opportunities still exist because of unevenness of the development.

Other countries and their trades, in both developing and industrialized countries, are in the same situation as India. New methods and resources for managing development are needed. The role of UNIDO and other development assistance organizations, as any consultants, need to introduce new, effective methods in assistance.

Assistance organizations' key consultants and personnel should be introduced to the systems for planned change. As these change processes can include a number of concepts, models and more detailed systems for application of the change process itself and for application of technology and its procedural systems, it is most necessary to have well-prepared training material and aids, not only for the consultants, but also for the people to be trained in the client organizations. In fact, much traditional training material is already available. However, for the dynamic development environment, much material should be updated and new material prepared.

Modern word processing, audio video media and multimedia techniques should be used to help better "see and feel" situations to emerge during the training, and for the easier update of the material.

The role of the development assistance organizations is to develop the training material, if possible, in co-operation with some client organizations in developing countries. These efforts should be co-ordinated to avoid duplication of effort.

The expert teams mentioned earlier, will provide valuable feedback to the development assistance organizations, not only about the needs and possibilities of training material, but about the development approaches generally. These team meetings should be conducted by using structured but innovative process consulting methods.

For the actual development projects, UNIDO and other development organizations should already enter during the project formulation stage, in consensus with client organizations about the type of planned change approach that is going to be used. This would "formalize" the efforts in introducing an approach by consultants in a given situation.

## **Integrated Development Programme Outline**

### **1. Expected end-of-project status**

The institutional support to the sector will have been improved by strengthening the industry-oriented applied research activities at the CLRI in Madras and by starting up the FOOTWEAR DESIGN AND DEVELOPMENT INSTITUTE (FDDI) in New Delhi.

The CLRI will provide direct assistance in mould design and manufacture, quality control and will also extend its services toward leather goods and leather garment manufacturers.

The FDDI will serve as a fashion and marketing information centre and will render practice-oriented services in design, pattern engineering and product development. The training capabilities of both institutes will have also been reinforced - especially in the field of retraining senior staff of the sub-sector. FDDI will have a model structure for multi-location training, having its regional offices and training facilities in Madras, Calcutta and Bombay. Close co-operation will have been established among the existing institutions catering to the leather-based sub-sector. There are also pressing needs to up-date the training of supervisory staff, technicians and skilled workers.

Several COMMON FOOTWEAR TRAINING CENTRES (CFTC) are in existence and two of these (Madras and Agra) will have been upgraded to provide well trained, skilled industry operators, technicians and supervisors in accordance with the needs of the industry.

The NATIONAL INSTITUTE OF FASHION TECHNOLOGY (NIFT) will provide training in design of leather garments.

Three specific clusters, one for footwear, one for leather goods (handbags) and one for leather garments, will have achieved their common marketing goals in independent export marketing through a specially designed marketing project. This model will serve as an example for further, similar activities.

Special skills in shoe last and component designing will have been transferred to Indian parties and a foot measurement survey will have provided data to develop a standardized Indian shoe last and standard components. Manufacturing of plastic shoe lasts will have started and machinery of Indian origin designed. Efforts will have been made to create an improved image of Indian leather goods in the importing countries.

Special skills in auxiliary support industries, such as shoe last and component designing, will have been transferred to Indian parties and a foot measurement survey has provided data to develop a standardized Indian shoe last and standard components. Manufacturing of plastic shoe lasts will have been started and machinery of Indian origin designed, and prototypes will be ready to offer manufacturing know-how to suitable engineering companies.



Pollution in a selected cluster of tanneries will have been brought under control. The quality of treated effluent is expected to meet the pollution control standards without undue economic burden. Environmentally cleaner technologies, including chrome recovery and recycling, have also been transferred to some of the tanneries in the selected cluster. The local technical capabilities in the area of environmental technology will have been reinforced so as to apply the knowledge and experience elsewhere in the country.

By implementing the proposed technical assistance programme, the Government of India will have available information on the human and material resources, the main reasons for inefficiency of the local professional training system, exact (quantitative and qualitative) needs in training, extension and R&D services, domestic and international marketing and environmental protection. Based on this information, the Government will be able to prepare a comprehensive, and at the same time consistent *leather-based industry development policy*, taking into consideration the particular local conditions and providing alternatives for decision makers for starting development schemes. The studies will specify further development objectives, justify them and propose project ideas for inclusion in the follow-up phase of the present development programme.

Socio-economic benefits are also likely to accrue for the weaker sections of Indian society, which will receive cleaner water for irrigation. A cleaned working environment will be available in Indian Tanneries. The project may also lead to technical co-operation among India and other developing countries through training programmes tailored to the needs of common effluent treatment plants.

## 2. Development objective

The programme is designed to support the attainment of the objectives of India's Eighth Five-Year Plan within the leather, footwear and leather products sectors. Specifically, the programme is expected to assist the export development of the footwear and leather goods sub-sectors. It is also directed towards generation of employment, particularly in the small-scale sector and in rural areas, and will assist in the development of the human resources required. The programme will further assist in protecting the environment from pollution caused by the industry.

## 3. Major elements

### Immediate objective 1

Improved and more practical *institutional framework for human resources development*, i.e. for training, technical development and extension services to local leather and leather products manufacturers - especially in the fields of design, product development, production management, quality control and marketing.

