CHAPTER 5

GROWTH OF TANNING INDUSTRY IN TAMIL NADU
AND ASSESSMENT OF ENVIRONMENTAL ASPECTS

5.1 HISTORICAL BACKGROUND

Historically, tanning industry has been found concentrated in a few districts in the State of Tamil Nadu. No specific reasons could be identified for this development. Though the quality of water available here is often mentioned as an important factor for this development, this is not convincing enough. Likewise, the geographical spread of the tanning industry in Tamil Nadu is also not explicable. Tanneries are found in Chennai (Pallavaram, Chrompet, and Madhavaram), Ranipet and surrounding areas, Ambur and surrounding areas, Pernambut, Vaniyambadi, Erode, Tiruchi and Dindigul, mostly in clusters. It is reported that tanning has been carried on in Tamil Nadu for over 200 years. The presence of British traders in large numbers in Madras Presidency during the British rule could be a strong reason for this development.

Traditionally all over the world tanning of hides and skins was done with the help of vegetable tannins. Tamil Nadu had earned a name for itself in the manufacture of what came to be known in the international circles as E.I. (East India) tanned leather. The process
adopted in the manufacture of E.I. leather was to apply vegetable tannins in tanning hides and skins. E.I. tanned leather is considered semi-processed leather and at this stage of process, leathers could be kept for a fairly long period without any damage. To begin with, the E.I tanned leather produced in India was auctioned in the markets of London and the Indian tanners had no knowledge about marketing of their produce. It was only in the late 1960’s that some dynamic entrepreneurs of Tamil Nadu embarked on marketing their produce directly in the world market. Till about 1973, bulk of hides and skins was processed in Tamil Nadu adopting the vegetable tanning process. Though chrome tanning had been started, the vegetable tanning process dominated the scene because the E.I. leather commanded premium price in the world market. It was generally believed that since E.I. leather processing did not involve use of any synthetic chemicals and heavy metal the effluent that was discharged from such tanneries did not pose any environmental threat. It was reported that in many places such effluent was directly used for agricultural purposes, with supposedly excellent results (Rajamani and Madhavakrishna 1983).

5.2 DEVELOPMENTS DURING 1973 AND BEYOND

The year 1973 was a watershed in the history of development of leather industry in India. It was in that year that, compelled by the adverse balance of payment situation caused by a sudden hike in oil prices, the Government of India identified some sectors of industry with good export potential and evolved special policies to enhance the export performance of such sectors. Leather industry was identified as one such sector. A high level committee headed by Dr. A. Seetharamiah, the then Director General of Technical Development of Government of India stated in its report that the policy of the government should be to discourage
export of raw and semi-processed leathers and encourage manufacture and export of finished leather and leather products. To achieve this many incentives were offered to the leather and leather products units. Fast technological changes in the leather process had taken place particularly changing over through E.I. leather processing with vegetable tannins to chrome tanning process.

5.3 SPREAD OF CHROME TANNING

The implementation of the new policy introduced in 1973 sent warning signals all over the world and many buyers of semi-processed E.I. leather from India came down here to explore the possibility of helping the tanners to move to the next stage of finishing leather. It was at this stage that many tanners were encouraged to opt for chrome tanning in preference to vegetable tanning. The reasons for this change were many but the important ones were

i. as compared to more than 6 weeks that vegetable tanning took, chrome tanning could be completed in less than a week's time

ii. chrome tanning enabled production of more supple leather, capable of multivarious uses and

iii. the market demand changed in the western markets, laying greater emphasis on full chrome and semi chrome leathers.

The Indian tanners took to chrome tanning in a big way. As Tamil Nadu was the leading centre of tanning in India, Tamil Nadu also took lead in adoption of chrome tanning. Along with switch over from
vegetable to chrome tanning, another development that took place was the progression from making semi-processed to finished leather. This did not happen overnight. It took over 10-15 years. But during these years the tanners acquired the capability to make completely finished leathers. This involved use of many synthetic chemicals as well as dyes in the process of manufacture. The characteristics of the effluent that emanated from the tanneries thus underwent a significant change during the period 1975-1985 (Rajamani et al. 1987).

