

Environmental Regulations and Indian Leather Industry

The Tamil Nadu leather industry has complied satisfactorily with the required environmental and pollution control standards. However, challenges in the future will require the government and industry bodies to be more proactive in helping the smaller firms all over the country keep up with rising competition from China.

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In 'Trade Liberalisation and Environmental Protection: Responses of Leather Industry in Brazil, China and India', U Sankar (2006) has argued that the growing complexities in environmental protectionism (i.e., use of standards higher than the ones appropriate to developing countries) in the developed countries force a compliance requirement on developing countries like India. The compliance cost erodes their natural comparative advantage, apart from potentially worsening the social welfare. Given this, that paper concluded, there is need to assist firms to have smooth transition to ensure conformity with the required standards in a cost-effective manner.

The current analysis supplements the core arguments of Sankar (2006) through two exercises. First, the key findings of our survey of leather firms in Tamil Nadu on the compliance level of various standards are summarised here. Second, through a Data Envelopment Analysis (DEA) the efficiency scores of the leather firms in India (given their input and output data) are estimated. Finally, a few policy conclusions are drawn.

Environmental Adjustments

Environmental adjustment particularly in the leather industry began relatively early in Tamil Nadu as compared to other states in India. In 1989-90, Germany banned the import of leather items containing more than five mg/kg of Pentachlorophenol (PCP); followed by another ban on import of leather (and textiles) treated with azo dyes (benzidine) in 1994. Furthermore, in 1995, adjudicating on complaints brought by farmers on groundwater pollution by tannery effluents, the Supreme Court ordered closure of the tanneries in Tamil

Nadu that were not treating their effluents in accordance with pollution control regulations.

Several factors jointly helped Tamil Nadu's leather firms to respond to these bans [Pillai 2000]. First, quasi-public sector institutions such as Central Leather Research Institute (CLRI) and Council for Leather Exports (CLE) played a key role in standard setting, monitoring, testing and certifying and disseminating of new information about the German standards. The former particularly acted in a demand-driven manner by developing customised certification and testing procedures.¹

Second, leading exporters after the German bans helped the smaller firms, their input-suppliers, in finding ways to comply with the stringent regulations. Third, the policy environment encouraged innovations in the chemical industry towards new, PCP-free dyes. Furthermore, to popularise adoption of alternative dyes developed, the chemical companies offered technical assistance to small firms. As a result of these events around 80 per cent of Palar valley's units came together to join seven Common Effluent Treatment Plants (CETPs), which become functional within three years [Kennedy 1999],² the largest being in the Vaniyambadi area. Current number of CETPs operational in India is 16, of which 12 are functioning in Tamil Nadu. There is no tannery in Tamil Nadu without a pollution control device. Nonetheless, the instances of "collective failure" and free-rider problem at Palar valley have been cited at times [Kennedy 1999].

Survey Results

We present here a sample of 24 exporting firms of finished leather and leather goods in the Chennai area, covering both

Table 1: Summary of the the Survey of Tamil Nadu Leather Industry
(Per cent)

Characteristics	Yes	No
Establishment before 1980	29.17	70.83
Regular exporter in last three years	91.67	8.33
Export-sales ratio greater than 80 per cent	66.67	33.33
Whether NTMs faced	20.83	79.17
Buyers as a main source of information on environmental standards	100.00	0.00
Abatement measures used	87.50	12.50
Connected to CETP or ETP	87.50	12.50
Awareness about eco-labels or labour standards	87.50	12.50
ISO or BIS certification	8.33	91.67
Adoption of eco-labels	0.00	100.00
Adoption of labour-standards	66.67	33.33
Increase in time cost and supervision cost after the ban	70.83	20.17
Significant role played by chemical companies in promoting the use of substitutes of the restricted chemicals	75.00	25.00
Labour-labels beneficial to exports	79.17	20.83
Adverse impact of environmental standards on export in long run	87.50	12.50
Willingness to follow environmental regulations	79.17	20.83