**Output 1.1** Established and operational FOOTWEAR DESIGN AND DEVELOPMENT INSTITUTE (FDDI) in New Delhi comprising a (CAD oriented) design studio, sample manufacturing and training pilot plant, quality control laboratory, media agency and information centre for dissemination of fashion trends, marketing advisory department. The following personnel will be trained: *one (technical) director of the institute, two chief designers, four assistant designers and pattern engineers, two computer (CAD) operators, one shoe last designer/sample maker, one shoe last manufacturing technologist, two senior and four junior footwear technologists, seven instructors in cutting, closing, component prefabrication, lasting, chemical processes and finishing, one senior and two junior laboratory experts, one chief information officer, one librarian, one publication specialist, one documentation specialist, three lecturers in design, technology, quality control, equipment maintenance and plant management, four assistant lecturers/teachers, one machinery engineer, one maintenance specialist.*

**Output 1.2** Improved and extended operation of the CENTRAL LEATHER RESEARCH INSTITUTE (CLRI) through establishing or reinforcing its activities in the field of applied

research, product and technology development, foot measurement programmes and shoe last design, laboratory testing of materials and products, tannery effluent treatment, extension services to small-scale manufacturers. The following personnel will be trained: *two shoe last designers/model makers, two shoe designers, three CAD specialists/operators, two cutting die/tool maker, one leather goods designer, one leather garment designer, three leather products technologists, eight instructors for operator training, one chief material technologist, one material and component utilization technologist, two laboratory testing specialists, two laboratory assistants, five footwear industry extension officer (tanning, footwear and leather products manufacture, shoe last and component making, two environmental engineers.*

- Output 1.3** Upgraded and improved functioning of two COMMON FOOTWEAR TRAINING CENTRES (CFTC) in Madras and Agra through expert services in the fields of pattern making, cutting, stitching, making and lasting departments. New industry-oriented syllabi and training methods for training of shoe technicians, supervisors and skilled workers.
- Output 1.4** Well functioning leather garment designing unit located at the NATIONAL INSTITUTE OF FASHION TECHNOLOGY (NIFT), capable of producing up-to-date modern designs and prototypes, and installed with modern machinery and equipment for leather garment prototype production. The following training personnel will be available: *one unit chief, senior designer/technologist, two leather garment designers, two leather garment technologists, two sample makers/instructors, support staff as needed.*

#### **Immediate Objective 2 (in co-operation with ITC)**

Improvement of product development and marketing capabilities of footwear and other leather products manufacturers for the export markets.

- Output 2.1** A model product development and export marketing package developed for three clusters of selected small to medium-scale manufacturers; one in footwear manufacturing, one in handbag manufacturing and one in leather garment manufacturing. This includes retrained footwear designers with upgraded knowledge required for producing new styles for export, as well as prototypes (samples) to be exhibited in Europe for sales (export) promotion. Altogether, 60 designers will be retrained.
- Output 2.2** Improved image of Indian footwear and leather goods in the markets of selected industrialized countries.

#### **Immediate objective 3**

Containment of environmental degradation emanating from tanneries in a selected region of India, introduction of cleaner and environment-friendly technologies and significant reduction in the amount of pollutant generated in the process of leather manufacture.

- Output 3.1** Fully operational COMMON EFFLUENT TREATMENT PLANT for the selected cluster of tanneries, with staff trained to operate and maintain the plant independently and to demonstrate it.
- Output 3.2** Fully operational, low-cost type model effluent treatment plant for a small to medium-scale isolated tannery.

- Output 3.3** A set of specific recommendations on leather processing technology resulting in a significantly lower pollution load; recommendations actually adopted by most tanneries in the cluster.
- Output 3.4** A fully operational chrome recovery unit, installed in the selected cluster, with the cost effectiveness of the process being suitable for local conditions.
- Output 3.5** Study on the scope of reducing/removing the total dissolved solids and chloride.

#### **Immediate Objective 4**

To improve support services and auxiliary industries catering to the footwear and leather products sector.

- Output 4.1** An operational pilot unit for plastic last manufacturing at the precision shoe last factory of the BHARAT LEATHER CORPORATION.
- Output 4.2** Footwear machinery prototypes for the lasting and finishing departments of footwear factories. Completed functional prototypes with a set of engineering drawings for a toe part pulling-over and lasting machine, for a back part lasting machine and for a combined finishing machine. Development work completed and ready for serial manufacture.

#### **Immediate objective 5**

To assist in organizing the co-ordination of the Indian leather, footwear and leather products sector and to generate information for the preparation of an integrated and coherent *development policy* for the Indian leather and leather products industry, which consequently should be used as a constant basis for all development actions taken by international agencies and the local Government(s).

- Output 5.1** Umbrella project headquarters established and later to be transformed into a permanent Indian Government OFFICE OF THE DEVELOPMENT COMMISSIONER for the leather, footwear and leather products sector.
- Output 5.2** Study on professional training currently available and to be provided in the future to the local leather and leather products industries with special references to technical level, diploma and certificate system, training programmes and skills or knowledge developed.
- Output 5.3** A study on the institutional background required for overall development of the leather and leather products industry in India.
- Output 5.4** An industrial development strategy (policy outline) based on the above recommendations to be used as a basis for planning on both federal and individual state levels, as well as proposal(s) for project(s) to be implemented through international technical assistance, taking into account the capabilities of UN organizations such as FAO, ILO, ITC, UNESCO and UNIDO.