5.4 STRUCTURE OF THE TANNING INDUSTRY IN TAMIL NADU

There are various estimates about the number of tanneries operating in Tamil Nadu. Though there are more than 1000 tanneries, the total numbers could not be specified as there are many unregistered small scale units and some units not in operation for long time. However, the report of National Environment Engineering Research Institute (NEERI) to the Supreme Court gives the details of tanneries connected to the CETPs operational/under construction/proposed. According to this document, there are 792 existing tanneries that seek connection to the CETPs and 299 proposed tanneries that too seek connection to the CETPs in various clusters in the State. Besides there are 81 tanneries in the state of Tamil Nadu, of which 30 were reportedly not having any pollution control devices. In all, thus, according to this report, there are 873 operational tanneries in the state of Tamil Nadu.

One important feature of the tanning industry is that it is dominated by the small scale sector. Barring about 5% of tanneries numbering not more than 50 in Tamil Nadu, all other tanneries fall in the category of small operators. Secondly, this industry has been found in
clusters in different parts of the country. Another particular aspect of this industry, peculiar to Tamil Nadu, is that a new practice – referred to as job tanning – has become very prominent in all tannery clusters, but particularly in Pallavaram, Ranipet, Vaniyambadi and Erode. The tannery including the machinery and equipment is owned by an individual or a partnership firm; but it is used by small technocrats for short or long duration against payment of a lease rent. Lease rent may be fixed on a monthly basis for long term leases and on piece rate or lot basis for short term utilisation. This aspect must be borne in mind because here the responsibility of the owner and/or the job worker vis-a-vis the public/environment protection agency of the government is not as keenly felt as in the case of owner-managed tanneries.

5.5 PRODUCTION DATA

The quantity of raw materials processed in the state of Tamil Nadu per day works out to about 1500 tons. Of this not even 10% is produced in the state of Tamil Nadu. A large quantity of hides and skins is transported to Tamil Nadu from various parts of the country. According to a report prepared by CLRI on tannery modernisation (1990), 60% of tanneries in South India (mainly Tamil Nadu) process skins. About 35% of the tanneries work exclusively as job work units and about 25% tanneries offer job work facilities in addition to undertaking their own production. E.I., upper, lining, wet blue and garment leathers are the mainly manufactured products of these tanneries. Majority (70 - 75%) of the country’s buff calf skins processing units and more than 70% of the goat and sheep skin tanneries are also located in Tamil Nadu. The direct employment provided by the tanning industry in the state of Tamil Nadu was estimated around 65,000 as per CLRI report.
With the growth in the tanning industry in different parts of the country, the flow of raw materials to Tamil Nadu has been declining and this gap is being increasingly met by import of hides and skins from different parts of the world. Such imports are often in the semi-processed stage - as wet blue - and hence the effluent generated in the primary stage of processing does not take place here. According to indications, such imports will rise in the years ahead if the leather industry in the country keeps up the tempo of growth. About 15 to 20% of raw material processed in the state of Tamil Nadu is estimated to be imported from outside the country.

5.6 LEATHER PRODUCT INDUSTRY

The main leather product industries that have developed in the past one decade are footwear and footwear components, leather garments, small leather goods and accessories. According to an all India survey of leather product industries carried out by CLRI (1995), there are 144 footwear/footwear component manufacturers, 155 leather garment manufacturers and 139 leather goods producers in the state of Tamil Nadu. Besides these registered producers, there are a large number of small producers and job workers with 5 or 10 machines producing garments and leather goods. Their number could run into hundreds. These registered and unregistered production units together would be providing employment to over 150,000 persons directly in the state of Tamil Nadu. It is estimated that a significant percentage (over 75%) of workers in these factories are women.

