PREFACE

State Pollution Control Boards (SPCBs), constituted under the Water (Prevention and Control of Pollution) Act 1974, are entrusted with the responsibility of monitoring and controlling environmental pollution. Successive enactment and framing of rules have specified the powers and functions of the SPCBs in different areas of their intervention.

Constituted with a two-tier administrative set-up consisting of a Board of Members and the regular administrative and technical staff and with a network of field offices, each SPCB is required to perform such functions as advising the State Government on matters relating to pollution, developing methods, standards and technology to abate pollution, administering pollution control and creating awareness among the public about the ill-effects of pollution.

At the instance of the Planning Commission, the Programme Evaluation Organisation (PEO) undertook a review of all the 25 SPCBs in the country with the objectives of studying their structure, organizational set-up, staffing pattern, finances and training requirements, examining their functioning with reference to the functions stipulated in the Pollution Control Acts, identifying the constraints in their functioning and suggesting remedial measures therein.

The main findings of the study are:

- The composition of the State Boards is mostly characterized by dominant presence of non-technical members, differential availability of staff for monitoring a certain number of polluting industrial units, discomforting vacancy positions, influx of contract and casual employees and varying ratios of technical to non-technical staff. Absence of any fixed norm for determining the staffing pattern of SPCBs is an important cause for the above. The field formations of some SPCBs are not commensurate with the task at their hand.

- There are vast variations in the financial positions of different SPCBs. Some SPCBs are heavily dependent on Government grants while some rely helplessly on their own insufficient resources. A few SPCBs claim to be financially self-reliant. With widely varying number of polluting industries across States and given the different types and rates of fees charged on industries, the potential for generating ‘own resources’ differs across SPCBs.

- Most of the SPCBs run considerable revenue surpluses even while they have not fulfilled the requirements for capital expenditure. Prohibitive spending restrictions imposed by State Governments are an important cause for this.

- The degree of inventorisation of polluting industrial activities accomplished by the SPCBs is not generally satisfactory. The inventorisation of small polluting units is yet to take off.

- Compliance of industrial units with the stipulated pollutant standards is poor in some States. Absence of an effective punitive mechanism instigates non-compliance.

- Most of the SPCBs do not supply the required number of observations on air and water quality to the Central Pollution Control Board (CPCB). Some of the sanctioned monitoring stations are not operational. Inadequate financial norms per sample and greater reliance on contract employees for monitoring lead to this.

- Crucial activities like training to staff, generation of awareness among the public regarding different aspects of pollution and research and development remain low-priority items of expenditure in the budgets of most of the SPCBs.

Based on these findings, suggestions have been made to improve the functioning of SPCBs. It is hoped that these findings and suggestions will be of some value to the Ministry of Environment and Forests, the CPCB and the SPCBs in taking corrective actions and in strengthening the mechanism of pollution control in the country.

The study received constant support and encouragement from Deputy Chairman, Planning Commission, Minister of State for Planning, Statistics and Programme Implementation, Secretary, Planning Commission and Chairman, Evaluation Advisory Committee. The study was designed by Shri. Prahlad Kumar, the then Deputy Adviser and continued under the guidance of Shri. K.L.Prasad, Director. Shri.Antony Cyriac, Research Officer has provided commendable assistance in the processing and compilation of data and report writing. The efforts put in by the officers of PEO Headquarters and the Regional Evaluation Offices under the guidance of Shri.V.K.Bhatia, Joint Adviser, P.E.O deserve special mention. A list of officers and members of staff who were associated in the conduct of this study is given in the annexure.

The invaluable help and co-operation extended by the officers of CPCB and the Environment and Forests Division of the Planning Commission are gratefully acknowledged.

(S.P.Pal)

Adviser (Evaluation)

Place: New Delhi
Date:

CHAPTER – I

INTRODUCTION

Evolution of Pollution Control Mechanism in India

Pollution Control efforts in India have a long history dating back to the British rule. The Shore Nuisance Act, 1853, the Indian Penal Act, 1860, the Indian Easement Act, 1882, the Bengal Smoke Nuisance Act, 1905, the Bombay Smoke Nuisance Act, 1912 and the Motor Vehicles Act, 1939 were some of the pioneering legislative attempts at abatement of pollution. These were at best a piecemeal approach to environmental regulation, based on the law of torts. Action against pollution could only be taken by the courts on the basis of proper representation by the affected people. In this scenario, litigation prolonged and penalties hardly served as deterrents.

1.1.2 In the post-independence period, there was a spate of legislation which, inter-alia, attempted to deal with pollution. These included the Factories Act, 1948, the Industries (Development and Regulation) Act, 1951, the River Boards Act, 1956, the Atomic Energy Act, 1962, the Insecticides Act, 1968, the Merchant Shipping (Amendment) Act, 1970, and the Radiation Protection Rules, 1971. All these Acts dealt incidentally with pollution and proved ineffective in handling it. River pollution zoomed up while these Acts remained on paper. Absence was felt of a specialized institution to oversee and implement environmental regulation.

1.1.3 The Water (Prevention and Control of Pollution) Act, 1974, the culmination of over a decade-long deliberations between the Central and State Governments, provided for the establishment of Boards for Prevention and Control of Pollution of water. These Boards were entitled to initiate proceedings against infringement of environmental law, without waiting for the affected people to launch legal action. The Water Cess Act, 1977, supplemented the Water Act by requiring specified industries to pay cess on their water consumption. With the passing of the Air (Prevention and Control of Pollution) Act in 1981, the need was felt for an integrated approach on pollution control. The Water Pollution Control Boards were thereby authorized to deal with air pollution too and were henceforth called Central/State Pollution Control Boards.

1.1.4 The Bhopal Gas tragedy, which occurred on 3rd December 1984, precipitated the tightening of environmental law. In 1985, the Department of Environment (DOE) was transformed into the Ministry of Environment and Forests (MoEF) with greater powers. The umbrella act called the Environment (Protection) Act got passed in 1986 encompassing water, air, land and other inter-relationships. The Act identified MoEF as the nodal agency in pollution control. The Environment (Protection) Rules, 1986 were, subsequently, notified to facilitate the exercise of the powers conferred on the Boards by the Act, 1986.

1.1.5 The Hazardous Wastes (Management and Handling) Rules, 1989 requires the 'occupier' of hazardous wastes who possesses a facility for collection, reception, treatment, transport, storage and disposal of such wastes to make an application to the SPCB for grant of authorization for any of the above activities. The Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989 supplemented the former. The Public Liability Insurance Act was passed in 1991 to provide for public liability insurance for the purpose of giving immediate relief to persons affected by accidents occurring while handling hazardous substances. The Public Liability Insurance Rules were promulgated in 1991 and an Environment Relief Fund was created to facilitate the exercise of the powers conferred by the Act, 1991. The National Environmental Tribunals Act was passed in 1995, to provide for strict liability for damages arising out of accidents occurring while handling hazardous substances, and, for the establishment of a National Environmental Tribunal, to ensure effective and expeditious disposal of cases arising out of such accidents with a view to giving early relief and compensation to affected persons, properties and environment. The National Environmental Appellate Authority Act, 1997, provides for an authority to hear appeals with respect to restriction of areas in which industries, operations or processes shall not be carried out.

1.1.6 Apart from the measures of command and control embodied in the above Acts and Rules, the Government of India has, time to time, offered many economic incentives for units endeavouring to control pollution. The scheme of ECO-Mark, introduced in 1991, operates on a notional basis and provides accreditation and labeling for products, which satisfy certain environmental criteria along with quality requirements of the Indian Standards. Other incentives include rebate offered on water cess to units implementing pollution control measures and meeting the standards, investment allowance to the actual cost of the new machinery or plant which assists in controlling pollution, exemptions in indirect taxes, income tax, etc.

1.1.7 Of late, judiciary has been taking active interest in matters relating to environmental pollution and in compensating for the ill effects of pollution on affected areas. In some States, 'Green Benches' have been created to dispose off environmental cases quickly.

Pollution Control - Organisational Set-up

1.2.1 The Ministry of Environment and Forests (MoEF), the apex policy making body in the field of environment, acts through the Central Pollution Control Boards (CPCB) and the State Pollution Control Boards (SPCBs). The CPCB, **a statutory organization**, was formed in 1974 under the **Water Act**. The CPCB, the nodal agency in pollution control, is to advice the Central Government on matters concerning pollution, plan and execute a nation-wide programme for prevention and control of pollution, coordinate and provide technical assistance to the State Boards, organize programmes for mass awareness, disseminate pollution- related information, lay down, modify and annul, in consultation with State Governments, the standards for **air and water quality** and so on. The CPCB has a network of zonal offices located in New Delhi, Calcutta, Shillong, Kanpur, Bangalore and Vadodara.

State Pollution Control Boards (SPCBs)

1.2.2 Each State Board has a two-tier administrative set-up. The first tier which comprises of its Chairman, Member Secretary and other members, not exceeding 15, - all nominated by the concerned State Government – meets once **in three months** unless any emergency warrants urgent meetings. The second tier consisting of appointed regular staff run the day-to-day administration of the Board. The main sources of a State Board's financial resources include grants-in-aid from the concerned State Government, funds received for specific projects from the Central Government, the concerned State Government and the CPCB, reimbursement of water cess collected by the State Board and credited to the **Consolidated Fund of India**, consent fee collection, sample testing fees/analysis charges, fines and forfeitures, interest on investments, other grants, etc. Each State Board may establish some regional offices and district level offices depending on the are of significant pollution stress. Board may constitute committees consisting wholly of members or wholly of other persons or party of members and partly of other persons for specific purposes. There is a provision for Joint Boards for two or more contiguous states. The SPCBs exercise their powers mainly through three instruments – (a) consent to establish producing units (NOC), (b) consent to operate, and (c) standards for air and water pollution.

Functions of SPCBs

1.3.1 The main functions entrusted with the SPCBs can be categorized into a) advisory / policy-related, b) administrative and c) those concerning public relations and HRD.

a) **Policy- related /Advisory.**

1. To plan a comprehensive programme for prevention, control and abatement of water and air pollution in the State.
2. To advise the State Government on matters concerning prevention, control or abatement of water and air pollution.
3. To lay down, modify or annul effluent standards for sewage and trade effluents and for the quality of receiving waters (not being water in an inter-state stream) and to classify waters of the State.
4. To develop economical and reliable methods for treatment of sewage and trade effluents, for their utilization in agriculture and for their disposal on land.
5. To advise the State Government in respect to the location of any industry the carrying on of which is likely to cause water and air pollution.
6. To lay down, in consultation with and having regard to the standards set by the CPCB, standards for emission of air pollutants into the atmosphere from different sources except ships and aircrafts.

b) **Administrative and monitoring.**

7. To inspect sewage or trade effluents, works and plants for the treatment of sewage and trade effluents.

8. To grant, suspend or cancel authorizations for collection, reception, treatment, transport, storage and disposal of hazardous wastes and to allow for import of these wastes for processing and re-use as raw materials.
9. To perform such other functions as may from time to time be entrusted to it by the Central Board or the State Government.
10. The Board may establish or recognize a laboratory or laboratories to enable the Board to perform its functions under the Water Act, 1974 and the Air Act, 1981 efficiently.
11. To lay down standards for treatment of sewage and trade effluents to be discharged into any particular stream.
12. To make, vary or revoke any order for the prevention, control or abatement of discharges of wastes into streams or wells.

c) **R&D, Training and Awareness.**

13) To collect and disseminate information relating to water and air pollution and the prevention, control or abatement thereof.

14) To encourage, conduct and participate in investigations and research on water pollution problems.

15) To collaborate with the Central Board in organizing the training of persons engaged or to be engaged in programmes relating to prevention, control and abatement of water and air pollution and to organize mass education programmes thereto.

Reports on Strengthening SPCBs

1.4.1 Four reports need to be mentioned in context of functioning of Pollution Control Boards. These include (a) the Bhattacharya Committee Report submitted in 1984, (b) The Belliappa Committee Report submitted in 1990, (c) the Report submitted by the Administrative Staff College of India in 1994 and (4) the Report submitted by the Sub-Group in 1994.

1.4.2 The **Bhattacharya Committee**, for assessing the requirements of SPCBs, classified them into three: (a) those Boards constituted recently which required strengthening in all areas (e.g. those of Orissa, Tamil Nadu and Meghalaya), (b) those formed in the beginning of the enactment, but remained passive due to the lack of interest of the concerned State Governments (e.g. those of Himachal Pradesh and J&K) and (c) those which had put considerable work in establishing head office, laboratory and regional offices and had achieved a good measure of success (e.g. those of Andhra Pradesh, Bihar, Gujarat, Haryana, Karnataka Kerala, Madhya Pradesh, Maharashtra, Punjab, Rajasthan, Uttar Pradesh and West Bengal). The committee proposed that the structural organization of SPCBs should consist of technical services, scientific services, planning, legal services, administrative services, accounts, training cell and research and development. The Committee, inter-alia, called for (a) delinking grants-in-aid from cess collections and reimbursing the cess amounts to the Boards without undue delay, (b) urging State Governments to allot suitable pieces of land to the Boards, (c) discouraging the flow of deputationists to the Boards, (d) upgrading regional laboratories, (e) providing

each Board with at least one mobile laboratory, (f) creating a centralised training institute, (g) providing one vehicle each for the Chairman, the Member-Secretary and divisional heads in addition to a common vehicle for staff and laboratory, (h) imposing a fine in excess of the running cost of effluent treatment plants on the erring units before legal action is initiated, (i) linking SPCBs to the State Department of Environment, (j) providing, on priority, funds to establish air control activity, (k) giving customs duty exemptions for instruments meant for measuring and analysing pollutants, (l) bestowing the power to make posts at least up to the rank of environmental engineers/scientists with the Boards, and, (m) decentralising administrative and financial powers at different levels of hierarchy within the Board.

