Evaluation
of
Central Pollution Control Board (CPCB)

Submitted to

Ministry of Environment and Forest
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By

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Content

List of Tables

List of Figures

Chapter 1

Introduction and Study Approach

Section 1: Background

1.1.1 Although India's economic growth aided by higher levels of industrialization is a matter of great pride, there is also huge concern for the environmental degradation that has followed. The problems associated with the quality of environment need to be addressed to with utmost seriousness because if nature revolts, economic growth would be that much more difficult to achieve.

1.1.2 The Government of India has been increasingly concerned, and rightly so, on the issue of environmental pollution as evidenced by the increasing number of environment laws, policies and programs. However, these laws, once passed, also need to be executed effectively. With this in mind, the Central Pollution Control Board (CPCB) was established to set environmental standards for all parts of the country. To bring the mandate of the CPCB to fruition, regulatory agencies like Pollution Control Boards (PCBs) and Pollution Control Committees (PCCs) at state level have been set up for the implementation of the norms to bring pollution under control.

1.1.3 However, to make sure that the CPCB's mandate is yielding results, performance audit of CPCB needs to be carried out at regular intervals. This will help identify the flaws, if any, and find out ways and means to remove them and thus make the system of environmental management more effective and proactive. The present study, therefore, focus on strengthening of CPCB and its preparedness to undertake various measures as suggested by environmental statutes.

Section 2: Purpose / Objectives of the Study

1.2.1 The purpose of this assignment is to carry out study in line with TOR communication and focusing especially on following outputs aspects

- Facilitate reprioritization/ reengineering of Central Pollution Control Board scheme with a view to increasing its efficiency, transparency and accountability.
- Assess the overall physical and financial outcomes and impact of Central Pollution Control Board scheme, as well as its cost effectiveness, during the 10th Five Year Plan.
- Improve the quality of implementation and enhance the efficiency and accountability of the delivery mechanism.

- Determine continued relevance of the scheme in the context of the National Environment Policy, 2006.

Detailed Scope of Work / Assignment

- To conduct comprehensive evaluation of the scheme of the Central Pollution Control Board and its Regional offices to ascertain the relevance of the present functions and responsibilities assigned to it under various Environmental Acts and Rules;
- To assess the efficacy of various activities undertaken by CPCB over the years at National and Regional levels;
- Performance assessment, both physical and financial, of the entire scheme of CPCB and the benefits received by the State Pollution Control Boards and other stake holders;
- To assess the major outcome of the scheme vis-à-vis the expenditure on various activities;
- To suggest rationalization of the existing activities and to provide a road map for further improvement by redesigning/reorganizing of the existing divisional structure created for major activities of CPCB;
- Assessing the capabilities of the laboratories of CPCB to undertake monitoring and analysis of environmental samples and reviewing the R&D programs already completed and proposed to be undertaken;
- To assess the impact/effectiveness of the follow up action taken for control of pollution in pursuance of the direction or order(s) passed by the various High Courts/Supreme Court.
- Functioning of Zonal Offices of CPCB and their coordination with SPCBs and Regional Offices of MoEF;
- Development of road map/standard procedure for award of project works to Consultants/out sourcing;
- Review of out reach procedure for wider dissemination of information;
- Suggestions for improvements in Plan and Programmes of CPCB on short term and long term basis; and Assessment of facilities to discharge the duties and responsibilities including the manpower requirements and upgradation of technical skills to address the enhanced responsibilities over the years

Section 3: Study Approach

1.3.1 The present study is not a typical impact evaluation study of CPCB. It has been conducted with a focus on (1) preparing a business plan of CPCB for the future and (2) to assess organizational capabilities, strengths and weaknesses to achieve the plan. Based on the analysis, the study identifies the areas for institutional strengthening to bridge the gap between the above two aspects. The study laid emphasis on implementation process of different activities being carried out by offices of CPCB. The implementation process included both physical achievements and financial outlays for each of the activity undertaken by offices of CPCB.

Tools and Techniques

1.3.2 Based on the approach used in the study, the following techniques were adopted:

(a) Strategic Business Planning
(b) Political, Economic, Social and Technological (PEST) Environmental Analysis
(c) Organizational Review
(d) Internal and External Stakeholders Consultations

(a) Strategic Business Planning

1.3.3 Strategic business planning is a disciplined and pragmatic approach that organizations can use to make decisions now about the future. It enables them to make more informed choices and decisions, set future directions, establish priorities, allocate limited resources, improve operations and monitor results. It is also a process of organizational self-assessment, goal setting, strategy development and performance monitoring. In the planning process, the institutions determine (or review) their core functions and objectives/goals within the context of trends in the external environment, their internal capacities as organizations and their missions. Determining their core functions and objectives/goals gives institutions a focus – a focus that allows them to plan activities, assign priorities and apply resources to move them from where they are now in the present to where they want to be in the future.

1.3.4 Strategic Business planning can be understood as two closely related processes: strategic planning and operational planning.

- Strategic planning articulates broad institutional goals, assesses the institution's performance, and develops an overall strategy for expanding outreach and sustainability.
- Operational planning creates a framework for implementing the strategy derived from strategic planning process.

Strategic Planning

1.3.5 This identifies the various elements that set the overall framework for the CPCB future operations, such as its mission statement, institutional strengths and weaknesses, macroeconomic issues, regulatory implications, and competitive advantage. It also helps lay out the CPCB's strategic objectives for a three- to five-year period, taking advantage of the institution's strengths and opportunities while addressing weaknesses and threats.

Operational Planning

1.3.6 This describes the specific steps needed to achieve the CPCB strategic objectives and relates them to all aspects of the business plan, such as its activities, human resource plans, organizational structure, geographic coverage.

1.3.7 The framework for detailed organizational analysis of CPCB has been given in Figure 1.

Figure 1.1: Elements Mapping in a Strategic Business Plan

Where are we now?	
1.0 CPCB Description	1.1 Origin and History 1.2 Organizational Structure 1.3 Stakeholders 1.4 Activities and Services
2.0. Mission, core functions and other mandates	2.1 Mission Statement 2.2 Core Function 2.3 Other Mandates
3.0. Environmental Assessment	3.1 Internal Environnent 3.2 External Environnent 3.3 Critical Issues
Where do we want to be?	
4.0 Vision	4.1 Vision
5.0 Goals and Objectives	5.1 Goals 5.2 Objectives
How do we get there?	
6.0 Strategy Development	6.1 Strategies 6.2 Priorities 6.3 Resource Requirements
7.0 Financial Plan	7.1 Funding 7.2 Expenditures

1.0 CPCB Description

1.3.8 This element of the strategic business plan provides basic facts and information about the CPCB as an organization. It includes brief narrative about when and why the CPCB was established and a chronology of important events since its creation. This element also describes the CPCB current organizational structure, identifies major clients and constituents (market analysis) as well as its important activities and services. *In short, the CPCB description portrays what the CPCB looks like, what it does and for whom.*

2.0 Mission, Core Functions, and Other Mandates

1.3.9 Mission is the reason for CPCB's existence. It clearly and succinctly identifies what the CPCB does, why it does it, and for whom. The mission reminds everyone – the public, other government entities and CPCB personnel – of the unique purposes promoted and served by the CPCB. The mission statement provides the foundation for the rest of the strategic business plan. CPCB goals, objectives, and strategies must be consonant with its mission statement.

1.3.10 Core functions are the essential business activities that the CPCB must undertake in support of its mission. CPCB's core functions therefore are directly tied to its mission and derived from it. Other mandates are additional CPCB responsibilities established by law, code or regulations. In other words, they are authoritative orders or commands from a higher official, legislature, or court that require the CPCB to provide a service, produce a good, or pursue a course of action. Where other mandates differ from core functions, it is that these business activities are not necessarily "essential" to the CPCB's mission.

3.0 Environment Assessment

1.3.11 This element of the strategic business plan aims to assess how internal and external conditions affect the CPCB's operations and performance. The **environmental assessment** provides an Institution with critical data, information and knowledge for thinking about, deciding upon, and preparing its future course of action.

1.3.12 The **internal assessment** identifies the CPCB's strengths and weaknesses as an organization. It examines factors within the CPCB that can positively or negatively affect its ability to accomplish its mission, goals and objectives. Areas to consider when conducting such a self examination include, but are not limited to, the characteristics of its work force (e.g size, composition, experience and training, morale, compensation), organizational structure, managerial style and other distinctive competencies, geographic location and the adequacy of technology and fiscal resources.

1.3.13 The **external assessment** looks at elements or forces in the outside environment that can have significant impacts on the CPCB. External factors include, but are not limited to, the economy, government, political climate, demographics and public opinion.

1.3.14 In the strategic business planning literature, the identification of an organization's strengths, weaknesses, opportunities and threats is sometimes called a SWOT analysis. It is also referred to as a situation analysis. Upon completion of the internal and external assessments, the CPCB should be able to identify the critical issues that it must address when planning for the future. A critical issue is defined here as a fundamental policy question or challenge that the CPCB must address. It must be dealt with expeditiously and effectively if the CPCB is to survive and prosper.

4.0 Vision

1.3.15 A vision statement is a clear and compelling picture of the CPCB's preferred future. It provides a description of the ideal future state made concrete. It is where the CPCB is going and where it wants to be. This preferred future must be sufficiently desirable and challenging so that it motivates and inspires all CPCB staff and influences their decision-making. Yet at the same time, the vision of the CPCB's future must be realistic and credible. When integrated with the CPCB mission statement and principles, the vision statement serves as the framework for the CPCB's planning process.

5.0 Goals And Objectives

1.3.16 **Goals** are the desired ends or results that the CPCB wants to achieve within a given time frame. The most effective goals are quantifiable and have completion dates.

1.3.17 **Objectives** are specific measurable targets (i.e. important milestones) that the CPCB achieves along the way toward reaching its goals.

1.3.18 Well-defined goals and objectives are aligned with the CPCB's vision and support its mission. Setting goals and objectives provides the CPCB with a strategic direction and a planned destination. For this reason, this step in the strategic business planning process is critical to the CPCB's future success.

6.0 Strategy Development

1.3.19 This element of the strategic business plan identifies how the CPCB will achieve its goals and objectives. Whereas the goals and objectives state what the CPCB hopes to accomplish, the CPCB must also develop strategies for **how** it will achieve them.

1.3.20 **Strategy development** occurs in three steps. The CPCB first determines what methods – or – **strategies** – it will employ to achieve its goals and objectives. These "means to an end" are the actual work efforts – that is the programs, products, services, projects, initiatives and activities – that it will use to bridge the gap between where the CPCB is now and where it wants to be. This done, the CPCB then determines the relative importance of each strategy. Setting **priorities** increases the likelihood that CPCB will focus on what is most important and do "first things first". Finally the last step is to determine the resource requirements to carry out the CPCB's strategies.

1.3.21 Strategy development is not the simple exercise of documenting the CPCB's current activities. It implies and requires change, deciding what is going to be done and what is going to be done differently. Change can mean eliminating wasteful or unnecessary activities, modifying a current practice or instituting a complete change in direction.

1.3.22 A detailed checklist to collect the information on the above mentioned aspects of CPCB has been provided in Annexure 1.

(b) PEST Analysis

1.3.23 This technique provided the scanning of political, economic, social and technological environment under which CPCB has been performing its mandate. It also enlisted the future changes in these spheres which might have negative or positive impacts on the functioning of CPCB in the future.

(c) Organizational Review

1.3.24 The organization review was intended to assess organization structure, manpower strength, technical infrastructure, systems and processes to implement the various activities of CPCB.

(d) Stakeholders Analysis

1.3.25 The stakeholder analysis was conducted with a highly participative process with interviews and interactions with internal stakeholders (senior management and Divisional heads of CPCB). External stakeholders included senior management of few State Pollution Control Boards, Industry Association and Development Organizations.

Section 4: Sources of Information

1.4.1 The required data and information has been collected from the following sources:

- Interaction and discussion with officials at CPCB headquarter
- Interaction and discussion with officials at CPCB Zonal Offices
- Interaction and discussion with officials at State Pollution Control Board
- Data base maintained at CPCB
- Interaction with Officials of different association of industries and development organizations
- Information from relevant published or unpublished reports/literature on the scope of the study

Chapter – 2

Organizational Profile of CPCB

Section 1 : Origin & History

2.1.1 The Water (Prevention & Control of Pollution) Act, 1974, enacted under Article 252 of the Constitution provided for the establishment of Pollution Control Boards in the Centre and at the State levels. Central Pollution Control Board (CPCB) has been originally created under Section 3 of the Water (Prevention and Control of Pollution) Act, 1974 with the main function to promote cleanliness of streams and wells in the different areas of the States. CPCB was constituted on 22nd September 1974. In 1981, the Air (Prevention and Control of Pollution) Act was passed. The original name of CPCB was Central Board for the Prevention and Control of Pollution. The name was subsequently changed to the CPCB on 01.04.1988 through Water (Prevention & Control) Amendment Act, 1988 to promote cleanliness of streams, wells etc. in different areas of the States by prevention, control and abatement of water pollution, and to improve the quality of air in the country. This was done with a view that the CPCB had to implement both Water and Air Act and functions under both the Act were to be executed by the one agency and, therefore, the name was changed to Central Pollution Control Board (CPCB).The Environment (Protection) Act (EPA) was passed in 1986 as an umbrella Act to close the gaps in the Water and Air Act, and subsequently, more functions were given to CPCB under this Act.

2.1.2 The very nature of Article 252 under which the original Water (Prevention and Control of Pollution) Act was passed, allowed the creation of two distinct organizations at the Centre and State levels. Whereas, the State Boards are mainly responsible for the enforcement and compliance of the Water and Air Acts, the CPCB as a multi-disciplinary technical organization of Ministry of Environment & Forest (MoEF) plays the role of an advisor and coordinator of the State Boards. Since inception, CPCB has been playing a key role in abatement and control of pollution in the country by generating relevant data, providing scientific information, rendering technical inputs for formation of national policies and programs, training and development of manpower and organizing activities for promoting awareness at different levels of the Government and public at large.

2.1.3 Presently CPCB is playing multi-faced role in the sphere of pollution abatment and control. The different roles are described as follows:

a) Legal/Statutory

- Performing functions as per Section 16 of Water and Air Acts (a set of 16 functions)
- Issue directions to SPCBs under Section 18; and can take over functions of any SPCB in a given area for a specified time
- Issuance of directions (directly) to industries under Section 5 of EPA; and
- Co-ordinating role under Rules (framed under EPA)

b) Advisory

- To Central Govt. and to judiciary (as per Directions) on matters pertaining to abatement of pollution.
- Co-ordination under Bilateral/ multilateral agreements

c) Research and Development

- R&D on thrust areas(Research Committee/ Linkages with R&D institution)
- Advanced laboratory at Head Office and regular AQC for SPCBs and EPA Labs / Proficiency test

Issues:

- Rationale for two parallel structures in the form of CPCB and SPCB, each one working as independent and autonomous entity in its own capacity with no single agency to command and control?
- Former is controlled by central govt. and the latter is controlled by state govt. resulting in problem of coordination.
- Dichotomy of control leading to division of work, SPCB entrusted with important and critical functions of enforcement and compliance, while CPCB as advisory and coordination role.
- It is clear that two organizations (CPCB and SPCBs) are linked to output performance without having inbuilt functional relationship.
- If the same structure be continuing, how can the CPCB has more stakes in the functioning of SPCBs? The issue is of critical importance when the performance of CPCB is largely dependent on the performance of SPCBs.
- As an autonomous Institute, what should be the relationship between CPCB and MoEF to ensure that CPCB should perform with functional and financial autonomy?

Section 2: Organization Structure

2.2.1 The CPCB is performing various functions through the following nine major project\ budget heads;

i. Pollution assessment (survey and monitoring).
ii. R&D and laboratory management.
iii. Development of standards and guidelines for industry specific emissions and effluents standards
iv. Training
v. Information database management and library
vi. Pollution control technology

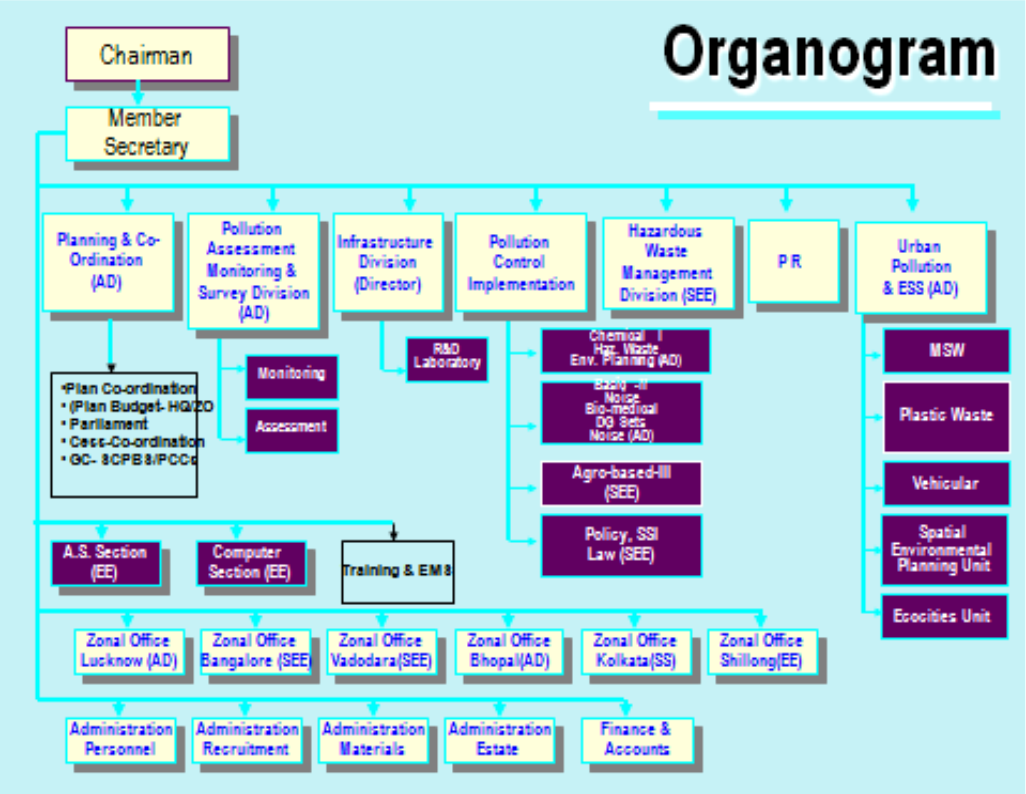
vii. Pollution control enforcement

viii. Mass awareness and publications

ix. Hazard waste management

2.2.2 To execute these schemes, CPCB has drawn detailed organizational structure (Figure 2.1) comprising of various divisions. The schemes are executed through in-house technical manpower or by out sourcing some of the components to the Government and Private Consultants. The State Pollution Control Boards/Committees are also entrusted execution of certain components to get State specific feedback.

