Chapter V
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CHAPTER V

POLLUTION CONTROL APPROACH IN INDIA

5.1. INTRODUCTION

The negative impact of tannery pollution occurs since the pollution control approach in the country is not upto the expected level. So a detailed analysis of pollution control approach in the country is discussed here. Though there is no separate legislations enacted in most of the countries for controlling tannery pollution, a discussion in controlling tannery pollution is made along with the above aspects.

5.2. POLLUTION CONTROL APPROACH IN INDUSTRIALISED COUNTRIES

Pollution is not only a local problem, for several years it has evolved into a global phenomenon. Nations have had past experiences of mismanagement of environmental resources. The pace of environmental destruction in the developed countries has accelerated as a consequence of the exponential growth of economies and population. As economic growth mushroomed in the 20th century, the amount of man-made pollution generated exceeded the carrying capacity of the natural environment. Therefore, there is need for government intervention to protect environment for sustainable development. The government is the supreme
With regard to pollution control policy, most of the industrialised countries follow the adoption of 'Standard and Enforcement Approach' and 'Economic Instruments Approach'. While they setting standards, for air and water pollution most of the countries follows technology based standards (for e.g., U.S.A., U.K., and Japan). With regard to the usage of economic instruments, a series of fiscal instruments has been developed and is already in operation in industrialised countries. "A recent OECD study of 14 industrialised countries revealed that they were using a total of 170 economic instruments. Of the 85 economic instruments in the 6 case study countries, roughly a 50 per cent of these were 'charges', only about 30 per cent were 'subsidies'. An important fact in this regard is, the European countries took the lead in implementation of these economic instruments. According to the study, the success of using economic instruments have been achieved in Netherland, Sweden, and in U.S.A, i.e., the Water Pollution Charges in the Netherland, Deposit Refund Schemes in Sweden and Emission trading in U.S.A.
5.3. POLLUTION CONTROL APPROACH IN INDIA

India is basically agrarian character, but it has achieved a great deal of diversified industrial development. Since independence, production in industrial sectors such as steel, petroleum, fertilizers, pesticides, cement, plastics and organic and inorganic chemicals has increased much more than 40 times and in some cases as much as 100 times. One noteworthy thing necessary to consider is the economic development in the form of industrial growth bring its own problems. Among them the most important and widely discussed one is the onslaught on the environment and the depletion of natural resources. Continuous growth of large, medium scale industries in India accentuated the pollution problem. India is one of the very few countries of the world which enshrined in its constitution a commitment to environmental protection and improvement. When the worldwide consciousness on environmental issues increased in 1972, after the 'United Nation Conference on Human Environment' in Stockholm, India also opened its eyes for the necessity of environmental protection. A National Committee on Environmental Planning and Co-ordination was set up in that same year in India to act as a high level advisory body to the government. Later due to bureaucratic problem it was replaced by a National Committee on Environmental Planning (NCEP) in April, 1984 on the recommendations of the Tiwari
Committee (1980). Tiwari committee was appointed on 29th February, 1980 for recommending legislative measures and administrative machinery to strengthen the existing arrangements towards environmental protection. The committee reported on September 15th, 1980 and one of its important recommendations was to establish a Department of Environment (DOE).

The DOE was established on November 1st, 1980. The chief functions of the Department of Environment are:

(a) to serve as a nodal agency for environmental protection and eco-development in the country.
(b) to play a 'watch dog' role to study and bring to the attention of government and parliament instances, causes and consequences of environmental degradation in all sectors.
(c) to carry out environmental appraisal of development projects and
(d) to carry out administrative responsibility for
   (i) pollution monitoring;
   (ii) conservation of critical eco-system designated as biosphere reserve; and
   (iii) conservation of marine eco systems.

Several laws have been enacted from time to time which are directly or indirectly related to environmental...

In March 1974 the Water (Prevention and Control of Pollution) Act was passed which comprises 64 sections and covers almost every type of water pollution. This act provides for setting up a Central Pollution Control Board and State Pollution Control Boards for prevention of water pollution. According to the Annual Report of Central Pollution Control Board for 1989-90, it is observed that 23 states of the nation have already adopted the act and respective state pollution control boards have been constituted. The act empowers the states to take emergency measures including issuing of orders restraining persons from causing pollution. It also empowers all the boards to move the court of law for restraining an apprehended act of pollution.

The Water (Prevention and Control of Pollution) Act was amended in 1988. However, after its amendment, now this act imposes a condition that a person have to get consent
from State Pollution Control Board before he establish new industry or extension of the industry which likely to discharge effluent.