1.4.3 **The Belliappa Committee** recommended for (a) categorizing Boards into four groups depending on the number of pollution sources, area, population, etc., (b) introducing elaborate monitoring, reporting and organizational systems at the national level along with four regional centres and one training cell in each Board, (d) effecting suitable changes in the Boards' recruitment policy to enable them induct persons with suitable academic qualifications, (e) ensuring adequate financial support to the Boards (which were then in variance with the allocations made by the Planning Commission) in a consistent manner and giving autonomy to Boards to utilize their resources for systematic development, (f) ensuring that the Chairman and Member-Secretary are appointed for a minimum of three years, (g) constituting a purchase committee, (h) revising the categorisation of industries, and, (i) formulating uniform and model sets of rules consistent with the corporate character of the Boards as set out in Section 4.3 of the Water Act.

1.4.4 **The Administrative Staff College of India** recommended that (a) the SPCBs be reoriented for implementing the instrument mix of legislation and regulation, fiscal incentives, voluntary agreements, information campaigns and educational programmes (b) an Annual Environmental Quality Report be prepared by every SPCB for the concerned State, (c) an inventory of discharges and effluents disaggregated to the district level be prepared, (d) controlling function be digitized (e) a research cell be formed in each SPCB and a network be established with the proposed clean technology centre, (f) model environmental impact assessments be prepared for major categories of industries , (g) a perspective plan be prepared to indicate industrial location sites, (h) polluters-pay-principle be progressively employed, (i) a business process re-engineering be undertaken in PCBs so that they will become technical groups with lean supporting staff structures, (j) a pollution control plan be prepared considering the marginal reduction possible at the lowest marginal cost, (k) technical staff who are on deputation from the Public Health Engineering Department be trained comprehensively, (l) a conversion plan be prepared so that the administrative staff, after re-training, may be converted into technical support staff, (m) an environmental education cell be created in each Board to create awareness among school children, professionals, decision-makers and public at large, (n) customer friendliness be ensured while dealing with polluting units, (o) on-line pollution monitoring systems be introduced for newer industries, especially for the red industries in the large category, (p) the NOC be issued in two stages such that there is a mid-term monitoring before the plant becomes operational and consent for non-red industries be given at the regional office level, (q) consent order be made available in a register so that if there are violations, public can seek redressal, (r) small water users be charged a flat rate of cess so that large

users are systematically covered, (s) the SPCBs be made the agencies for certifying Ecomark, (t) a system for institutionalizing vigilance be evolved, (u) increased use of consultants and sampling through external labs be initiated, and, v) initiatives like rationalisation of cess collection and metering, sponsored research, services to industries for Environmental Impact Assessment (EIA) and analysis, environmental engineering, information support, environmental quality report sales, recognition charges for labs and reimbursement of inspection expenditure by industry be introduced for increasing the Board's revenue.

1.4.5 **The Sub Group,** towards strengthening of SPCBs, recommended for (1) creating independent sections for hazardous wastes and substances, clean technology, training programmes, collection of cess, prosecution of cases and complaints, (2) introducing a Time Targeted Action Plan for the most polluted cities in the State, (3) evolving and updating Environmental Atlas, (4) conducting regular programmes to foster awareness, (5) creating a computer-based data network, (6) establishing and maintaining a library in each Board, (7) monitoring and managing high-risk bio-medical wastes (8) establishing laboratories in Head Office and regional offices, (9) fixing the tenure of Chairman and Member-Secretary at not less than 5 years, (10) authorising the Boards to create posts and to appoint all categories of employees other than Chairman and Member-Secretary, (11) entitling the SPCBs to spend the collected amount of cess on programmes on priority basis rather than restricting them to a predetermined formula, (12) providing for retaining 82% of the cess with the Boards and for depositing the remaining 18% with the CPCB for programmes of national importance, (13) introducing a single window approach to consent management whereby units can seek consents through one single application covering aspects of both air and water pollution, (14) granting consents to small units in the Green category within 15 days from the receipt of the application and (15) empowering the regional offices to issue consent to units of the Green category. These recommendations were given in the form of "Vision Statements"

The Present Study

1.5.1 The present study was taken up at the instance of Planning Commission. India is a signatory to many global conventions on environment, which seek to foster sustainable development. It is now well established that the levels of air and water pollution have been mounting in India. The machinery, institutions, infrastructure and enabling rules, procedures and laws, created to tackle the problems of pollution is in place since the inception of the Water Act, 1974, which is now roughly two and half decades old. However, very little is known about the functioning and efficacy of the SPCBs in discharging their various advisory, administrative and advocacy roles. It would be appropriate, therefore, to review the functioning of the SPCBs with reference to the responsibilities assigned to them, to examine the efficacy of the functional tools employed by them and to identify the constraints to their effective and efficient functioning.

CHAPTER – 2

OBJECTIVES AND METHODOLOGY

The review of the functioning of the State Pollution Control Boards was taken up by the Programme Evaluation Organization (PEO) at the instance of Planning Commission. The design and questionnaires of the study were finalized after holding informal discussions between the officials of the PEO and the Central Pollution Control Board.

I. Objectives of the Study

2.2 The broad objectives of the study are:

i) To study the structure, organizational set-up, staffing pattern, finances and training requirements of the State Pollution Control Boards vis-à-vis their existing functions and activities;

ii) To examine the functioning of the Boards with reference to their functions stipulated in the Pollution Control Acts; and

iii) To identify the constraints in the functioning of the Boards and to suggest measures to remedy them.

II. Scope of the Study

2.3 The scope of the present study is different from that of other PEO studies, which assess performance, adequacy of implementation methods, process of delivery and impact by a sample survey of concerned institutions and beneficiaries. Since the management of pollution is a technical matter and the delivery of "cleaner environment" as a public service presents problems of quantification, the scope of this study is restricted only to the functioning of the State Pollution Control Boards.

III. Reference Period

2.4 The Study refers to the Eighth Plan period, i.e. 1992-93 to 1996-97, and to the year 1997-98.

IV. Design and Sources of Information

2.5 The State Pollution Control Boards of all the 25 States were included in the study. Two Questionnaires were canvassed with each Board. The Questionnaire-I probed the composition and sources of revenue and expenditure of the Boards over the period from 1992-93 to 1997-98. The Questionnaire-II was designed to elicit information on the organizational structure, infrastructure and activities of the Boards. Among other things, this questionnaire sought information on the staffing

pattern of the Boards, availability of building and laboratory facilities, water and air quality monitoring status of the SPCBs, their R&D activities and awareness programmes, pollution abatement status of major polluting industries and the opinion of the Boards' officials about crucial aspects of their functioning.

2.6 The latest Annual Report collected from each Board supplemented the information obtained through structured questionnaires. The qualitative notes prepared by the concerned REOs/PEOs elaborated on the composition, functions, activities and finances of the State Pollution Control Boards. The views expressed by SPCBs on the constraints faced by them and alternatives for improvement also were used in the preparation of the report.

2.7 Secondary information collected form the various publications of the Ministry of Environment and Forests, Central Pollution Control Board and Central Statistical Organization were made use of in different stages of analysis to transcend the serious data problems.

CHAPTER – 3

ORGANIZATION

As envisaged in the various Acts, the State Pollution Control Boards (SPCBs) are required to have a technically competent Board of Members, a well-qualified core group of technicians and administrators who are to evaluate, monitor and control pollution at the field level and a network of field offices that facilitates such monitoring and control. This chapter attempts to understand the existing organizational structure of 25 SPCBs. It probes whether the composition of State Boards is in consonance with its requirements spelt out in the Water Act. In the absence of any prescribed norm for the staffing pattern of the State Boards, an analysis of inter-SPCB variations in the relevant ratios and parameters is made.

Constitution of the State Boards

3.2.1 SPCBs are corporate bodies, having perpetual succession and a common seal with powers to perform the functions entrusted to it through successive enactments. No State Board exists for Union Territories, where the Central Board itself exercises the functions of a State Board or delegates all or any of its powers to such persons or body of persons as the Central Government may specify. The Water Act specifies the composition of the SPCBs, the essential characteristics of which are detailed below:

Chairman and Member Secretary

3.2.2 Each State Board shall be constituted with a Chairman, Member Secretary and other members. The Chairman of a State Board shall be a person having **special knowledge or practical experience in respect of matters relating to environmental protection or a person having knowledge and experience in administering institutions** dealing with the matters aforesaid. He shall be nominated by the State Government for a **term of three years** and may be either whole time or part-time, as the State Government may think fit. Member-Secretary, a full-time member, shall be a person possessing **qualifications, knowledge and experience of scientific, engineering or management aspects of pollution control**. The Chairman and Member-Secretary shall exercise such powers and perform such duties as may be prescribed or delegated to them by the Board.

Other Members

3.2.3 Other members shall include: (a) such number of officials, not exceeding five, to be nominated by the concerned State Government **to represent that Government;** (b) such number of persons, not exceeding five, to be nominated by the State Government from among the members of **the local authorities functioning within the State;** (c) such number of non-officials, not exceeding three to be nominated by the State Government **to represent the interests of agriculture, fishery, industry, trade or any other interest which, in the opinion of the State Government, ought to be represented;** and (d) two persons to be

nominated by the State Government to represent the **companies or corporations owned, controlled or managed by it.** Members, other than the Member-Secretary, shall hold office for a **term of three years.** A member shall, notwithstanding the expiry of his term, continue to hold office until his successor takes over. The term of office of a member shall come to an end as soon as he ceases to hold the office by virtue of which he was nominated.

Analysis of the composition of Boards

3.2.4 The Water Act lays down the broad composition of the State Boards; but it does not specify the qualifications to be possessed by the members of the Boards. Though the broad composition of the State Boards in general seems to be in consonance with the norms specified in the Water Act, some disturbing facts stand out.

Table3.1: Composition of some State Boards.

State	Total number of members	No. of members whose qualifications (professional status) are known	No. of civil servants	No. of other non-technical members	No of technical members
1	2	3	4	5	6
Andhra Pradesh	15	15	9	4	2
Assam	17	17	5	4	8
Bihar	11	6	0	0	6
Goa	15	15	3	2	10
Gujarat	16	8	5	0	3
Himachal	8	8	8	0	0
Jammu Kashmir	8	8	6	1	1
Karnataka	16	16	7	3	6
Kerala	17	7	2	0	5
Madhya	14	9	5	0	4
Maharashtra	13	10	6	2	2
Manipur	11	10	5	1	4
Punjab	15	15	9	3	3
Sikkim	14	13	8	5	0
Tamil Nadu	10	10	7	0	3
Tripura	13	13	4	4	5
West Bengal	17	17	5	6	6

3.2.5 Table 3.1 suggests that the presence of non-technical people is predominant in the composition of some SPCBs. For instance, Himachal Pradesh SPCB in which the post of Chairman is vacant has all its 8 members from bureaucracy. In the case of Andhra Pradesh SPCB, 9 members including Member Secretary and Chairman, are bureaucrats and another 3 are non-technicals. The Sikkim State Board, which is without a chairman, has 14 members out of whom 8 are from bureaucracy, 4 are

panchayat members and one is a retired teacher. From what is known of the professional status of the members, the case is more or less the same with the State Boards of Tamil Nadu, Punjab, Jammu & Kashmir, West Bengal and Maharashtra. However, **there are some State Boards, like those of Assam, Bihar and Goa (Karnataka, Manipur and Tripura to some extent), which have maintained a good number of technically qualified people along with generalists.** With the levels of available information, nothing can be concluded about the composition of the State Boards of Madhya Pradesh, Bihar, Kerala and Gujarat. Considering the intricate technicalities involved in the functions to be performed by these Boards, it is essential that technical persons possessing scientific knowledge about matters relating to pollution and pollution control hold an upper hand.

3.2.6 There are two categories of members – those representing local authorities and those representing interests of agriculture, industry, fisheries and trade-for whom any professional competence cannot be guaranteed. **There is a tendency among State Boards to not to fill the vacancies of members representing local authorities.** Himachal Pradesh and Manipur SPCBs do not have any member of this category, Tamil Nadu Board has only one, whereas the State Boards of Bihar, Maharashtra, Madhya Pradesh and Jammu & Kashmir have only two each.