Figure 2.1 : Current Organogram of CPCB



2.2.3 CPCB has established 6 zonal offices catering to various States as presented in table 2.1. ZOs are field offices of CPCB and all the schemes are prepared at HO are executed by them. ZO undertake field investigation; send reports like reports on Water Quality Monitoring, Air Quality Monitoring, Industrial Inspection and other such related activities to the HO for further action.

Table 2.1 : Zonal Offices of CPCB and their Implementation Area

	Zonal Offices	States Covered
1	Bangalore	Karnataka, Kerala, Tamil Nadu, Andhra Pradesh, Lakshdweep, Goa, Pondicherry,
2.	Kolkata	West Bengal, Orissa, Bihar, Jharkhand, Andman & Nicobar.
3.	Shillong	Assam, Meghalaya, Tripura, Nagaland, Arunachal Pradesh, Manipur
4.	Bhopal	Madhaya Pradesh, Chhatisgarh, Rajasthan
5.	Lucknow	Uttar Pradesh, Uttranchal Pradesh, Haryana, Chandigarh, Punjab, Himachal Pradesh, Jammu & Kashmir
6.	Vadodara	Gujarat, Maharastra, Daman Diu

Issues:

The different divisions which have been created in the CPCB are presently based on the nature of functions being performed by the organization as evolved over a period of time. Ideally, these divisions should be reorganized based on broad components of pollution control management, in general and specific mandate and key objectives of the CPCB, in particular.

We are not clear the rationale of having only 6 zonal offices, each one catering to such large number of states. Moreover, the study team wonders how the locations of these zonal offices have been chosen. Given the large area under each zonal office, it is difficult to have close coordination with SPCBs. As a result, SPCBs are not able to derive benefits of CPCB expertise.

Section 3 : Governance

2.3.1 The Governing board of CPCB comprises of The Chairman, Member Secretary and other members not exceeding 15. All are nominated by the Central, concerned State governments. Sub-clauses (1) and (2) of clause 3 of 'The Water (Prevention and Control of Pollution) Act, 1974 provide that to exercise its powers and discharge its functions, there shall be a Central Board consisting of the following members:

- a full-time Chairman, being 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, to be nominated by the Central Government;
- Such number of officials, not exceeding five, to be nominated by the Central Government to represent Government;
- Such number of persons, not exceeding five, to be nominated by the Central Government, from amongst the members of the State Boards, of whom not exceeding two shall be from amongst the members of the local authorities
- Such number of non-officials, not exceeding three to be nominated by -the Central Government, to represent the interest of agriculture, fishery or industry or trade or any other interest which, in the opinion of the Central Government, ought to be represented;

- Two persons to represent the companies or corporations owned, controlled *or* managed by the Central Government, to be nominated by the Government; and
- A full-time Member Secretary *possessing* qualifications, knowledge and experience of scientific, engineering or management, aspects of pollution control, to be appointed by the Central Government.

Issues:

(a) The Act does not prescribe any time limit within which the vacancy of Chairman or other Members has to be filled up. As a result the post of regular Chairman of CPCB, lying vacant for almost two years on two occasions and officers of rank of additional secretary and joint secretary in the Ministry of Environment and Forest were holding the charge of chairman as shown in table 2.2.

Table 2.2 : Status of Absence of Full Time Chairman

Sl. No.	Name of Chairman	Period
1.	Shri A.Bhattacharjya, IAS, Additional Secretary	03.12.91 to 11.05.93
2.	Shri C.Viswanath, IAS, Joint Secretary	01.08.03 to 16.09.03
3.	Shri J.M.Mauskar, IAS, Joint Secretary	17.09. 06 to 02.02.09

(b) The enforcement and compliance of the water and air Act is to be ensured by CPCB through State Boards. The situation regarding qualifications and tenure of chairman and member secretaries is much worse as the appointments are adhoc. There is neither any advertisement for the post nor there is any e panel of experts for selection of chairman and member secretary of State Boards as is the case in CPCB. The same concern has been highlighted by The Department related parliamentary standing committee on science and technology, environment & forests (Rajya Sabha Committee) in its 192nd report on functioning of central pollution control board. The above report points out that *"According to the report of the Supreme Court Monitoring Committee on Hazardous waste, 77 percent of Chairpersons and 55 percent of Member Secretaries in different State pollution control Boards are not qualified enough to hold the post" (ibid, para 2.6 of page 6).*

(c) The Board is dominated by members nominated by the central government who represent central government, State Boards, companies and corporations of the central government. There is need for restructuring the composition of the board of CPCB for balancing the representation of all stakeholders (polluter and victim). Further there is need to include more independent persons in the board having expertise in pollution control and legal areas.

Similar sentiments have been expressed by the Rajya Sabha Committee in its report. The report mentioned that *"The total number of Members of the Board comes to 15 excluding the Chairman and the Member Secretary. Out of fifteen, twelve Members are such officials who hold additional charge of the Membership of CPCB. Out of the twelve, five officials represent the Government and five persons are nominated from amongst the members of State Boards. All the appointments are made by Government. Further sub section 3 of section 5 of the Act provides that the central Government may remove any Member of a Board before the expiry of his term of office which is three years".*

"The Committee is of the view that with such a composition dominated by Government representatives and constituted by central Government, CPCB can' not be expected to act as a watchdog of environmental protection" (ibid, para 2.3 and 2.5 of page 5).

(d) The CPCB has to deal with very strong lobbies in the industry and other sectoral ministries. The Chairman and Member secretary have to be fully competent, knowledgeable, upright people capable of fulfilling their duties without fear and favor. Their duties further require that the technical and the scientific personnel have deep knowledge about the nuances of the industrial processes and the other environmental factors. In the words of Rajya Sabha Committee Report "Chairman and Members of the Board should be persons who have rendered remarkable and distinguished service to the cause of Environment. They should be persons of repute and widely acclaimed. They should be appointed for a fixed tenure and the sword of removal or termination should not be hanging on their heads. Members like Chairman should be full time" (ibid, para 2.7 of page 6).

Section 4 : Core Functions

2.4.1 Besides the main functions of promoting cleanliness of streams and wells and improving the quality of air and to prevent, control or abate air pollution. CPCB has the following functions under section 16 of both Water and Air Acts:

- Advise the central government on any matter concerning prevention and control of water and air pollution and improvement of the quality of surface waters and air.
- Plan and cause to be executed nationwide programmes for the prevention, control or abatement of water and air pollution;
- Coordinate the activities of the State Boards and resolve disputes among them;
- Provide technical assistance and guidance to the State Boards, carryout and sponsor investigation and research relating to problems of water and air pollution;
- Plan and organize training of persons engaged in programmes for prevention, control or abatement of water and air pollution;

- Organize through mass media, a comprehensive mass awareness program on control, prevention or abatement of water and air pollution;
- Collect ,compile and publish technical and statistical data relating to water and air pollution and the measures devised for their effective prevention, control or abatement;
- Prepare manuals, codes and guidance relating to treatment and disposal of sewage and trade effluents as well as for stack gas cleaning devices, stacks and ducts;
- Disseminate information in respect of matters relating to water and air pollution and their prevention and control;
- Lay down, modify or annul, in consultation with state government concerned, the standard for stream or well or quality of air;
- Establish or recognize laboratories to enable the Board to perform and;
- Perform such other functions as and when prescribed by the government of India;

Additional Responsibilities Given by MoEF to CPCB

1. Environmental Protection Control Authority (EPCA), Delhi
2. Loss of Ecology Authority Work
3. Taj Trapezium Authority
4. Bio Medical Rules – standards development, co-ordination
5. Noise Pollution Control – Standard development
6. Vehicular Pollution Control – standards, road Map, co-ordination
7. Fuel quality standard
8. Hazardous Waste Management (Technical issues)
9. Municipal Solid Waste Management
10. Plastic Waste Management
11. Fly Ash Rules
12. Registration of industries for recycle and reuse under Haz. Waste Rules
13. Water quality monitoring under GAP / YAP
14. Action plan of 16 cities for Air Pollution Control
15. STP performance set up under GAP / YAP

2.4.2 These schemes are being executed through the various divisions as mentioned in the figures 2.2 and 2.3. Some of the components are being outsourced to government and private consultants and State Boards due to lack of staff in CPCB.

Figure 2.2 : Functions of Various Divisions of CPCB

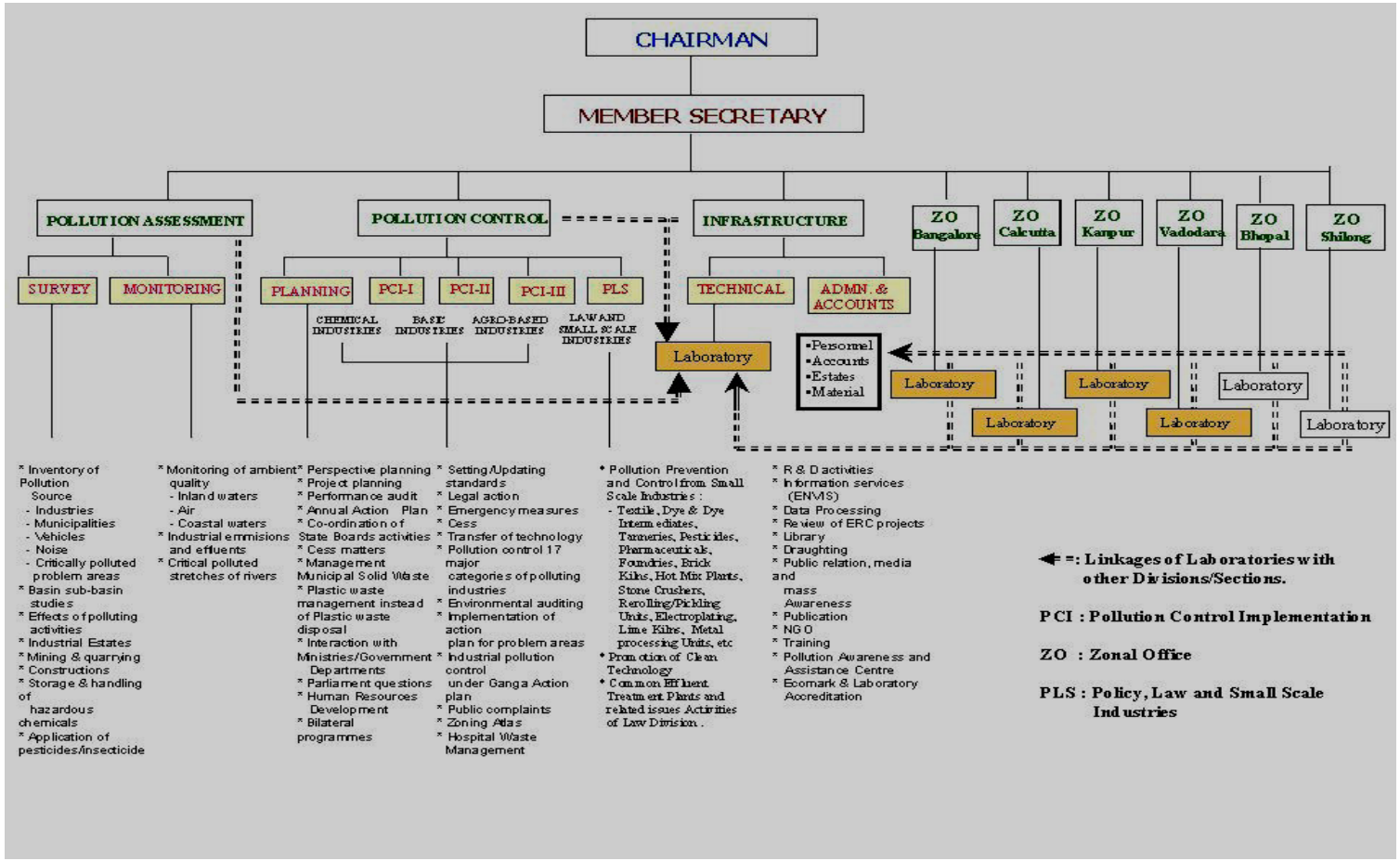
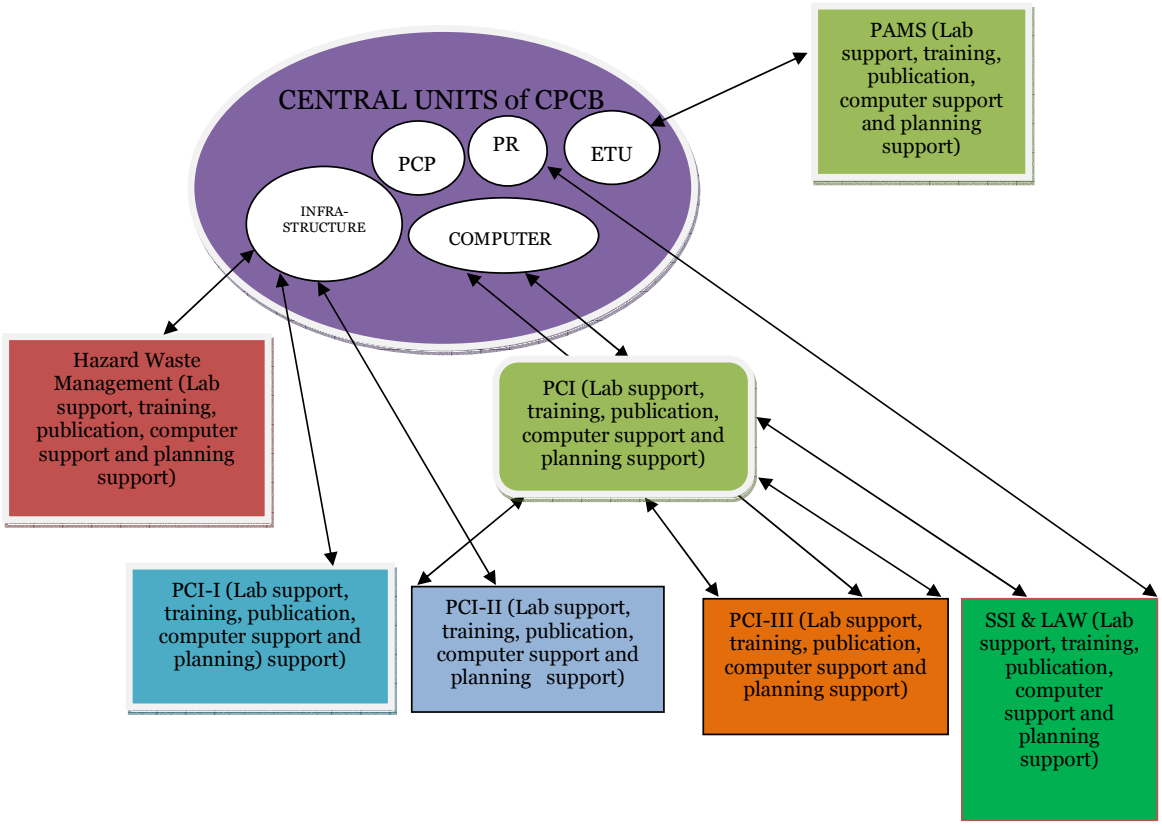


Figure 2.3 : Linkages Among the Divisions of CPCB



The functions of the different divisions are described below:

1. Pollution Control Planning

Role in CPCB's Mission

2.4.3 This division is the think tank unit of CPCB. This division provides blueprint for goals and objectives to be achieved, for short and long term perspective keeping in view the resources. It is responsible for the preparation of annual action plan as well as Five Year Plan of the Board which reflects the short and long term objectives to be achieved in the field of abatement of pollution. This division coordinates activities with all the divisions at head quarter also of the Zonal Offices of CPCB. Coordination is being done in terms of exchange of technology, information and presenting the objective and plans and programmes of the divisions through an administration document 'Annual Action Plan' before the MoEF.

Relation with SPCBs & Zonal Offices

2.4.4 It also coordinates between State Pollution Control Boards and Pollution Control Committees, undertakes state and subject specific reviews. It is the nodal agency responsible for coordinating between CPCB and MoEF. All the parliament questions are sent to this division and depending on the subject matter, PCP harmonize with other divisions for replying to the parliamentary questions.

Relation with Other Sub-divisions of CPCB

2.4.5 This division analyses achievements of the preceding Five Year Plan, in terms of accomplishment of targets. Based on the existing status of environment, and considering the dimension of pollution from various sources, the thrust and programme of succeeding years are identified. Also studies current plans, programme of the Ministry, coordinating policy and accordingly put them in the Five Year Plans. For carrying out this responsibility it has to depend on other departments for data and information.

Special Comments from PCP/ Constraints:

- The last officially approved reorganisation plan was in 1987. This plan was approved by MoEF. Subsequently there after no such comprehensive reorganisation plan has been prepared by Ministry & staff strength after 1987 is based on the proposal made by CPCB based on the specific act to be handled and taking the court matters.

- Presently there is no internal sanctioned document or guideline for placement of staff in each division. There is no sanctioned staff strength for Zonal offices. However, an in house effort has been made by the PCP division to work out requirement of staff strength as well as setting targets for Zonal Offices.

- There are no guidelines for rotation of scientific and technical staff within the division at head office. As a result some of the scientific and engineering staff have developed themselves as specific subject experts by virtue of their experience.

- There is acute shortage of staff particularly in Zonal Offices. ZOs have to undertake frequent field investigation. Thus, the scientific and engineers hardly get the time to concentrate and develop state specific issues on abatement of pollution.