Air (Prevention and Control of Pollution) Act was passed in 1981 and its powers are performed by the respective state boards and central pollution control board which were set up under the earlier Water (Prevention and Control of Pollution) Act of 1974. This act was amended in 1987.

With a view to augment the financial resource of the central and the state boards, the Government of India have enacted the Water (Prevention and Control of Pollution) Cess Act 1977, which provides provisions for the levy and collection of a cess on water consumed by certain industries and by local authorities.
The rate of cess is as follows:

**TABLE 5.1**

**RATE OF WATER CESS FOR VARIOUS WATER USE IN INDUSTRIES**

<table>
<thead>
<tr>
<th>Purpose for which water is consumed</th>
<th>Maximum rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Industrial cooling, spraying in mine pits or boiler feed</td>
<td>Three-fourth of a paise per kilo litre</td>
</tr>
<tr>
<td>2. Domestic purpose</td>
<td>One paise, per kilo litre</td>
</tr>
<tr>
<td>3. Processing whereby water gets polluted and the pollutants are easily bio-degradable.</td>
<td>Two paise, per kilo litre</td>
</tr>
<tr>
<td>4. Processing whereby water gets polluted and the pollutants are not easily bio-degradable and the toxic.</td>
<td>Two and a half paise per kilo litre</td>
</tr>
</tbody>
</table>

**Source:** Tamilnadu Pollution Control Board, "Pollution Control Legislation". Madras, 1989, p.125.

The Environment Bill 1986 was passed on May 8, 1986. This act is by far more comprehensive than the rest on matters related to environmental problems. It gives more powers to central and state boards to take all such measures which are necessary for the purpose of protecting or improving the quality of environment and lists a variety of subjects including quality standards, maximum possible concentration of pollutants and location of industry etc. The act, thus extends government control beyond air and
water pollution to include other possible polluted media. That is, it specifically defines hazardous substances as a regulatable category separate from ordinary pollutants. According to this act, even the ordinary citizen has the right to go to the court on alleged offenses, after giving 60 days notice of his complaint to the central government or the competent authority.

Several new initiatives have been taken by the Ministry of Environmental and Forests during 1989-90 for the control of industrial pollution. They include:

(i) Legislation to incorporate civil liability in case of environmental damage and organizing of 'environmental courts' to quickly dispose the cases involving compensation claims.

(ii) Introducing a system of making Environment Friendly Products (EFP). The ministry prepared a paper on this and hopes that if it is accepted, may encourage consumers to buy environment friendly products which may in turn put pressure on industries to change their manufacturing process.

(a) Setting of Standards

The central board is the apex body attending to the problem of water and air pollution at the national level and advises the central government in formulating all the
policies and plans for action of environmental pollution. It acts as the State Board for some Union Territories and co-ordinates the activities of the State Boards in the nationwide implementation of pollution control and monitoring through the regional offices. To control pollution, India followed regulatory method which come under direct controls. Under this approach, the pollution control authorities prescribe the environmental quality standards for water and air with which the polluting industries must comply. Standards for environmental management in India are formulated by the Indian Standards Institute (ISI). The central board and most of the state boards have adopted ISI effluent standards as the basis for environmental reviews.

Generally the standards prescribed range from 80 to 90 per cent of pollution to be abated. Standards were fixed not in terms of percentages to be abated, but in terms of actual pollutants discharged. Air and water quality standard in India approved by ISI were based on the techno-economic feasibilities of treatment techniques, protection of the environment, likely damages of the receiving media and their usages.

Apart from this, the central board in India prepared industry wise comprehensive documents in evolving industry specific Minimal National Standards (MINAS) based upon the
evaluation of cost of various levels of treatment for certain industries" MINAS have been promulgated both for water and air polluting industries. The industries to be subjected to MINAS appear to have been selected because they were highly polluting or so large in volume that pollution problem, because they were located in or near population centers or there were known technologies that could allow standards to be met".

Regarding the enforcement of standards for those specific industries, it is observed that the state boards may adopt their own standards but they must be more stringent than MINAS level depending on the location of the industries. They shall not however, relax the standards. "The prescription of MINAS based on annual burden of treatment as certain percentage of annual turnover of the industry, is liked by industries as because the industry can pass on the cost of pollution control to the price of product".