3.2.7 Chairmen and member secretaries of different State Boards seem to have been chosen from various disciplines: bureaucracy, science and technology, environmental economics, mathematics, law and representatives of the people. They, in a majority of cases, seem to be in grip with issues of environment. **However, frequent changes of Board Chairman and other members, which amount to the absence of a sustained vision on policies and programmes for pollution control cannot be endorsed.** Tamil Nadu Board, since its inception in 1982 has had 18 Chairmen. The Karnataka Board, since 1988 has had 8 Chairmen. The Uttar Pradesh SPCB has accommodated 24 Chairmen and 10 member secretaries during the last 24 years.

Staffing Pattern of State Boards

3.3.1 The Water Act, 1974, empowers each State Board to appoint, subject to the rules made by the concerned State Government, such officers and employees whom it considers required for the effective performance of its functions. The method of recruitment & terms and conditions of their service are to be determined by the regulations made by the State Board. However, the regulations made by the State Board thereon must get the approval of the State Government. The State Board may, subject to specified limitations and conditions, delegate to any officer of the Board its powers and functions in this respect.

3.3.2 The SPCBs catering to the North Eastern States (except Assam) and Jammu & Kashmir are treated separately as a second category in this Chapter and in the Chapters to follow in view of their distinct problems and insignificant pollution potential.

3.3.3 Table 3.2 gives the staff position of the State Boards along with the number of red and orange category of polluting units to be monitored by them.

Table3.2: Staffing position of State Boards.

State	Estimated number of polluting units	Sanctioned Staff strength	Staff in position	Number of technical staff in position	Number of vacancies
1	2	3	4	5	6
Andhra Pradesh	7521	355	234	88	121
Arunachal Pradesh	*	0	0	0	0
Assam	*	204	197	93	7
Bihar	1663	277	261	171	16
Goa	248	24	13	4	11
Gujarat	7337	572	491	257	81
Haryana	2085	258	179	45	79
Himachal Pradesh	226	119	100	26	19
Jammu Kashmir	*	467	54	15	413
Karnataka	3267	725	254	146	471
Kerala	848	253	244	121	9
Madhya Pradesh	2687	541	589	255	-48
Maharashtra	9035	765	632	292	133
Manipur	*	61	13	8	48
Meghalaya	*	72	30	12	42
Mizoram	*	11	8	1	3
Orissa	1045	220	160	61	60
Punjab	3706	232	106	86	126
Rajasthan	2265	225	206	88	19
Sikkim	*	4	4	4	0
Tamil Nadu	8151	931	696	295	235
Tripura	*	9	8	6	1
Uttar Pradesh	6441	752	549	199	203
West Bengal	3414	181	143	85	38

* Not estimated.

3.3.4 The number of polluting units in a State must be one of the major determinants of the staff strength of a State Board. The other major determinant must be the geographical dispersion of pollution, which given the inadequate database, cannot be estimated. The number of polluting units in a State is approximated as the number of red and orange category of manufacturing units estimated from the Annual Survey of Industries, 1994-95. Variations in the staff position of the SPCBs can be analysed only with the help of appropriate ratios that deflate the absolute numbers with the task at hand. These ratios are presented in Table3.3.

Table 3.3: Variations in staff positions

State	(Sanction-ed Staff /Number of polluting units)*100	(Staff in position/ Number of polluting units)*100	(No. of technical staff/No. of polluting units)*100	(No. of technical staff/Total number of staff)*100	(Vacant posts/San-ctioned posts)*100
1	2	3	4	5	6
Andhra Pradesh	4.72	3.11	1.17	37.61	34.08
Assam	*	*	*	47.21	3.43
Bihar	16.66	15.69	10.28	65.52	5.78
Goa	9.68	5.24	1.61	30.77	45.83
Gujarat	7.80	6.69	3.50	52.34	14.16
Haryana	12.37	8.59	2.16	25.14	30.62
Himachal Pradesh	52.65	44.25	11.50	26.00	15.97
Karnataka	22.19	7.77	4.47	57.48	64.97
Kerala	29.83	28.77	14.27	49.59	3.56
Madhya Pradesh	20.13	21.92	9.49	43.29	-8.87
Maharashtra	8.47	7.00	3.23	46.20	17.39
Orissa	21.05	15.31	5.84	38.13	27.27
Punjab	6.26	2.86	2.32	81.13	54.31
Rajasthan	9.93	9.09	3.89	42.72	8.44
Tamil Nadu	11.42	8.54	3.62	42.39	25.24
Uttar Pradesh	11.68	8.52	3.09	36.25	26.99
West Bengal	5.30	4.19	2.49	59.44	20.99
All Boards	10.73	8.10	3.70	45.69	24.46

* Not estimated

3.3.5 All the ratios presented in Table 3.3 exhibit wide variations across State Boards. The per unit staff ratios – the total staff strength of a State Board divided by the estimated number of orange and red category units in the State (S/N), and, the number of engineering and scientific staff of the State Board divided by the number of red and orange units in the State (Ses/N)– differ widely across State Boards (Table 3.3). The situation of 44 persons in position for 100 red and orange units in Himachal Pradesh can be compared with the state of having only 3 persons for 100 units in Punjab and Andhra Pradesh. More pertinent are the differences in the per unit availability of scientific and engineering staff (Table 3.3), who alone should be shouldering the task of monitoring**. It is estimated that the Andhra Pradesh Board has only 1 technical person to monitor 100 units, Goa Board has only less than 2 technical personnel for 100 units and 3 other Boards – those of West Bengal, Haryana and Punjab – have less than 3 persons to perform the same task.** The ratio (Ses/N * 100) averages to 3.8 for the first category of State Boards (excluding SPCBs of the NorthEast and J&K). 11 of these State Boards have this ratio less than 5, while those of Himachal Pradesh, Kerala and Bihar possess the ratio values in excess of 10, i.e. more than 10 scientific and engineering personnel per 100 red and orange units.

3.3.6 Non-filling of the sanctioned staff strength is one of the most important factors behind the widely varying per unit staff ratios across State Boards. The vacancy ratio

(number of vacant posts as percentage of number of sanctioned posts) averages to 22.1% for all the first category State Boards (Table 3.3). **The vacancy ratio is as high as 65% for Karnataka, 54% for Punjab, 46% for Goa and 43% in Andhra Pradesh. On the other hand, the overwhelming presence of contract employees in the Madhya Pradesh State Board made its staff in position exceed the sanctioned staff strength.** The influx of contract employees is a discomforting feature of the staffing pattern of most of the State Boards, reported especially from Manipur, Sikkim, Kerala and Madhya Pradesh. The incumbent, who is not paid according to his qualifications and denied of standard benefits and allowances of the Government, lacks motivation and takes it as a stopgap arrangement. This precludes proper development of work culture.

3.3.7 It is learnt that **the Central Government has not laid down any norm for determining the staffing pattern of the State Boards with respect to coverage of pollution units.** Given the geographical dispersion of polluting units, the per-unit ratios would vary with variations in the financial resources of the State Boards and the freedom with they can create posts and appoint these personnel. **It is reported that the maximum pay scale to which the State Boards are entitled to create posts differs across States.** In the case of Kerala SPCB, the maximum pay to which posts can be created - Rs.1500/- fixed in 1976 had then enabled them to create posts up to the level of the environmental engineer. With the same limit remaining unrevised, the highest post that the Board can now create is only that of attender. SPCBs of Himachal Pradesh and Assam are still empowered to create posts up to the scale of Environmental Engineer. The highest (pre-revised) pay scales to which posts can be created are Rs. 4150/- and Rs.3100/- respectively in Meghalaya and Uttar Pradesh. In Sikkim and J&K the State Boards are virtually the appendages of their respective Forest Departments and the Boards have to bank on the Departments for all their staffing decisions. The State Boards of Maharashtra, U.P. and Tamil Nadu which are said to have no financial constraints in creating and filling additional posts cannot easily do so due to the condition of obtaining approvals from their respective State Governments.

3.3.8 Non-pursuit of any norm for the determination of the staffing pattern of the State Boards is further evidenced by the results presented in Statement 3.1.

Statement 3.1: Correlation between per unit staff ratios and pollution intensity

	Sanctioned staff per 100 units	Available staff per 100 units	Available tech.staff per 100 units	Sanction-ed staff per 100 polluting units	Available staff per 100 polluting units	Available tech.staff per 100 polluting units
1	2	3	4	5	6	7
Correla-tion with pollution intensity *	0.15	0.09	0.02	-0.23	-0.28	-0.46

* Pollution intensity is measured as the ratio of the estimated number of red and orange category of polluting units to the total number of industrial units in the State.

3.3.9 It seems reasonable to hypothesise that as pollution intensity as defined above increases, the personnel available for pollution control per 100 industrial units goes up. This hypothesis is tested with the ratios presented in columns 2, 3 and 4 of Statement 3.1. The ratios suggest that there does not exist any significant positive relation between pollution intensity and staff per 100 polluting units. Having disproved the first hypothesis, it is further tested whether there is any direct relation between pollution intensity in manufacturing and the availability of staff per 100 polluting units. The ratios presented in columns 5, 6 and 7 suggest that there is, in fact, a negative relation between pollution intensity and staff per 100 polluting units. The last coefficient (column 7) is particularly important, in that it shows a fairly high negative relation between pollution intensity and the availability of scientific and engineering staff per 100 polluting units. **All this tends to suggest that the deployment of staff, particularly of technical staff, is not based on any scientific criterion.** It is appropriate that some rational criteria be developed for deployment of staff in SPCBs, keeping in view the functions of these institutions.

3.3.10 Engineering and scientific expertise of a State Board is a prime factor in monitoring and controlling pollution in a State. The Ses/S ratio, the ratio of the number of engineering and scientific staff to the total staff strength, averaged for all State Boards, works out to 45.6 percent (Table 3.3). This ratio stood at 25%, 26% and 31% in the SPCBs of Himachal Pradesh, Haryana and Goa respectively while it was as high as 81% in the SPCB of Punjab. Only 5 SPCBs – those of Gujarat, West Bengal, Punjab, Karnataka and Bihar – of the first category of 17 SPCBs had this ratio greater than 50 percent**. The high level of dispersion exhibited by individual State Boards around the average ratio speaks of the absence of any established norm in determining the staff composition of State Boards.** It may be seen (Table 3.2) that the distribution of whatever little staff available with the State Boards of J&K, Mizoram and Goa is highly skewed against engineering and scientific staff.

3.3.11 **All State Boards of the North East, probably with the single exception of the Assam Board, are crippled with gross inadequacies of manpower** (Table 3.2). The State Board of Arunachal Pradesh does not have separate staff of its own and is run by the personnel of the State Department of Environment & Forests. The Sikkim Board is managed by 4 employees with one senior scientist looking after the whole thing. Despite having own central laboratory, the Mizoram Board is unable to measure pollution because of the lack of scientific manpower. No inventorization has been carried out in Tripura too, owing to shortage of staff. With only 54 out of 467 sanctioned posts filled, the J&K Board is acutely understaffed.

Summing Up

3.4.1 SPCBs are required to be constituted with technically qualified people and to be represented adequately by trade, industry and local bodies. This is not the case with most of the SPCBs. The norms for determining the staffing pattern of the Boards have not been prescribed, leading to wide differences in the per polluting unit availability of staff for monitoring. The primary functional tool employed by SPCBs in controlling industrial pollution is inspection of polluting units. Scientific, engineering and laboratory staffs are all being employed in observing inspection norms. Problems like huge vacancy positions, influx of temporary staff, low pay scales of

some field posts and lack of powers with the SPCBs to create posts are discernible. Even in the limited context of controlling industrial pollution, some SPCBs do not seem to be appropriately staffed. Belliappa Committee also has expressed the same view. To conclude, lack of uniformity in the Constitution of the State Boards and differences in the per polluting unit availability of staff render the State Boards unequally positioned to discharge their duties of monitoring the inventorised polluting activities and furthering inventorisation.

CHAPTER – 1V

FINANCIAL POSITION OF STATE BOARDS

This chapter is divided into six sections. Section I gives a brief introduction to the finances of the SPCBs. Section II looks into the receipts of the SPCBs and analyses its principal components. Section III brings out some of the serious anomalies in the spending pattern of the State Boards. Section IV attempts to combine the receipts and expenditure of the State Boards in a comparative framework. Section V briefly discusses the financial position of the SPCBs of the North East. Section VI sums up the whole discussion.

Receipts and Expenditure of the State Boards

4.2.1 The financial resources of a State Board can broadly be categorized into two: (1) own resources and (2) external assistance. The own resources of a State Board consist mainly of cess reimbursement, consent fee collections and interest received on investments. Other minor sources of own resources include receipts from consultancy and sponsored projects, sample testing fees, appellate fees, receipts from the sale of forms, fines and forfeitures, etc. The external sources of funds for a State Board is composed of funds received by the Board from the Government of India, the concerned State Government and the Central Pollution Control Board (for specific projects such as Global Environmental Monitoring System (GEMS), National Ambient Air Quality Monitoring (NAAQM), Monitoring of Indian National Aquatic Resources (MINARS), clean technology and preparation of zoning Atlas), grants-in-aid provided by the concerned State Governments and other grants.