2. Environment Training Unit

Role in CPCB's Mission

2.4.6 Training is essential for human resource development of any organisation. Environmental awareness among the masses and educating the officers working in the pollution control board are essential steps to have a sound environmental management in the country. The water Act of 1974 and the Air Act of 1981 also emphasise, imparting training is one of the major functions of CPCB. Training in various aspects of prevention, abatement and control of pollution to the identified target groups is important. The target groups include officials dealing with planning, funding and implementation of programmes for prevention and control of pollution in the Central and State Governments, SPCBs, the local bodies, operators of industrial and municipal wastewater treatment plants and NGO's engaged in management of pollution control programmes.This unit provides training to the staffs of CPCB as well as SPCB staff. It also trains personnel from hospitals, municipality for day to day work under Bio Medical Waste and Solid Waste Management. Each division of the board assess and forward the need of training to ETU. On job training as well as training for deputation are provided by this division.

Functions

2.4.7 Training cycle in a year starts with planning. The process of training cycle is shown in figure-2.4. Excluding training its other activities include Management of Laboratory System as per ISO/IEC 17025: 2005 (NABL), Integrated Management System (ISO 9001 & ISO 14001), Ecomark Scheme, and Vigilance Matters.

a) Laboratory Management System as per ISO/IEC 17025: 2005 (NABL)

2.4.8 Under this ETU conducts Awareness and training programmes on laboratory management system as per requirements of ISO/IEC 17025. It is also responsible for the development, amendments, revision, issue and control of quality system documents. It conducts Internal Audits and Management Review Meetings periodically for implementation and maintenance of laboratory management system. Based on these Internal Audits and Management Review Meetings, it proposes corrective actions on non-conformance by different laboratories. ETU is the authority for Coordination with CPCB, Zonal Office Laboratories for development and implementation of laboratory management system as per requirements of ISO/IEC 17025. It co-ordinates with NABL for assessment/surveillance of CPCB, Central Laboratory, Delhi, proficiency testing programmes and assessment of testing laboratories on behalf of NABL.

b) Integrated Management System (IMS)

2.4.9 ETU is accountable for the Design, Development and Implementation of IMS (ISO 9001 and ISO 14001) in CPCB. Under it, ETU carries out awareness and training programs on IMS for all level staff of CPCB, organizes internal auditor/lead

auditor trainings for selected officials of CPCB, develops system documents meeting the requirements of ISO 9001 and ISO 14001, standard operating procedures, control and implementation, conducts regular internal audits and management review for maintenance of IMS and takes necessary corrective actions. It applies to competent authorities for certification of CPCB as per requirements of ISO 9001 and ISO 14001.

c) Ecomark

2.4.10 The Ecomark Scheme was launched in 1991 by Ministry of Environment and Forests, Govt. of India (Gazette Notification G.S.R. 85 E, February, 1991).The Ecomark Scheme is voluntary in nature. An earthen pot has been chosen as the logo for the Ecomark .CPCB is the member of Global Eco labeling Network (GEN).the aim of this scheme is to motivate manufacturers and importers to reduce adverse environmental impact of their products, to reward genuine initiatives by companies to reduce adverse environmental impact of their products to assist consumers in their daily purchase decisions to become environmentally responsible to encourage citizens to purchase products which have less harmful environmental impacts and ultimately to improve the quality of environment and to encourage sustainable management of resources.

d) Vigilance Matters

2.4.11 Besides preventive vigilance, as and when vigilance related complaints are received they are investigated and appropriate actions are taken.

Constraints

- It has 10 staff posts out of which 4 are in-position (2 technical and 2 non-technical). 6 technical posts are lying vacant. Keeping in view the very nature of the job it has been entrusted to carry; new appointments should be made as early as possible. Without sufficient staff, it would not be possible to provide quality training to the concerned entities.
- It lacks proper work environment.
- Delay in receiving nominations from SPCB/PCC.
- Last moment cancellations of nominations without intimation to CPCB or organizers.
- Sometimes participants are called back in-between training.
- Without receiving confirmation from the organizing institutes, SPCB nominate participants and send for training.
- Delay in receipt of utilization certificate (UC) and statement of expenditure (SoE) from training institutes for full and final settlement of accounts.
- Delay in approval of MoEF for international training/visit.

Requirement

- Fully AC seating space with modular furniture and latest models of computer/laptop, scanner, digital camera, fax and photocopier.

- ❖ A committee room of capacity of 20 persons with modern audio-visual system and an attached pantry with latest system of washing of utensils and storage.
- ❖ Trainee hostel/guest house of capacity of 30 persons with modern kitchen.
- ❖ Staff:
  Technical : 06
  (Scientists/Engineers)
  Non-Technical : 04

3. Infrastructure

Role in CPCB's Mission

2.4.12 One of the major objectives of CPCB is monitoring of pollution sources and ambient environmental quality. Laboratory plays a vital role in carrying out these tasks. The Laboratory Divisions of CPCB at Delhi includes:

1) Water and Wastewater Laboratories
2) Air Laboratory
3) Bio-Science Laboratory
4) Treatability Laboratory
5) Instrumentation Laboratory
   i. Trace Organics Laboratory
   ii. Trace Inorganic Laboratory

2.4.13 The main purposes of these laboratories are:

- o Carrying out monitoring of water, waste water, air, soil and solid wastes
- o Supporting services for various projects with regard to sampling, analysis and reporting
- o Carrying out research and development project studies
- o Standardization of new methodology for analysis of specific pollutants
- o Carrying out bilateral collaborative project studies with other countries
- o Providing scientific laboratory related services to the State Pollution Control Boards and other organizations
- o Conducting Inter Laboratory Analytical Quality Control (AQC) exercises for the benefit of the laboratories of SPCB and others for water, air and solid waste related parameters
- o Conducting laboratory oriented training programmes for SPCBs, PCCs, industries, educational institutions and other organizations

Figure 2.4 : Training Cycle for a Year

2.4.14 The CPCB Laboratory at Delhi has been recognized as 'Central Laboratory' under the Ministry of Environment & Forests vide notification number 78(E) since November 19, 1991 and as 'Environmental Laboratory' under the Environment (Protection) Act, 1986 (29 of 1986) since July 21, 1987. The Laboratory has provision for sampling and analysis of environmental samples such as water, air, soil and solid wastes. The CPCB laboratory has obtained Laboratory Accreditation through the National Accreditation Board for Testing and Calibration Laboratories (NABL), Department of Science & Technology as per ISO/IEC 17025. The accreditation covers 85 chemical and 6 biological parameters

2.4.15 The CPCB Laboratory at Delhi is equipped with sophisticated instruments and equipment for analysis of water, air soil and solid wastes. The CPCB Laboratories are involved in many applied and experimental research activities besides routine monitoring, sampling and analysis activities. The investigations related to public complaints, matters related to Hon'ble Courts directives, association with all the divisions with reference to development of discharge standards, emission norms, performance evaluation of pollution control devices in all types of industrial sectors and urban pollution, survey of river and its respective polluted stretches are other aspects of pollution and control of pollution in the country. In addition to these, CPCB's Laboratory carries out various R&D activities entrusted by Government Organizations (Ministry of Environment & Forests, National River Conservation Directorate etc.) in the country. Thus the objectives and functions are correlated with CPCB's mission.

Relation with SPCBs

2.4.16 As per the Act, the SPCB's are main implementing agency for implementation of prevention and control of pollution in respective state, while the major role of Zonal Offices is the regular coordination and interaction with respective State Governments and State Pollution Control Boards / Committees with reference to the implementation of various pollution control norms / regulations at the state level. The offices also associate for specific environmental problems, performance evaluations, pollution control devices monitoring. However, with a view to avoid time-delay in carrying the analyses and to prepare time targeted actions, Zonal Offices are also equipped with laboratory facilities.

Relation with other Divisions of CPCB

2.4.17 No other division in CPCB-Delhi has the laboratory back-up. The Laboratory Division has the adequate infrastructure and expertise for evaluation

and monitoring facility for all nation-wide programmes for implementation of various rules, regulations, norms etc. besides standardization of new methodology for analysis of specific pollutants as per requirement of other divisions.

2.4.18 As such, generally no activities of Laboratory Divisions are out-sourced; however Laboratory Division has been entrusted for sponsored projects by many other Government Organizations viz. IARI, NRCD etc. Also, Laboratory Division is carrying out many R & D related activities and obtained International and National patents for the innovative technologies either solely or in collaboration with the Institute of Genomics & Integrative Body (IGIB-CSIR), Delhi.

Constraints

2.4.19 Activities have increased manifolds over the years (due to notification of many rules, added responsibility by the Hon'ble courts, task forces etc.). However, sanctioned staff has not increased proportionately. Due to inadequate middle level staff (SSA, JSA, STS, TS, SLA, JLA), research scholars are appointed as and when required. Rrealizing the problem of non-absorption in the Board, research fellows generally do not stay in the Board for long time, resulting in the loss of the expertise and loss of time and delay in project activities because of frequent recruitment of research fellows.

The table 2.3 gives a glimpse over the present number of staff and required staff.

Table 2.3 : Data on Type of Staff, Scientific/Technical/Non-Technical/Financial

Name of Laboratory	SS/SEE	EE/Sc-C	AEE/Sc-B	STS-TS-ST	SSA-JSA	SLA/ JLA	Non-technical	Financial
IFD	-	1	1	-	-	-	1	-
Air	1	2	7	8(4)	7(4)	12(4)	2	-
Water	1	-	2	1	1(3)	2(2)	2	-
Treatability	1	-	-	-	3(2)	1(1)	1	-
Trace Organic	1	-	3	-	4(4)	3(2)	1	-
Bio-Science		2	1	1	1(2)	1(1)	1	-
Instrumentation		1	2	-(1)	2(2)	2(1)	1	-
Total	**4**	**5**	**16**	**10(5)**	**18(17)**	**21(11)**	**9**	**-**

Note: Figures in bracket indicate additional staff requirement under the category

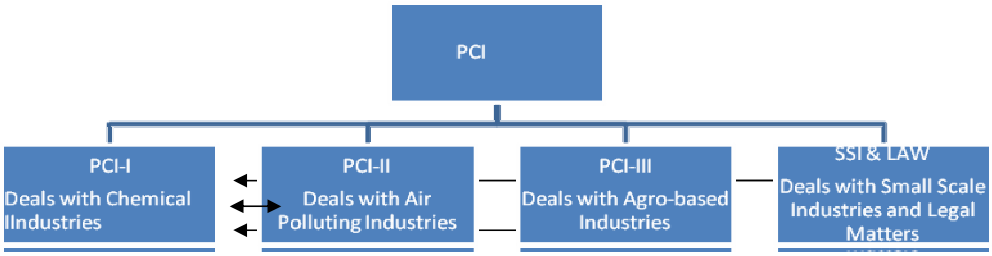
- Multi-tasking and overloading of activities on existing manpower.
- Time delay in procurement of instrument spares, calibration standards, consumables (chemicals, glasswares, solvents), UPS batteries replacement etc.

4. Pollution Control Implementation

Role in CPCB Mission

2.4.20 This division deals with development of standards. It provides the entity for implementation and has an eye over the implementation of the same by the SPCBs. Zonal Offices act as its watchdog at the state level. It has been divided into 4 subdivisions for better administration. They are as shown below in figure 2.5.

Figure 2.5 : Sub-divisions of PCI



2.4.21 The lines show that PCI-I acts as a storehouse of standards made by the other three divisions. Standards made by these divisions for specific industries they deal with, has to be approved by PCI-I and then sent to the Ministry for notification. In this way, PCI-I is a gateway between PCI & its different division for the development and notification of standards. These divisions are dependent on Infrastructure division for lab support and industrial compliance to the standards. Each sub-division is empowered to carry out inspection activity for the industrial non-compliance and closure of the industry. Coordination of Zonal

Offices is essential for the inspection and closure activity as per Section 5 of EPA, 1986 and Environment Surveillance Scheme (ESS).

4.a. Pollution Control Implementation-I (Chemical Industries)

Role in CPCB Mission/Functions

2.4.22 This division deals with chemical industries. It coordinates with other 3 sub-divisions approval of standards developed by them. These standards are to be implemented by the SPCBs through consents with the respective industries. Development of standards for pollution control is very much intrinsic in the objectives of CPCB. Thus, this is a vital organisation of the board. It has developed standards for discharge of wastewater, emission of air pollutants and disposal of hazardous waste. It has Peer & Core Expert committee to evolve standards. Effluent standards and Emission standards have also been developed by PCI-I. This division also undertakes any specific project given by the Government.

The major industries dealt by this division are:

1. Oil Refineries
2. Fertilisers
3. Dyes & Dye Intermediates
4. Chlor-alkali
5. Pharmaceuticals
6. Petrochemicals
7. Pesticides
8. Manmade fibre
9. Soda Ash
10. Sulphuric Acid
11. Basic Organic Chemicals
12. Paints
13. Oil Drilling & Exploration
14. Ink & Ink Printing etc.

Relation with other Divisions

2.4.23 It has close coordination with PCP, Infrastructure and Computer division of CPCB.

Constraints

2.4.24 The major constraint faced by this division is shortage of manpower. Out of the 11 staffs, 8 staffs are from technical background. Three of the technical staffs have additional charge of other department. Few years back there were 21 staff posts. So, 10 posts are vacant now. No division specific staff requirement has been done. However, keeping in view the number of industries they deal with, technical staff strength should be enhanced. Incentives such as promotion should be given according to seniority.

4.b. Pollution Control Implementation-II (Air Polluting Industries)

Role in CPCB Mission/ Functions

2.4.25 It has the responsibility to develop standards and guidelines for Air Polluting Industries. Carrying out ESS activity, noise pollution control, are the other activities of PCI-II. It has inspected 77 industries under ESS activity over the last 2 years and directions were issued to 10 industries. The industries dealt by this division are:

1. Thermal Power Plants
2. Iron and Steel Industry
3. Sponge iron plants
4. Aluminium Industry
5. Cement Industry
6. Copper, Lead and Zinc Smelters
7. Coal and Mineral Mining
8. Ferro alloys Industries
9. Noise Pollution
10. Generator Sets
11. Odor Pollution
12. Asbestos Industry

4.c. Pollution Control Implementation-III (Agro-based Industries)

Role in CPCB Mission/Functions

2.4.26 This division deals with agro-based industries which includes distilleries, sugar, pulp & paper, fermentation (Maltris, breweries), textiles, and slaughter houses. It issues directions to above industries, prepares standards and guidelines for them and undertakes ESS activity.

2.4.27 This division oversees the implementation of standards as well as dissemination of clean technologies. This division has linkages with Infrastructure division for getting the samples analysed. It also has linkage with the computer division for environmental database management. Most of the works are outsourced because of inadequate staffing, manpower and the programmes need frequent field investigations for each sector of industries.

2.4.28 Zonal Offices are performing the industrial inspection on random basis based on their inspection report actions are taken by this division. Coordination is also made with the SPCB with these industries for compliance verification, implementation of recommendation of CREP.

Constraints

2.4.29 The constraints faced by this division are

- Inadequate staff

  It has eight technical staff seats out of which 3 technical staff posts are vacant. Out of its total 14 staff seats, 8 belong to technical and 6 to non-technical background. All the staffs are permanent. Proposed staff strength includes: 1 Additional Director, 1 Senior Environment Engineer, 1 Senior Scientist, 3 Environment Engineer and 6 Assistant Engineer. Till now no request has been made formally for new appointment.

- Lack of complete inventorization on industries including updated compliance status form SPCBs.
- Constraints in implementation due to cost effectiveness.

5. Small Scale Industries & Law

Role in CPCB's Mission/Function

2.4.30 This division was separated from PCI-I for better administration. It is responsible for the Development of Standards and Guidelines for SSI units. Under this, it prepares and publishes COINDS on these industries. It is also responsible for Pollution Control Enforcement. Under this it undertakes inventorization of SSI units, quantification of pollution load from SSI, frequent surprise inspections of SSIs, action against non-conforming / unauthorized industries, and oversees CREP implementation for Tannery Sector. Under the dissemination of Pollution Control Technology Programme, it has conducted workshops and training programs and constituted task forces for surveillance. This division's mission includes the following:

- Promoting cleaner technology and demonstration of cleaner production techniques.
- Providing guidance on implementation of waste minimization measures and demonstration projects.
- Promotion of common effluent treatment plants
- Promoting / initiating R & D activities for the development of cost effective technologies in various sectors of SSI and need for their state level demonstration of these technologies.
- Environmentally sustainable production capacity for certain SSI sector.

2.4.31 SSI units affect livelihood of a large number of population. CPCB in its mission for abatement and control of pollution is also the objective of SSI division. Due to staff shortage, 60% of the work is outsourced. ZO coordinates for field activity, organizes meetings and workshops. However, shortage of manpower at the ZO is a bottleneck for the execution as well as efficiency of this division.

Constraints

2.4.32 The constraints followed by this division are as follows:

- ❖ Due to miscellaneous work load, the very vision of the division (SSI units) is neglected. The work provided to it is not specific to SSI units.
- ❖ It lies low in terms of priority by CPCB as well as Government.
- ❖ Most of the SSI units are resource-less resulting in poor compliance to the standards by them. Thus enforcement of standards is not possible always.
- ❖ Inadequacy of staff is there.

6. Computer Division

Role in CPCB's Mission/Function

2.4.33 This division is one of the central units of CPCB. It is responsible for the dissemination of information and data relating to pollution in the public domain. It also provides technical support through LAN setting, internet connection, computer services, publishing data and standards generated by different divisions on the website. It is the gateway for putting information in public domain. It has real time data transmission system for Continuous Ambient Air Quality Monitoring (CAAQM) stations. In this system data is transmitted directly from analyzers to servers without human intervention. It is capable to pick up any number of parameters from monitoring station. In 15 minute interval customizable data can be acquired. With this raw as well as analyzed data – comparison with standards, trend analysis, comparison among different locations, can be made. In this Automatic Data Plausibility checks are also available. It is also entrusted with the development of computerized system for random inspection of industries and follow- up actions. Online access of emission data from major industries can be done.

2.4.34 Few of the works are outsourced due to lack of experts. Also, lucrative salary in private sector acts as a barrier to procure highly talented people to this sector. Thus, it is deprived of getting talented and well informed people into its service. Works like GIS has to be outsourced.