Upto 1987, MINAS was finalised for ten water polluting industries and 12 air polluting industries. Central Board's Annual Report 1989-90 reported that, MINAS for liquid effluents were finalised for dye and dye intermediates, selected inorganic chemicals (part I), paint manufacturing, and Bullion refinery in 1989-90. During 1990-91 MINAS have been finalised for limekiln, jute processing and fruit processing industries.
(b) Environmental review in licensing

To start a new manufacturing establishment or altering the major operation of existing plant it is necessary that an entrepreneur have to get a licence from the competent authority according to the Industry (Development and Regulation) Act of 1951. After the various reviews by numerous departments at center and state governments, the government issue a Letter of Intent (LOI). It describes the approved project and also stipulates a set of conditions for the license. It takes minimum a year to convert the LOI to a full fledged industrial licence by fulfilling the conditions specified in it. Along with various reviews, environmental review is also carried out in the licensing system. Environmental review is simply added to the many other criteria for project approval. The first and important requirement for environmental review is consent order or permit. Consent order is issued by state pollution control board in which the factory would be located. The consent order lists the levels of effluent allowed to the factory as well as other environment related conditions of operation. Valid time period for the issued consent order depends on the polluting potential of industrial units. For instance, highly polluting units have to get consent order every year. It is illegal for a factory to operate without a consent order.
The second aspect of environmental review in the licensing system is "adequate steps shall be taken to ... prevent air and water pollution. Further, such antipollution measures to be installed should confirm to the effluent and emission standards - prescribed by the state government in which the industrial undertaking is located." However, installing the necessary equipment is not by itself a sufficient condition for environmental protection. Therefore in 1984, the Government of India designated 20 categories of polluting industries for which the location or site review is an important control mechanism. For these 20 industries, the LOI can be converted into a license only after the State Director of Industries confirms that the site has been approved from an environmental angle by the relevant state authority, i.e., State Pollution Control Board. These three aspects are required for the environmental review while the applicants asked to fulfill certain conditions to convert the LOI to a full-fledged licensing. From 1985, apart from this, a new procedure, 'No Objection Certificate' (NOC) was instituted.

(c) Effluent Treatment Plant (ETP) Status

The central and the state boards in 1984 completed a countrywide inventory of water polluting large and medium industries, along with the effluent treatment plant status. An analysis of the inventory data reveals that a
total of 4054 industrial units have been identified, both in large and medium sectors as relevant to water pollution. In which 51 per cent (2076 units) had taken appropriate measures to treat the liquid waste before discharge (Table 5.2).

TABLE 5.2

<table>
<thead>
<tr>
<th>ETP Status</th>
<th>Number</th>
<th>Per cent</th>
<th>Percent of the Total Industrial Units (4054 units)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating and Commissioning Stage</td>
<td>1314</td>
<td>63</td>
<td>32</td>
</tr>
<tr>
<td>Construction and Planning stage</td>
<td>762</td>
<td>37</td>
<td>19</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>2076</td>
<td>100</td>
<td>51</td>
</tr>
</tbody>
</table>

Source: Central Pollution Control Board. "National Inventory of Water Polluting Industry and Status of Effluent Treatment Plants". The Institute of Engineers. 1984 New Delhi.

Sixty seven percent in the large sector and 39 per cent in the medium sector have taken appropriate measures for pollution control. The states of Karnataka, Gujarat and Maharastra led in the setting up of effluent treatment facilities with 95 per cent, 86 per cent and 80 per cent of the units there, respectively, having such facilities.

The other states which had been identified as important from this viewpoint but had lagged behind were Andhrapradesh, West Bengal, Tamil Nadu, Haryana, and Uttar
Pradesh. Seventy Five per cent of the total 4054 units identified as relevant to water pollution were situated in these eight states. Regarding the industrywise status of ETP, the inventory suggest that there were 11 categories (out of 25 categories) may be referred as major group and in this major group the following categories have put up ETP in more than 50 units.

**TABLE 5.3**

**INDUSTRY-WISE STATUS OF ETP IN 1984**

<table>
<thead>
<tr>
<th>Industry Category</th>
<th>Percentage of industry with ETP</th>
</tr>
</thead>
<tbody>
<tr>
<td>i. Pharmachutical</td>
<td>74</td>
</tr>
<tr>
<td>ii. Distillery</td>
<td>65</td>
</tr>
<tr>
<td>iii. Organic Petrochemical</td>
<td>65</td>
</tr>
<tr>
<td>iv. Inorganic Chemical</td>
<td>65</td>
</tr>
<tr>
<td>v. Tannery</td>
<td>64</td>
</tr>
<tr>
<td>vi. Pulp and Paper</td>
<td>62</td>
</tr>
<tr>
<td>vii. Sugar</td>
<td>57</td>
</tr>
</tbody>
</table>

Source: Central Pollution Control Board, "National Inventory of Water Polluting Industry and Status of Effluent Treatment Plants", The Institute of Engineers, 1984, New Delhi
General Engineering, Textile, Foodstuffs and Edible oil and Vanaspathi units are the rest of the four categories in the major group who are asked to improve their progress in installation of ETPs.