4.2.2 The item 'cess reimbursement' stands for that part of the water cess, collected by the State Boards from specific industries and local bodies and later deposited with the Consolidated Fund of India, which is reimbursed to the State Boards. Consent fee collections include the fee collected by a State Board from industrial units, which apply to the State Board for (a) establishing the unit, (b) operating outlets for effluents and emissions, and (c) renewing the consent to operate. Board's interest income is formed by the interest received by the Board on investments made by it from its accumulated surpluses.

4.2.3 The expenditure incurred by a State Board may, for analytical purposes, be classified into revenue expenditure and capital expenditure. Revenue expenditure includes the amount spent on administration, maintenance and running of laboratories, vehicles, buildings, furniture and fixtures, scientific instruments, tools and plants, legal charges, fee to consultants and specialists, fees for audit depreciation and training of staff of the Board. Capital expenditure includes expenditure on fixed and other assets. The following flow diagram depicts the budgetary transactions of a State Board.

Receipts of the State Boards

4.3.1 The revenue position of the SPCBs during the 8th Five Year Plan exhibited some distinct patterns. This can be understood from Table 4.1.

Table 4.1: Components of receipts of the State Boards during the 8th Plan.

State Board	Total revenue(TR) during 8th Plan (Rs.Lakhs)	Own Resources as % of T.R.	Funds for specific project as % of TR	Grants-in-aid as % of T.R.
1	2	3	4	5
Andhra Pradesh	2217.89	79.28	6.13	13.04
Arunachal Pradesh	1.99	0	100	0
Assam	537.17	53.6	6.65	39.74
Bihar	934.3	94.4	3.41	0
Goa	71.2	47.21	5.21	47.58
Gujarat	3414.29	59	2.64	19.28
Haryana	1260.68	90.92	6.6	0
Himachal Pradesh	734.54	40.32	56.92	0
J & K	176.62	10.13	3.19	86.67
Karnataka	2689.17	84.93	2.74	11.96
Kerala	1252.03	19.69	6.58	70.84
Madhya Pradesh	4055.83	65.25	18.38	15.57
Maharashtra	5811.21	79.98	3.36	16.35
Manipur	37.325	3.34	27.01	69.66
Meghalaya	156.23	6.67	24.76	59.11
Mizoram	43.5	0	54.7	45.3
Orissa	1024.34	84.26	4.9	9.63
Punjab	3008.59	94.61	4.46	0
Rajasthan	1363.36	48.35	4.07	47.31
Tamil Nadu	5889.02	94.23	1.18	3.47
Tripura	153.19	23.3	12.53	63.97
Uttar Pradesh	4562.74	85.25	15.75	0
West Bengal	1606.39	68.61	15.87	15.25

4.3.2 The first pattern, evidenced by the Bihar Board, is marked by helpless dependence on its own insufficient resources in the absence of any considerable external assistance. No payment has reportedly been made by the State Government of Bihar to its SPCB during the last 10 years. Despite the fact that Bihar Board's own resources contributed almost 95% of its total receipts (Table 4.2) during the 8th Five Year Plan, ratio of the number of its staff to the estimated number of polluting units in the State (the adequacy of which is a pre-requisite for effective monitoring of pollution) was not appreciable in comparison (Table 3.3). The Board laments that the problems in mobilizing external resources hinder the mobilization of own resources, because of which total activity in the current scenario gets restricted. The case appears to be more or less the similar with the State Board of Andhra Pradesh, when one compares its low per polluting unit staff ratio with the high ratio of

own resources to total resources (80%) during the 8th Plan period. The second pattern marks an unsustainable dependence on external funds owing to constraints in mobilising own resources. Most of the SPCBs of the North East and that of J&K fall in this category. The State Board of Kerala, with one of the lowest per unit staff ratios and with the ratio of own resources to total resources hovering around 20%, typified the case of desperate dependence on State grants. Contrariwise, there are some State Boards, like those of Uttar Pradesh, Tamil Nadu, Maharashtra and Karnataka, which claim to be not having any financial constraint in their operations.

Table 4.2. Own Resources of the State Boards during the 8th Plan.

State Board	Cess Reimburse-ment as % of T.R.	Consent Fee as % of T.R.	Interest on invest-ments as % of T.R.	Sample testing fees as % of T.R.
1	2	3	4	5
Andhra Pradesh	24.59	49.58	4.8	0.07
Arunachal Pradesh	0	0	0	0
Assam	17.37	33.59	1.38	1.15
Bihar	40.64	25.73	0	0
Goa	27.68	14.31	2.92	0
Gujarat	14.42	7.57	5.27	7.05
Haryana	23.71	39.26	16.67	12.53
Himachal Pradesh	6.16	27.25	5.6	1.3
J & K	0	10.13	0	0
Karnataka	12.58	48.11	15.47	1.28
Kerala	8.89	5.88	4.15	0.21
Madhya Pradesh	19.75	30.43	13.88	1.14
Maharashtra	43.7	19.88	14.45	1.53
Manipur	0	3.17	0	0
Meghalaya	0	2.05	13.08	0.89
Mizoram	0	0	0	0
Orissa	37.26	14.5	2.22	0
Punjab	38.93	36.47	15.29	1.49
Rajasthan	34.91	8.08	5.36	0
Tamil Nadu	21.56	48.22	14.39	9.62
Tripura	0	2.92	20.13	0.26
Uttar Pradesh	63.67	12.72	7	0.29
West Bengal	41.84	22.06	2.85	1.06

Consent fee and other fees

4.3.3 Consent fee structure differs considerably across State Boards in the amount of consent fee charged and in the classification of industries for the purpose of charging consent fees. For instance, if an industrial unit falling in the investment limit between Rs. 50 lakhs and Rs. 100 lakhs applies for the consent of the Madhya Pradesh State Board, it is bound to pay Rs.7500/- as fees whereas if the same unit applied for the consent of the Kerala Board, the fee would only be Rs. 2000/-. Some State Boards, like Kerala Board, have taken an ideological stance against the

imposition of sample testing fees, while some other State Boards have, during 8th Plan period, earned a notable portion of their total receipts from such fees (Table 4.2). The Gujarat Board earned almost 21% of its total resources from the head, "Sale of Forms" during the 8th Plan while this has not been a considerable source of revenue to other State Boards. These varying patterns across State Boards would, at least, amount to inequitable horizontal treatment of industrial units.

Cess Collection & Reimbursement

4.3.4 The Water (Prevention and Control of Pollution) Cess Act, 1977 provides for "the levy and collection of cess on water consumed by persons carrying on certain industries and by local authorities, with a view to augment the resources of the Central Board and the State Boards." The Act extends to the whole of India, except J&K. Schedule 1 of the Act has specified the industries from which the cess is to be collected. These industries include ferrous and non-ferrous metallurgical industry, mining, ore processing, petroleum, petro-chemicals, chemicals, ceramics, cement, textiles, paper, fertilizers, coal, power, processing of animal or vegetable products and engineering. Confining the imposition of water cess to these specific industries, which amounts to discriminating between water polluting industries and putting the States in which these specific industries are concentrated on an undue advantage, is questioned by many State Boards. It has been felt by many State Boards that restricting cess to these industries affect them adversely as there is not much presence of these industries in their States and hence their low levels of own resources. It is felt by them that this cess should be on all industrial units. The plight of certain State Boards is compounded by the non-payment of water cess by their local bodies, which are financially weak. The existing system provides that the defaulter is bound to pay a monthly interest of 2% on the amount due and that the recovery of interest and arrears is to be made in the same manner of the recovery of arrears of land revenue. However, some SPCBs have recorded considerable payment defaults over time resulting in a persistent gap between the amount of cess assessed and the amount realised.

4.3.5 The figures of reimbursement of water cess furnished by the MoEF differ from those furnished by the SPCBs. The differences in these figures for individual years may be explained in terms of accounting differences. However, the differences between the annual average of the cess reimbursement figures supplied by the MoEF for the five years of the 8th Plan period and the annual average of the corresponding figures supplied by the SPCBs are hardly explicable.

4.3.6 Though originally designed as a resource tax on water consuming units, water cess is capable of serving as an effluent tax as well. However, as M.N.Murthy ('*Environmental Regulation in the Developing World: The Case of India*' published in 'Review of European Community and International Environmental Law', 1995) emphasizes "recent research on water pollution abatement in India suggests that pollution tax on industrial water use should be several times higher than the current rate of water cess in order to achieve the prescribed water quality standards". Now, it suffices to say that the low rates of water cess prevent State Boards from mobilizing greater resources on their own.

4.3.7 The item 'interest on investments' is the return earned by the State Boards on investments made out of the accumulated surpluses run by them. It may be seen from Table 4.2 that this item is quite sizeable for many State Boards. Once surpluses are there, it is always desirable to earn some money out of them; however, questions may be asked about the very existence of surpluses in the current financial state of most of the State Boards (Section 4.3.2 & section 5.7).

Expenditure of the State Boards

4.4.1 Table 4.3 gives the division of the total expenditure of the State Boards into capital expenditure and the major components of its revenue expenditure.

Table 4.3: Expenditure of State Boards during the 8th Plan.

State	Total expen-diture	Capital exp. as % of total exp	Admn. exp. as % of total exp.	Mainte-nance as % of total exp.	Project expens-es as % of total exp.	Other expens-es as % of total exp.	Surplu-ses as % of total revenue
1	2	3	4	5	6	7	8
Andhra Pradesh	2363.72	2.69	na	5.40	1.56	na	-6.57
Assam	543.18	13.10	72.86	4.11	0.00	0.00	-1.12
Bihar	813.32	11.61	72.86	13.26	1.35	0.00	12.95
Goa	51.9	10.58	79.85	3.24	5.66	0.00	27.11
Gujarat	1862.96	15.55	62.10	5.29	7.14	0.56	45.44
Haryana	884.39	11.63	62.66	12.16	0.12	4.53	29.85
Himachal Pradesh	456.78	17.55	51.36	11.08	12.85	6.31	37.81
Jammu&Kashmir	148.3	6.29	74.89	10.44	2.04	6.34	16.03
Karnataka	1656.74	15.19	44.97	7.85	0.00	26.05	38.39
Kerala	1082.45	8.98	52.26	8.43	8.80	13.80	13.54
Madhya Pradesh	2903.91	14.99	51.80	10.53	15.87	0.00	28.40
Maharashtra	2280.64	15.64	65.95	12.23	0.00	0.84	60.75
Meghalaya	139.43	20.51	68.69	9.99	0.5	0	10.75
Mizoram	22.26	23.36	48.02	28.62	0	0	48.29
Orrissa	784.29	22.48	59.22	10.93	0.03	5.37	23.43
Punjab	1471.01	14.70	57.66	4.77	17.14	0.00	59.09
Rajasthan	1119.62	15.19	74.05	3.77	0.00	5.85	17.88
Tamil Nadu	3894.28	22.49	50.62	8.71	0.00	8.61	44.89
Tripura	15.21	0	76.98	22.81	0	0	90.07
Uttar Pradesh	2548.38	13.85	49.50	5.52	17.33	4.45	44.15
West Bengal	762	9.87	55.11	13.54	16.16	0.00	52.56
Total	27194.6	13.66	56.62	7.73	5.94	5.35	

4.4.2 It may be seen that the different components of revenue expenditure have, during the 8th Plan, shown a reasonable degree of dispersion across State Boards. It may be seen that, on an average, almost 83% of the administrative expenditure is constituted by expenditure on salaries. Differences in the ratio of expenditure on administration to total expenditure are suggestive of differentials in the staffing pattern and resource positions of the State Boards.

Surpluses and Capital Expenditure

4.4.3 Most of the SPCBs of large States have, over time, developed wide networks for monitoring industrial pollution. However, many of them seem to have satiated their requirements for pollution control infrastructure (seen in section 5.8).

4.4.4 The ratio of capital expenditure to total expenditure aggregated for all State Boards during the 8th Plan period stood at 13.66 percent (Table 4.4). Tamil Nadu and Orissa Boards had the highest ratio of 22.5% each and the Andhra Board recorded the lowest ratio of 2.7%. The rest of the values range between 10-15%. Considering the requirements of pollution control infrastructure vis-a-vis the pollution potentials of the States, this level is far below the optimum. Given this, it is not justified to run even meagre long-run revenue surpluses, and, not to speak of mega surpluses to the extent of 90% of the total receipts maintained by the Tripura Board during the 8th Plan, 61% by the Maharashtra Board, 53% by the West Bengal Board and 44% by the Tamil Nadu and U.P. Boards (Table 4.3). It is here that the surpluses run by a State Board come to be a poor indicator of its financial soundness.