Relation with SPCBs & ZO

2.4.35 It depends on SPCBs and ZO for data collection on behalf of CPCB. ZO coordinates in getting data on WQM & AQM. ZO also puts data directly. This division also provides LAN setup and technical set up at SPCBs and ZO.

Constraints

2.4.36 The constraints faced by this division are:

- Dependency on other divisions for data dissemination. These divisions sometimes, do not provide data on time
- Lack of technical expertise.

7. VPCD & ESS

Role in CPCS's Mission/ Function

2.4.37 This division primarily deals with three activities namely Vehicular Pollution Control (VPC), Eco-city, and Spatial Environment Planning. The different kinds of activities carried out under these three programmes are as below:

- **Vehicular Pollution Control**: under this programme, 4 projects have been undertaken.
  (a) Study on Ambient Air Quality Status of Kolkata with reference to Ozone, VOC's and Aldehydes. Objectives of this project include development of ambient air quality status database covering selected criteria and non-criteria pollutants, monitor ambient levels of NOx, VOC, carbonyls and Ozone at representative four area categories viz. industrial, commercial cum residential, refuelling stations and traffic intersections along with meteorological parameters, identify source categories of VOCs and estimate relative contribution of each source category , prepare database to support environmental fate analysis of VOCs, air toxic deposition and transport modelling. From this project, information based on selected criteria and non criteria pollutants for use in policy making, research are expected to be obtained.
  (b) Project on assessment of Aldehydes, Ketones and Methane emissions in vehicle exhaust, using different fuels (Petrol, Diesel, LPG, CNG, Ethanol in Petrol, Biodiesel and Hythane). The aim of this project is to develop database on tailpipe emissions of Aldehydes, Ketones and Methane emissions in vehicle exhaust using different fuels. Based on these data, rrecommendations for future emission standards for Aldehydes, Ketones and Methane in vehicles along with other pollutants have to be made.
  (c) Project on auditing of Pollution Under Control (PUC) centers assessment of the status of compliance of vehicles with respect to PUC norms in Indian cities, verification of the testing facilities / instruments with respect to PUC norms, calibration, approval status etc. The aim is to determine the performance / lacuna in the PUC system and based on this recommendation for improvement in the system has to be made.
  (d) Study on aassessment of vehicular pollution problems & development of air quality management action plan in religious (Haridwar) & tourist (Mussoorie) places. In this project, assessment of measures taken so far for controlling vehicular pollution at religious & tourist places is done. This project will

help in developing air quality management plan and in preparation of area specific action plan of vehicular pollution problems in religious and tourist places.

- **ECO-CITY:** Started in 2002, this scheme involves selection of small and medium towns of historical/religious/tourism importance and implementation of projects that improve environment around these towns. This is made through a comprehensive urban improvement program, land use planning, sewerage drainage, management of transportation & traffic, plantation/landscaping/urban design and municipal solid waste management.

- **SPATIAL ENVIRONMENTAL PLANNING:** This scheme deals with Compilation of environment relevant information in the form of maps, texts and statistical data at State and District level. It provides guidelines on areas to be considered for industrial siting, keeping an eye on the sensitivity of environment with the pollution potential of industries for identification of sites involving minimal environmental impacts/risks.

Relation with SPCBs & ZOs

2.4.38 This division, by preparing guidelines for industrial sites in district level provides a backup for CPCB's mission. SPCBs and ZO coordinate with this division for carrying out its schemes. Under the Eco-city programme, urban local bodies are involved for implementation of the scheme. Cent percent support is given by CPCB for its implementation, while last year it was decided to give only technical support to the urban local bodies and operational cost in case of urgency.

Relation with other Divisions

2.4.39 This division has close link with PCP, Infrastructure, Computer Division, PCI, PR. It depends on PCP for planning, lab support from infrastructure and Computer division for data dissemination. It is also linked with PCI divisions for data on polluting industries, PAMS for data on AQM and WQM. Public Relation department is also linked with it, which is responsible for publication.

Constraints

2.4.40 Among the constraints faced by this division, no proper management is in place. There are no hard & fast rules for work. Shortages of staff are another factor. Even the temporary staffs have to face uncertainty in job as every year they have to wait for the extension of their appointment. Also there is delay in delivery of salary due to administrative procedure involved.

8. Environmental Surveillance

2.4.41 This division carries out four kinds of activities. They are as follows:

- Coordinate activities under Environment Surveillance programme
- Updating status on 17 categories of highly polluting industries
- Updating status of grossly polluting industries and
- Reviewing status of action plan implementation with respect to 24 problem Areas.

2.4.42 For carrying out these activities it coordinates with other divisions such as PCP, PCI, Infrastructure and Computer Division.

2.4.43 This division needs more staff to carry out random investigations. Technical experts at field survey are less numbered in ZO and SPCBs. So, effort should be to increase the technical staff strengths.

9. Office Support

2.4.44 This division works under the Member Secretary. It is entrusted with the following tasks:-

- **Organization of Board Meeting: it organizes board meetings. It is responsible for the** Issue of meeting notice to the Board members, agenda preparation, finalization of meeting date, etc. It compiles agenda items, prepares minutes of the Board meetings, maintains records of minutes and agenda of meetings, circulates minutes and agenda and reimburse TA/DA to the members.
- **Organisation of National Conference of Chairmen & Member Secretaries of SPCBs/PCCs: under this its responsibility includes -**Issue of meeting notice to the Chairmen & Member Secretaries of all SPCBs/PCCs, Agenda as well as Action Taken Report

(ATR) preparation, finalization of venue and conference date etc, compilation of agenda items and preparation of minutes of the Conference, maintaining Records of minutes and agenda of the Conferences, circulating Record of Discussion of the Conference.

- **NGOs Cell Activities-** An NGO Cell was set up in CPCB in the year 1992 to coordinate the following tasks:
- Enlist environmental NGOs involved in activities related to pollution control with CPCB. CPCB is enlisting NGOs, organising interaction meets and Regional Meetings with the following objectives :
  - To take uniform and concerted approach towards pollution control;
  - To have public participation for abatement of pollution through community action;
  - To identify the major localised environmental problems; and
  - To identify the areas of mutual co-operation among NGOs themselves as well as Pollution Control Boards.

Establish NGO network in consultation with State Pollution Control Boards/Zonal Offices;

- Provide training to the NGOs and equip them with facilities, like water testing kits, analytical instruments, books, literature etc. in order to enhance their capabilities in the field of pollution control; and
- Organise mass awareness programmes and pollution control activities through NGOs.
- **Redressal of public complaints**: the public as well as VIP complaints as and when received are investigated either through the SPCBs or through CPCB itself depending upon the severity of the complaint.
- **Co-ordination of applications received under Right to Information Act, 2005.** The database is being maintained for the applications received under Right to Information Act, 2005 and follow-up for timely disposal of the RTI Applications.
- Work assigned by Chairmen & Member Secretary as and when required. The nature of the work is not defined and it may include co-ordination activities.

2.4.45 This section acts as the coordinating authority between the Member Secretary and other divisions of the board. Lack of manpower is evident as this division is under the charge (additional) of a Senior Environment Engineer. Keeping in view the enormous responsibility of the office and the increasing

workload, specialised manpower is needed for this division and the current staff should be unburdened from his additional duty.

10. Pollution Assessment, Monitoring & Survey

Role in CPCB's Mission/Functions

2.4.46 According to the section 16 (i) of Water and Air Act, CPCB should promote cleanliness of streams and wells in different areas of the states and to improve the quality of air and to prevent, control or abate air pollution in the country. This division helps to carry out these functions by monitoring the Air Quality and Water Quality, carrying out surveys and providing supporting activities. The major function of PAMS Division is to coordinate, collect and compile nation-wide data on various sponsored monitoring programs (entrusted to SPCBs / PCCs / Universities) and its documentation besides preparation of nation wide industrial inventory with status on the installation and type of pollution control devices etc. Functions of this division are as follows:

- **Monitoring –** the word 'monitoring' means to watch or record information. PAMS is responsible for the operation & strengthening of water & air quality monitoring network. It is also responsible for noise quality monitoring, bio-monitoring, status of Interstate disputes regarding water quality of rivers at interstate borders. It checks or adjusts the accuracy of air quality stations. It develops the objective criteria for water & air quality standards. PAMS depends on PCBs for sampling and analysis of data while data storage, processing and retrieval are done in house for Water and Air Quality Monitoring. It develops protocol and system for noise quality monitoring which is to be executed by PCBs. Coordination between ZO and PAMS is sought to resolve interstate dispute on water quality of rivers at interstate borders. It outsources some of its works such as calibration of air quality stations, bio monitoring etc because of insufficiency of staffs. It coordinates with PCI-I, PCP, Computer Division and Infrastructure Division.
- **Survey-** Under this, PAMS prepares a detailed list of all the river basins and sub basins, lakes, reservoirs, wetlands & classifies the pollution load by them. It also assesses groundwater, water quality in class I cities. It is responsible for Inventorization of pollution load assessment & water quality management on polluted stretches, problem areas. Survey is made to assess the status of water supply & waste generated in cities, evaluates STPs in India. For air quality monitoring, it commences air pollution epidemiological survey. It is responsible for the initiation, supervision and finalisation of survey

activities. These activities are carried out by consultants, SPCBs. Most of the survey works are outsourced due to staff shortage.

- Supporting activity- Under this, it is responsible for the Assessment & monitoring work assigned by Hon'ble High Courts & Supreme Court, Evaluation of research projects from various ministries, participation on water quality assessment authority (MWR), Participation on aquaculture committee (MoEF), Impact of agriculture on ground water quality in Ganga Basin (MWR), Research Committee on Rural Sanitation & Water Supply.

Constraints

2.4.47 For data on monitoring, it has to depend on SPCBs. But, some SPCBs cannot enter data on EDB or delays to provide data. Some SPCBs do not provide new stations with respect to water & air.

- Sampling location with respect to water quality monitoring sometimes get redundant or changes due to non-availability of water No data on major point sources both water & air, thus no cause-effect relationship could be established– leads to delay of action plan Response to questionnaire survey is poor, SPCB do not take much interest in it.
- Sometimes Quantity data is not easily available, needs dialogue with CWC. Absence of proper software delays data processing, payment & report. Working space and second line of permanent staff are needed. No composite training program.

11. Hazardous Waste Management Division

2.4.48 This division is newly created to adhere to the abatement and control of pollution by bio waste, hazardous wastes which are highly dangerous. PCI-I division deals with hazardous waste created by Chemical industries, while HWM division deals with the management and handling of these waste. This division's responsibility stems from rules under the three acts as follows:

- Implementation of Hazardous Waste (Management, Handling and Trans- boundary Movement) Rules, 2008
- Implementation of Bio Medical Waste (Management, Handling) Rules, 1998
- Batteries (Manufacture and Handling) Rules, 2000

2.4.49 This division is required to implement the provisions as mentioned in these rules for CPCB. It executes its function through in-house as well as engaging consultants. Major activities include issuance of directions to and

registration of hazardous waste recycling industries. This takes most of their time.

12. Public Relations

2.4.50 This division publishes technical documents of other divisions. While computer division publishes it on their web portal, PR division publishes the documents, agendas for public awareness programme. It is responsible for coordinating public awareness programme of other divisions. For effectiveness, this department should have coordination with Information and Broadcasting Ministry of Government of India.

Section 5 : Major Activities

2.5.1 The CPCB has identified following thrust areas –

- National Water quality monitoring
- Study of ground Water pollution
- Assessment of non point sources of pollution
- Monitoring of national ambient air quality
- Epidemiological studies
- Preparation of environmental status reports
- Laboratory management and R&D
- Development and review of effluent & emission standards
- Cleaner production, environmental auditing and common effluent treatment plants
- Implementation of hazardous waste(management & handling) rules
- Spatial environmental planning and natural resource protection
- Preparation and updating of zoning atlas

a) Water Quality Assessment

2.5.2 CPCB has established 1365 stations in 27 States and 6 UTs, with frequency of sampling from monthly to 4 yearly covering 282 rivers, 92 lakes, 34 ponds, 12

creeks & sea Water, 10 canals, 18 drains and 398 wells which are being monitored for seven field parameters , nine core parameters, nineteen general, nine trace metals and fifteen pesticides. Based on these studies 182 Water bodies have been identified as polluted out of which 143 are rivers stretch, 33 lakes, tanks and ponds, 3 creeks and 3 canals. CPCB is incurring Rs 1.10 Cr annually on this scheme.

b) Water Quality Trend

2.5.3 Water quality monitoring results obtained during 1995-2007 indicate that organic and bacterial contamination continued to be critical in Water bodies. This is mainly due to discharge of domestic wastewater mostly in untreated form from the urban centers of the country. The municipal corporations at large are not treating the sewage. Secondly the receiving water bodies did not have adequate water for dilution. This situation is mainly responsible for water borne diseases.

2.5.4 The majority of rivers are not polluted in their entire lengths but are polluted in segments, due to waste water discharges from urban centers as well as industries. Based on water quality monitoring 143 stretches of rivers have been identified as polluted as these are not meeting water quality criteria.

c) Ground Water Quality

2.5.5 Under National Water Quality Network CPCB is monitoring ground water on 398 stations. In this study ,the water quality of 35 metropolitan cities have been assessed. The samples were collected from open dug wells and hand pumps used for drinking or irrigation .In continuation of metro cities, CPCB has also undertaken assessment study of 25 class 1 cities recently

d) Air Quality Management

2.5.6 The CPCB is monitoring Air quality at 342 stations in 127 cities in 26 States and 4 UTs for sulphur dioxide, oxides of nitrogen, SPM and respirable suspended particulate matter. In some stations additional parameters like respirable lead, toxic metals, hydrogen sulphide, ammonia and PAHs are also being studied. The monitoring frequency is 104 observations in a year (twice weekly) with gases being sampled 4 hourly and particulate matter 8 hourly. Based on the studies, it has been observed that 72 towns do not meet the standards. CPCB is incurring Rs. 3.56 Cr annually on this scheme.

e) Overall Ambient Air Quality Trends

2.5.7 The Air quality has been categorized into four broad categories based on these exceedence factors. The core categories are low, moderate, high and critical levels. Percentages of cities with low levels of sulphur dioxide have decreased over the years indicating that sulphur dioxide pollution has reduced over the years. The national mean concentration of NO2 (nitrogen dioxide) and RSPM has remained stable over the years in spite of increase in sources like vehicles. This indicates the effect of various intervention measures that have taken place such as improvement in vehicle technology and other vehicle pollution control measures like alternate fuel etc. National mean of SPM concentration has been fluctuating over the years.

f) Private Participation in the Management of Continuous Ambient Air Quality Monitoring

2.5.8 In a meeting at planning commission it was decided that CPCB should start monitoring of air quality in major cities and critically polluted areas by installing continuous air quality monitoring stations through public private participations due to shortage of technical manpower in CPCB. CPCB has decided to adopt the two models (i) operation contract (Delhi, Lucknow, Bangalore and (ii) Chennai) and build, own and operate contract in Ahmadabad and Mumbai.The project is in progress.

g) Industrial Pollution Control

2.5.9 CPCB had decided in 1990 to control pollution in 17 categories of highly polluting industries. Out of 2982 industries, 2121 units are been complying, 383 are defaulting whereas 478 are closed. 8513 cases have filed in the court against defaulters so far, out which 3533 cases are pending.

h) Critically Polluted Areas

2.5.10 In early 1990s CPCB had also decided to control pollution in 25 critically polluted areas. The CPCB is still to find success in those areas.

i) Spatial Environmental Planning

2.5.11 CPCB had decided in collaboration with GTZ, a German consultant to find areas where polluting industries could be located without much problem and areas where they cannot be allowed at all. In this process CPCB in collaboration with State Boards has prepared 8 State environmental atlases (SEA), 79 (49 needing valuation) district environmental atlases (DEA) whereas 9 CEA, 83 DEA are under preparation. Similarly the zoning atlas has been completed in 102 districts (25 needing valuation) and are under preparation in 61 districts.

Section 6 : Challenges in the Field of Water Pollution Control

- Greatest challenge is sewage management: out of 33000 MLD generated, only 7000 MLD collected and treated. For effective sewage pollution control and Management action essential under JNNURM & NRCD.
- Minimum flow of water in recipient water bodies (river, streams, etc) essential to meet water quality objective.
- Water quality monitoring station to be increased from 1245 to 2500 stations during 11th Five Year Plan.
- Distilleries, Paper and Pulp and Thermal Power Plants three major water polluting industries. New Treatment technologies identified by CPCB to be implemented.
- More CETP's to be set-up to control water pollution from SSI units. All CETP's to meet effluent discharge standards.
- Total dissolved solids (TDS) management from pharmaceutical, tannery and textile units to be tackled on priority. Try zero liquid discharge from these industries.
- Rain Water Harvesting and other water conservation programme should be part of water quality management.
- Units discharging raw effluent / partially treated effluent in ground water acquifier should be identified and penalized.
- Achieving zero liquid discharge into polluted river stretches.
- Achieving absolute (100%) compliance to the norms by industries (around 2,55,000 units).
- Reducing water consumption (50%) by water intensive industries
- Recycling/reuse of wastewater to 50% by 2012
- Phasing out of obsolete processing technologies

- Setting up of cleaner technology dissemination centers and R&D works on demonstration basis
- Introducing strict fiscal penalties on polluting and non-compliant industries as cost prohibitive to compel industry to go for pollution prevention measures.
- The CPCB & State Boards are mainly concentrating on control and abatement of trade effluents from industry. Hardly any attention is being paid to treatment of sewage and storm water emanating from the urban areas. The percentage of cities having sewage treatment plants is very small. Many STPs have been installed, such as under Ganga Action Plan and Yamuna Action Plan but most of them are not working, the rest are not complying with prescribed standards.
- Similarly the effluent treatment plants whether individual or common are not operating most of the time; even where they are operating they may not meet the prescribed standards
- Unless and until proper and fool proof arrangements and adequate facilities for STPs and ETPs are put in place it should be ensured that these are not allowed to be discharged into rivers especially where they do not have enough water for dilution. There is need to introduce the idea of zero liquid discharge (ZLD) into surface water even if it is achieved in phased manner. The sewage and effluents could be used on land for irrigation and even recirculated where ever and as much as is possible. CPCB and State Boards need to identify the industries which could adopt recirculation (ZLD) even with a lead time of up to ten years.
- The MoEF and CPCB should interact with sectoral ministries like ministry of urban development, ministry of local authorities, ministry of small scale industries and ministry of industry and ministry of health for better coordination to achieve the targets of water and air pollution control as well as treatment and disposal of wastes through cross sectoral approach.
- There is need for much more aggressive strategies with problems of water and air pollution as 35 years have already passed since passage of Water Act, 1974 and significant effects are still not visible.