(d) Fiscal Incentives for Pollution Control

In India, though direct regulation is conventionally adopted to the Industrial pollution, the Government in recent times have resorted to the use of economic instruments. To generate enthusiastic public involvement the government decided in 1982 that the amount paid by a tax-payer to any association or institution for programs of conservation of natural resources will be allowed as deduction in the computation of taxable income. Under Water (Prevention and Control) Cess Act 1977, it is provided that any person or local authority, may obtain rebate at the rate of 70 per cent of the actual cess, if they installed pollution abatement devices and running them efficiently to the satisfaction of the State Water Pollution Control Boards.17

Another scheme of incentive announced in the budget for 1982-83 is depreciation allowance at 30 per cent on devices and systems installed by industrial units for reducing industrial pollution. This allowance was raised from 30 to
50 per cent in the 1988-89 budget. In addition to that, from the financial year 1983-84 the industrialists can use the grant of investment allowance at a higher rate of 35 per cent of the actual cost of new machinery or plant which would assist in control of pollution. As a measure of decongesting the over crowded cities and for reducing pollution, Capital gains arising from transfer of building or lands used for the purpose of business are exempt from tax if they sell their assets and move to a new place. And recently in 1993 budget, Dr. Manmohan Singh, Finance Minister allowed 100 per cent depreciation allowance on pollution abatement and treatment plants for controlling pollution in the country.

(e) Critical Analysis on Pollution Control Approach in India

Pollution control policy in India is caught in the pattern of relying on mandatory controls, standards and legal enforcements. "Though apparently anti-pollution law is made stricter now, in India, it is not likely by itself to achieve a significant improvement in pollution abatement. The major weakness of the regulatory system is the large amount of distinction and even laxity that it allows the authorities incharge of monitoring and ensuring the implementation of the law. Merely because it exists in the statute book, its implementation cannot be taken for granted
as automatic. The authorities have often moving into action only after local people have strongly protested with perseverance. This is because the officials don't have adequate staffs, finance to inspect all units.

Nirmala Saraswat indicated that the present pollution control approach has served very limited purpose in ensuring environmental protection. The main reasons for that are:

(i) The existing approach considers industrial protection as a black-box primarily imposing controls at the end of the pipe or at the beginning of the pipe. Therefore it does not induce pragmatic waste management through changes in raw materials, and production processes or by products recovery.

(ii) The pollution control approach is based on a set of media specific policies concerning air quality, water quality, waste disposal and so on. Since the inter relationship amongst various environmental media are not recognised in this approach, it merely leads to a problem shifting rather than solutions that minimise the overall damage to the environment.

(iii) A major drawback of the pollution control approach is that it does not induce
internalisation of environmental damage costs. This is because polluters normally find it economically advantages to pay the penalties rather than comply with the regulations. Even if penalties appear to be sufficiently stringent, the complexity of the legal process and its inherent drawbacks leave loopholes for non-compliance.

(iv) The legalistic approach followed by pollution control boards is countered by the industries in the same (legalistic) way by filing cases on 'formal procedural' aspects. This leads to considerable delays and finally deadlocks and the actual environment issue is side tracked.

This fact is confirmed by the report of Estimate 21 Committee of 8th Lokh Shaba i.e. the committee feels deeply concerned to find that quite a large number of cases regarding violation of provisions of water and air acts are pending in various courts. While these cases may take several years to be decided, the danger from the defaulting industries which in the mean time, continue to discharge polluting effluents or emit air pollutants looms large on the lives of the people in the concerned areas. Critics pointed out that there are hurdles appeared also in
complying with standards. MINAS prescribed by Central Pollution Control Board (CPCB) is laid down after a bargaining between industry representatives and pollution control board staffs. This method of fixing standards often makes them unscientific. Another thing in this regard is, on the part of industries, according to two studies, compliance with the MINAS is a difficult operation.

The Central Pollution Control Board has prescribed MINAS with a provision that the state boards can further tighten some parameters at their discretion. According to the Associated Chamber of Commerce (ASSOCHAM) study, this provision has led to many parameters being made unachievable in practice. In many areas the fresh water itself has higher BOD and COD levels than prescribed by the state boards. The industry representatives therefore feel that the state boards should have the freedom to relax selectively the MINAS parameters after careful assessment of the overall environmental quality. Federation of Indian Chamber of Commerce and Industry (FICCI) study confirmed this fact.