Export of leather and leather products from India during 1999-2000 is estimated at over 1600 million USD and Tamil Nadu's share in this is assessed at over 40%.
5.7 ENVIRONMENTAL AWARENESS AND DEVELOPMENT MEASURES

The general awareness towards protection of environment in the country improved only in the beginning of 1980's with the establishment of a separate Ministry of Environment and Forests in the Government of India and counterpart ministries in the state governments (Subramanian 1990). Simultaneously various state governments started setting up Pollution Control Boards for establishing norms and enforcing these on various industries. Tamil Nadu Pollution Control Board (TNPCB) was set up in 1982. TNPCB became active in the area of pollution control right from the start and all industries including the tanning industry were directed to conform to the norms specified with regard to discharge of treated effluents. In the early years, the tanners neither had the knowledge nor the resources to tackle this problem. Various representations were made to different agencies in the central and the state governments, and in 1989 the Planning Commission of the Government of India had instituted a scheme wherein for common effluent treatment plants, 25% of the capital cost was offered as central government subsidy, provided the state governments gave an equal amount. The balance 50% was to be raised partly as equity by the tanners (10 to 15%) and the balance as soft loan from banks. Tamil Nadu was the first state to take advantage of this scheme. Within Tamil Nadu, Vaniyambadi was the first location where a CETP was planned. Following on the heels of Vaniyambadi, tanners of Ambur, Ranipet, Pernambut and other locations in the state also began setting up companies to create pollution control devices. Sometime in 1991/92, the scheme originally started for the tanning sector was extended to all industrial sectors which were coming forward to put up CETPs and transferred to the Ministry of Environment and Forests from the Ministry of Industry. World Bank
funding was tied up for the purpose. With it came the restriction that the 25% subsidy offered by the central and the state governments would be subject to a ceiling of Rs. 5 million in each case.

To begin with, Tamil Nadu Leather Development Corporation (TALCO) played a positive role in setting up the CETPs. In the meantime United Nations Industrial Development Organisation (UNIDO) had launched, with Swiss assistance, a project for tannery pollution control in Tamil Nadu in collaboration with TNPCB. Under this project, a CETP at Pallavaram has been assisted, catering to 138 tanneries in this location. Another CETP at Ranipet has also been assisted under the project. Besides, two isolated tanneries, one chrome tanning and another vegetable tanning unit, have also been helped. The latest position regarding CETPs in Tamil Nadu is as follows:

i. CETPs at Pallavaram (138 tanneries), Ranipet (76 tanneries), Vaniyambadi (111 tanneries) and Ambur (41 tanneries) had been commissioned during 1993 to 1995.

ii. CETPs at Vaniyambadi - Udayendram (10 tanneries), Ranipet-SIDCO (86 tanneries) and Pernambut (18 tanneries) were commissioned in the beginning of 1996.

iii. CETPs at Melvisharam (37 tanneries), Dindigul (36 tanneries) were commissioned by the end of 1996.

iv. CETP at Madhavaram (14 tanneries) was commissioned during 1997.
v. CETPs at Maligaithope-Ambur (18 tanneries) was commissioned during 1998.

vi. Many CETPs such as Mitta-Ambur, Melpudupet-Ranipet, Chettithangal - Ranipet, SIPCOT & SIDCO Phase II - Ranipet, CV Pattarai-Vaniyambadi, Ramjinagar-Trichy, V.Kotta -Pernambut and Erode were under various stages of construction. Some of these cases were waiting for sanction of loan and release of subsidy as per the situation in 1999.

In the meantime the Public Interest litigation filed by the Vellore Citizen's Forum was being heard by the Supreme Court. The main burden of the case was that the tanners by discharging untreated effluent had despoiled the ground water and arable land. Partly due to the fact that the tanners were genuinely doing something towards tannery pollution control and partly due to lack of appreciation of the seriousness of the case, this petition was perhaps not closely followed and the measures taken by tanners not presented in proper perspective. Accordingly when the Supreme Court orders came in April 1996 ordering closure of all tanneries not connected to a CETP or having own treatment plant, this was indeed a great shock to the industry in the State. The Supreme Court felt that the tanners were not doing enough despite adequate warning.