- The water and air quality monitoring data need to be properly documented and analyzed. CPCB should then plan the prevention, control and abatement strategies based on this data. The data should also be made available to the state governments and State Boards for planning their actions.
- The most important issue of all is the awareness programs about the status of environment, pollution of water, air and soil and its effects on human health, flora and fauna. These need to be conducted at a much higher scale so as to make the public, (the impacted), the polluter and the regulator fully aware of the implications of pollution.

Section 7 : Challenges in the Handling of Wastes

a) Hazardous Waste Management

2.7.1 The State Boards all over the country have identified 35655 units generating 6208 MT hazardous annually wastes. It has been observed that 48.90% is recyclable, 44.44% is land fill able and 6.66% is incinerable. All over the country 64 sites have identified for TSDF, out of these 35 have been notified whereas at 25 sites TSDF is in operation and at 9 sites are under construction.

- More number of TSDF to be set-up (atleast one in each State).
- State generating less than 5000 TPA of incinerable hazardous wastes should be allowed to send the hazardous wastes for treatment and disposal facility located in neighboring state TSDF.
- Recycling and reuse of Hazardous waste to be promoted. Use of High Calorific Value Hazardous Waste as partial fuel in cement kiln to be encouraged.
- Incinerable waste upto a certain time and quantity only should be allowed for storage at TSDF site.
- Remediation plan to be effectively executed in identified contaminated sites.
- TSDF should be designed as per design/ specification given by CPCB.
- Common solvent recovery plant / common acid recovery plant to be set-up to minimize generation of hazardous waste / air pollutant.
- Clean Technologies need to be developed and promoted for minimization of hazardous waste generation.
- Technical capabilities of Custom Authorities and infrastructure for analysis of hazardous waste at ports need to be strengthened.
- The hazardous waste being stored in the premises of industrial units to be documented, reconciled and transported to TSDF.

b) Biomedical Waste Management

2.7.2 Presently 50-55% of Bio-medical wastes is collected, segregated and treated as per Bio-medical Waste Management Rules. Rest are dumped with municipal solid wastes.

Challenges

- To treat 420561 kg per day of bio-medical waste in accordance with BMW Rules.
- Number of Common Bio-medical Wastes Treatment Facility (CBMWTF) to be increased manifold. Presently there are 157 facilities which are not adequate to handle all the Bio Medical Wastes generated.
- CBMWTF is to be set-up under Public Private Partnership mode.
- New technologies to be promoted for destruction of toxic bio-medical wastes. DST, GOI is developing Plasma Technology for incinerating 50 TPH of biomedical waste, will be expedited.

c) E-Waste Management

2.7.3 Presently more than 400,000 tonnes of E-waste is generated which may increase in coming years. MoEF has evolved the guidelines for E-Waste Management.

- Inventory of E-Waste Generation in the Country to be done by SPCBs/PCCs.
- Common facility for E-Waste management (Collection, Segregation, Recovery and Reuse Facility) in Public Private Partnership mode to be setup.
- More emphasis on metal recovery
- To treat E-waste and battery waste

d) Municipal Solid Waste Including Plastic Waste Management

- Enforcement of Municipal Solid Waste (MSW) Rule is very poor. Out of 573838 TPD MSW generation, only 5% is collected and treated as per MSW Rules.

- Plastic Waste which is part of MSW is creating serious health hazard.
- Use of Bio Degradable Plastic to be encouraged.
- SPCB's has to play an important role under JNNURM of Ministry of Urban Development for management of Municipal Solid Waste and Plastic Waste.
- Plastic Waste use in Road Making, Conversion upto 15722 TPD to Oil, as partial fuel in Cement Plant, Blast Furnace of Steel Plants to be encouraged.

Section 8 : Human Resources

2.8.1 Given the role of CPCB in pollution control, it requires that the technical and the scientific personnel have deep knowledge about the nuances of the industrial processes and the other environmental factors. This requires a dedicated team of scientists and engineers regularly trained and retrained to build knowledge of specific technologies and processes old, new and futuristic.

2.8.2 Total number of technical staff employed in CPCB over the years since inception has been depicted in table 2.4.

Table 2.4 : Status of technical staff sanctioned and in positioned

Year	Total	
	Sanctioned	In Position
1978	19	13
1979	23	15
1984	100	64
1989	225	134
1994	310	180
1999	331	191
2004	326	235
2009	364	267

Issues:

- It is disturbing to note that there has been a gap in the sanctioned posts and the positioned staff over the years. Is it due to non-availability of competent candidates or due to lack of funds or due to some internal reason within

CPCB? Could it be due to high turnover of the staff from CPCB over the years as CPCB has not been able to retain the qualified staff in its fold?

- The moot issue is how CPCB can attract and retain the well qualified technical staff? The issue is of utmost importance as the portfolio of its activities has increased many folds over the time and if this issue is not addressed immediately, it would hamper the functioning of the organization.

Section 9 : Financial Expenditure and Allocation

2.9.1 The financial expenditure of CPCB in various activities during 10th Five Year Plan has been presented in the table 2.5.

Table 2.5 :Plan Expenditure During 10th Plan

(Rs. lacs)

Sl. No.	Project Head	2002-03	%	2003-04	%	2004-05	%	2005-06	%	2006-07	%
1	Pollution Assessment	505.10	24.85	445.19	20.66	353.54	17.70	723.16	19.02	647.60	17.14
2	Laboratory Management	275.08	13.53	521.82	24.22	510.55	25.50	1840.33	48.40	1105.90	29.27
3	Standards	88.13	4.34	73.12	3.39	58.33	2.90	51.86	1.36	76.95	2.04
4	Training	11.66	0.57	7.11	0.33	33.97	1.70	55.63	1.46	56.05	1.48
5	Database Management &Library	40.96	2.02	25.47	1.18	37.06	1.90	45.34	1.19	30.15	0.80
6	Pollution Control Enforcement	950.54	46.77	916.65	42.54	878.85	43.90	969.93	25.51	1644.97	43.53
7	Pollution Control Technologies	66.39	3.27	46.33	2.15	59.12	3.00	31.06	0.82	81.92	2.17
8	Mass awareness and Publication	69.72	3.43	92.08	4.27	44.03	2.20	50.86	1.34	82.13	2.17
9	Hazardous Waste Management	24.88	1.22	26.81	1.24	24.55	1.20	34.12	0.90	52.96	1.40
	Total	**2032.46**	**100.00**	**2154.58**	**100.00**	**2000.00**	**100.00**	**3802.30**	**100.00**	**3778.63**	**100.00**

Section 10 : Performance Assessment of CPCB

2.10.1 A detailed exercise has been carried-out for assessing the physical achievements of the Central Pollution Control Board. The review has indicated that CPCB has designed its operational systems in accordance with the mandates given under the various Acts relating to prevention and control of pollution. The actions taken by CPCB includes; assessment of pollution, monitoring of source-specific pollution, monitoring of ambient air and water quality, development and enforcement of standards, hazardous waste management and dissemination of information and conducting mass-awareness programmes. The activities performed by CPCB have provided benefits to the various stake holders and particularly to SPCBs. CPCB has provided technical guidance to SPCBs and the notable contributions of CPCB relates to development of standards and establishing water and air quality trends based on the comprehensive network established.

The detail analysis of performance achievements with respect to major functions of CPCB has been done in Table 2.6.

Table 2.6: Performance Achievements of CPCB

<table>
<tr><th>S. No.</th><th>Functions</th><th>Achievements</th></tr>
<tr><td>1.</td><td>Water Quality Assessment and Monitoring</td><td>
• 1429 stations have been set up for water quality assessment as per the following details:
<table>
<tr><th>Water Bodies</th><th>No. of Stations</th></tr>
<tr><td>Rivers(293)</td><td>810</td></tr>
<tr><td>Lakes (94)</td><td>102</td></tr>
<tr><td>Tanks (09)</td><td>09</td></tr>
<tr><td>Ponds (41)</td><td>41</td></tr>
<tr><td>Creeks (15)</td><td>15</td></tr>
<tr><td>Canals (23)</td><td>23</td></tr>
<tr><td>Drains (18)</td><td>18</td></tr>
<tr><td>Wells (411)</td><td>411</td></tr>
</table>
• 9 core parameters are monitored in each sampling, 19 parameters are 'General' done once a year {micro pollutants (9 metals & 15 pesticides) are also monitored once a year.
• Coliform and faecal coliform are analysed at all stations.
• Biological surveys (benthic macro-invertebrates and fisheries status) is not conducted as a part of water quality assessment.
</td></tr>
<tr><td>2.</td><td>Monitoring on Continuous Basis of Specific Locations

1. Water quality monitoring of intake points so to protect water supply with early warning to concerned Department and such assessment will be done based on continuous water quality monitoring (Metro cities, State Capitals, other cities/ towns located on bank of rivers)
2. Water Quality monitoring of all origin points of rivers to protect original pristine quality and prohibiting human interference at such points</td><td>• Presently not being done with specific object but planned for 2010-11.

• Done only for selected origin points (Gangotri, Yamunotri)</td></tr>
<tr><td>3.</td><td>Preparation of action plans for restoration of water quality of polluted water bodies</td><td>• 139 polluted river stretches have been identified</td></tr>
<tr><td>4.</td><td>Prohibiting disposal of liquid industrial and domestic sewage on river banks, lakes; and no disposal of solid waste (industrial and domestic) on river bed/bank.</td><td>• Grossly polluting industries have been identified and their compliance is monitored. Out of 1360 units, 898 units are complying, 271 are closed and 191 units are defaulting.</td></tr>
</table>

S. No.	Functions	Achievements
5.	Ambient Air Quality Assessment and Monitoring	• Ambient air quality monitoring is being currently conducted at 346 locations in 130 cities. • Proposal is underway to monitor air quality at 444 locations covering 178 cities.
6.	Noise Level Monitoring	• Presently, carried out especially during festive season/or specific survey. National level noise monitoring is planned from 2010-11
7.	Improving the Air Quality by; • Prohibit burning of garbage, leaves, other wastes in urban and rural areas • Regulating operation of Diesel Generator sets in urban areas	• Non-satisfactory, requisite strengthening is being done to improve the air quality.
8.	Preparation of action plan for air pollution control for preserving ambient air quality with respect to national ambient air quality standards in cities and in industrial areas	• Presently, action plan is at various stages of implementation in 16 cities.
9.	Industrial Pollution Control and Hazardous Chemicals and Waste Management	• 17 categories of highly polluting industries (2982) have been identified of which, 2121 units are complying, 383 are defaulting and 108 are closed. • Standards for 78 category of polluting units have been notified • 24 critically polluted areas identified and action plans implemented for restoration of environmental quality • Sector-specific action plans for industries are implemented. (Mining, Thermal Power Plants, Refineries, Petro chemicals, Distilleries. etc.) • 124 common effluent treatment plants (CETPs) are set up. • Zoning atlas for siting of industries prepared for 102 districts and under preparation for 61 Districts. • During 2006-08,68 Directions issued to 18 SPCBs under Section 18 (i) (b) of Water /Air Acts; and • Issued Directions under Section 5 of EPA to 118 units during 2006-08 • Identified 35,655 hazardous waste generating industries. • 6.2 million tons of hazardous waste is generated • 789 units are registered with CPCB for recycling with capacity of 3086409 KL/KTA • 25 TSDF are in operation and 9 are under construction. • 64 sites have been identified for hazardous waste disposal and 35 sites are notified by the State Govt.

S. No.	Functions	Achievements
10.	Waste Management	• SPCBs are in process of granting of authorization to 4378 urban local bodies to treat MSW. • 24 MSW landfill sites are constructed and 108 compost plants are set up • On demo basis, MP State has utilized plastics waste in cement kilns and in some states, plastics waste is used in road construction. • Inventorisation of Bio-medical waste generation has been carried out. Out of 84,809 health care establishments, 43,075 authorisations have been generated by SPCBs for management of bio-medical waste. Out of 420461 kg/d of waste generation, only 24,0682 kg/d of waste is treated. Out of 84,809 hospitals, 48,183 hospital are either using common bio-medical waste treatment facilities (which are 170 in Numbers) or have engaged private agencies. There are; 391 incinerators (with APCB), 2562 autoclaves, 458 micorwaves, 145 hydroclaves and 6047 shredders in operation. Further, 14,959 hospitals have been served as show cause notices as defaulters. • E-waste inventorisation has yet to be taken in the country. There are 06 facilities granted with registration to treat E-waste of 27,600 MT/A capacity. • Inventorisation of battery waste management is yet to be completed.
11.	To act as resource agency in National Programmes	• CPCB has provided inputs in National Programmes like National River Conservation Plan, NGRBA
12.	Capacity Building of SPCBs and PCCs	• Scientific and Technical assistance is provided to SPCBs and PCCs • Training Programmes are being conducted for officers of SPCBs and PCCs
13.	Enhancing Public Participation in maintenance of Environmental Quality	• NGO Cell is set up in CPCB to provide financial assistance to NGOs

Significant Achievements

1. **Cleaning of River**

   The CPCB's proposal for cleaning of Ganga was adopted by MoEF as National Ganga Action Plan which was later converted into National River Conservation Program.

2. **Vehicular Pollution Control**

   In 1991, CPCB set up a committee to evolve vehicular emission standards to be effective from 1995 and 2000, which enabled it to introduce Euro standards in the year 2000.

3. **Development of Standards**

   For industrial effluent discharge: 43 Nos.

   For industrial emission release: 49 Nos.

4. **Preparation of Guidance Documents**

   - CPCB Publications : > 500 Nos.
   - Guidelines on Waste Management : 32 Nos.
   - Manuals on Laboratory Management: 18 Nos.

5. **National Ambient Monitoring Network**

   - Air Quality Monitoring Stations : 386 Nos. (including 40 continuous AAQM Stations)

6. **Water Quality Monitoring Network Stations: 1429 Nos.**

7. **Compliance monitoring efforts led to Setting up of Common Environmental Infrastructure:**

   - Effluent Treatment Plants : 131 Nos. (Total 750 MLD Treatment capacity)
   - Waste Management Facilities for Hazardous Wastes : 34 Nos.
   - Bio-Medical Waste Management Facilities : 170 Nos.

8. **Patents obtained on R&D:** 13

Section 11 : Areas for Concern

- It has still not been able to prepare a Mission and Vision Statement and as such appears to be directionless and thus its working is adhoc.
- In spite of 34 years of its existence, CPCB has not been able to complete the inventorization of polluting sources in terms of water, air and soils.

2.11.1 It is clear from the figures that financial allocation for all the activities is not in equal importance. The organization is concentrating more on monitoring, pollution assessment and laboratory management. The relatively neglected activities are"

- Mass awareness
- Training
- Data base Management
- Development of standards
- Pollution control technology

2.11.2 The skewed distribution of activities arises due to limited budget and lack of in-house expertise in the respective activity.

2.11.3 This is of utmost importance that public participations are encouraged by involving citizens in maintenance of environmental quality i.e. local area improvement programme and CPCB takes up capacity building to develop 28 SPCBs and 6 PCCs as self reliant capable institutions.

Section 12: Follow-up Actions Taken in Pursuant to the Court Order

2.12.1 CPCB is not directly involved in implementation of standards under the Water and Air Acts. However, CPCB has been respondent to a number of litigations filed in the various High Courts and Supreme Court. Hon'ble Courts from time-to-time have directed CPCB to submit its independent evaluation report with its recommendations for facilitating appropriate decisions. CPCB has been involved in many important litigations which include; industrial pollution control, management of municipal and hazardous waste, noise, vehicular pollution etc. CPCB in pursuant with various directives has also evolved guidelines for various users. Since, CPCB has established accredited laboratories and by virtue of having expertise, the Courts have referred the matters relating to control of pollution to CPCB. The present report study has analysed the interface of CPCB with judiciary and has reached to the conclusion that CPCB should be properly strengthened to deal various matters relating to abatement of pollution which may also help in providing clear cut technical reports to the various courts when so directed.

2.12.2 CPCB has been assisting the High Courts and the Supreme Court by providing technical inputs (technical reports). The important cases where CPCB has provided its technical inputs based on which the higher Courts have given directives which also attained the status of guidelines at the national level. In this regard, a few prominent exemplars are given below:

1. Delhi High Court- Vinod Kumar Jain Vs. Union of India (WPC 6456/2004)-
   In this case, CPCB provided assistance to Justice Chopra in a Committee on Plastics Waste Management. The entire proceedings of the Committee co-ordinated by CPCB.

2. Delhi High Court- B.L.Wadhera Vs Union of India (WPC 841/1998)-

CPCB has been forwarding quarterly Inspection Reports on status of solid waste management in Delhi and has so far submitted 39 reports.

3. Supreme Court- M.C.Mehta Vs. Union of India (WPC-13029/1985) relating to CNG matter. The CPCB assisted the Hon'ble Court on technical aspects.

4. Supreme Court- Almitra H.Patel Vs. Union of India (WPC-888/1996). This matter relates to status of solid waste management in India. CPCB co-ordinated and collected information from 59 cities and provided technical inputs to Ministry of Urban Development.

Other Important Cases dealt in Supreme Court relates to Taj Pollution, Yamuna monitoring, Pollution in Slaughter Houses, Ganga Pollution etc.