#### 4. Risks to be monitored

The only, and rather counterproductive, negative effect of the programme could be if the results of the technical assistance would remain within the recipient institutions or pilot plants and not reach the target beneficiaries.

The reluctance on the part of the tanneries to implement the common effluent treatment concept and constraints in the timely mobilization of the entire funds for the construction work and other related activities are the two main anticipated risks in this programme. A slow decision-taking by Government bodies and authorities may cause delays in implementation. An unexpected crisis in the tanning industry is one of the rare risks. Frequent disruptions in the power supply may also seriously affect the installation, commissioning and especially the optimization of the treatment process. Unseasonal heavy rains may cause a temporary slowdown of the activities.

The objectives of the programme will not be attained if the institutions and pilot facilities established will not interact with industry.

The risks of the programme are relatively small and mainly in the area of the industry linkage of the programme. There is no doubt that the services to be provided by the programme as well as the established capabilities of the FDDI and the CLRI are badly needed by the industry. Previous experience with this type of institution-building projects shows, however, that the main risk lies in the lack of industry co-operation and that the institute may, therefore, be working in a vacuum. Careful monitoring of this aspect during the programme's life will minimize this risk.

#### 5. Skeleton budget

The project budget given below is according to the major elements of the project, namely:

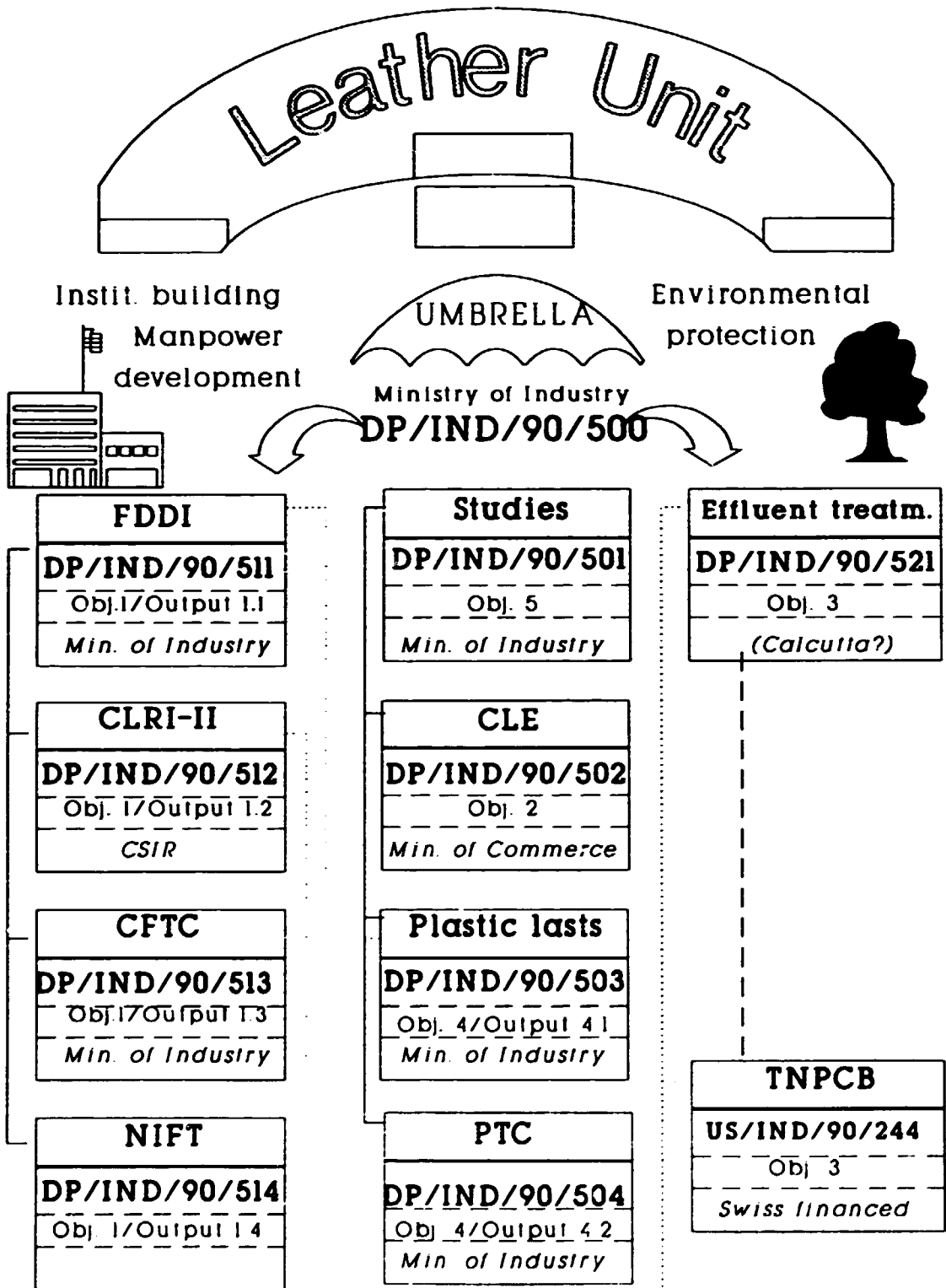
- A1 - Human resources development through establishing the FDDI in New Delhi.
- A2 - Assistance in upgrading the capabilities of the CLRI in Madras.
- A3 - Assistance to CFTC's Madras and Agra
- A4 - Assistance in leather garment design at NIFT
- B - Assistance in marketing CLE
- C - Assistance in treatment of tannery effluents
- D1 - Assistance to plastic last manufacturing
- D2 - Assistance in footwear machinery prototype manufacturing
- E - Preparation of an integrated development policy for the Indian leather-based industries.
- F - Umbrella project needs (International Co-ordinator, etc.)