As a consequence of the orders of the Supreme Court, over 400 tanneries of the state of Tamil Nadu were closed. Tanning activities ceased in Trichy, Dindigul, Erode, Madhavaram and in many tanneries in Vaniyambadi, Ambur, Ranipet and Pernambut. As per the orders of the Supreme Court, until these tanneries were able to set up satisfactory pollution control devices and the TNPCB certified as such, they could not
approach the court for restarting their operation. The Supreme Court also had ordered that the operational CETPs must improve their performance in two months so as to reach the pollution discharge standards prescribed by TNPCB. Many tanners from Erode, Trichy, Dindigul and other places had been looking at unutilised capacities in tanneries in neighbouring states and some were planning to migrate to such States. Some tanners had shifted to tanneries working in other places in the State, thereby overloading the CETPs that are operational. Overall there was panic and gloom.

5.8 INVOLVEMENT OF RESEARCH INSTITUTIONS

Meantime, the Supreme Court had commissioned National Environmental Engineering Research Institute (NEERI) to undertake an assessment of the situation in Tamil Nadu and the order passed by the Supreme Court was based on this report. NEERI had made some recommendations in their report to the CETPs, individually (Preliminary Report, NEERI 1997). Many tanners and CETP management were not sure on how to go about the same. This involved some additional investments. Their plant designs had been cleared by appropriate agencies including in some cases NEERI. Accordingly, the tanners of Tamil Nadu through All India Skins, Hides, Tanners and Merchants Association (AISHTMA), an umbrella organisation, approached Council of Scientific and Industrial Research (CSIR) to call upon NEERI and CLRI, two premier research bodies in the country, to advise, guide and help them stabilise their operations and achieve the standards prescribed in a cost effective manner.
5.9 GLOBAL TRENDS

Globally, the leather consuming industries have been footloose. Upto the end of 1960s the production of leather products such as leather footwear, garments, bags, belts and other accessories were predominantly made in the advanced countries such as the USA, UK, France, Germany, Italy and the like. They created fashion and many of these countries, in those years, used to import semi-processed leather from developing countries like India which did not have much use for leather. The 1970s witnessed the first migration of such industries from the USA and some western countries. This migration was caused mainly by the difference in wage levels on the one hand and the comparative ease in adoption of technology in manufacture of these products by the developing countries on the other. Some figures will prove the point. The hourly wage for an unskilled labour in the USA and advanced western countries like Germany is 8 USD. The daily wage of a worker there is somewhat equal to 1.5 month's wage in developing countries like China and India. Such difference in wage levels cannot be bridged by automation. Besides, automation has its own limitation in the type of industries such as leather industry. The fact that production of leather footwear declined from 660 million pairs per annum in 1970 to around 150 million pairs in 1994 in the USA speaks for itself. Similar is the situation in Germany, Denmark, Norway, Sweden, Switzerland, to a lesser extent in the UK and France. The two countries in Europe which continue to be important in this industry are Italy and Spain, the latter showing signs of decline. Of these two, Italian factories are by and large small and compact units unlike the larger ones found in other European countries, perhaps proving the point that small scale production units have greater chances of survival in this industry.
The countries to benefit from this first migration were South Korea and Taiwan in Asia, Brazil in South America, and Portugal and Turkey in Europe. Till the middle of 1980s South Korea was the largest exporter of footwear, followed by Taiwan. Around this time, the wage levels in South Korea and Taiwan started going up and the industry had started growing in other developing countries like China, Indonesia etc. The second migration of this industry started taking place in the late 1980s. In fact if we looked at the export figures of the countries of this region in 1989, we would find that India was ahead of countries like China, Indonesia etc. But in the second migration China, Indonesia, Thailand and to a very limited extent Vietnam reaped rich harvests. The fact that China today has become the largest exporter of leather and leather products in the world speaks volumes for the enormous growth achieved by this sector there. Indonesia and Thailand have also achieved impressive gains.