Table 2: Summary of DEA Estimates on Input Usage Efficiency of Indian Leather Firms (1996-2003)
(Percentage of Units on the Frontier)

Year	Variable Returns to Scale (Pure Efficiency)	Constant Returns to Scale (Technical Efficiency)	Scale Efficiency
1996	25.00	15.63	46.88
1997	34.38	18.75	37.50
1998	35.48	12.90	29.03
1999	22.86	14.29	22.86
2000	27.03	16.22	37.84
2001	28.57	11.43	20.00
2002	25.64	17.95	58.97
2003	28.95	21.05	28.95
Average	28.49	16.03	35.25

small and large firms (annual turnover range Rs 12 lakh to Rs 200 crore), interviewed in course of a wider field survey.³ Most of the firms have been established during the last three decades with moderate to high export-intensity. The principal export market is Europe, followed by south-east Asia (Hong Kong, Korea and Japan) and the US respectively. Almost all of the surveyed units have been regular exporters during the last three years without facing major problems, testifying a certain degree of adoption of requisite standards.⁴ Although firms generally felt that they were given sufficient time by the importers to “modernise”, the ban has increased the time and efforts needed to supervise the production process, with obvious cost implications. However, the cost has not been prohibitive.

Interestingly, despite high awareness about “eco-label”, firms are yet to adopt such standards because it is not mandatory either for domestic or for export sales. Furthermore, only two out of 24 firms have ISO or BIS certification, with others claiming that it is not a prerequisite in the export or the domestic market.⁵ However, compliance with labour labels are quite high and firms are earnestly trying to maintain those standards, as there have been frequent visits by the importing country experts for checking maintenance of those labels to the proper criterion.

Most of the firms surveyed are either having an individual Effluent Treatment Plant (ETP) or are linked to a CETP. Link to CETP or ETP has resulted from a strict order by the Tamil Nadu Pollution Control Board. Interestingly, the funds for setting up of ETPs have been generated by the firms themselves, while the government has generally funded a portion of the establishment cost of the CETPs. However, the functioning of the installed ETPs have faced problems on several counts, e.g. – wrong load designing, exposure to a number of toxic and non-biodegradable chemicals and preservatives, irregular power supplies, etc [Rajamani 2001]. They have also suffered by following a regulatory approach rather than an incentive-based economic approach [Sankar 2006].

The enforcement mechanism regarding the functioning of CETPs/ETPs differs somewhat in Chennai than Kanpur. While it is true that though some of the tanneries have been closed following the Supreme Court order, around

80 per cent got themselves connected to either ETP/CETP. One of the interviewees in Chennai talked about bequeathing the effects of good environmental practices that they are practising as a part of the regulations imposed by the state government. Even though the tanneries cannot comply with the total dissolved solids (TDS) norms at present, they are in constant touch with CLRI to develop some mechanism/technology to meet the specified standard. But in Kanpur, even though most of the tanneries are either connected to CETPs and ETPs, they are reported to perform poorly.⁶ Furthermore, in many cases, the tanneries do not operate the ETPs regularly. The functioning of the CETP, which is managed by the local administration, suffers from poor management and shortage of resources.⁷ The increase in sulphate concentration due to increased chrome tanning has resulted in the reduction of biogas generation and an increase in sulphide concentration in the treated effluent from the CETP. Moreover, it is also not mandatory for a tannery in Kanpur to be connected with a CETP/ETP for continuing its production.⁸

For all the surveyed firms, the foreign buyers have been the most important source of information on environmental restrictions and standards, given their interest in quick adoption of the standards by their Indian suppliers. Moreover, almost all the firms relied on CLRI (which charged a very nominal fee)⁹ and private bodies in their advisory capacity (e.g. large chemical companies as mentioned earlier) for technical support to replace the restricted chemicals. The current policy environment has made the firms confident, willing to comply with 30 ppm Biological Oxygen Demand (BOD), 250 ppm Chemical Oxygen Demand (COD) and other related norms.¹⁰