(US\$)

Component	Project personnel	Sub-contracts	Training	Equipment	Miscellaneous	TOTAL
A1	1,430,000	130,000	660,000	2,220,000	35,000	4,475,000
A2	188,400	80,000	188,800	2,142,700	18,000	2,567,900
A3	792,000		180,000	1,085,000	46,000	2,103,000
A4	180,000		60,000	245,000	15,000	500,000
B	480,000	520,000	371,000		10,000	1,381,000
C	259,500		270,000	990,000	15,000	1,534,500
D1	180,000		90,000	800,000	10,000	1,080,000
D2	120,000	240,000			10,000	370,000
E	255,000	40,000			12,000	307,000
F	600,000			30,000	20,000	650,000
Total:	4,484,900	960,000	1,819,800	7,512,700	191,000	14,968,400

**6. Programme management**

For effective management of the integrated development programme a scheme has been proposed by UNIDO (Fig. 3).



**ANNEX I**  
**VISION**  
**OF THE LEATHER AND LEATHER PRODUCTS TRADE**

The following draft concept or scenario has been formulated to identify development gaps and the related opportunities of India's future leather and leather products trade. The concept, as it is hoped, will be worked out in more detail and by deeper understanding of the Indian circumstances.

**The Vision:**

1. **Fragmented home and export leather and leather products market will become even more fragmented.**
2. **More variety and more unique products will be in demand.**
3. **Fashion and business cycle in most market segments will become ever shorter.**
4. **Export and home market customers will be reluctant to take any inventory risks.**
5. **Tighter delivery schedules; shorter production runs; more complicated, but flexible and economical production systems.**
6. **The successful Indian leather and leather products producers will follow a strategy that blends high productivity with drive for design and quality so as to reduce the time required to turn raw materials into finished products. Some of them will form partnerships for joint efforts in export and domestic marketing. Similar consortiums will be seen in the materials and components supply side. Leather product producers will form partnerships in producing footwear auxiliaries, etc.**
7. **Many customers, manufacturers, suppliers, design offices, banks, etc. will be electronically linked together.**
8. **Brand loyalty of the consumers in export markets will become weaker. However in the future, brands are still dominating the value added markets, but consumers are frequently shifting from one brand to another. This and closing down of leather products industries in some countries will create an export opportunity for Indian entries to branded leather products markets.**
9. **Exports of leather products of good design and quality will help to improve the Indian product image in the mind of the consumers on the export markets. The creative ways some of the manufacturers will build their brands will make it far easier for other Indian firms to penetrate the market.**
10. **Competition in the rapidly emerging affluent, fashion conscious domestic market segments will form a base for skills development for subsequent export drives.**
11. **Large export marketing and other training inputs will help to avoid export newcomer entrepreneur mistakes that could lead to undesired image profile of leather products of India.**
12. **Supply of leather will be a bottleneck. India will be in a better position because of the domestic hides and skins availability, an improved carcass recovery and other waste reduction efforts, as well as alternative material adoption schemes that are to be run on a large scale.**

13. **Labour cost advantages will somewhat diminish in export because the low labour cost will no longer beat the advantage of using high technology in products for certain upmarket market segments. In some segments it is essential to produce products near the market. This and serious shortages of skilled cobblers, saddlers, etc. in the growing industries will force Indian factories to gradually adopt more mechanization and in some cases even high technology. Increasing labour costs will force some Indian enterprises to move their production facilities to low cost districts in India.**
14. **Foreign-trade liberalization and investment schemes will enable the industry to buy technology, materials and services that are required and build collaboration and strategic alliances with foreign firms. This will be most essential in building the component and other auxiliary industries of the shoe trade.**
15. **General infrastructure in India will further improve. Telecommunication, post, transport, customs, banking services, government schemes, etc. will be in ever better shape. Bureaucratic red tape will be turned to high quality services. Special assistance schemes for the small cottage type of produce will help them to learn to use these services.**
16. **A shift in trade cultural values towards the common good, that is already experienced, will strengthen as the entrepreneurs for overcoming business constraints find advantages in working together in areas of interest for the common good, such as training-cum-production centres.**
17. **Footwear auxiliary and tools industries, such as the footwear components industry, last manufacture, tool making, etc. will develop to form part of the much needed modern manufacturing environment in some industry centres of India. Government will give extra resource inputs to this vital development area to enable the shoe industry to export complete shoes.**
18. **Modern engineering work-shops will emerge through the assistance of development schemes to manufacture leather processing and leather products machinery. Trade liberalization and assistance schemes will help. Some of the machinery will be simple, low-power equipment that is needed for mechanization of the tiny segment of the leather products industry. Even in this area the Government will come to assist the machinery industry.**
19. **Well-established tanning industry of India will further develop. Most of the tanneries, not only the certain sector, will produce leather of good appearance and consistent quality. Rapid adoption of automated process control systems will be a key to this. Methods will be widely developed and adopted that enhance quality of leather produced of the low-end grades of hides and skins. Split recovery techniques adoption will be part of the programme. Improved carcass recovery, flaying, *by-product recovery*, etc. techniques will improve the quantity, quality and value of leather. Carcass recovery/flaying/wet bluing centres spread around the country will support this. Pilot plants to study and spread the techniques will be set up immediately. India will, in this way, buy time in the face of leather shortage. Because of just-in-time, integrated quick response business systems of the leather products trade, the tanneries and other suppliers will shift to small batch processing techniques.**
20. **Service trades, such as shoe design studios, software houses and consultants, will reach internationally competent level. Apart from the assistance schemes, the market forces of the liberal trade will be the major activating factor in the phenomena.**
21. **Many cottage or tiny leather products manufacturers will be innovative. Family firms, having educated young generations who were trained in leather or leather products manufacturing courses, will be striving to break away from small scale and low productivity practices. They will be assisted in buying simple machines and in order to reach sufficient production volumes per machine to serve as facility centres to other manufacturers. This development will spread the know-how to other manufacturers. In the *cottage industry* there is a tremendous development opportunity, as these people really want to grow, to be entrepreneurs, to break away from their present social image.**