Some interesting aspects of this migration are noteworthy. First, while the production base of the leather product units has shifted to low cost countries, such a migration has not taken place in so far as tanneries are concerned. No doubt, tanneries developed in a big way in South Korea and Taiwan based on US hides in the 1970s and 1980s and these continue to be strong there. But by and large tanning continued to be carried on in Europe, though there have been intra migrations - for example from Germany to Italy; from UK, Norway and Sweden to Spain, Portugal and Eastern Europe. Tanning declined in the USA and some European countries like Germany, mainly because the user industries of leather such as footwear, garment and accessories declined sharply and hence a sharp fall in demand for leather. If the domestic footwear industry had survived and demanded leather, the US tanners could have produced and sold the same to them. But it was not possible for the US tanners to
competitively tan and sell leathers to developing countries. Of course they made semi-processed leathers but at that stage they exported large quantities.

Another significant aspect that must be noted is that the developed countries of the world are the large producers of hides and skins because the consumption of meat and/or production of wool is very high in these countries. For example, the production of hides in the US has been in the range of 34-36 million pieces per year for the last two decades. Australia and New Zealand have large herds of sheep where sheep is reared for wool. The sheepskins, by-products of this industry, are exported by them in large numbers for want of domestic demand. There has been a mistaken notion in some developing countries including India that the advanced countries are trying to shift the tanning activity to developing countries so as to get rid of this dirty industry. Such a notion is not at all borne out by hard facts. On the contrary countries like Italy, Spain, Turkey, France and Portugal are maintaining a high level of tanning; the tanning activity fluctuates according to demand for leather in their markets.

One more significant factor vis-à-vis the global market place that should be realised is that the consumers of leather products such as shoes, garments, bags, belts and other accessories will be in the advanced countries of the world because of their purchasing power. 85% of such leather products are imported by less than 15 advanced countries. The quantity of hides and skins produced in the world has not shown any significant change upward or downward but the demand for leather and leather articles has been on the rise in the advanced countries so also global import, with shrinking production base for such products in the advanced countries and their continuously raising demand for such
articles. Substitutes made of non-leather materials instead of dampening the demand have in fact accentuated it for leather articles. Though there has been a rise in the demand for leather products in developing countries like India and China as well, because of the superior purchasing power of the advanced countries, it has been seen that the leather products these days are produced in the low cost developing countries and exported to the high consumption advanced counties. It would appear that this trend would continue for quite some years.

The developing counties of the world, particularly Brazil in South America, Turkey and Portugal in Europe, South Korea, Indonesia, China, Thailand and Vietnam in Far East and South East Asia, India and Pakistan in South Asia, have emerged as important producers of leather products and all these countries are posing varying rates of growth for different product groups. While Turkey is quite strong in garments, China is strong in all product groups i.e. footwear, garments and accessories. India has a good presence in the garment market. China benefited the most by migration of the industry from Taiwan and South Korea, followed by Indonesia and Thailand. Among these countries except India and to an extent China, other countries have limited source of domestic supply of hides and skins. Accordingly all these depend on import. If these countries identify leather as a growth area and intend expanding their production and export of leather products, there is no alternative to augmenting availability of raw material by import. And if the tanning activity increases thereby, it is by their own choice and not due to 'dumping' of this industry here, by advanced countries. There is nothing wrong at all as in these countries it is possible to competitively process hides and skins, taking effective measures to deal with the resultant pollution.
In future, the growth of leather industry in any country or in any region of a country will depend on its access to raw material. The leather product industry can thrive and grow only if assured supply of raw material is available. A strong tanning industry, developed in an environmentally sustainable manner, is therefore the backbone for sustained growth of this industry in any location (Rajamani et al 1996).