Section 13: Procedure Relating to Award of Project Work

2.13.1 CPCB is following follows standard GFR norms existing prevailing in Govt. of India for award of project work. However, the project being awarded by CPCB are purely S&T in nature and they are to be viewed as a specialized job and which are to be executed by the specialized agencies. The normal procedure adopted for the award of project work includes;

i) Identification of the project and its inclusion in the annual Action Plan with estimated cost.

ii) Preparation of terms of reference on the project furnishing methodology to be followed and technical intervention required.

iii) Identification of agencies known for undertaking similar type of projects.

iv) Inviting Expression of Interest/ proposal from identified institutions with technical and financial bid separately

v) Evaluation of technical bids and organizing presentations for understanding the terms of reference conceived by the firms and listing out of capabilities of institutions and their preparedness.

vi) Opening of financial bid based on the technical capabilities in a Committee constituted internally in CPCB

vii) Award of work to the Consultant

Section 14 : Out-Reach Procedure for Wider Dissemination

2.14.1 CPCB has adopted methodology pronged strategy for disseminating technical information. CPCB has also been mandated as one of its function to disseminate technical information in various forms. CPCB, so far has brought out as many as 300

publications on various aspects relating to abatement of pollution. These publications are widely used by the students, researchers, industrialists and other agencies. Reports are also being placed on the website. CPCB has also participated in various exhibitions organized by the agencies for developing showcasing the achievements carried out. For public use, the data on water and air quality is also being disseminated. The students from various Universities and Colleges are also considered in CPCB for their short term adjustment. Recently, CPCB contributed participated its research findings in the 97th Session of Indian Science Congress held in Thiruvananthapuram where Research papers were presented as well as an exhibition was organized. Apart from above, CPCB has also conceived an ambitious programme the 'Paryavaran Darshan' for mass awareness on various aspects of environment. CPCB has established linkages with SPCBs for receiving water and air quality monitoring data through Environmental Data Bank System. As many as 300 publications in the form of scientific reports have been printed by CPCB. In future CPCB should develop partnership with State Department of Environment and SPCBs for creating awareness programmes. It is felt that CPCB is not adequately so equipped for efficient and effective execution of plans/programmes as it should be and therefore it needs to leverage the resources within its command to sharpen skill of execution so as to achieve the desired results and objectives.

Chapter – 3

Business Plan for CPCB

Section 1 : PEST Analysis

3.1.1 PEST analysis examines the external factors that are likely to influence the organisation (to its benefit or detriment). The Political, Environmental, Social (including legal and environmental) and Technological trends are assessed using a PEST framework. PEST analysis gives this information about macro trends which influence activities of the organization (usually in long term).

3.1.2 Analysed trends can represent opportunities or threats. The main issue is identifying key trends that will provide leverage in building competitive advantage. The study has attempted to identify the trends which are going to influence the sector in the future (months, years) and assess how the trend will influence CPCB – positively or negatively. Let us be cautious that every trend can become a threat or opportunity, it depends on how we use it.

Political

- The constitution of India provides (Article 48A) that the state shall endeavour to protect and improve the environment and to safeguard the forests and wildlife of the country and also that (Article 51.1g) it shall be the fundamental duty of every citizen to protect and improve natural environment. This resolve has been further strengthened by the Judicial Interpretation of the Article 21 bringing the right to clean environment within the ambit of Right to Life as enshrined in the constitution.
- In view of the constitutional provisions protection of environment should be a top political agenda. Irrespective of any political party, 'environment' should be a national issue.
- Therefore, political commitment is necessary to protect natural resources which primarily will include water and air. There has to be a political consensus on protection of water quality of rivers and lakes which have been worshiped from the ages. Development of the country should not be at the cost of environment.
- According to Pargal, Mani, and Huq[1] the monitoring and enforcement efforts of provincial pollution control authorities are affected by local community characteristics which serve as proxies for political power.

  Political parties should seek commitment from the industrial sectors in respect of greater public interest, that they will not contaminate water as well as will not discharge their effluents and waste in river or on land. Very often

[1] Pargal et al, *Inspections and Emissions in India, Puzzling Survey Evidence About Industrial Pollution (1997)* World Bank Policy Research Working Paper No 1810

political commitments are marred by personal nexus with polluters defeat the very aim of greener environment.

- Industries such as thermal power and fertiliser industries should take a plea to implement standards properly and should be willing to support any agenda concerning green environment.

Economical

- Economic development and environmental sustainability are not supplementary to each other. Sustained development is elusive without sustainable environment, especially for developing countries like India.
- Environmental outcomes can be significantly affected by the sectoral composition of economic activity, as well as the geographic features of each locus of activity. So, any plan aiming at curbing pollution at local level should look into sectoral composition of economic activity. For example, vegetation degradation, desertification etc.
- Weak governance and geographic vulnerability coupled with rapid industrialization and urbanization can account for the crisis levels of air pollution.[2]
- Unlike developed countries, developing countries do not have adequate financial resources to tackle the problem of natural resource depletion or degradation. Hence it is imperative that developing countries such as India should protect their natural resources, rather than searching for solutions after depletion and degradation has occurred. The natural resource degradation, if not checked, will result in large-scale poverty and destitution, and can hamper the very process of socio-economic development of the populace.
- Though industries are a great symbol of prosperity, yet very often they put the environment at risk. These polluting industries will have to substitute part of their profit to conserve natural resources as well as for taking all conservation measures and control pollution.
- We have to strike a balance between development and environmental sustainability. We have to keep in mind that the cost of environment is higher than any other national asset in the long run.

Social

- Demographic change can influence environmental policy if the demand for environmental regulation varies across demographic groups. For example, educational attainment is rising. If the more educated support greater

[2]Susmita Dasgupta et al, *Air Pollution During Growth: Accounting for Governance and Vulnerability(*2004*)* World Bank Policy Research Working Paper No 3383

environmental protection, then this trend predicts increased environmental support.

- Public resentment and collective action depends to a large extent on awareness that potential threat due to inaction is high.
- Even if closure takes place due to non-compliance of industries to emission standards, livelihood of employees is threatened. So closure is not a feasible solution which will lead to social unrest.
- Environment protection should be the voice of the citizen, when the public realize the importance of environment protection. Public has to be informed through social forums, about importance of water, air, noise and natural resources. They should be made aware of the importance of individual contribution in the protection of environment. In this context, pulse polio immunization programme is a good example.
- Society, through some legitimate authority issues orders or improve environmental conditions. Along with this, informal regulation, such as Chipko Andolan helps in the conservation of environment. Public awareness, citizen partnership and active participation of well informed civil society is the need of the hour.

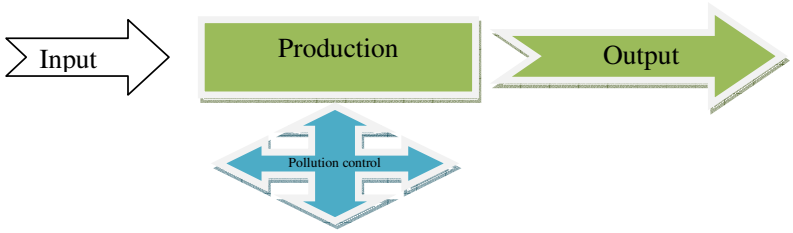
Technological

- Under the command/ control regulation development of standards for abatement and control of pollution is a major part of technology. If the goal is environmental quality standards, the regulatory mechanism involves prohibitions and technology based standards[3]. These standards can be categorised as below depending on the nature of function involved. They are as below:

a) Emission standard- it limits the amount of pollution coming out of a stack. These are often stated in terms or emission rates. Wastage product is treated with different technologies available. Effluent standards and Emission standards falls under this End of Pipe treatment technology.

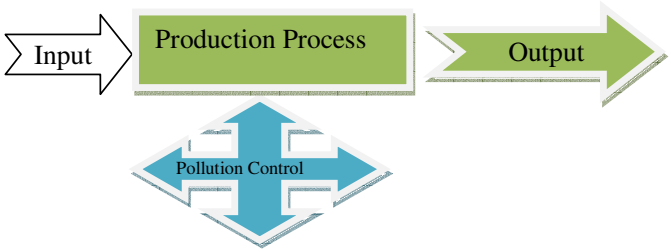
[3] Roger Raufer,*Market Based Pollution Control Regulation: Implementing Economic Theory In The Real World(1996, National Affairs, IOS Press*

b) Performance standards- it limits the amount of pollution coming out of a stack based on the amount of material being processed.



Pollution is controlled here through the production process.

c) Product standards- it limits the quality of fuels or inputs that can be used. Here attempt is made at the first stage to reduce pollution. For example, use of Xeolite in the detergent industry instead of Phosphate.



d) Design standards- it tells the polluter how the process of production must be designed. For example, Ecomark in India.

- Technology adopted earlier needed to change as the dynamism involved in the pollution. Some of the technology and standards have become obsolete where as some need to be updated. Also, Technology should be made considering the cost effectiveness as well as suitability in the local environmental conditions. In India emphasis should be made on the development of product design and performance standards as the emission standard involves higher cost, time and energy. For this, expenditure on R&D activities has to be increased.

Table 3.1 : Summary of PEST Analysis for CPCB

Factor	Event/Issue	Threat/ Opportunity	Probability/ Importance	Impact on CPCB
Political	1. Increasing Government commitment (irrespective of political party) for protection of environment	Opportunity	Very high	Since CPCB is grant based organization of Central Government, it would get full support from the Government.
	2. Devolution of power and control to local communities	Opportunity	Very high	Provide scope as well as challenges to work closely with local governing bodies like Municipalities and Panchyati Raj Institutions.
Economic	1. Rapid industrialization and urbanization	Threat	High	Leads to higher level pollution and thus require strict enforcement and compliance of various environmental laws
	2. Depletion of natural resources	Threat	Very high	
Social	1. Educational level in the society has been on increasing trend	Opportunity	High	It would be easy for CPCB to get public cooperation for pollution control measures as Public resentment and collective action depends to a large extent on awareness that potential threat due to inaction is high.
	2. Public awareness toward environment is increasing	Opportunity	High	
	3. Unemployment problem has been on the rising	Threat	Medium	Even if closure takes place due to non-compliance of industries to emission standards, livelihood of employees is threatened. So closure is not a feasible

Factor	Event/Issue	Threat/ Opportunity	Probability/ Importance	Impact on CPCB
	trend			solution which will lead to social unrest.
	4. Amendment of existing laws and enactment of new environmental laws and growing environmental issues such as e-waste, solid waste, bio-medical waste, plastic etc,	Opportunity	High	On the one hand it would provide opportunity to CPCB to diversify its activities, however, it would put additional pressure on financial and human resources of CPCB.
Technological	1.Innovation of new technology related to pollution control	Opportunity	Medium	Evolving new technologies both for processes and pollution control requires CPCB to periodically revise the standards set for industry.
	2. Cost of new technology	Threat	High	Industry may not adopt the costly technology and therefore, may not cooperate. To promote cost effective new technologies, close collaboration with technical institutions is called for.

Section 2 : Strengths and Weaknesses Analysis

3.2.1 While opportunities and threats for CPCB have been derived from PEST Analysis, strengths and weaknesses are internal to the organisation. The various strengths and weaknesses of CPCB are enlisted below.

Strengths

- experienced subject specific expert staff
- Adequate infrastructure in terms of laboratories to undertake field investigations
- Having vast field experience
- Having expertise on developing the standards and their enforcement
- Competent technically qualified pool of Scientists and Engineers, experienced in water and air quality management.
- Maintaining 323 air quality stations and 1019 water quality stations all over India.
- Having State of Art Trace Organic Laboratory capable of monitoring VOCs, Poly Aromatic Hydro Carbon, Dioxins, Furans and other complex hazardous air pollutants.
- Developed Effluent / Emission standard for 78 categories of industry.
- Develop facility for hazardous waste management and responsible for setting of TSDF, etc.
- Regularly conducting analytical quality control.
- Set-up standard for fuel quality.
- Responsible for setting of 157 common bio medical waste management facilities in India.
- Capable of monitoring and conducting performance evaluation of CETPs, STPs, TSDF, etc.
- Achievements in pollution control from 17 categories of highly polluting industries.
- Develop clean technology and pollution prevention technologies for small scale industries in India.
- Develop large number of pollution control technologies, pollution monitoring techniques for which national and international patents have been obtained.

- Promoted clean coal technologies including coal beneficiation for thermal power stations.
- Involved in finalization of vehicular emission norms Bharat Stage I – IV fuel quality norms, etc.
- Responsible for setting of continuous real time air quality monitoring station and electronic transmission of the data in CPCB website.

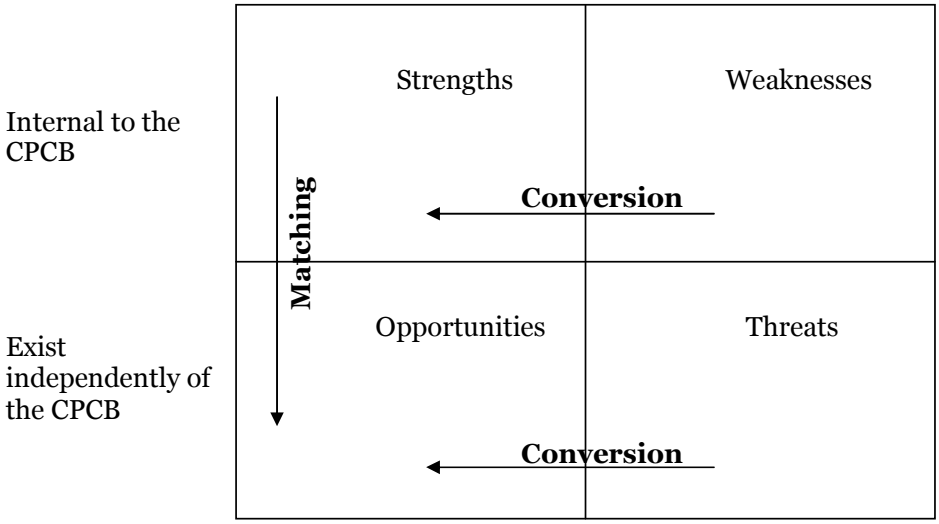
Weaknesses

- Lack of adequate technical and scientific staff
- Lack of motivation among the senior staff
- Lack of availability of funds
- No thrust on training and capacity building of the existing staff
- Not able to attract and retain technically qualified human resources
- CPCB has not been able to prepare a well defined mission and vision statement and as such appears to be direction less
- In spite of 34 years of its existence, CPCB has not been able to complete the inventorization of polluting sources in terms of water, air and soils.

3.2.2 The various strengths, weaknesses, opportunities and threats can be put in the following framework (Figure 3.1) to make strategic decisions based on the following principles:

- Avoid threats
- Use opportunities based on your strengths
- Improve weaknesses

Figure 3.1 : SWOT Analysis Framework



Source : Adopted from Strategic Business Planning for Market-led Financial Institutions Toolkit, MicroSave (2007)

Section 3 : KOGMA Analysis

3.3.1 Based on the PEST and strengths and weaknesses of CPCB, an attempt has been made to develop Key Objectives, Goals, Measures and Activities (KOGMA) for CPCB and the same has been reproduced in table 3.2. The KOGMA Analysis presents the business plan for CPCB to be achieved by the year 2017. To derive the business plan, targets and activities to be performed for achieving the key objectives, have been developed in consultation with CPCB officials on the one hand and the state of environment in the country on the other.

Table 3.2 : KOGMA Analysis for CPCB

Sl. No.	Key Objectives	Goal	Measures	Targets	Activities
1.	Prevention and control of water pollution and maintaining or resorting wholesomeness of water	1. Promote cleanliness of streams and wells in different areas of the states.	1. Water quality monitoring	• Setting up of 2500 stations by 2012 ; and • Expanding monitoring network to 5000 stations by 2017	• All the flowing rives in the country will be monitored regularly for physic-chemical bacteriological and biological assessment. • Monitoring stations will be finalized by CPCB with SPCBs/PCCs • Imparting training to staff of SPCBs for laboratory analysis and data computerization and organizing annual Review workshops to discuss the findings • Preparing river-wise (water body) state-wise water quality trends and identifying/ designating States for planning formulation of action plans according to the need.