Regarding the enforcement of the various laws, the ASSOCHAM study reveals feeling among the industrialists that there are state level variations in determining the basis for buying charges for giving clearance under the different acts and that these have to be rationalised. For
instance, Tamilnadu charges for consent order on the basis of capital investment where as Maharastra charges on the basis of daily consumption of water. For charges under the Air Act, Maharastra takes into account the nature of the industry while in Tamilnadu the fixed assets are taken as the basis. So variations in enforcing the laws motivate the industrialists to find out and use the loopholes in the acts.

To consider industrialists views towards pollution control approach of government, it is necessary to adopt a periodical thorough recheck of the norms prescribed earlier. And this must be considered on the basis of location specific problems.

To get licence, after 1985, getting NOC is a must. But it takes four to eight months to issue a fully researched certificate. This is because resources are limited and the licensing process is extremely lengthy before coming to NOC review. So in this situation, State Pollution Control boards are under pressure to issue NOCs quite quickly. For this reason critics believe that the NOC review is "ritualised" and "perfunctory" rather than a serious point of environmental review. The system of NOC practiced till date had remained one of the weakest link in pollution control.
In 1985, a set of environmental guidelines for siting of industries was issued by the Union Government. It was specified in the guidelines that ecologically sensitive areas should be avoided in establishing any polluting plant. A minimum distance of 25 kilometers had to be maintained between such a site and polluting plant.

Drawbacks exist not only in the environmental review of licensing and siting of industries, but also in other policy aspects. The existing policy framework ignores the impact of the policy decision on the another sector and thereby on the environment. Most of the small scale industries do not come under the Factories Act and the Pollution Control Regulations and siting procedures do not apply to them. Resultantly, the market mechanism favours a shift towards small scale industries in order to avoid pollution control costs. The Industrial policy has neither been effective in identifying industries which adhere to environmental provisions nor the multidimension aspects of environment is appreciated. The main reason for these policy conflicts is that environment is treated like a separate sector such as industry, agriculture and so on. Unless the interactive nature of environmental aspects is recognised and
appropriate adjustments introduced in the sectoral policies, these inter policy conflicts are bound to continue.

In India the process of law making and its implementation in the context of environment have remained as bureaucratic exercises. The mandatory sanctions in the law are repressive in nature. The concept of positive sanctions, where industries do not pollute are rewarded in a variety of ways is not followed. Such a positive approach should be brought into the pollution control approach.

To tackle the various problems mentioned above, it is necessary to change the static character of our pollution control approach. The present approach does not create any self interest amongst those who cause pollution. Litigation will always cause opposition and will always be countered with weapons. Only recently the Ministry of Environment realised this and hence a beginning has been made in a direction by having regional meetings between industry and environment agencies i.e. between industry and state pollution control boards for better understanding in solving the pollution problem. Hope this will provide a desired result.

In addition, the government has to increase its role in controlling pollution by using more of economic instruments.
In the Western Countries there is growing interest in the use of fiscal instruments (economic instruments) for environmental management and there are a number of reasons why these measures also be relevant for us. One such important reason is the growing disenchantment with the present regulatory system.

Among the number of instruments, the government may adopt pollution tax as a measure for its pollution control activities. Pollution tax along with the regulatory system may be suitable for the country like India. The purpose of these taxes would be less to raise revenue for governments and more to modify economic behaviour favouring better environmental quality.

Advocates of ecological tax reforms are saying that taxes or charges ought to be levied on

a) the use of natural resources and energy to force producers to be more efficient and consumers to be more abstemious in their use and

b) the generation of harmful emissions and toxic substances so that producers will innovate cleaner process.

According to Dr M.N. Murthy, "Once the environmental standards are fixed through a political process or a process
involving all the parties affected by pollution, the government has to fix such a tax that the polluters adopt abatement technologies to realise those standards.27

Setting standards, Murthy and his associates argue, is a political process that should involve both the victims and perpetrators of pollution. In India, while the MINAS by the Central Pollution Control Board try to keep the cost of pollution control within one per cent of the annual turnover of a firm, it is the interests of polluters alone have been taken care of, not the victims. Hence, it is suggested the standard imposed should be stringent, depending upon local water quality requirements as only such standards will eliminate the direct damages borne by the victims.

In India, levying of pollution tax is not always easy. The regulatory system along with appropriate use of economic instrument would be highly instrumental in handling the pollution. It may be better to look for an economic instrument alone since it does not need any regulation. But it is not possible for all the industries with hazardous wastes which cannot be monitored by using only economic instruments. In such cases, it is necessary to continue command and control system. The authority has to impose stringent standards to control pollution of such industries.
The effectiveness in implementing economic instruments and direct control systems count on the public awareness about the ill effects of pollution and the seriousness of the Government in curbing it. Any pollution control device would produce the desired outcome if they are open to public scrutiny and less amenable to corruption.