5.10 OPPORTUNITIES AND THREATS

The above analysis of the global market place clearly brings out the areas of opportunity for the developing countries as follows:

1. Demand for leather products in advanced countries is high and will continue to rise and bulk of such demand will be met by imports.

2. Developing, low cost countries, that are able to create and expand production base for such products will be able to take a big share of the market for such products.

3. Effective access to raw material available globally is *sine qua non* for sustained growth of the leather product industry in any location.

4. A strong tanning industry, based on indigenous as well as imported raw material, developed in an environmentally sustainable manner is essential for expanding leather product industry in any country.
India indeed has a great opportunity with 10% of raw material available globally being produced here. Besides our policy allows duty free import of raw material from anywhere in the world. In India, Tamil Nadu has great scope in this sector for the following reasons:

1. Tamil Nadu has a rich crop of tannery operators and master craftsmen. Despite great scientific advancements, tanning hides and skins is still considered an art and the role of master craftsmen is important.

2. There are a number of institutions located in Tamil Nadu which can train personnel for tanneries and leather product industries - design, fabrication, quality control etc.

3. Over the past many years, the leather industry leaders have earned for Tamil Nadu an excellent reputation for fair business.

4. Other infrastructure such as roads, ports, banks, etc., of international standards are available here.

5. Managerial personnel, skilled workers and other facilitators for efficient business are available in Tamil Nadu.

The tanning industry has also developed in clusters in Uttar Pradesh, West Bengal, Punjab and Karnataka. The location of tanneries in the country and the tannery clusters with CETP facilities in the country are depicted in Figure 5.1.
Figure 5.1 Location of tanneries
Why should the industry interest the government? First, it is an industry ideally suited for the small-scale sector. The growth of this industry will thus give a fillip to the small-scale sector in the State. Secondly, it is an employment intensive industry. By a rough estimate, it may be stated that for every 25,000 rupees invested, a new job is created. As the leather product industry is suited to women employment, this will be an added attraction. Another aspect of the employment potential of this industry is that it provides subsidiary occupation to a large number of agricultural workers in flaying, collection of hides and skins and their marketing. Bulks of such people belong to the weaker sections of the society and the income earned by them is an important supplement to their families. In some cases, some such workers depend entirely on this source for income. The growth of the industry of course will result in added revenue to the state. Last but not the least, it will contribute enormously to the foreign exchange kitty of the nation.

However the threat to the industry comes from the environment angle (Ramasami 1997b). Though the tanners of Tamil Nadu are faced with a serious crisis following the orders of the Supreme Court, assuming that they are able to overcome the current crisis, continued sustained efforts are a must to ensure that the tanners always and ever conform to the pollution discharge standards prescribed. The reasons are the following:

1. Public awareness and consciousness have increased enormously about damage caused to environment by industries. Genuine non-governmental organisations have come up in different parts of the country to bridle unchecked industrial growth.
2. As a corollary, the sense of responsibility felt by the governments has increased manifold. In a democracy, any government will have to pay heed to the voice of the majority. The government will not tolerate violation of norms fixed by the Pollution Control Authorities by the industry.

3. The courts of law in this country have become quite concerned about the environmental damage caused by industries and are taking tough stand in disciplining the industry.

4. While the domestic situation is becoming more and more difficult day by day, from external point of view, due to pressure from green movements in advanced countries, increasing restrictions are being placed on import of products. Recent ban by Germany of use of azo dyes is a case in point. What Germany does today, others follow tomorrow.

5. International eco labelling is a new concept becoming popular in the world today. Under this, minimum product and process specifications will be made by an international group and if an exporter did not conform to these, he would not be considered environment-friendly. A stage may come when, due to pressure from their consumers, the importers in advanced countries will stop import of products from such countries, which do not meet pollution control norms (Sahasranaman et al 1998).
Any country or region, which does not fully comprehend these developments and genuinely prepare itself to face the situation, will have no future in this industry. Half-hearted and emergency measures will not help. Growth of this industrial sector is possible only if it will be environmentally sustainable.