22. Larger shoe manufacturing firms that grew in the 1980s and earlier will have fewer layers of organizational structure for easier communications and speedier decision making. *Oppressive status* related hierarchy, that hinder progress, will increasingly be words of the past. Creativity and professionalism will take hold and be given a chance. Modern management training and intense competition will contribute towards a change in the enterprise cultures. These larger firms, many of which will become international, will be occupied by more autonomous units. The units will be far more flexible in specializing in the rapidly changing market. In fact the units will be continually formulating their own strategies for survival in the fragmented, competitive market. The *units* will no longer be tied up with stiff vertical integration (such as tannery-shoe factory), but are able to form partnerships in order to quickly respond to market and other environmental changes.
23. Leather products manufacturers will become ever more specialized. Each type of product, like various sports, leisure, safety, etc. products, requires very special knowledge and technology, as well as special distribution channels. In fact *flexible specialization* will be found to be the password to the fast changing market segments. This differentiation covers not only the shoe products or brand images, but the whole business concept; a differentiated concept for doing business in each market niche the leather and leather products producer is in.
23. This flexible specialization will be supported by quick response campaign. The campaign will be launched to knit all levels of the business - from tanners and other suppliers, to leather products component manufacturers, to leather product makers and finally to retail stores, in some part by utilizing electronic networks. The government agencies, including the training institutes, will take an active part in the campaign.
24. Mechanized factories will have responsiveness comparative to the cobblers, but the production capacities and quality will be better suited for export.
25. Seasonality of demand in home market and in some export markets will still be a problem.
26. Changes in international leather and leather products trade patterns has shown that the producers that have prospered are those with the best and fastest access to market information. *Fashion information* and other organized market data will be made available by design and development centres. *Well trained Indian export personnel* and their carefully selected representatives abroad will be the key in analyzing market opportunities and implementing the marketing programs.
27. Presently many Indian exporters are selling shoe uppers and/or shoes to industrial markets, producing products according to buyer specifications. In future many shoe manufacturers will, through their efforts, succeed in selling shoes of their own design and brand to reseller markets.
28. Quality will no longer be measured on the factory floor alone but in the minds of customers to specify the perceived characteristics of quality. The concept of quality will ever more be related to the "four Ps" of marketing: The *Product, Price, Place, and Promotion*. In other words, the quality assurance will reflect the totality related to the "four Ps".
29. Medium size and larger firms will not only install machinery, but also much-needed modern planning, information processing, controlling, motivational, occupational health, etc. systems. These management systems are for sustaining product quality, flexibility, response to markets and for higher productivity. It will be the role of the leather and leather products training centres to introduce these important concepts.
30. Because of Government budget constraints, the Indian leather and leather products research centres will be forced to earn more revenue through their services to the trade. At the same time, competition from foreign technology centres will intensify in India. Government, however, will be assisting by financing result-oriented, project-type research programs in India. All these research programmes will have strong, technology transfer component systems built in. Much of the personnel in research and consultancy will be hired for the project.