5.4. POLLUTION CONTROL APPROACH IN TAMIL NADU

The planners and policy makers in the country have promulgated pollution control laws at the national level which have been adopted by the various State Government's. They implement them through State pollution control boards.

As far as Tamil Nadu is concerned the Pollution Control Board was established in February, 1982. The Board has the responsibility of administering the following legislations.

(iii) The Air (Prevention and Control of Pollution) Act 1981, as amended in 1987
(vi) The Hazardous Chemical Rules 1989, and

All new and existing industries are required to apply to the pollution control board for permission to discharge sewage/trade effluents into any stream or well or sewer or on land and/or operations in the air pollution control area. Board has taken 45 days to issue consent order for green site applications.

All industries are classified as Red, Orange and Green by the Government of India, Ministry of Environment and Forestry on the basis of their potential for causing pollution. Red category industries are highly polluting industries, orange category indicates less polluting industries and green category industries are non polluting industries. All the three category of industries have to apply for consent and all consents are valid upto 31st March of the year. Red category, i.e. highly polluting industries have to get the consent renewal annually, orange category industries have to get the consent renewed annually till the effluent treatment plants are commissioned, thereafter renewal will be every two years. Green category have to get the consent renewal once in every two years. Income from
consent fees and consent application forms is the major revenue of the Board. In 1989-90 for Tamil Nadu, it was 2.58 crores which increased to Rs.2.95 crores in 1990-91.

Violation of the laws carry punishments of not less than one year which may be extended upto six years and with fine. In case of continued violation, a fine upto Rs.5000/- every day during which such infraction continues.

Releasing the fact that the pollution Control Board has to interact with industry, the activities the board have been reorganised and decentralised with effect from 1.12.1988. Under the present arrangement there are regional offices of Senior Environmental Engineers at Madras, Trichy, Madurai, Coimbatore and Vellore. Offices of District Environmental Engineers are located in Madras, Chengai MGR (North), Chengai MGR (South), South Arcot, Thanjavur, Trichy, North Arcot Ambedkar, Salem, Dharmapuri, Periyar, Coimbatore, Nilgiris, Madurai, Chidambaranar, Dindigul Anna and Kanyakumari (30). Decentralisation and delegation of powers to regional offices of the Board, for issue of consent would help in minimising delays. Such a practice of Tamilnadu Pollution Control Board is not adopted in other states. The district offices receive and
process the application forms various persons desirous of setting up industries. In addition they are also required to inspect and monitor the industries in their jurisdiction and to ensure that proper pollution control measures are adopted.

The Board achieved good organisational growth during 1982 to 1991. It started with 17 staffs in 1982, which increased to 635 in 1991. However, the composition of the staff reveals that engineers and scientific staffs are in shortage. The need for more number of technical staffs in the Board is essential for any developing state which ventures to control pollution activities progressively.

The board is supported only with few laboratory services. There are three advanced environmental laboratories, four district environmental laboratories. To deal with problems concerning clusters of industries in the tannery and dying sectors, the board has taken initiative to organise these units to set up Common Effluent Treatment plants and assume responsibility for operating and maintaining them. Thereby the board establishing the principle that the polluter should clean up the pollution caused. The construction of the common effluent treatment plants is under progress in the following locations in Tamil Nadu; Pallavaram, Ranipet, Erode, Tiruppur and Dindigul.
To create environmental awareness among the public, Tamilnadu Pollution Control Board organises seminars, exhibitions and publication of periodical newsletters. The issue which needs further attention is publicity and advertisement, which is not enough in the present context. The Board allotted very meager amount towards this in its budget.

Apart from air and water pollution control activities, the board involves hazardous waste management regulations through Hazardous Wastes Rules, 1989. In May 1992, vehicular pollution monitoring campaign was carried out especially for heavy commercial vehicles in Madras city. Further, as a future programme the Board planned to set up an emergency response centre in the state.