Sl. No.	Key Objectives	Goal	Measures	Targets	Activities
			2. Water quality monitoring at intake point	• 100 stations by 2017 • Will be done for all major rivers by 2011-12	• Identification of location on priority basis • Finalization of equipment for monitoring • For Glacial- fed rivers, monitoring will be done frequently. • For spring fed rivers, monitoring will be done quarterly to six monthly basis
			3. Preparation of action plan for restoration of water quality of polluted water bodies	• Identification of 150 polluted river stretches	• Identification of polluted water bodies for formulation of action plans • Identification / quantification of polluted load on water bodies • Referring actions to be taken to the concerned state agency and placing before Central Govt. • Monitoring for assessing results achieved out of measures taken

Sl. No.	Key Objectives	Goal	Measures	Targets	Activities
		2. Prohibiting disposal of liquid industrial, solid waste and domestic sewage on river bank	1. Inventorisation of grossly polluting industries 2. Inventorisation on disposal of industrial effluents and sewage disposed in rivers	• Prohibiting disposal of sewage by 2012-17 and industrial effluents by 2012-14 into rivers	• Regular surveillance/ inventorisation of industries discharging waste water. • Performance study of effluent treatment plants (ETP) and sewage treatment plants (STPs)
		3. Monitoring of developmental hydel river projects	1. Inventorisation of existing hydel projects and their impact assessment	• All hydel projects will be covered	• Inventorisation of existing hydel projects and their impact assessment studies • Pre-developmental studies (before start) to keep baseline data • Keeping scientific data on Environmental flow in rivers.
2.	Prevention, control and abatement of air pollution	1. Preservation of the quality of air and control of air pollution	1. Ambient air quality assessment	• Expand air quality monitoring network to 700 stations by 2012 • Further increase network to 3000 stations to cover all Class-I cities and Class-II towns (by 2022) • Undertaking air quality monitoring at ecological sensitive areas like Himalyan region, Islands and National monuments (by 2012) • Set-up 100 continuous	• All the activities which are currently undertaken for air quality assessment

Sl. No.	Key Objectives	Goal	Measures	Targets	Activities
				air quality monitoring stations by 2012 • Set up CAQMS in all metro cities, State capitals and other sensitive locations (approximately 100 more stations) by 2017	
			2. Noise level Monitoring	• Setting up of 100 noise monitoring stations in 59 cities (35+24) • Setting up of 500 stations by 2017 in Class-I cities	• Selection of cities/ towns • Finalization of work plan procurement of instruments • Display of data in cities for public • Establishing noise level trends • Implementation of Noise pollution (Regulation and Control) Rules, 2000
			3. Prohibit burning of garbage, leaves and other waste in urban and rural areas 4. Regulating operation of diesel generator set in urban areas	No specific target	• Sensitizing urban local bodies through SPCBs to prohibit such activities (burning of garbage, waste, leaves, etc.) • Undertake monitoring of air to assess site-specific impacts • Checking use of adulterated fuel in DG sets

Sl. No.	Key Objectives	Goal	Measures	Targets	Activities
					• Monitoring of air and noise caused by DG sets
			5. Air quality management	• Action plan is to be prepared for 107 cities where Respirable Suspended Particulate Matter (RSPM) is higher than 60 micrograms per M^3	• Preserving/restoring ambient air quality with respect to national ambient air quality standards in cities and in industrial areas • Preparation of action plan for air pollution control
3.	Industrial pollution control and hazardous chemicals and waste management	1. Controlling industrial pollution	1. Absolute Compliance to the norms by the industries 2. Zero effluent discharge by industries 3. Reducing water consumption by industries 4. Recycling or re-use of waste water by industry	• Achieving 100% compliance to the norms by 2,55,000 polluting industries by 2010 • Reducing 50% water consumption by industries by 2011 • Reuse of 50% waste water by industries by 2012-14	• Maintaining industry wise data on pollution control for 2,55,000 in the polluting industries through SPCBs and PCCs • Digitization/ computerization of consent and Authorization issuance mechanism by SPCBs 2010 • Names of polluting and non-complying units dissemination on web sites of SPCBs and in local news papers • 17 categories of industry to display pollution control status at there entry gates for

Sl. No.	Key Objectives	Goal	Measures	Targets	Activities
					public • Reducing water consumption by water intensive industries by 20 to 50% • Recycling/reuse of treated water up to 50% • Achieve Zero liquid discharge • No disposal of effluents on rivers/lakes
		2. Hazardous waste management	1. Industry setting up individual facilities to treat hazardous waste 2. Setting up collective treatment storage and disposal facilities for hazardous waste 3. Remedial plan for already contaminated sites 4. Setting up district level crisis management centers	• Setting up of TSDFs (Common/individual) for entire hazardous waste treatment by 2012-2022 • Implementation of remediation plan in 81 contaminated sites and their rehabilitation by 2012-2022 • Setting up of District level crisis management centers to meet out eventualities arising out of hazardous waste/chemical accidents (by 2013) • National level information on improved performance	• Identification of hazardous water generating industries • Estimation of hazardous waste generated by industries • Issuing directions to industries under Section 5 of EPA • Identification of sites for disposing off hazardous waste • Dissemination of on site and off site emergency plan in public domain for accident management due to hazardous waste and chemicals • Helping the industry to

Sl. No.	Key Objectives	Goal	Measures	Targets	Activities
				due to remedial measures taken relating to hazardous waste management.	setup common treatment storage and disposal facilities for hazardous waste
		3. Restoration of environmental quality in identified industrial clusters	1. Action plan for identify cluster	• To implement action plans in 43 identified clusters (score > 70) and achieve results by 2014-17	• As above (Goal 2 of objective 3)
4.	Waste Management	1. To process and treat entire municipal solid waste generated in the country 2. Utilizing plastic waste through process of co-incineration in cements kilns and for the road constructions 3. To treat bio-medical waste in accordance with BMW rules 4. To treat E-waste and Battery wastes	1. Inventorisation of municipal solid wastes, plastic wastes, bio-medical waste, E-waste and Battery waste 2. Granting of authorization through SPCBs to local bodies to treat MSW	• Organic waste 292,230 tons per day (of MSW) is to be treated by 2017. • Inert waste of 183,360 tons per day is required to be land filled by 2017 • Ultimate aim is to achieve no MSW to be left out for landfill by 2022. • Around 15,000 plastic waste to be utilized in cement kilns and for road construction by 2012 • To treat 17,97779 kg/d of bio-medical waste by 2012 and total waste generated in each State to have adequate common facilities to treat bio-medical waste by 2022 • Each State should have E-waste recycling	• As above (Goal 2 of objective 3)

Sl. No.	Key Objectives	Goal	Measures	Targets	Activities
				facility by 2017 (100 facilities). • Complete inventorisation of E-waste and battery waste generation by 2011. With evolving mechanism to treat such wastes by 2011-17.	
5.	Public Participation	1. Involving citizens in maintenance of environmental quality, that is, local area improvement programme	1. Involving different groups of citizens (senior citizens, women, school and colleges, NCC/Scouts, NGOs) in; a) Preservation of water quality of water bodies b) Air pollution control c) Solid waste management d) Vigilance over there local areas.	• No specific target	• On-going activities

Sl. No.	Key Objectives	Goal	Measures	Targets	Activities
6.	Capacity Building and Strengthening of SPCBs and PCCs	1. To develop 28 SPCBs and 6 PCCs as self reliant capable institutions	1. Providing scientific and technical assistance to SPCBs and PCCs 2. Organizing Training Programs to SPCBs and PCCs	• Develop laboratories at Head Office and Regional level by 2017. • Develop digitization/ computerization in SPCB by 2014. • Develop infrastructure. Such as building, vehicles, training facilities by SPCBs/ PCCs by themselves (by 2017).	• On-going activities

Section – 4 : Resource Requirement

(a) Human Resources

3.4.1 To achieve the target set in the KOGMA Analysis, the requirement of additional human resources and its financial implications have been worked out in consultation with CPCB. It has been estimated that additional 550 posts are required at the head office and various zonal offices of CPCB. It will cost an additional Rs. 18.0 crores per annum to sustain additional 550 posts. The consolidated manpower requirement and its financial implication both for the head office of CPCB and its zonal offices have been presented in table 3.3 & 3.4 respectively. The break-up of the manpower requirement for the different divisions of CPCB as well as various zonal offices are shown in Appendix 2.

3.4.2 However on priority basis immediate requirement of human resource has been worked out and the same has been reproduced in table 3.5. We suggest that CPCB should immediately fill-up these 308 posts if it wants to achieve the agenda set in business plan. The financial implication of these additional 308 posts would be Rs. 10.0 crores per annum which has been shown in table 3.6.

(b) Computerization

3.4.3 It is required that the activities and the data generated by CPCB need to computerized which will be ensure the periodic updating of all the information. For computerization, adequate No. of PCs and supporting softwares need to be procured and requirement will also be extended to the existing 6 Zonal officers. The zonal offices will be linked with all the divisions at Head Office. Further, Video Conferencing facility will be developed between CPCB and MOEF and Head office of CPCB with the zonal offices. Such facility will also be established amongst the zonal offices also. To cover entire computerization work, an amount of Rs. 8.0 crores is estimated by National Information Centre (NIC). The proposal developed by NIC has been reproduced in appendix 3.

3.4.4. CPCB is stressing on on-line monitoring by the major category of industries and connectivity of their monitoring data with the Central and Zonal laboratories for surveillance coupled with GIS/GPS based system to assess environmental status across the country. No precise estimates have been worked out to set-up GIS/GPS system at CPCB by any authentic agency so far. At preliminary level, it is estimated to cost Rs. 36 crores.

Table 3.3 Consolidated Manpower Requirement of Central Pollution Control Board

S. No.	Post	Head Office	ZOs	Total Requirement	Sanctioned Posts (As on 31.3.2009)	Additional Requirement
1	Advisor	2	-	**2**		2
2	Director	7	-	**7**	2	5
3	Additional Director	15	6	**21**	8	13
4	Additional Director (Law) - MoEF	1	-	**1**	1	0
5	Joint Director (SS+SEE)	36	12	**48**	22	26
6	Sr. Administrative Officer	1	-	**1**	1	0
7	Finance & Accounts Officer	1	-	**1**	1	0
8	Sr. Law Officer	2	-	**2**		2
9	Dy. Director (EE + Sc. `C')	66	33	**99**	60	39
10	Law Officer	2	-	**2**	2	0
11	Assistant Law Officer	2	-	**2**	2	0
12	Administrative Officer	3	4	**7**	7	0
13	Sr. Hindi Officer	1	-	**1**		1
14	Assistant Director (AEE + Sc. `B' + Documentation Officer + ATO)	115	57	**172**	78	94
15	Accounts Officer	2	-	**2**	2	0
16	Assistant Accounts Officer	4	6	**10**	5	5
17	Section Officer	6	6	**12**	10	2
18	Hindi Officer	1	-	**1**	1	0
19	Junior Engineer (E&M) / (Civil)	2	-	**2**	2	0
20	Senior Technical Supervisor	6	3	**9**	9	0
21	Senior Scientific Assistant	26	61	**87**	35	52
22	Senior Technician	11	12	**23**	12	11
23	Technical Supervisor	6	4	**10**	10	0
24	Junior Scientific Assistant	51	66	**117**	35	82

S. No.	Post	Head Office	ZOs	Total Requirement	Sanctioned Posts (As on 31.3.2009)	Additional Requirement
25	Data Processing Assistant	6	-	**6**	4	2
26	Junior Technician	8	1	**9**	7	2
27	Publication Assistant	1	-	**1**	1	0
28	Accounts Assistant	4	10	**14**	6	8
29	Cashier	2	4	**6**	6	0
30	Assistant	19	11	**30**	19	11
31	PPS	2	-	**2**	-	2
32	PS PA Stenographer	19 05 08	03 02 02	**19** **08** **12**	19 01 02	- 05 12
33	Data Entry Operator Grade-I & Grade-II	32	10	**42**	10	32
34	Dr. Sup. Sr. Dr. Man/ Jr. Draftsman	4	-	**4**	4	0
35	Deputy Librarian	1	-	**1**	1	0
36	Jr./Sr Hindi Translator	3	-	**3**	2	1
37	Upper Division Clerk	16	8	**24**	24	0
38	Lower Division Clerk	27	8	**35**	35	0
39	Hindi Typist	3	-	**3**		3
40	Senior Laboratory Assistant	15	62	**77**	32	45
41	Junior Laboratory Assistant	33	66	**99**	38	61
42	Field Attendant	7	-	**7**	7	0
43	Pump & Wh. Valve Operator + Plumber	2	-	**2**	2	0
44	Driver (Sp Gr.+ Gr-I +Gr.II + Ordinary)	12	16	**28**	22	6
45	Sr. Attendant / Attendant/Lab Attendant	49	31	**80**	54	26
Total		**647**	**504**	**1151**	**601**	**550**

Note: Total Sanctioned Posts as on 31.3.2009 – 601; Posts Filled (Regular / Deputation) - 422; Adhoc - 10; Vacant - 94; Deemed Abolished / Approval for revival awaited – 75.

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Table 3.4 Additional Fund Requirement for Additional Manpower Required

S. No.	Post	Additional Requirement	Pay Band	Pay band scale	Grade Pay	Pay in pay band	Total	HRA+ DA	TA	DA on TA	Gross Salary	Additional fund Requirement (Monthly) Rupees
1	Advisor	2	PB-4	37400-67000	10000	43000	53000	30210	3200	864	87274	174548
2	Director	5	PB-4	37400-67000	8900	40200	49100	27987	3200	864	81151	405755
3	Additional Director	13	PB-4	37400-67000	8700	37400	46100	26277	3200	864	76441	993733
4	Additional Director (Law) - MoEF	-	-	-	-	-	-	-	-	-	-	-
5	Joint Director (SS+SEE)	26	PB-3	15600-39100	7600	21900	29500	16815	3200	864	50379	1309854
6	Sr. Administrative Officer	-										
7	Fin. & Acc. Officer	-										
8	Sr. Law Officer	2	PB-3	15600-39100	7600	21900	29500	16815	3200	864	50379	100758
9	Dy. Director (EE + Sc. `C')	39	PB-3	15600-39100	6600	18750	25350	14450	3200	864	43864	1710677
10	Law Officer	-										
11	Assistant Law Officer	-										
12	Administrative Officer	-										
13	Sr. Hindi Officer	1	PB-3	15600-39100	6600	18750	25350	14450	3200	864	43864	43864
14	Assistant Director (AEE + Sc. `B' + Documentation Officer + ATO)	94	PB-3	15600-39100	5400	15600	21000	11970	3200	864	37034	3481196
15	Accounts Officer	0										
16	Assistant Accounts Officer	5	PB-2	9300-34800	4200	9300	13500	7695	1600	432	23227	116135
17	Section Officer	2	PB-2	9300-34800	4200	9300	13500	7695	1600	432	23227	46454

S. No.	Post	Additional Requirement	Pay Band	Pay band scale	Grade Pay	Pay in pay band	Total	HRA+ DA	TA	DA on TA	Gross Salary	Additional fund Requirement (Monthly) Rupees
18	Hindi Officer	-										
19	Jr. Engineer (E&M) / (Civil)	-										
20	Sr. Technical Supervisor	-										
21	Sr. Scientific Assistant	52	PB-2	9300-34800	4200	9300	13500	7695	1600	432	23227	1207804
22	Senior Technician	11	PB-2	9300-34800	4200	9300	13500	7695	1600	432	23227	255497
23	Technical Supervisor	-										
24	Jr. Scientific Assistant	82	PB-2	9300-34800	4200	9300	13500	7695	1600	432	23227	1904614
25	Data Processing Assistant	2	PB-2	9300-34800	4200	9300	13500	7695	1600	432	23227	46454
26	Junior Technician	2	PB-1	5200-20200	2400	7510	9910	5649	1600	432	17591	35181
27	Publication Assistant	-										
28	Accounts Assistant	8	PB-2	9300-34800	4200	9300	13500	7695	1600	432	23227	185816
29	Cashier	-										
30	Assistant	11	PB-2	9300-34800	4200	9300	13500	7695	1600	432	23227	255497
31	PPS	2	PB-3	15600-39100	6600	18750	25350	14450	3200	864	43864	87728
32	PS	-	PB-2	9300-34800	4200	9300	13500	7695	1600	432	23227	-
	PA	05	PB-2	9300-34800	4200	9300	13500	7695	1600	432	23227	116135
	Stenographer	12	PB-1	5200-20200	2400	7510	9910	5649	1600	432	17591	211092
33	Data Entry Operator Grade-I & Grade-II	32	PB-1	5200-20200	2400	7510	9910	5649	1600	432	17591	562902

S. No.	Post	Additional Requirement	Pay Band	Pay band scale	Grade Pay	Pay in pay band	Total	HRA+ DA	TA	DA on TA	Gross Salary	Additional fund Requirement (Monthly) Rupees
34	Dr. Sup. Sr. Dr. Man/ Jr. Draftsman	-										
35	Deputy Librarian	-										
36	Jr./Sr Hindi Translator	1	PB-2	9300-34800	4200	9300	13500	7695	1600	432	23227	23227
37	Upper Division Clerk	-										
38	Lower Division Clerk	-										
39	Hindi Typist	3	PB-1	5200-20200	1900	5830	7730	4406	600	162	12898	38694
40	Senior Laboratory Assistant	45	PB-1	5200-20200	2400	7510	9910	5649	1600	432	17591	791582
41	Junior Laboratory Assistant	61	PB-1	5200-20200	1900	5830	7730	4406	600	162	12898	786784
42	Field Attendant	-										
43	Pump & Wh. Valve Operator + Plumber	-										
44	Driver (Sp Gr.+ Gr-I +Gr.II + Ordinary)	6	PB-1	5200-20200	1900	5830	7730	4406	600	162	12898	77389
45	Sr. Attendant / Attendant/Lab Attendant	26	PB-1	5200-20200	1800	5200	7000	3990	600	162	11752	305552
Total		**550**							**Total (Monthly)**			**15045914**
									Total (Yearly)			**180605441**

Gross salary calculated on the basis of HRA (30%) & TA for A-1 Class cities and DA 27%

Table 3.5 Immediate Manpower Requirement of Central Pollution Control Board

S. No.	Post	Head Office	ZOs	Total Requirement	Sanctioned Posts	Additional Requirement
1	Director	7	-	**7**	2	5
2	Additional Director	15	6	**21**	8	13
3	Additional Director (Law) - MoEF	1	-	**1**	1	0
4	Joint Director (SS+SEE)	29	6	**35**	22	13
5	Sr. Administrative Officer	1	-	**1**	1	0
6	Finance & Accounts Officer	1	-	**1**	1	0
7	Sr. Law Officer	2	-	**2**		2
8	Dy. Director (EE + Sc. `C')	44	25	**69**	60	9
9	Law Officer	2	-	**2**	2	0
10	Assistant Law Officer	2	-	**2**	2	0
11	Administrative Officer	3	4	**7**	7	0
12	Sr. Hindi Officer	1	-	**1**		1
13	Assistant Director (AEE + Sc. `B' + Documentation Officer + ATO)	88	49	**137**	78	59
14	Accounts Officer	2	-	**2**	2	0
15	Assistant Accounts Officer	4	6	**10**	5	5
16	Section Officer	6	6	**12**	10	2
17	Hindi Officer	1	-	**1**	1	0
18	Junior Engineer (E&M) / (Civil)	2	-	**2**	2	0
19	Senior Technical Supervisor	6	3	**9**	9	0
20	Senior Scientific Assistant	21	32	**53**	35	18
21	Senior Technician	8	12	**20**	12	8
22	Technical Supervisor	6	4	**10**	10	0
23	Junior Scientific Assistant	38	48	**86**	35	51
24	Data Processing Assistant	4	-	**4**	4	0