4.4.5 Many Boards (e.g. Maharashtra Board, U.P. Board and Tamil Nadu Board) are reported to be in the process of initiating additional capital investments. This is a welcome trend, though bit delayed. The delay could partially be explained by the prohibitive spending restrictions imposed by the State Governments on the respective SPCBs. The U.P. Board explains away Rs. 2977 lakhs worth unspent funds maintained by it by the end of 1997-98 in terms of (a) savings on salary payouts accumulated because of large number of vacancies (which, the Board officials say, is largely due to the holding of the power to create and approve posts by the State Government), (b) the money set aside for proposed capital investments and (c) the requirement to obtain the clearance of the Government of India to spend a portion of funds. The Maharashtra SPCB, too, must obtain the permission of the State Govt. to undertake any capital investment. The West Bengal Board, which echoes funds constraint as its most binding constraint even while maintaining an enormous revenue surplus (Table 4.3), pines for greater financial autonomy. The Kerala SPCB also attributes its revenue surpluses to the spending restrictions imposed by the State Government on expenditure on fixed assets. The budgetary transactions of the SPCBs of Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Sikkim and Tripura are almost exogenously determined. To conclude, it is highly objectionable to pre-empt a State Board, especially one, which claims to be financially self-reliant, from making reasonable and discretionary capital investments.

Financial Position-A Comparison

4.5.1 Relative positions in resources and expenditure are seemingly the best indicators of the financial soundness of a State Board. Since the extent and spread of industrial pollution differ across States, the absolute levels of expenditure and resources of a State Board do not facilitate direct comparison with other State Boards. Considering the vulnerable financial positions of most of the State Governments in terms of their balance from current revenue (BCR) and States' own resources (SOR), their grants to the SPCBs do not seem sustainable. Hence, own resources of a State Board seem to be a more pertinent variable than its total

resources for assessing the financial strength of a State Board. Combining the expenditure of the Boards with their own resources, after deflating both by the task at the hands of the SPCBs, enables us to comment on the extent and sustainability of their activities.

Table 4.4 : Levels and growth rates of expenditures &own resources of SPCBs During the 8th Plan

State	Growth rate of exp. (grY)	Growth rate of own resources (grR)	Own resources/ number of polluting units (R/N)	Exp./number of polluting units (Y/N)	Rank in grY	Rank in grR	Rank in R/N	Rank in Y/N	Index
1	2	3	4	5	6	7	8	9	10
Andhra.P	12.5	3.5	0.23	0.31	6	16	15	12	11.47
Assam	2	18.1	0.32	0.598	14	9	10	4	8.43
Bihar	5.9	7.7	0.52	0.49	10	14	8	6	9.05
Goa	30.3	26.6	0.14	0.21	1	2	16	16	4.76
Gujarat	8.5	22.1	0.27	0.25	8	5	14	13	9.24
Haryana	4.7	14.1	0.55	0.42	12	10	7	8	9.05
Karnataka	19.6	19.5	0.7	0.51	2	7	4	5	4.09
Kerala	1.5	9.5	0.29	1.28	15	13	12	1	6.96
M.P	11	9.7	0.98	1.08	7	12	1	2	3.60
Maharashtra	14.5	20.9	0.51	0.25	4	6	9	13	7.28
Orissa	12.9	5.4	0.83	0.75	5	15	2	3	4.61
Punjab	0.7	22.3	0.77	0.4	16	4	3	9	6.45
Rajasthan	2.6	19.2	0.29	0.49	13	8	12	6	9.30
T.N	8.5	13.9	0.68	0.4	8	11	5	9	7.93
U.P	5	23.9	0.6	0.4	11	3	6	9	6.50
W.B	17.4	33	0.32	0.22	3	1	10	15	4.61

4.5.2 The R/N ratio presented in Table 4.4 divides the own resources of a State Board (R) for the year 1994-95 by the estimated number of the red and orange categories of industrial units (N) in the registered manufacturing sector for the same year, to get the normalized levels of sustainable (own) resources of State Boards. Similarly, Y/N ratio (Table 4.4), where Y is the total expenditure incurred by a State Board during 1994-95, gives an approximation of accomplishments in pollution control expenditure, normalized for different levels of industrial pollution across States.

4.5.3 The exponential real growth rates* of expenditure and own resources of the

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* The real values of expenditure and own resources of State Boards are arrived at by deflating the corresponding current price figures with the price index. The exponential growth rate of a variable is calculated by fitting the equation $Y = e^{a+bt}$ where 'Y' is the variable concerned, 'e' is the base for natural logarithm and 't' is the time trend. In its logarithmic format, the equation becomes log Y = a+bt, and, the estimate of the slope coefficient, 'b' multiplied by 100 gives the exponential growth rate of the variable.

State Boards, calculated for the period 1992-93 to 1997-98, are presented in tandem with the above said ratios in Table 4.4. An index has been arrived at for each State Board by first ranking it with regard to four variables – R/N, Y/N, the exponential real growth rate of own resources (grR) and the exponential real growth rate of expenditure (grY) – and then taking the geometric mean of the ranks obtained by the Board in these four variables. The index (I) will have the limiting values of 1 and 16 ($1 \leq Ii \leq 16$), where the index value of 1 represents the best among the available positions and 16 stands for the worst. (It is nevertheless apparent that most of the State Boards have not fully satisfied their infrastructure requirements for pollution abatement. This may be seen in sections 3.3 and 5.8). However, the lowest attained value of index would indicate that the Board, which corresponds to that value, stands in a better financial position compared to that of other Boards.

4.5.4 These four ratios placed together tend to suggest that none of the State Boards can, with certainty, be said to be comfortably placed in respect of the levels of the relevant financial parameters. West Bengal Board, despite its high-ranking growth rates in expenditure and own resources, has low normalized values for both expenditure and own resources (Table 4.4) and less than adequate per polluting unit ratio of scientific and engineering staff (Table 3.3). (Per polluting unit availability of scientific and engineering staff is brought in here to understand the adequacy of overhead expenditure made by the State Boards). Punjab Board has comparatively higher normalized values of expenditure and own resources, but it has also shown the lowest growth rate in expenditure (Table 4.4) and a low per polluting unit staff ratio (Table3.3). Though Kerala Board's normalized level of expenditure is the highest among the available, yet, it fairs badly in mobilizing its own resources and has comparatively lower growth rates in both expenditure and own resources (Table 4.4). Goa Board's high growth rates in expenditure and own resources are only indications of their taking off from very low base levels. The trade-off between normalized levels of expenditure and own resources, their growth rates and the per polluting unit staff ratio can be verified for other State Boards also.

4.5.5 Despite mobilizing comparatively higher levels of own resources, the claim of the State Boards of Tamil Nadu, Maharashtra and Uttar Pradesh to be financially self-reliant can be endorsed only after realistically assessing the financial requirements of these Boards with reference to the additional pollution control infrastructure to be created by them vis-à-vis the pollution potentials of these States. The ratios and the overall index strongly suggest this.

Financial Position of SPCBs of the North East

4.6.1 With a large portion of area under forests and with not many large industries around, the potential for generating own resources is very limited for North Eastern States (except Assam). During 1992-93, none of them derived any revenue from cess collections. While the State Boards of Arunachal Pradesh, Mizoram and Sikkim could not at all collect any consent fee, the Boards of Manipur, Meghalaya and Tripura collected very insignificantly. The State Boards of Tripura, Mizoram and Arunachal Pradesh have not inventorised any polluting unit while inventorization is extremely poor in other States too. Manpower constraint, (caused allegedly by scarcity of resources) has led to low inventorization, which, in turn results in

negligible mobilization of own resources. It is true that these Boards are met with alarming fund scarcity. Paradoxically, most of these Boards are running considerable revenue surpluses, even to the extent of 90% and 48% of the total revenue in the case of the State Boards of Tripura and Mizoram respectively. All this reflects the gross lack of spending powers, which forms part of a more fundamental problem of the lack of distinct identity and functional autonomy to these State Boards.

4.6.2 The Government of Sikkim is reluctant to impose water cess on industries. All expenses of the Sikkim Land Use and Environment Board (SLUEB) are borne by the Forest Department of the Government of Sikkim and all the employees of SLUEB are but employees of the same Department. Interestingly, the accounts of the Department do not include a separate head showing the budgetary transactions of the SLUEB. Arunachal Board does not have any separate staff, nor does it get any budgetary support from the State Government. In Manipur, water cess is collected by the State PHED, while no portion of the proceeds of cess collection is given out to the State Board. Though the Meghalaya Board does not face any resource crunch with its existing staff strength, limited sources of revenue collection and the present level of unstable budgetary allocations circumscribe its expansion and strengthening. The absence of the required executive order of the State Government prevents the Mizoram Board from imposing any fee or cess.

Summing Up

4.7.1 On the financial front, SPCBs have achieved mixed and varied levels of accomplishments. Some of them are heavily dependent on Government grants, while some have perforce to be content with their own insufficient resources. Some of them claim to be financially self-reliant while some complain about their being starved of funds. However, the preliminary analysis attempted in this Chapter suggests that it is not justified to take these claims and complaints for granted without realistically assessing their achievements and requirements. Some State Boards run huge long-run surpluses in their budgets. This should be viewed against the levels of pollution control infrastructure created by them. Many of the State Boards are forced to settle at a below-optimal level of expenditure because of the prohibitive spending restrictions imposed by their respective State Governments. At the extreme, most of the State Boards of the North East are vested with such insignificant financial powers that some of them even lack their distinct identity.

CHAPTER V

PERFORMANCE OF FUNCTIONS BY THE SPCBs-SOME ASPECTS

This chapter dwells upon some important aspects of physical performance of the State Boards. Barring some fresh initiatives, the SPCBs have largely remained as agencies for control of industrial pollution. Hence, this chapter attempts to evaluate the extent of success achieved by the State Boards in inventorising polluting industrial activities, ensuring compliance with the established standards for water and air pollution, observing the required frequency in air and water quality monitoring, according consents within the stipulated time, establishing a State-wide network that is commensurate with the task at hand, co-ordinating and organizing programmes for pollution prevention, promoting research and development and environmental training, etc. Major operational constraints faced by the State Boards in performing the above-mentioned functions are also discussed.

5.2.1 The analysis of the levels of achievements reached by the SPCBs in performing their functions as enshrined in the Pollution Control Acts is beset with enormous statistical and conceptual difficulties. Some of the serious problems are examined below:

5.2.2 The industry heads contained in the classification made by the CPCB of polluting units into red, orange and green units do not tally with those in the National Industrial Classification (NIC) adopted by the Annual Survey of Industries (ASI) of the Central Statistical Organization. This is especially so in the listing of green category of polluting units. The need for a one-to one/ close correspondence between the two classifications arises when one needs to examine the degree to which polluting units have been inventorised by the State Boards. Undoubtedly, with a wider network and longer standing than the PCBs, the CSO must have a broader database of industrial units across the country. The NIC, which bases itself on the values of principal products manufactured by registered industrial units, does not take stock of the pollution potentials of industrial units. However, with the decomposition of industrial units available upto the 8^{th} digit, it should not be difficult for the CPCB to pick out from the NIC, industry heads that are strictly comparable, if not identical, to its requirement. The Summary Results of Annual Survey of Industries, published by the CSO, combining the results of census and sample surveys, offer the closest approximation of industry characteristics in the registered manufacturing.

5.2.3 The number of units inventorised by a State Board cannot be taken to be the number of polluting units in the concerned State as there are observed deficiencies in the degree of inventorisation achieved by different State Boards. (This point is detailed in section 5.3). Inventorisation of polluting units should ideally be preceded by an inventorisation of all industrial units in the State. This can be realized only when the SPCBs work in close coordination with other governmental agencies, which undertake industrial surveys.

5.2.4 The second problem is one of under-defined and arbitrarily assigned jurisdictions in pollution control. For instance, while monitoring of air pollution is the

prerogative of the SPCBs, the control of vehicular pollution, the one of the important sources of air pollution is vested mostly with the State Transport Authority in majority of States. This renders it almost impossible to disentangle the effect of the control mechanisms employed by the SPCBs on the trend movement of air pollutants. (This is detailed in section 5.5). Again, the involvement of SPCBs in the implementation of the Public Liability Insurance (PLI) Act differs considerably across States. The State Boards of Bihar, Tamil Nadu, Orissa, Assam, Himachal Pradesh, Rajasthan and Madhya Pradesh have identified the units to be covered under PLI Act and urged them to take the requisite insurance policies. The Karnataka Board, though not vested with the powers under the Act, claims to have identified certain units to be covered under the Act. Kerala Board's role in this respect limits only to serving notices to the identified units. The State Boards of Uttar Pradesh, Maharashtra and West Bengal have reported that the implementation of the Act is outside their jurisdiction. Again, the regional and sub-regional offices of different State Boards are variedly structured and empowered. Finally, not all State Boards are entrusted with the task of preparing the zoning atlases for the districts coming under their respective jurisdiction.

5.2.5 Incomparable and inadequate database of different State Boards is a major factor that precludes an exhaustive analysis of their performance. This point will become amply clear in the sections that are to follow.

Degree of Inventorisation of HPUs

5.3.1 The degree to which the industrial units falling in the 17 categories of highly polluting industries operating in a State have been inventorised by the concerned State Boards can be one of the criteria for assessing the vigil kept by the Board on industrial pollution in the State.