Tamil Nadu Pollution Control Board which is having nexus with international bodies is particularly involved in monitoring of major river basins under GEMS established by WHO, WMO, UNESCO and UNEP. The Board received sophisticated equipment from ODA to the extent of Rs.1.2 lakhs as an aid under the Indo-British agreement. The world bank has proposed to provide funds to the extent of $2.74 millions to strengthen its laboratories and the UNIDO has agreed to provide technical assistance of about $1.4 million for the establishment of CET plants in Tamilnadu.
5.5. ISSUES RELATED TO REGULATIONS OF TANNING INDUSTRY
POLLUTION IN INDUSTRIALISED COUNTRIES

In the last two decades profound changes have taken place in the global leather industry. A review of the changes in the leather industry in different countries show that the relocation and structural changes have come about mainly on account of the shifts in the comparative advantage of countries in terms of availability and cost of raw materials, labour, capital energy, chemicals and other production inputs. Moreover the preference for hi-tech industries and stringent environment regulations in the developed countries have accentuated these changes.

Developed countries have already started to shift their tanning activities to developing countries. "The first migration of leather industry from advanced countries like the U.S.A. took place around 1970, when U.S. manufacturers started moving out their manufacturing facilities to low cost countries in view of rising cost of production due to increased wage levels, high cost of pollution control measures and growing reluctance on the part of newly emerging labour force to enter this industry. They moved first to South Korea and Taiwan".
The prominence of green issues in the public mind in Western Europe and North America are also reason for the shift of these tannery industries to other countries. In this regard, the International Council of Tanners (ICT), President stated that, the "ICT has recognised that the demand for leather products in the future may well depend on how the consumer sees the industry's attitude towards the environment". So here an analysis of pollution control measure for tanning industries in some industrialized countries is discussed.

Industrialised countries like U.S.A., Japan, Germany, U.K, and France also involved in leather and leather products manufacturing. But most of the tanners in these countries reducing their tannery activities by shifting tanneries to developing countries. This is mainly because of adoption of stringent environmental measures by their governments. In U.S.A., although categorical standards for the tanning industry have been in use for some time, they are not likely to remain static. The Environment Protection Agency (EPA) is now moving away from the 'Best Available Technologies Standards' to second generation standards based on local water quality criteria. In Japan, tanneries are subject to the regulations contained in the Water Pollution Prevention Law and the Sewerage Law. In Germany one area
in which their tanners have faced frighteningly high costs is in meeting environmental protection legislation. Discharge limits on prescribed substances in waste water are some of the toughest in the world and now they are being joined by air pollution restriction also. The country is using an economic measure, Effluent charges, which is computed for the tanning industry on the basis of volume, solids, contents, COD/BOD and toxicity. For U.K. tanners, the pressures come not only from UK legislation but also from the way in which EC Directives are applied in the U.K. The recent legislation, Environmental Protection Act 1990 sets out prescribed processes and substances which may not be disposed to any medium without authorisation. Thus U.K. tanners are faced with new or modified legislation affecting discharge to water, to land and for the first time to air. In France, apart from restrictions through the 'Act on Management and Allocation of Water Resources and Abatement of Water Pollution 1964', the country uses large variety of economic instruments like charges, permits, quality standards subsidies and tax cuts for controlling tannery pollution.
5.6. POLLUTION CONTROL APPROACH IN INDIAN TANNING INDUSTRY

In India, no separate legislations are adopted for controlling tannery industry pollution. Factories Act 1948, Water (Prevention and Control of Pollution) Act 1974, Water (Prevention and Control of Pollution) Cess Act 1977, Air Act 1981 are designed to protect the environment from industrial effluents. These acts, so cover the tannery industry pollution also. The Factories Act 1948 amended in 1987 has introduced special provisions for ensuring safety and health of workers who are engaged in hazardous industries. The leather tanning industry has been identified in the act as hazardous industry. The act lays down the maximum permissible limits of exposure to chemical and toxic substances in the working environment. The factories act stipulates that effective arrangement must be made for the treatment of waste and industrial effluents.

The Environment Protection Act 1986 is an umbrella legislation applicable to all industries and has stringent provisions to protect the environment. The state pollution control board monitors water and air pollution coming from the tanning industry, according to the guidelines of the central pollution control authorities. Before starting a tannery it is necessary to get environment clearance from the state pollution control boards.
To control the tannery industry pollution through regulatory method, almost all states followed tolerance limits prescribed by ISI. The following table gives some of the specific tolerance limits (for effluent discharged into inland surface waters) prescribed by ISI for tanning industry.