31. **Applied research and organized transfer of technology in environmental problem fields will help the leather industry to solve the problems. Financial assistance will also be needed.**
32. **Inputs to training at all organizational levels and functions will be intensive. Shoe and allied industries will be users of highly trained, flexible and motivated people as principal means of adding value. The same applies to the cottage sector in the relevant skills context. However, a shortage of qualified manpower may continue to create development bottlenecks, slowing down the trade development. Training institutes will form alliances in running joint training programs. This will also greatly help the foreign assistance inputs to the training centres, as much of the preliminary training of instructors will be carried out through existing training and consultancy centres in India.**
33. **Most of the training institutes will become flexible, relevant and responsive to the needs of the various segments of the trade employers. This will be expressed by the increasingly flexible structures that allow students and their employers to put together training packages that are more appropriate in the ever changing needs of the modern shoe industry.**
34. **Some key Indian leather and leather products training institutes through UNDP assistance will reach high international standards. These institutes in turn will transfer the know-how in an orderly manner to other training centres.**
35. **Training-cum-production concept, as already found superior in charity run, self-sustaining training centres, will be widely adopted in order to ensure hands-on training at all levels of training. This will eliminate one of the most serious drawbacks in the present training of trainees who do not have much of a chance to grasp the depths of the instruction. The concept will also create cash-flow for self-sustaining training institute operations. This will be achieved by strategic alliances to be set up between the industry and the training centres.**
36. **Some leather products industry certificate and diploma examinations, to ensure an international level, will be conducted by CLOTHING AND FOOTWEAR INSTITUTE (CFTI), England. Later, a professional body, the "LEATHER AND LEATHER PRODUCTS INSTITUTE OF INDIA", which will be founded, will conduct these demanding, up-to-date examinations.**
37. **During the 1990s a new generation of export personnel will be trained. These people will be familiar with the industrial systems, and will be well-trained for export marketing. They will even be able to fluently speak the language of their export markets. At the same time, their well-trained export secretaries at the home base will give backstopping support.**
38. **Product design will become ever more important for business success. In fact, added value and profit generation will be largely based on the quality of product design. Persons having design education background in apparel or in other fields will be trained in leather products pattern making and manufacturing methods. As a result of this, some of the best industrial design talents of India will be working as leather products designers. A rich heritage in design of the country will contribute to the design success. This will enable exporters to use less foreign designers, but foreigners will still be needed because of their better understanding of some markets.**
39. **The more knowledge-based and complex the industry becomes, the more it will depend on the willingness of individuals to take responsibility for contributing to the whole, for understanding the objectives, the values, the performance of the whole. This and tough free trade competition will motivate the industry to send personnel to refresher courses.**
40. **Not knowing how to manage is often the single largest reason for the failure of trade ventures, including export ventures. Management refresher training will help to have more concepts to select and apply in real life situations. The training will help managers in their challenges to find and identify those parts of Indian tradition and culture that are to be of use as management building blocks.**

41. The frequent refresher training courses will not be conducted for managers alone. Supervisors, production operatives, office, maintenance personnel and others will frequently attend this training. Government officials and trade union officials will attend the same training. The courses will be run by several institutes and consultants and by the enterprises. Some of the courses will be designed for managers and administrators to learn to understand the very basics of the production technology they are dealing with.
42. Illiterate or semi-illiterate work forces will still be a serious bottleneck in the leather products industries development. Local governments will do their best to enhance the school system in the trade cluster areas. The manufacturers will press hard for this improvement.
43. The success of the Indian leather and the leather products industry in the 1990's and early 2000s will be based on the careful goals and strategy formulation to be done in 1991 in each State. The strategy will be followed-up and up-dated each year.
44. This strategy formulation process will not only reveal opportunities, but also resource build-up needs. The participants will realize that the decisions that are to be made will not only be goals, but will also be on means, timing and implementation programmes as how to get there.
45. The formulation process will create serious commitment and consensus within the industry and the government as how to allocate resources and how to carry the programmes through.
46. Even the entrepreneurs in the small production units will feel that society is providing them with an efficient system of opportunity and fairness that is within their reach.
47. Positive development will also be encouraged by the forthcoming economic block that will emerge in Asia in the early 1990s. Investment by Japan and the NIEs will reshape the structure of production in the area. Leather products manufacturing will be among the industries to be relocated first to Southeast and South Asia from the NIEs. Incessant pressure to *innovate* will be the outcome of the free trade competition. Already now rapidly emerging fashion oriented leather products demand in the affluent market segments will enable the entrepreneurs to learn and be more adapt to find their ways to the reseller markets in exports.

## ANNEX II

### STRATEGY EXAMPLE: STRATEGY OF HYDERABAD LEATHER FOOTWEAR CENTRE (HLFC), PAKISTAN

#### Typical development paths of the shoe industry

1. Export oriented tannery builds a mechanized shoe upper manufacturing unit to produce uppers for foreign shoe manufacturers.
2. Some other manufacturer or financier enters to produce shoe uppers as in the case of a.
3. An established footwear upper manufacturer becomes interested in adding value by starting production of complete shoes, but still as a contractor to foreign/local shoe manufacturers (to industrial markets).
4. Manufacturer of complete shoes becomes interested in building his capabilities in marketing in domestic or export reseller markets for avoiding the intense price competition in the industrial market.
5. Artisan manufacturer becomes partly mechanized and starts to contract or subcontract work to other footwear manufacturers situated nearby.
6. Foreign shoe manufacturer builds a shoe factory in Pakistan. The newcomer brings his know-how, market share, finance, etc. The new enterprise can also be a joint-venture.

#### Long-term Concerns

Future shoe trade will be knowledge intensive.

From the concept we know that the real foundation for development will be investment in education and competence. Suitable environment for entrepreneurship and competition will be equally important.

Increasingly, the short-term focus on every day business will have to be balanced with long-term concern with and competitiveness and the factors related to the entrepreneurial climate. The roles of different organizations can and should be planned in the goals and strategy formulation of the whole shoe industry.

The role or function of the HLFC will be discussed in the following.

#### Role and Function of the HLFC

Development objective of the project is to increase the productivity and improve the quality of footwear manufactured in small industrial units in Pakistan through developing labour skills and assisting entrepreneurs in the introduction of more advanced design and production methods in order to increase the footwear industry subsector's output.

Improvement of shoe industry productivity and increase of output will have to be based on utilization of market demand and related opportunities. Rapid sales increase cannot be found in the home market alone. More export will be needed. To succeed in a competitive export market, the enterprises need competitiveness.

Based on the concept, it appears that the function of the Hyderabad Leather Footwear Centre will be to offer knowledge-based assistance to the shoe and allied trades manufacturers in their efforts in improving competitiveness. Competitiveness relates both to home and export markets.