5.3.2 Column 2 of table 5.1 gives an approximation of the number of industrial units that are potentially high polluting. This number is arrived at by picking out the number of factories under comparable – in most cases identical – industry heads at the 3 digit level from the Annual Survey of Industries 1994-95, Summary Results for the Factory Sector. The Column 3 gives the number of 17 categories of HPUs inventorised by the SPCBs. The ratio of Column III to Column II presented in Column IV gives an indication of the extent of inventorisation achieved by the State Boards. The ratio 113.3 achieved by Haryana is feasible, for, the ASI covers only those units which are employing 10 or more workers and using power and those employing 20 or more workers but not using power. This, it may be noted, is sufficiently large a scale to generate considerable quantum of effluent or emission.

5.3.3 While there are only two State Boards – those of Haryana & Orissa having ratios in excess of 80%, another two – those of Uttar Pradesh and Goa – possess ratios which hover around 50%. The abysmally low ratios associated with the SPCBs of Tamil Nadu, Punjab, Rajasthan, West Bengal, Himachal Pradesh, Bihar, and Madhya Pradesh need to be closely analysed. A host of factors may have to account for this dismal picture.

Table 5.1: State-wise distribution of estimated and inventorised number of HPUs.

State	Estimated No. of HPUs	No. of HPUs inventorised	No. inventorised as % of No. estimated
1	2	3	4
Andra Pradesh	550	220	40.00
Assam	33	15	45.45
Bihar	226	62	27.43
Goa	14	7	50.00
Gujarat	551	200	36.30
Haryana	203	230	113.30
Himachal Pradesh	51	12	23.53
Karnataka	273	120	43.96
Kerala	78	24	30.77
Madhya Pradesh	371	103	27.76
Maharashtra	845	335	39.64
Orrissa	111	92	82.88
Punjab	413	58	14.04
Rajasthan	347	49	14.12
Tamil Nadu	1280	188	14.69
Uttar Pradesh	1438	735	51.11
West Bengal	400	73	18.25

5.3.4 One important factor that might have led to these poor ratios is the non-inventorisation of small-scale units in the category of highly polluting units. It may, however, be noted that the CPCB listing of high polluting units is not attached with any threshold scale of operation, beyond which only an industrial unit may be treated as highly polluting. Secondly, the lucid and non-specific listing of industries by the CPCB has led to a divergence between specification of industry heads by ASI and CPCB, which, in turn, may have contributed its bit towards a big difference between Column 2 and Column 3 of Table 5.1 in the case of some State Boards. A third factor may be the sheer ignorance of the SPCBs about the existence of some highly polluting units in their respective States. The major causes for such ignorance could be the inadequate network of some of the SPCBs, (detailed in section 5.8) which render the full coverage of the State impossible and the lack of interdepartmental coordination, especially between the SPCBs and the field units of NSSO and DCSSI. The last factor could be the closure of some highly polluting units between 1994-95 and 1997-98. This may be an insignificant factor if closure of such units has been counter balanced by the opening up of new polluting units. In the final analysis, it remains that the anomaly factors (such as specification differences and closures) can explain only a portion of the observed differences between the inventorised and actual number of units and that the level of inventorisation of highly polluting category is low, in varying degrees, across State Boards. It is learnt that the inventorisation of small-scale units in the highly polluting category is yet to gain momentum. Low level of inventorisation is further evidenced in the case of hazardous waste generating units.

Table 5.2: State-wise distribution of hazarduous waste generating units.

State	Inventorised number of HWG units	Estimated number of HWG units	No. with licence as % of column 2	no. of sites identified for disposal	no. of sites operational
1	2	3	4	5	6
Andhra Pradesh	233	744	98.71	2	0
Assam	18	31	100	0	0
Bihar	36	146	91.67	2	0
Goa	23	28	95.65	0	0
Gujarat	2376	1362	98.15	19	0
Haryana	299	178	100	1	0
Himachal Pradesh	78	25	76.9	1	0
Karnataka	325	333	88.31	2	0
Kerala	64	229	92.19	0	0
Madhya Pradesh	166	191	100	9	9
Maharashtra	3669	1763	88.72	7	0
Punjab	586	174	100	7	0
Rajasthan	306	174	63.07	5	0
Tamil Nadu	1026	1465	98.44	9	0
Uttar Pradesh	943	591	71.58	3	0
West Bengal	271	413	15.5	5	0

5.3.5 The report of Planning Commission on the status of urban solid waste management in India, published in 1995, gives a list of industrial heads in the small scale category, which may generate hazardous wastes. An attempt has been made to evaluate the degree of inventorisation of hazardous waste generating units by the SPCBs by estimating from the ASI the number of such industries in each State. Table 5.2 shows that the degree of inventorisation is far less than complete in the States of Andhra Pradesh, Kerala, Tamil Nadu, Bihar and West Bengal. This can be read along with the MoEF contention “current estimates indicate that around five million tonnes of HWs is generated in India every year, largely concentrated in the four States of Andhra Pradesh, Gujarat, Maharashtra and Tamil Nadu.” Comments cannot be offered on the situation in some other States in this respect, because of the conservative nature of estimation, which has left out industrial heads that do not have close correspondence in the two classifications. Incomplete inventorisation by the aforementioned four States is established even after omitting the number of incomparable categories from the final estimated number.

5.3.6 Secondly, though all the major State Boards have identified some sites for disposing hazardous wastes, yet most of them remain non-operational. Barring three State Boards – those of Haryana, Goa and Maharashtra rest of them have instituted a separate cell for dealing with hazardous wastes.

Adoption of Pollution Control Devices and Compliance with Standards.

5.4.1 The Central Pollution Control Board (CPCB) has promulgated (a) industry specific standards for specific industries and (b) general standards for those industries for which specific standards have not been promulgated. These standards stipulate pollutant-specific limits beyond which air and water polluting units are not permitted to make emissions and discharges. The State Boards, depending on the environmental situation prevalent in their respective States, are entitled to make these standards more stringent. It is, however, noted that the SPCBs barring those of Andhra Pradesh, West Bengal and Kerala (in some specific cases) have not ventured to impose more stringent standards. The World Bank Country Study (1995) observes that the Minimum National Standards (MINAS) fixed by the CPCB have not left any room for the SPCBs to make them further stringent as these standards at their current levels require near-the-maximum effluent reduction technically achievable. Suffice it to say that the producing units of a particular polluting industry, irrespective of their location and scale, are directed to comply with almost undifferentiated standards across the country.

5.4.2 Table 5.3 gives the status of pollution control in water and air polluting units as reported by the SPCBs.

Table 5.3:State-wise distribution of industrial units According to their pollution control status.

State	No. of water pollut-ing units	% of units with ETP	% of units satisfy-ing stand-ards	No. of air Pollut-ing units	% of units with APC meas-ures	% of units satisfy-ing stand-ards	No. of HPUs	% of HPUs with facilities to satisfy stand-ards
1	2	3	4	5	6	7	8	9
Andhra Pradesh	2820	90.85	90.85	2520	79.84	79.84	220	96.36
Assam	95	30.52	13.68	86	38.57	32.56	15	60
Bihar	116	70.69	29.31	1386	40.55	40.55	40	82.5
Goa	32	100	100	18	100	100	7	100
Gujarat	8098	52.72	32.16	5757	59.74	54.87	200	95
Haryana	2580	63.49	53.72	1513	74.88	26.76	2580	40.19
Himachal Pradesh	975	77.54	28.82	983	74.67	74.67	12	50
Karnataka	8015	59.5	57.83	6902	59.79	46.33	113	91.15
Kerala	2250	51.95	35.6	1528	62.04	24.41	24	91.67
Madhya Pradesh	526	78.9	*	526	68.63	68.63	88	98.86
Maharashtra	7169	86.29	62.29	7008	72.6	58.86	318	95.59
Manipur	0	0	0	26	100	100	4	*
Meghalaya	14	14.29	0	81	14.81	0	1	100
Punjab	3280	49.72	49.72	8299	17.62	17.62	51	76.47
Rajasthan	692	80.6	*	430	91	*	49	97.95
Tamil Nadu	6338	41.23	*	6998	86.12	*	188	98.4
Uttar Pradesh	454	81.94	48.9	281	90.75	80.07	627	83.41
West Bengal	62	96.77	59.68	6188	*	*	64	81.25

* not specified by the SPCB

5.4.3 It may be seen from Table 5.3 that a significant proportion of units discharging trade effluents do not have effluent treatment plants in the States of Assam, Tamil Nadu, Punjab, Kerala, Karnataka, Gujarat and Haryana (Column 3). Similarly, a considerable proportion of units emitting air pollutants do not have air pollution control measures in the States of Punjab, Assam, Bihar, Gujarat, Karnataka and Kerala (Column 6). The corresponding figure for the State of Punjab – 17.6% - stands out dubiously. Though the facilities available with the highly polluting units (both in water and air polluting category) are generally better, the States of Haryana, Himachal Pradesh and Assam fair badly in this respect too.

5.4.4 The table 5.3 (Column 4&7) also brings out the fact that having facilities to control pollution is not a sufficient condition for polluting units to comply with the prescribed standards. In the States of Assam, Himachal Pradesh and Bihar more than 50% of the water polluting units having effluent treatment plants do not comply with effluent standards. The States of Uttar Pradesh, West Bengal and Gujarat and to some extent Kerala and Maharashtra have also not performed well in this respect. Similarly, in the States of Haryana and Kerala, among the air polluting units having APC measures only 35.7% and 39.4% respectively have complied with the standards. In general, what transpires is an unsatisfactory level of control of industrial pollution in most parts of the country. It should also be noted that prima-facie compliance with concentration-based standards might have meant non-compliance, had the standards been load based. This is because, concentration based standards facilitate dilution of concentration of pollutants to ensure superficial compliance with standards. Several factors may have contributed towards this dismal scenario.

5.4.5 Non-installation of abatement mechanisms by the polluting units is a direct consequence of the absence of any effective punitive and deterrent mechanism in case of non-compliance. First, the SPCBs, do not have the power to impose on-the-spot-fines on persistently non-complying units. In the absence of such power, the State Boards will have to either hope for the non-complying unit to abide by their directions or file a case with the Court of Justice against the said unit and wait for the court verdict. The Court is entitled to impose stringent punishments ranging from imprisonment of 18 months to 6 years plus fine. Courts are generally busy with day-today criminal and civil cases and may keep environmental cases on pending for years together. Table 5.4 brings out the gravity of the problem of pendancy of environmental cases filed by the SPCBs.

5.4.6 It is not difficult to read from Column 2 through Column 6 of Table 5.4 that a considerable proportion of cases filed by the SPCBs over the years have been pending with the courts for more than a year. The pendancy problem is particularly alarming in States like Madhya Pradesh, Orissa, Gujarat, Punjab and Assam. A case pending for more than a year tantamounts to an unhampered license to a non-complying firm to continue flouting standards for that duration. The growing disillusionment with the efficacy of litigation as a control mechanism felt by some of the State Boards, especially those of Madhya Pradesh, Tamil Nadu, Punjab, Orissa and Gujarat is evidenced by the negligible number of environmental cases (compared with the preceding years) filed by them during 1997-98. Reading tables 5.3 & Table 5.4 together makes it clear that the cumulative number of cases filed by

the State Boards like those of Assam, Punjab, Maharashtra, Gujarat, Kerala, Karnataka and Tamil Nadu was far less than the number of non-complying industrial units. Some State Boards complain that when the cases are finally decided, the verdicts often go against them, for, the courts are reluctant to award 18 months of imprisonment to the recalcitrant units. The Pollution Control Acts do not provide for the constitution of Special Courts to try environmental cases.

Table 5.4: Legal Status of some State Boards.

State	year of constitu-tion	No. of cases filed upto 31.3.98	No. of cases disposed upto 31.3.98	No. of cases Pending as % of no. filed	No. of cases filed in 1997-98	No. of cases disposed in 1997-98
1	2	3	4	5	6	7
Andhra Pradesh	1976	156	120	23.08	48	29
Assam	1975	5	0	100	1	0
Gujarat	1974	2961	1181	60.11	20	76
Karnataka	1974	158	95	39.87	17	7
Kerala	1974	66	63	4.55	0	0
Maharashtra	1970	524	389	25.76	38	15
MP	1974	164	38	76.83	3	8
Orissa	1982	109	11	89.91	6	0
Punjab	1975	848	482	43.16	1	26
Tamil Nadu	1982	454	299	34.14	0	9
UP	1975	444	329	25.9	24	39

5.4.7 The Environment Protection Act, 1986 vested the power of issuing directions (in regard to pollution control) with the Govt. of India which, subsequently, was delegated to the SPCBs. This includes the power to direct; a) closure, prohibition or regulation of any industry, operation or process, and, b) stoppage or regulation of the supply of electricity or water or any other service. The directions are to be issued only after hearing the objections that may be placed before the SPCBs by those persons who are sought to be directed. However, the efficacy of the SPCBs in exercising this and other powers is affected by the interference of powerful interest groups and pressure groups. This problem of acute dimensions has been reported by many State Boards. Such interference is sometimes based on the argument that strict compliance with standards will lead to closure of industrial units, which in turn may result in unemployment and social disorder.