While the present problems have been tackled somewhat adequately, our analysis shows that future concerns still remain. First, the firms have very limited technological capability and only around 1-2 per cent of the employees are technical personnel. Second, only two firms have testing facilities, but none of them undertake any R & D activities. Third, irrespective of size all the firms believe that infrastructure development is going to play a key role for capacity development, the sorry state of which is definitely a hindrance at times. Fourth, enhancing productivity and efficiency still remains a major

challenge. Fifth, more than imposition of non-tariff measures, competition from China is emerging as a major constraint that Indian leather firms are facing in the international markets. Our DEA attempts to check the seriousness of this threat in the future. Finally, given the current low level of government support in this sector, there is enough scope for enhancing it.

Input Usage Efficiency

We have used the all-India firm-level data for leather sector over 1995-2003 obtained from PROWESS database for the purpose of our study. After eliminating the spurious ones with missing information we adopted a one output and three inputs framework with gross sales as an indicator of output, wages and salaries as a proxy of labour input, depreciation plus interests as a proxy of capital factor and an adjusted variable costs component to represent other variable input factors. The proportion of efficient units on the frontier obtained through the DEA analysis is presented in Table 2. It is observed that among leather firms while the proportion of pure efficient units and units experiencing scale efficiency is moderate, firms having technical efficiency are currently at a low level. Moreover, the efficiency level has decreased in the post-1998 period. The result implies that many of the leather units are not producing at the efficient point, thereby incurring a higher production cost, which in turn leads to a higher per unit cost. The results suggest that the higher standard adoption requirement is likely to erode the level of competitiveness of the firms already producing at inefficient scale further. Clearly this leaves enough space for policy intervention by the government.

Conclusion

Two of the most critical challenges for the leather firms in the recent period are the growing emphasis on environmental and pollution control standards, and the greater scrutiny over labour practices. While our field survey reveal that firms have responded to the challenges in the short run in a satisfactory manner through private initiatives coupled by technical inputs from quasi-public sector; more intense participation from the government and industry bodies is required to help local firms, especially the smaller

ones, meet future challenges. Our DEA results revealing an already low technical efficiency level for Indian leather firms suggests that compliance costs are likely to affect them in a significant manner. The question of cost efficiency becomes all the more important on the face of the rising competition from Chinese firms. It is time to understand that apart from production-decisions, adopting higher environmental standards, cleaner technologies, as well as good labour practices is not a trade-off with growth, but a critical component of it, and act accordingly. pavel@teri.res.in

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Notes

- 1 To do so, CLRI upgraded its own technical facilities and develop relationship with a German research institute to establish mutually acceptable testing procedures.
- 2 Within three years of the first (PCP) ban, only 7 per cent of all leather samples tested more than five mg/kg levels of PCPs compared to the corresponding figure of 46 per cent in 1990, right after the ban. In 1998, three years after the second ban was imposed, only one in 129 samples tested failed the azo dye test compared to nearly all in 1994.
- 3 The other places surveyed include leather firms located in Kanpur and Kolkata.
- 4 In Chennai especially, all the firms have agreed that the domestic requirements are adequate to deal with export requirements, in fact

domestic regulations particularly in Chennai are much more stricter than the international norms. Tamil Nadu Pollution Control Board, Interview, Chennai, 2005.

- 5 Field Interview, Chennai, 2005.
- 6 Inputs from Regional Director-CLE, Kanpur, 2005.
- 7 Inputs from UP Pollution Control Board.
- 8 Field Interview, Kanpur, 2005.
- 9 Field Interview, Chennai, 2005.
- 10 It needs to be mentioned that the ETBs in Tamil Nadu have been found ineffective in meeting the TDS norms of 2,100 parts per million prescribed by the Tamil Nadu Pollution Control Board. The TDS values of the treated effluent from these tanneries are reported to be three to four times higher than the limit.

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