As related to the concept, the development objective is sound but should not be interpreted narrowly. For instance, if an entrepreneur requests ideas for systems as how he or she is to segment an export market, the Centre will have to give the answer or find the source of information.

It is recommended to have the Centre, in framework of its resources, to be prepared to assist the industry in any productivity and competitiveness related areas.

### **Roles and Functions of other related organizations**

Entrepreneurship and competition are the driving force for the growth and development of the shoe industry. On the macro level, the society's goals and strategies and related implementation are about strengthening the environment of entrepreneurship and competition.

Strategy for fulfilling objectives is about means. The strategic decisions that the HLFC will face are over means and how to mobilize consensus on ends and means. The centre will have to work towards consensus with other organizations in the country.

### **Strategy of the HLFC**

#### **1. Flexibility Need of the Strategy**

The shoe trade turned out to be complex in the drafted concept. But complex systems do not allow prediction. In other words, the total environment of market opportunities, cultural factors, infrastructure development, political environment, technological impacts and resource availability does not allow prediction.

In this unpredictable environment, the strategy will have to be flexible. Contingency plans and ability to switch strategies and resources quickly and efficiently will mark the success of the Hyderabad Leather Footwear Centre.

Serious commitment, ability to reach consensus about means with the organizations concerned, willingness to concentrate on priorities, hard work and growing competence will be needed.

#### **2. Market Opportunities**

Segmentation of the trade environment of the Centre helps in studying the problems and change opportunities and in planning the activities accordingly.

The clients of the Centre will be categorized under following market segments:

- Footwear manufacturers
- Artisan
- Mechanized
- Procurement agencies
- Government procurement agencies
- Public procurement agencies
- Footwear industry suppliers
- Material and component manufacturers and their agents
- Equipment manufacturers and their agents
- Footwear wholesalers and retailer
- Leather goods manufacturers

The "products" or services the Centre will develop will be under following headings:

1. **Imparting training:** training courses, seminars.
2. **Extension services:** consultancy.
3. **Product development services:** new product designs and patterns for the shoe factories.
4. **Facility services:** machine time available for local shoe manufacturers.

**Technology.** Technology is not only about tools. It is about how man works. It is equally about how man lives and how man thinks. For this reason, technology will have a significant impact on almost every aspect of shoe business.

Technology opportunities, constraints related to these opportunities and economic feasibilities will be cornerstones in the continuous strategy formulation of the Centre and the industry as well.

Competence areas of the Centre will be as follows:

- Human anatomy and foot
- Designing footwear
- Footwear process technology
- Footwear materials technology
- Footwear machine and tools technology
- Management systems

As the technology develops and new trade related situations emerge, the Centre - to be flexible, relevant and responsive - will frequently revise its contingency plans.

**High-tech/intermediate technology.** As a certain technology can be applicable in one enterprise but not in another, the Centre will specify the situational feasibility of technologies in terms of economy, quality, occupational safety, etc. factors.

Possibly not only older technologies, but also some high-tech applications may turn out to be feasible even for the artisan types of manufacturer.

For feasibility assessment of technologies, the staff members will need not only to be familiar with modern and emerging production methods and materials as such, but also be trained to apply work study, ergonomics, capital out-lay calculations and other management systems.

Appropriate management systems are seen as an integral part of technology.

The Centre will work in close contact with machinery work shops, machinery importers, material suppliers institutes, etc. in its efforts to introduce feasible technologies to the trade.

**Artisan/mechanized.** Development needs of different types of shoe manufacturers vary.

**Artisans** may mainly need basic mechanization know-how. As the artisan shoe industry has not yet had many chances to "see, learn, feel and create" the change opportunities that are to be available there. For this, the Centre will serve as a change agent in introducing new or some older methods.

**Mechanized units**, according to their size, stage of mechanization, products, markets, etc., will need more sophisticated machinery, but also modern planning, information processing, controlling, motivational, etc. management systems. The role of the Centre will be a change agent for these more sophisticated but necessary systems.

**Imparting training.** Imparting training is an important means of fulfilling the function and development objective of the Centre. It will cover the Centre's areas of competence (see competence areas). Course and seminar contingency plans will be based on expected needs of the client groups.

Nothing is more anathema to skills learning than rote memorization. Instead, trainees of the Centre should observe, measure, collect, categorize, record, interpret data and try in practice. As development of technology is unpredictable, training should emphasize ideas and thinking at the expense of specialized vocabulary and memorized procedures.

Imparting training to be given by the Centre is to encourage higher order thinking - rather than memorization but the ability to see connections, solve problems, make generalizations and abstractions, but also to gain practical skills.

Facts organized to the form of information is conceptual. But meaning is not; it is perception. Information becomes knowledge through perception, understanding of concepts.

The effort of HLFC will be to train its students to identify and perceive information as concepts. But also to critically evaluate the concepts. Great emphasis will be given to hands on problem solving and learning even on more abstract subjects.

As the development paths and needs of the Pakistani shoe industry will be varied, there need not be a rigid curriculum. But there needs to be a sequential one. Thus a smart hands on program that builds one concept and skill atop another, until that form of solid structure and skill base for learning more in the industry.

The sequential curriculum and related syllabi should be built in co-operation with several training institutes. The idea will be a credit accumulation and transfer scheme. Trainees can build their proficiencies in specialized fields, not only at the HLFC, but in other institutes as well. It is hoped This will bring about the efficient use of specialized training resources.