5.4.8 Equally disturbing is the problem of non-compliance even while possessing the necessary mechanisms for pollution abatement. Once the capital cost is incurred on obtaining the treatment equipment, it is the operating cost of the equipment that guides the firm to determine its level of operation. If the marginal abatement cost is prohibitively high, it is quite possible that the firm may keep the equipment idle. In the absence of any economic incentive system which is based on the marginal abatement cost of polluting units, it may be difficult for the SPCBs to ensure that the available pollution control mechanisms are operated to their optimal capacity.

5.4.9 Available literature on water pollution abatement suggests that there are significant economics of scale with respect to the volume of Waste Water Stream (*'Incentives and Regulations for Pollution Abatement with an Application to Waste Water Treatment'* Mehta,S.,Mundle and U.Sankar, 1993). As such, small scale polluting firms may find it difficult to install and operate ETPs, as they would have extremely high marginal abatement costs at their small scales of operation.

NAAQM and SPCBs

5.5.1 The National Ambient Air Quality Programme, initiated by the CPCB in 1984, is operated mainly through the SPCBs. A country-wide network of 290 monitoring stations has been established for NAAQM. It may, however, be noted that in most of the States, not all the sanctioned stations are operational. This picture is unveiled in table 5.5.

Table 5.5: State-wise distribution of NAAQM stations

State	No. of NAAQM Stations sanctioned	No. of stations Operating	No. operating as % of no. sanctioned
1	2	3	4
Andhra Pradesh	12	9	75.00
Assam	5	5	100
Bihar	12	6	50.00
Goa	2	2	100.00
Gujarat	23	18	78.26
Haryana	8	3	37.50
Himachal Pradesh	8	7	87.50
J&K	2	0	0
Karnataka	14	5	35.71
Kerala	16	13	81.25
Madhya Pradesh	25	22	88.00
Maharashtra	25	14	56.00
Punjab	12	8	66.67
Rajasthan	19	19	100.00
Tamil Nadu	16	13	81.25
Uttar Pradesh	38	25	65.79
West Bengal	14	9	64.29

5.5.2 It may be seen from table 5.5 that only in 4 States, Rajasthan, Orissa, Assam and Goa – all the NAAQM stations sanctioned by the MoEF are operating. The status of Karnataka and Haryana is extremely poor in this respect. The position of Bihar, Maharashtra, Uttar Pradesh, West Bengal and Punjab is also not appreciable. None of the North Eastern States – each sanctioned with 2 NAAQM stations – have any of these stations operational. Among other things, the fund constraint of the Central Pollution Control Board in financing the SPCBs to establish and operate the sanctioned stations also accounts for the difference between the number of sanctioned and operating stations.

5.5.3 The National Ambient Air Quality Standards (NAAQS) for the three parameters that are regularly monitored - Sulphur dioxide (SO_2), Oxides of Nitrogen (NO_X) and suspended particulate matter (SPM) – have been defined in terms of their annual

Table 5.6: State-wise distribution of frequency of monitoring of SPM, NO_2 & SO_2 in selected NAAQM stations in 1992 and 1996.

	1992			1996			
State	SO_2	NO_2	SPM	SO_2	NO_2	SPM	
Andhra Pradesh	116	116	116	76	75	35	SPCB
	70	70	73	69	69	47	NEERI
	132	132	132	55	55	17	SPCB
Bihar	88	89	94	77	77	83	SPCB
Goa	33	35	50	65	83	84	SPCB
Gujarat	114	114	114	75	75	76	SPCB
	90	89	99	86	86	88	SPCB
	100	100	101	95	95	95	SPCB
Haryana	96	96	8	66	66	58	SPCB
Himachal Pradesh	1	92	102	104	104	104	SPCB
	4	90	93	104	104	104	SPCB
	2	84	85	104	104	104	SPCB
Karnataka	38	38	38	12	12	12	SPCB
	38	38	38	40	40	40	SPCB
Kerala	108	108	107	94	81	95	SPCB
	109	109	108	92	92	94	SPCB
	108	108	108	92	71	94	SPCB
	92	92	92	93	93	93	SPCB
Madhya Pradesh	30	43	64	84	84	100	SPCB
	34	36	67	63	65	74	SPCB
	45	45	77	92	92	95	SPCB
	12	19	25	78	78	82	SPCB
	66	67	76	88	88	88	SPCB
Maharashtra	66	66	16	69	69	45	NEERI
	92	92	69	88	88	91	VRC
	53	53	55	52	52	40	NEERI
Orissa	37	37	37	86	86	88	SPCB
	69	72	110	25	25	41	SPCB
Punjab	99	99	99	89	89	88	SPCB
	86	88	98	97	97	97	SPCB
Rajasthan	79	79	1	69	70	48	NEERI
	61	61	31	73	73	81	SPCB
Tamil Nadu	93	93	65	92	92	48	NEERI
Uttar Pradesh	85	85	84	71	53	79	SPCB
	96	71	43	59	59	44	NEERI
	9	9	10	58	58	58	SPCB
West Bengal	56	56	23	57	57	54	NEERI
	88	88	88	0	0	54	SPCB
	82	82	82	0	0	48	SPCB

arithmetic means (80mg/m^3, 80mg/m^3 and 360 mg/m^3 respectively for SO_2, NO_2 and SPM in the designated industrial areas) of a minimum of 104 measurements in a year, taken twice a week 24 hourly at uniform interval. It is also provided that 24 hourly values should be within 120mg/m^3, 120 mg/m^3 and 500 mg/m^3 for NO_2, SO_2 and SPM respectively in at least 98% of the measurements in a year. This requires the State Boards to annually furnish at least 104 observations from each National Ambient Air Quality Monitoring (NAAQM) Station assigned to them. The extent to which the State Boards cater to this requirement is examined in Table 5.6.

5.5.4 The status of 39 industrial locations which are common to the years 1992 and 1996 is presented in Table 5.6. Of these, 7 are being monitored by NEERI, Nagpur, 1 by Vishveswaraya Regional College of Engineering, Nagpur, and the remaining 31 stations by the respective SPCBs. In 1992, there were only 6 stations – 2 in Andhra Pradesh, 1 in Gujarat and 3 in Kerala – from which 104 or more measurements could be reported. All these stations were being monitored by the corresponding SPCBs. However, none of these 6 stations could report 104 measurements in 1996. Barring three stations of Himachal Pradesh, none could report 104 measurements in 1996. None of the stations monitored by NEERI reported the required number of measurements in either of the 2 years. The VRC, Nagpur, also could not report the required number of measurements.

5.5.5 While the number of measurements from the NAAQMs of Orissa, Punjab, Rajasthan, U.P and West Bengal did not show any clear sign towards improvement during 1992-96, the number of measurements reported by the State Boards of Andhra Pradesh, Bihar and Gujarat exhibited a distinct declining trend. The number of measurements from Madhya Pradesh and Himachal Pradesh showed an increasing trend over the period.

5.5.6 It is for lack of facilities required for complex tests with the SPCBs that 30 stations in 10 metro cities were entrusted with the NEERI for monitoring. CPCB is contemplating on handing these stations over to the SPCBs, which implies need for additional financial provisioning for NAAQM network.

5.5.7 The system in place to conduct the NAAQM itself explains, to some extent, the situation in which most of the State Boards fail to maintain the required monitoring frequency. Most of those employed on this task are on temporary bases. Among the field staff, the Junior Scientific Assistant is paid Rs. 1800/- as monthly salary and the Field Assistant, only Rs. 1200/-. The amount annually earmarked by the CPCB for all the expenses related to the monitoring of a NAAQM station including maintenance of the equipment supplied to the station and the salary and conveyance of the field staff stands at Rs. 50000 (stipulated in 1994).

5.5.8 For many reasons, the time trend of NO_2, SO_2 and SPM estimated from the measurements obtained from the NAAQM stations located in the designated industrial areas cannot be taken to throw light on to the levels of achievements of the State Boards in controlling industrial pollution. First, of course, is the inadequacy of measurements from which annual arithmetic mean of these three parameters is calculated. Secondly, an area that had originally been designated as industrial may gradually have turned commercial or residential or a combination of the three, depending on the dynamics of the developments which have occurred in that area.

Thirdly, the coming up of new air polluting industrial units in the area may have increased the concentration of pollutants in the atmosphere, despite the existing units, more or less, complying with the standards. Fourthly, assessing the above said developments, the CPCB has time and again relocated the monitoring stations (within a city), which restricts the number of locations common to different time periods. The last and the most important reason is that air pollution emanates from many sources and industrial pollution is only one among them. A considerable portion of air pollution is caused by vehicular sources. It is already noted that in most of the States, vehicular pollution control is outside the jurisdiction of the SPCBs.

WQM and SPCBs

5.6.1 The CPCB in collaboration with the SPCBs has established a Water Quality Monitoring (WQM) network of 480 stations spread over 21 States and 4 Union Territories in the country. The monitoring of these stations is entrusted with the SPCBs and the Pollution Control Committees of the Union Territories.

5.6.2 There are observed inadequacies in the number of measurements reported by the State Boards when compared with the frequency norms fixed by the CPCB. The factors like insufficient laboratory facilities and skilled manpower in the regional and sub-regional offices of the SPCBs, unfavourable climatic conditions and inadequate supply of funds for the WQM programme might have contributed towards these deficiencies. Per sample norm of grants was stipulated by the CPCB in 1989 and the same remains even without an inflation indexation.

5.6.3 For many reasons, the trend in water quality statistics cannot be related to the performance of the SPCBs. Firstly, 'the presence of large/medium or clusters of Small Water Polluting Industries' is only one among the 12 criteria based on which WQM stations are selected by the CPCB. It is, thus, not always tenable to attribute the changes in the levels of water pollution observed in the WQM stations to the changes in the levels of industrial discharges to the water body. Secondly, with the advent of new industries, the water quality may deteriorate, even in the event of better compliance of the existing units with standards. Thirdly, the coming up of new barrages and abstraction points, which is uncorrelated with the efforts of the SPCBs, may distort the time trend in the levels of pollution at the monitoring stations. Concentration of pollutants observed at a monitoring station is, thus, effect of the confluence of a set of point and diffused sources of water pollution, many of which are beyond the ambit of SPCB control.

Award of Consents

5.7.1 Consents to be awarded by the SPCBs are of two types: Consent to establish and consent to operate. Consent to establish is essentially a site clearance from the concerned SPCBs for establishing an industrial unit. Consent to operate outlets (under water Act and Air Act separately or together) refers to the consent that an industrial unit must obtain from the concerned SPCB before starting its operations.

5.7.2 The number of active consents maintained by a State Board (under Water Act and Air Act) is said to approximate the number of polluting units in the respective States. Table 5.7 gives cumulative number of consents awarded by the State Boards as is recorded by them.

Table 5.7: Consent status of State Boards.

	Consent to establish			Consent to operate (Water Act)			Consent to operate (Air Act)		
States	Appli-ed for	Gran-ted	Pen-ding	Appli-ed for	Grant-ed	Pen-ding	Appli-ed for	Gran-ted	Pen-ding
1	2	3	4	5	6	7	8	9	10
Andhra Pradesh	126785	126471	142	2866	2253	0	2781	2160	0
Assam	2082	1765	35	3432	3298	80	2956	2608	150
Bihar	1627	903	275	1172	1122	0	5733	4313	1108
Goa	705	678	27	688	678	10	0	0	0
Gujarat	15976	12866	153	10441	7420	272	7884	6489	175
Haryana	33903	21806	2607	18990	12363	1162	14913	9443	1445
Himachal Pradesh	2811	2811	0	975	975	0	783	783	0
Karnataka	5329	4298	924	22293	20642	1428	16092	13638	2236
Kerala	na	2850	7	na	2785	10	na	1666	135
Madhya Pradesh	580	558	8	2394	2376	18	1912	1894	18
Manipur	65	65	0	10	10	0	20	20	0
Meghalaya	129	86	42	45	38	2	81	70	0
Orissa	38	25	1	0	0	0	38	25	1
Punjab	12225	11358	721	7182	6590	518	5151	4768	311
Rajasthan	4140	3955	185	4906	4444	462	3880	3502	358
Tamil Nadu	18847	15429	0	14845	12667	0	0	0	0
Uttar Pradesh	13637	7035	131	6474	1942	0	5934	1742	0

5.7.3 It is not certain whether the cumulative number of consents awarded by the Boards can be taken to be the number of active consents or not. It should be noted that the cumulative figures of consent to operate under Water Act and Air Act could be made available by the State Boards of Andhra Pradesh and Uttar Pradesh only since 1994. The State Boards of West Bengal and Orissa could not furnish any cumulative figure at all. Without such a record, it is difficult to understand as to how these Boards keep track of the growth in the number of polluting units in their respective States.