Effluents in Chrome Tanning industry shall meet with the tolerance limits given in Table 5.4

**TABLE 5.4**

**SPECIFIC TOLERANCE FOR EFFLUENTS OF CHROME TANNING INDUSTRY**

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Characteristic</th>
<th>Tolerance</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Chloride, Mg/l</td>
<td>1000.0</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>BOD(5 days at 20 C) mg/l Max</td>
<td>30.0</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Hexavalent Chromium, mg/l Max</td>
<td>0.1</td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>pH</td>
<td>5.5 to 9.0</td>
<td></td>
</tr>
</tbody>
</table>


Table 5.5 gives the tolerance limits for the effluents of vegetable tanning industry.
TABLE 5.5
SPECIFIC TOLERANCE FOR EFFLUENTS OF VEGETABLE TANNING INDUSTRY

<table>
<thead>
<tr>
<th>SI.No.</th>
<th>Characteristics</th>
<th>Tolerance Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Biochemical Oxygen Demand (for five days at 20°C) mg/1 max</td>
<td>* 30</td>
</tr>
<tr>
<td>2.</td>
<td>Chlorides, mg/1 max</td>
<td>1000</td>
</tr>
<tr>
<td>3.</td>
<td>pH</td>
<td>5.5 to 9.0</td>
</tr>
<tr>
<td>4.</td>
<td>Suspended solids, mg/1 max</td>
<td>100</td>
</tr>
<tr>
<td>5.</td>
<td>Color and Odour</td>
<td>Absent</td>
</tr>
</tbody>
</table>


* For existing vegetable tanneries relaxation upto a value of 100 may be granted. Mention has to be made that the tolerance limits mentioned above are specific tolerance. In addition to these, general tolerance limits are also to be looked for.

Discharge of effluents exceeding the tolerance limit is construed as an offense.

In March 1990, following an investigation by a special Government Committee, the Indian Supreme Court closed four tanneries in Kanpur, for polluting the Ganges river as they had failed to comply with pollution regulations. The committee also
criticised 18 other tanneries for operating with faulty pollution control systems. They were given six weeks by the courts to rectify these problems. The judges also directed 35 tanneries to pay their contributions towards a new communal waste treatment plant. Tanning operations in 31 units were instructed to undertake repairs to their waste treatment plant.

In Indian context, any type of litigation imposed has always been nullified by the political interference and thereby allowing the tanneries to escape prosecution.

5.7 ACTION IN THE STUDY AREA:

The tanning industry while contributing to the development of Dindigul Anna District has also created ecological problem due to effluents from tanneries, which is being allowed to flow into the land surrounding the factories. The contamination has affected the lives and livelihood of villagers around the area. People had been representing to authorities since 1980 to save their life. Various voluntary organisations and the public resorted to Agitations like hunger fast, rallies, road, blockade etc. protesting against the Health hazards due to pollution from Tanneries. Government officials were asking for
evidence for the damages caused by the effluents. So a local voluntary organisation gathered the information and made a report on tannery pollution in Dindigul which highlighted the plight of village people. The availability of evidence altered the scene considerably. But nothing happened in a progressive way.

The office of the Tamilnadu Pollution Control Board (Office of the District Environment engineer) functioning in the district to look after the various aspects like collection of water cess, consent fees, periodical inspection of tanneries, collection and testing of effluent samples etc., it is not proper due to inadequate resources and personnel.

To quote an example in this regard, when the researcher discussed with an officer, he mentioned an incident. Because of the different tanning process the effluents released from the tannery are different in quality. Normally, the board's officer who visit's the tannery to collect the effluent sample, do the work at a particular time. Usually, the tanners discharge the salty water in bulk quantity having more pollutants in the early hours.
The quantum of discharge later in the morning has low level of pollutants which is normally collected by the board officer's. for analysis. Hence, collection of effluent at particular time and giving the results based on that gives incorrect inference. To overcome this, the officer maintained that the board needs more number of personnel so that samples could be collected for different points of time.

Since, the tanneries in the district have not established their own individual Effluent Treatment Plant (ETP), the local people and the voluntary organisation demanded the Common Effluent Treatment Plant in the Dindigul area. The Government of Tamil Nadu sanctioned two plants for the purpose. In addition, the local voluntary organisation demanded that no fresh license be issued for establishment of tanneries in Dindigul area. It was also agreed by the Government in principle. However, the problem remains unsettled as the construction of CET plants have not been completed even after a lapse of almost five years.

The red tapism and the bureaucratic delay are important factors which impedes implementation of schemes meant for environmental protection.
5.8. REFERENCES


16. Central Pollution Control Board (1984),"National Inventory of Water Polluting Industry and Status of Effluent Treatment Plants", The Institution of Engineers (India), New Delhi, pp.i-vi.
21. Central Pollution Control Board (1988)."Table items, annexures, and other papers to be placed before the XXVI State Board Chairman's Conference, New Delhi, p.7.


30. Tamil Nadu Pollution Control Board (1991), Ibid., p.67.