As skill needs vary, the credit accumulation idea will be used in developing schemes for various types of shoe and allied factories. Already, many of the students of the Centre have progressed from one course to another. Some of them have expressed their wish to continue to attend other courses that eventually will accumulate credit, even lead to certificates.

Adequate stipends will be one key in having able students attend courses in sequential training. Passing examinations and tests in some training courses will be the password to related further courses.

Another important key will be the future development of the local shoe industry. The more sophisticated the industry develops, the more sophisticated and varied the training and consultancy needs will become.

Imparting training will be organized to have courses and seminars, not only for entrepreneurs and supervisory staff, etc., but also for production operatives.

Operative training efforts will, however, mainly be in factories because of training capacity, distance, etc. factors. Supervisors and instructors of the industry will train operatives by modern analytical training systems learned at the HLFC.

Extension services or consultancy will cover the competence areas of the Centre.

The Centre, while building its knowledge based strengths, will be active in selling its consultancy services. Consultancy will also serve as excellent feed-back for the Centre in its efforts to learn about the needs of the trade.

**Product development service** will be to help shoe producers to have design/pattern cutting/grading services from the Centre. If this type of service demand is found to be big enough, the Centre will have to be supplied with further funds to gather fashion and related information and materials in visiting foreign shoe materials and component fairs, retail shops, etc. Part of the cash flow will come from the services sold.

**Facility services** will be machine time of the Centre to be sold to the local shoe makers. The Centre can also sell injection moulded unit soles to finance its operations.

The facility services will be an excellent opportunity for the local shoe makers to see and feel how modern technology could be used in their production.

### 3. Integration opportunities

The Centre will be creative in its ways of integrating itself with the trade. The integration should have strong elements built in, by which the people from trade could come and have a chance to creatively work out and experience the opportunities that modern environment might offer.

The main carriers for the "see, learn, create and feel" experience could be the training, extension and facility services the Centre will provide to shoe factories and to shoe trade machine, tools and materials suppliers.

Government and other procurement agencies could serve as change agents in transmitting shoe technology know-how for better product qualities, if the personnel of these organizations were trained in shoe technology by the Centre.

Other training, consultancy research, etc. centres will be contacted to establish ways to co-operate in fields of training, material testing, etc.

The Centre could assist financing institutes and entrepreneurs in assessing investment plans of the entrepreneurs.

Some of the technical and management systems to be introduced could also be utilized by leather goods manufacturers.

Furthermore, to avoid slack periods, the shoe industry could possibly learn to produce some other products, such as leather products.

An artisan colony will be situated in the building of the HLFC. There are rooms for 46 artisan workshops, about 20 sq. meters each, in the new building of the Centre. The workshops have not yet been occupied. 3/4 of the rooms will be allocated to shoe makers already in trade, 1/4 will be for newcomers to the trade. The selection of artisans will be based on training participation and their training results shown in the Centre.

Members of the artisan colony will have easy access to the Centre for learning mechanization and for receiving design and facility services.

### 4. Culture

The really significant results come from unleashing creative forces. People should not be frustrated by "me think, you do" hierarchies.

There has already been a concerned effort to avoid building oppressive hierarchies in the Centre. It is hoped that this effort will be realized by the students and the way they will affect their future enterprise culture.



HLFC will be structured around goals that clearly state the performance expectations of the Centre, for each portion of its part and specialist. It will be organized around feedback that compares results and expectations so that every member can exercise self-control. It is important that each staff member has a chance to have his or her say in setting the goals.

One feedback already in force is the requirement set for the students in passing tests and examinations. For some students the somewhat demanding and firm test requirements have been a surprise, but most students seem to feel that the adopted system is fair and just.

5. Key personnel

Careful selection of Senior and Junior Instructors and other personnel is important for meeting the goals set for the project.

The policy adopted for appointment of the instructors and the national project director/principal of the Centre is through personal traits and results shown during training at the Centre. It is most important to extend this policy to the appointment of other staff members as well.

Self-development of the staff members is already on the way by the efforts of the UNIDO experts and through experience gained by conducting courses. Learning to consult in the industry will also be supported by the experts. Later some staff members will be sent for fellowship training and study tours after learning basics from the experts.

6. Facilities

The machinery at the Centre is for making leather type shoes mainly by cemented construction. The Centre also has an injection moulding machine to make PVC and Thermoplastic rubber soles.

In order to fulfill the function of the Centre, more equipment is needed, a few machines, spare parts, workshop equipment and material testing equipment. Requests have been forwarded to UNIDO for some more funds.

7. Priorities

The Centre, to be competent in teaching and consulting, will first mainly concentrate in strengthening its own knowledge and skills base.

The strengthening that is already in process, is about learning basic shoe designing and mechanized manufacturing methods and materials in leather type, cemented footwear. Gradually, the Centre will direct learning to some other footwear constructions as well as to the related management systems.

UNIDO experts have already held training courses. During periods when experts have not been on mission, the Instructors and the National Counterpart have conducted the same courses for other students. This type of learning and technology transfer will be conducted as long as the experts are available. Extension services and design/pattern making services will be built up in similar way. Facility services will be started later when the staff has time for that.

The Centre is not yet in a position to decide on the use of some consultancy funds allocated to the project, as some industry needs may have not yet been identified.

Some staff members will be sent for fellowship training after learning basics from the experts and consultants.

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