5.7.4 The Water Act provides that, the "consent ……. shall unless given or refused earlier be deemed to have been given unconditionally on the expiry of a period of four months of the making of an application in this behalf complete in all respects to the State Boards". The State Boards of Goa, Andhra Pradesh, Haryana, Orissa, Karnataka and Assam, while furnishing the details of the time taken in awarding or refusing consents in intervals, i.e. 0-15 days, 16-30 days 31-45 days, 45-120 days and beyond 120 days, declare that all the consent applications received by them were disposed off within 120 days. The State Boards of Rajasthan, Kerala and Madhya Pradesh admit that the consent processing of some of their cases involved more than 120 days. Such data details could not be furnished by the State

Boards of Uttar Pradesh, West Bengal, Gujarat, Maharashtra, Bihar, Punjab and Tamil Nadu. Of them, the State Boards of Uttar Pradesh and Bihar claim that the consent applications have been disposed within 120 days. The State Board of Tamil Nadu claims to have awarded consents within 45 days if the applications were complete in every respect.

Regional Offices and Regional Laboratories of SPCBs.

5.8.1 The CPCB has not stipulated any standard norm to be followed by the SPCBs while establishing their regional and sub regional offices and laboratories. This leaves the SPCBs with the discretion to establish regional offices and laboratories in accordance with their priorities and financial position.

Table 5.8. Distribution of regional offices and laboratories of SPCBs

State	No. of regional offices	No of regional labs	No of sub-regional offices	No of sub-regional labs	No of mobile labs
1	2	3	4	5	6
Andhra Pradesh	14	8	2	0	0
Assam	7	3	0	0	1
Bihar	7	7	0	0	3
Goa	0	0	0	0	0
Gujarat	6	6	0	0	0
Haryana	9	4	0	0	0
Himachal Pradesh	10	3	0	0	0
Karnataka	15	6	0	0	0
Kerala	9	8	2	0	1
Madhya Pradesh	13	11	5	0	0
Maharashtra	11	5	26	0	7
Orissa	6	7	0	0	2
Punjab	11	4	0	0	1
Rajasthan	10	4	0	0	1
Tamil Nadu	5	2	20	9	3
Uttar Pradesh	15	12	1	0	1
West Bengal	4	2	0	0	0

5.8.2 Table 5.8 does not provide any conclusive information regarding the adequacy of the network of regional offices and laboratories created by the SPCBs. The following discussion attempts to supplement table 5.8.

5.8.3 Establishing an office for each district may render some of the district offices redundant, as there are considerable inter-State and intra-State variations in the levels of industrialisation. For most of the State Boards, this is financially infeasible also. If the question of financial adequacy is set aside, it appears that the concentration of polluting industrial units within an area (district) and the distance of the area from the adjacent regional office (which, to some extent, measures manageability of the said area from the adjacent office) should determine the number and location of regional offices and labs. There are other factors such as connectivity and manpower and equipments available with regional offices that may

influence decision-making in this respect. The ensuing preliminary analysis presents the State-wise details of some of the obvious inadequacies in the number of regional and sub regional offices.

West Bengal

5.8.4 All the four regional offices (ROs) of the WBSPCB are located in the South Bengal region. This may keep the Board completely in the dark about the potential pollution sources of the North Bengal region (especially places like Siliguri), a region which only has agro-based industries.

Goa

5.8.5 The Goa Board functioned (as on 31-3-1998) with 4 technical staff and did not have any regional office in either of its two districts. The Board claims that the entire region is manageable from the head office located at Panaji. The Board did not have a Central Laboratory. Routine samples were being sent to the laboratory of the Environmental Pollution Control Wing of the Government of Goa and samples for complex tests to the neighbouring SPCBs and the zonal office of CPCB at Bangalore. It may be noted that both the districts of Goa are fairly industrialised.

Haryana

5.8.6 Haryana SPCB has 9 ROs spread over the whole State. However, two districts – Yamunanagar (rolling mills and paper mills) and Panipat (handloom with dyeing) – consist of areas that are to be closely monitored but are far off from adjacent regional offices.

Punjab

5.8.7 Punjab SPCB has a reasonably dispersed network with 11 ROs. But the district of Rupnagar with some polluting industries and a thermal power plant may require a separate office.

Orissa

5.8.8 Sambalpur district which has some potentially polluting industries is more than 100 k ms away form the nearest regional offices at Rourkela and Angul. Sambalpur does not have an office of the SPCB.

Bihar

5.8.9 The State Board of Bihar has 7 ROs, which can cover the major industrial centres in the State. However, the district, Giridh, with uranium and coal mines does not have an office of the SPCB.

Andhra Pradesh

5.8.10 Except for the absence of a regional office in Anantpur in which district Tadapatri region (with cement and matchbox units) falls, the network of offices of the Andhra Pradesh SPCB seems adequate.

Rajasthan

5.8.11 The district of Ajmer (which houses a big city and the Kishangad region where there is a good concentration of marble mining) does not have an office of the SPCB and is more than 100 kms away from the adjacent ROs at Jaipur and Bhilwara. The districts of Jhunjhun, Churu and Sikkar can together have one office of the SPCB. It should also be examined whether Sirohi (with marble mining and cement units) can be managed from Udaipur.

Tamil Nadu

5.8.12 TNSPCB has 5 regional offices and 20 district offices, a network commensurate with its pollution potential. However, it should be seen whether Sivakasi (falls in Virudanagar district) abounds with fireworks and lithopress, can be monitored from Madurai, more than 100 kms far from Sivakasi.

Gujarat

5.8.13 The industrialised district of Ahmadabad (Reliance industries Ltd. Arvind Mills, Mafatlal) does not have an office of the SPCB. It is also to be seen whether the districts of Amreli, Mahesana and Surendranagar can be effectively monitored from the adjacent ROs.

5.8.14 It may be noted that the above analysis considers only the numerical adequacy of regional and sub-regional offices (only for a sample of States). However, the monitoring potential of the network depends more on the availability of skilled manpower and well-equiped laboratories in the ROs and SROs than their number. A regional office without technical manpower is rather a burden than an asset.

Environmental Training

5.9.1 Skill formation should be one among the primary activities in a technical organisation like SPCB. State Boards barring those of North East (except Sikkim) and Rajasthan claim to have conducted training programmes for their staff and others. While the State Boards of Tamil Nadu, Karnataka, Madhya Pradesh and Bihar report to have imparted training to their staff through their own mechanism, those of Gujarat, Maharashtra and Himachal Pradesh reported the use of inhouse and external facilities for this. The State Boards of Orissa, West Bengal, Punjab, Andhra Pradesh, Uttar Pradesh and Haryana relied entirely on other institutions to

get their staff trained. Boards of Maharashtra and Andhra Pradesh report to have sent their personnel abroad for training. The training component in Kerala Board was only in the form of weekly seminars.

5.9.2 However, when the share of training in the total expenditure of State Boards is examined, it becomes clear that the relative importance attached by the SPCBs to this activity is exceedingly low. Table 5.9 substantiates this.

Table 5.9: Expenditure on training across State Boards During the 8th Plan and 1996-97.

State	Expenditure on training during 8th Plan	Training expenditure as% of total expenditure	Expenditure on training during 1996-97	Training expenditure as % of total expenditure
1	2	3	4	5
Andhra Pradesh	1.413	0.060	1.514	0.221
Assam	0.53	0.098	0.07	0.055
Bihar	0.68	0.084	0	0.000
Goa	0	0.000	0	0.000
Gujarat	0.88	0.047	0.63	0.106
Haryana	3.56	0.403	0.1	0.040
Himachal Pradesh	0.01	0.002	na	
J&K	0.9	0.608	0	0.000
Karnataka	0	0.000	0	0.000
Kerala	0.53	0.049	0	0.000
Madhya Pradesh	4.33	0.149	3.88	0.425
Maharashtra	0	0.000	0	0.000
Orissa	12.4	1.582	9.86	2.716
Punjab	1.35	0.042	1.01	0.118
Rajasthan	0	0.000	0	0.000
Tamil Nadu	6.96	0.179	1.54	0.131
Uttar Pradesh	2.37	0.093	0.23	0.033
West Bengal	1.62	0.213	0.44	0.180

5.9.3 Apart from the State Boards of the North East, those of Rajasthan and Goa also did not earmark any amount for training during the 8th Plan and in 1997-98. The percentage share of training in total expenditure was less than 1% in the case of all State Boards except Orissa. The year 1997-98 does not show any visible sign of improvement in this respect. With the task of preparation of zoning atlas and other technical activities being increasingly thrusted upon the Stated Boards, a reversal of this trend is urgently called for.

Awareness and Publicity

5.10.1 The crucial importance of mass awareness and publicity programmes of the SPCBs lies in their potential to inspire public action, especially, collaborative efforts of affected parties, polluters, the Government and non-Governmental agencies to abate pollution. The secondary information obtained from the SPCBs suggests that

the State Boards other than those of North East and Goa are involved in a variety of awareness generation programmes such as stage shows, film shows, exhibitions, trade fairs, workshops, seminars, symposia etc. Besides this, the State Boards of Orissa, Kerala, Bihar, and Karnataka have instituted “pollution control” awards, of which the recipients include industrial units and the general public. Awards were proposed to be instituted by the State Boards of Tamil Nadu and Punjab too. Maharashtra Board's publication of booklets for school children and the inhouse journal called “Prakruti” and Andhra Pradesh Board's “Community Consultation” on treatment, storage and disposal of hazardous wastes are examples of potentially effective public awareness programmes.

5.10.2 However, the percentage share of advertisement, publicity and awareness generation in the total expenditure of the SPCBs of some big States corroborates that this important activity has so far remained a low priority head of expenditure. The percentage shares were 0.25% (advertisement and publicity) in Kerala during 1995-96, 1.16% (Mass awareness and publications) in Maharashtra during 1995-96, 0.31% (advertisement, publicity and awareness) in Tamil Nadu during 1996-97, 0.85% (environment awareness programmes) in Andhra Pradesh during 1994-95 and 0.60% (advertisement, mass media and pollution awareness) in Bihar during 1996-97.

Public Hearings

5.11.1 Apart from the SPCBs of the North Eastern States, those of Assam, Haryana, Uttar Pradesh and Maharashtra have not introduced public hearing as an instrument to resolve environmental conflicts. It may be interesting to note that the State Boards of Sikkim and Mizoram also are reported to have organised public hearings to a limited extent. However, it is the West Bengal SPCB that has claimed to have kept an impressive record in organizing public hearings to resolve environmental complaints. On receipt of the complaint from an affected party, the Board officials claim to undertake site inspections, and, subsequently on the basis of inspection report a hearing of the complainant and the respondent is organised in an attempt to mitigate their differences.

Research and Development Activities

5.12.1 The State Boards of Assam, Haryana, Andhra Pradesh, Goa and Maharashtra do not have separate wings for R&D works, nor do they collaborate with any other institution to undertake research works. Though the State Boards of Orissa, Karnataka, Rajasthan and Uttar Pradesh do not maintain separate R&D wings, they claim to have tied up with other research or academic institutions to undertake R&D activities. The State Boards of West Bengal, Himachal Pradesh, and Tamil Nadu claim to maintain their own R&D wing and at the same time to have research tie ups with other institutions. None of the State Boards of the North East with the exception of that of Sikkim, which report to maintain its R&D wing and to have research tie-ups do not undertake any research activity.

Zoning Atlas Preparation and the SPCBs

5.13.1 Zoning Atlas, which classifies environment and presents the possible alternative sites for industries and their pollution receiving potential in terms of easy-to-read maps, is slated to become the pivotal instrument of environmentally compatible spatial planning in India. The programme is co-ordinated by the CPCB and executed through SPCBs and other institutions with technical assistance from the German Agency for Technical Cooperation (GTZ) and the World Bank funding of US$8.44 millions for the five year period 1997-2003.

5.13.2 Districts of 19 States including the North Eastern States of Tripura, Manipur and Meghalaya are being increasingly covered under the programme on a priority basis. The efforts of some of the State Boards like those of Uttar Pradesh, Andhra Pradesh and Karnataka in this respect have been appreciated by the CPCB. The SPCB of Karnataka has gone ahead to prepare Zoning Atlas for 6 districts with its own funds. On the other hand, the State of Haryana is not seen in the Atlas because of its luckwarm response to the CPCB call to provide it with the background data for initiating the programme.

Summing Up

5.14.1 The forgoing analysis of the physical performance of the State Boards draws a mixed picture. The degree of inventorisation achieved by some State Boards falls clearly short of its desired level. The extent of compliance with pollution standards observed by the inventorised polluting units is also not satisfactory in many States. Among other things, absence of an effective punitive mechanism contributes to non-compliance. There are many pitfalls in the observance of the required frequency of monitoring in NAAQM and WQM and in the functioning of monitoring stations. Though elaborate monitoring networks have been created by the SPCBs of the industrialised States, yet some serious deficiencies are evident from the above preliminary analysis. The relative importance attached to crucial areas like environmental research, awareness generation and publicity and R & D leaves much to be desired. To conclude, the existing system of industrial pollution control, despite its wide network and moderate achievements, exhibits many symptoms of underdevelopment, which need to be urgently attended to.

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