S. No.	Post	Head Office	ZOs	Total Requirement	Sanctioned Posts	Additional Requirement
25	Junior Technician	8	1	**9**	7	2
26	Publication Assistant	1	-	**1**	1	0
27	Accounts Assistant	4	6	**10**	6	4
28	Cashier	2	4	**6**	6	0
29	Assistant	19	7	**26**	19	7
30	PPS	2	-	**2**	-	2
31	PS PA Stenographer	19 05 08	03 02 02	**19** **08** **12**	19 01 02	- 05 12
32	Data Entry Operator Grade-I & Grade-II	28	6	**34**	10	24
33	Dr. Sup. Sr. Dr. Man/ Jr. Draftsman	4	-	**4**	4	0
34	Deputy Librarian	1	-	**1**	1	0
35	Jr./Sr Hindi Translator	3	-	**3**	2	1
36	Upper Division Clerk	16	8	**24**	24	0
37	Lower Division Clerk	27	8	**35**	35	0
38	Hindi Typist	3	-	**3**		3
39	Senior Laboratory Assistant	12	25	**37**	32	5
40	Junior Laboratory Assistant	25	40	**65**	38	27
41	Field Attendant	7	-	**7**	7	0
42	Pump & Wh. Valve Operator + Plumber	2	-	**2**	2	0
43	Driver (Sp Gr.+ Gr-I +Gr.II + Ordinary)	12	16	**28**	22	6
44	Sr. Attendant / Attendant/Lab Attendant	47	31	**78**	54	24
Total		**549**	**360**	**909**	**601**	308

Note: Total Sanctioned Posts as on 31.3.2009 – 601; Posts Filled (Regular / Deputation) - 422; Adhoc - 10; Vacant - 94; Deemed Abolished / Approval for revival awaited – 75

Table 3.6 Financial Implication of Additional Three Hundred Eight Manpower Requirement for Central Pollution Control Board - Salary Component

S. No.	Post	Additional Requirement	Pay Band	Pay band scale	Grade Pay	Pay in pay band	Total	HRA + DA	TA	DA on TA	Gross Salary	Additional fund Requirement (Monthly) Rupees
1	Director	5	PB-4	37400-67000	8900	40200	49100	27987	3200	864	81151	405755
2	Additional Director	13	PB-4	37400-67000	8700	37400	46100	26277	3200	864	76441	993733
3	Additional Director (Law) - MoEF	-										
4	Joint Director (SS+SEE)	13	PB-3	15600-39100	7600	21900	29500	16815	3200	864	50379	654927
5	Sr. Administrative Officer	-										
6	Fin. & Acc. Officer	-										
7	Sr. Law Officer	2	PB-3	15600-39100	7600	21900	29500	16815	3200	864	50379	100758
8	Dy. Director (EE + Sc. `C')	9	PB-3	15600-39100	6600	18750	25350	14450	3200	864	43864	394772
9	Law Officer	-										
10	Assistant Law Officer	-										
11	Administrative Officer	-										
12	Sr. Hindi Officer	1	PB-3	15600-39100	6600	18750	25350	14450	3200	864	43864	43864
13	Assistant Director (AEE + Sc. `B' + Documentation Officer + ATO)	59	PB-3	15600-39100	5400	15600	21000	11970	3200	864	37034	2185006
14	Accounts Officer	-	-	-	-	-	-	-	-	-	-	-
15	Assistant Accounts Officer	5	PB-2	9300-34800	4200	9300	13500	7695	1600	432	23227	116135
16	Section Officer	2	PB-2	9300-34800	4200	9300	13500	7695	1600	432	23227	46454
17	Hindi Officer	-										
18	Jr. Engineer (E&M) / (Civil)	-										
19	Sr. Technical Supervisor	-										
20	Sr. Scientific Assistant	18	PB-2	9300-34800	4200	9300	13500	7695	1600	432	23227	418086
21	Senior Technician	8	PB-2	9300-34800	4200	9300	13500	7695	1600	432	23227	185816
22	Technical Supervisor	-										
23	Jr. Scientific Assistant	51	PB-2	9300-34800	4200	9300	13500	7695	1600	432	23227	1184577
24	Data Processing Assistant	-										
25	Junior Technician	2	PB-1	5200-20200	2400	7510	9910	5649	1600	432	17591	35181

S. No.	Post	Additional Requirement	Pay Band	Pay band scale	Grade Pay	Pay in pay band	Total	HRA + DA	TA	DA on TA	Gross Salary	Additional fund Requirement (Monthly) Rupees
26	Publication Assistant	-										
27	Accounts Assistant	4	PB-2	9300-34800	4200	9300	13500	7695	1600	432	23227	92908
28	Cashier	-										
29	Assistant	7	PB-2	9300-34800	4200	9300	13500	7695	1600	432	23227	162589
30	PPS	2	PB-3	15600-39100	6600	18750	25350	14450	3200	864	43864	87728
31	PS PA Stenographer	- 05 12	PB-2 PB-2 PB-1	9300-34800 9300-34800 5200-20200	4200 4200 2400	9300 9300 7510	135001 3500 9910	7695 7695 5649	1600 1600 1600	432 432 432	23227 23227 17591	- 116135 211092
32	Data Entry Operator Grade-I & Grade-II	24	PB-1	5200-20200	2400	7510	9910	5649	1600	432	17591	422177
33	Dr. Sup. Sr. Dr. Man/ Jr. Draftsman	-										
34	Deputy Librarian	-										
35	Jr./Sr Hindi Translator	1	PB-2	9300-34800	4200	9300	13500	7695	1600	432	23227	23227
36	Upper Division Clerk	-										
37	Lower Division Clerk	-										
38	Hindi Typist	3	PB-1	5200-20200	1900	5830	7730	4406	600	162	12898	38694
39	Senior Laboratory Assistant	5	PB-1	5200-20200	2400	7510	9910	5649	1600	432	17591	87954
40	Junior Laboratory Assistant	27	PB-1	5200-20200	1900	5830	7730	4406	600	162	12898	348249
41	Field Attendant	-										
42	Pump & Wh. Valve Operator + Plumber	-										
43	Driver (Sp Gr.+ Gr-I +Gr.II + Ordinary)	6	PB-1	5200-20200	1900	5830	7730	4406	600	162	12898	77389
44	Sr. Attendant / Attendant/Lab Attendant	24	PB-1	5200-20200	1800	5200	7000	3990	600	162	11752	282048
Total		**308**							**Total (Monthly)**			**8660793**
Gross salary calculated on the basis of HRA (30%) & TA for A-1 Class cities and DA 27%									**Total (Yearly)**			**103983989**

(c) Laboratory Upgradation

3.4.5 It is proposed to strengthen the Central Laboratories at Head office as well as Zonal offices. These laboratories will be equipped to undertake Monitoring Programmes relating to:-

a) Water Quality Monitoring
b) Ambient Air Quality Monitoring (with reference to new ambient air quality standards)
c) Analysis of all the pollutants which have been notified with respect to Industrial Effluents, Emission, Hazardous Waste, etc.
d) Noise Assessment

An estimated amount of Rs. 24 Crores will be required of strengthening of laboratories as shown in table 3.7.

Table 3.7 : Requirement of Laboratory Instruments for CPCB Headquarters and Zonal Office Laboratories

S. No.	Instrument	Total Units	Approx. cost per unit in Lakh Rs.	Total Cost in Lakh Rs.
1.	Gas Chromatograph (GC) – ECD/FID/FPD	5	20	100
2.	Gas Chromatograph – Mass Spectrophotometer (GC-MS) - LR	6	53	318
3.	High Pressure Liquid Chromatograph (HPLC)	5	36	180
4.	Ion Chromatograph	3	22	66
5.	Inductively Coupled Plasma – Atomic Emission Spectrometer (ICP-AES)	4	42	168
6.	$PM_{2.5}$ Dichotomous Sampler System	15	8	120
7.	PM2.5 Sampler (FRM)	8	12	96
8.	High Volume Sampler with PUF (for ambient Dioxin / Furan)	6	6	36
9.	Speciation Sampler	3	10	30
10.	Stack monitoring kit with VOST	4	25	100
11.	Zero Head space extractor 90 mm	4	2.5	10
12.	Zero Head space extractor 140 mm	4	2.5	10
13.	Rotary Agitator	4	1	4
14.	Flash Point Apparatus	5	1.6	8
15.	Bomb Calorimeter	5	3.1	15.5
16.	Mobile Air Quality Monitoring Van	10	100	1000
17.	Microwave Digester	7	5.5	38.5
18.	ICP-MS	1	100	100
			Total Rs. (in Lakh)	**2400**

(d) Infrastructural Development

3.4.6 In order to undertake effective Environmental Surveillance Programme and for establishing co-ordination with the State Pollution Control Boards, CPCB would require adequate infrastructure in terms of Training Facilities, Vehicles and Building for its Head Office Delhi and Zonal Office at Shillong. The infrastructure facilities would include procurement of field monitoring vehicles to be used for surveillance purpose (4 at head quarter and 12 at zonal laboratories) and training facilities at all the Centres. Requirement on capital investment has been proposed which will include expansion of laboratories at Head Quarter, Delhi and Zonal Offices and procuring and establishing premises for the Regional Office at Shillong.

3.4.7 It is proposed to have an additional building adjacent to existing building. The proposed addition to the existing building proposes provisions for three floors with a total built up area of 2250 sq meter. The approximate estimate includes structure, interiors, front finish, furniture, Air Conditioning, DG sets, electric sub station. The construction plan includes Training Halls, Auditorium, Conference Rooms, Office Space, GIS Rooms and/Training Laboratories. Tentatively a total amount of Rs. 20.0 crores will be required on infrastructure development. However, a detailed estimate for infrastructure has to be worked out by a government architect agency.

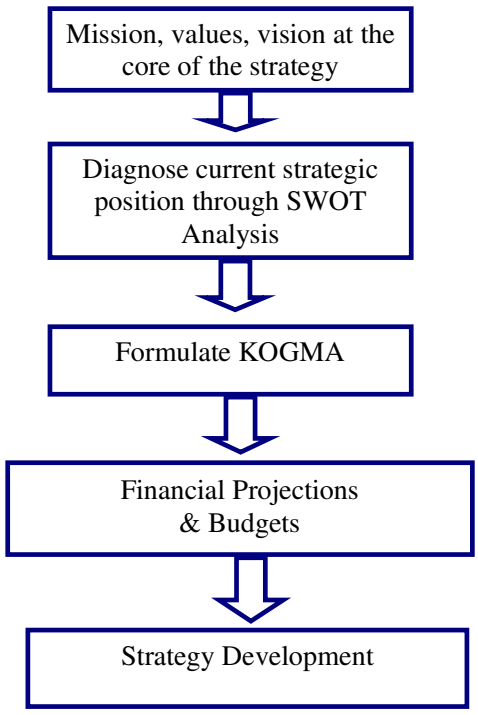
Chapter 4

Strategies and Recommendations

Section 1: Framework for Strategy Development

4.1.1 Based on the organizational profile of CPCB in terms of its mandate, core functions, activities and governance structure on the one hand, and the business plan emerging out of SWOT Analysis on the other, a detailed strategy for its operational planning has been done using the framework given in figure 4.1.

Figure 4.1: Process of Strategy Development



4.1.2 While designing the strategies results of both internal and external stakeholder analysis have been kept behind the curtain. The salient outcome of the stakeholder analysis has been presented in figure 4.2 and 4.3.

Figure 4.2: Views of External Stakeholders

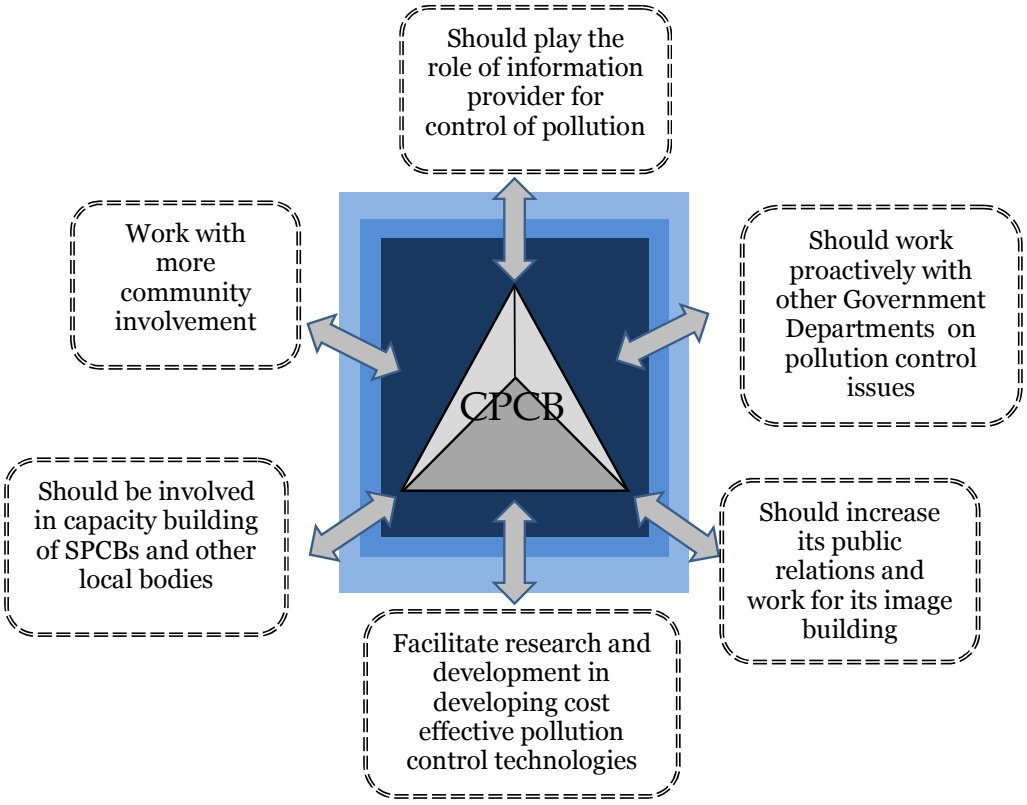
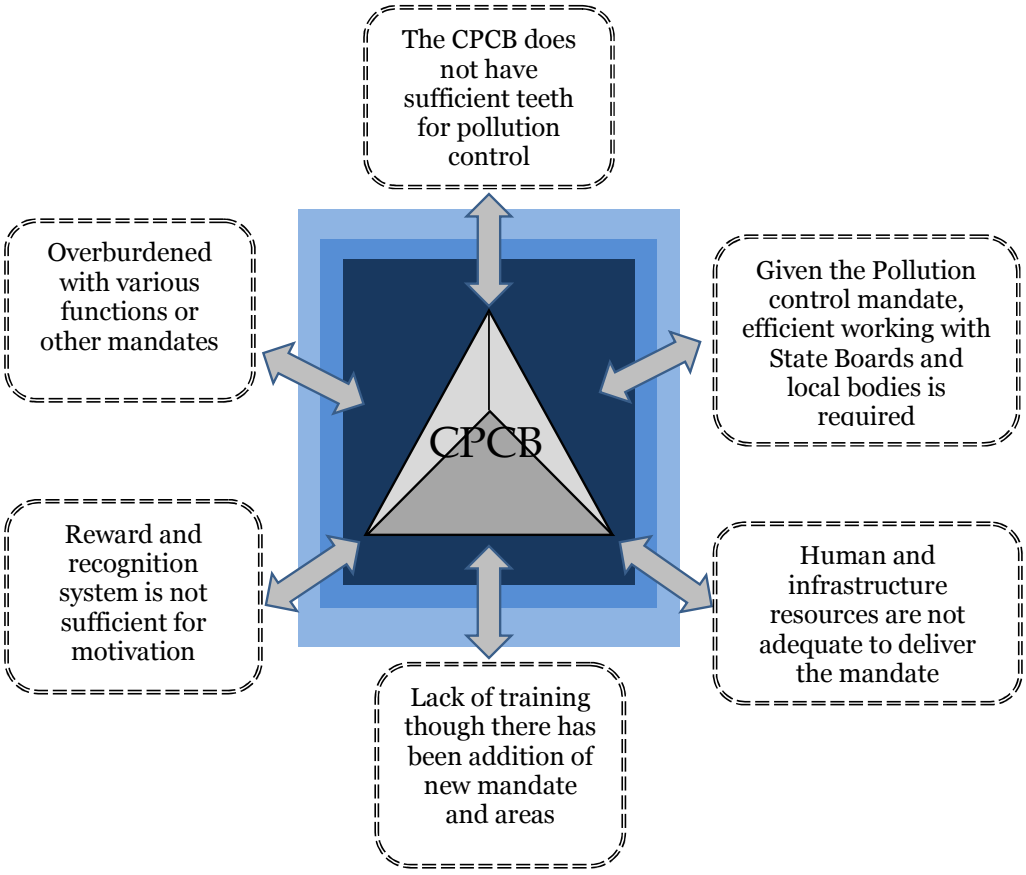


Figure 4.3: Feelings of Internal Stakeholders



4.1.3 The strategy and the recommendations have been divided into the following spheres.

a) Strengthening Organizational Capacity

b) Strengthening Human and Financial Resources

c) Role of CPCB based on its competency and mandate

Section 2: Strengthening Organizational Capacity

4.2.1 Governing board of any organization is considered to be a think-tank and provide directions to fulfill the mission and vision of the organization. Keeping this in mind there is a need for restructuring of governing board of CPCB. Such a reorientation may also be achieved with having technically qualified full time Chairman and Member Secretary and majority of nominated Members having technical expertise in areas like air pollution, water pollution and law.

4.2.2 Although CPCB and respective SPCB are two independent institutions located at two different levels, they need to function jointly/cohesively and in a coordinated manner. The performance of CPCB in terms of its impact on pollution abatement and control depends largely on the efficiency and efficacy of SPCBs, CPCB should, therefore, have a stake in the governance of state boards. For this purpose, there must be representation of CPCB in the governing board of all SPCBs. This practice is being followed presently in Tripura.

4.2.3 Presently there is no inbuilt performance review system of CPCB at regular interval by MoEF. The review should include both performance budgeting and perspective planning of CPCB. This exercise should be done at annual level between the CPCB and MoEF. It will facilitate coordination between the two agencies and the problem (if any) arises at any level can be nipped in the bud.

4.2.4 Zonal offices of CPCB are considered an extension arm of CPCB for working closely with SPCBs. Given the present 6 zonal offices each one catering to a large number of states, it is clear that zonal offices are not able to justify their existence and role. The acute shortage of staff at zonal office level adds fuel in the fire in this direction. We recommend that CPCB should open more zonal offices in other states in the long run. As an immediate measure, the present zonal offices should be strengthened by providing more human and infrastructure resources. Let the CPCB have video-conferencing facility so that it can interact regularly with SPCBs and its zonal offices. For this purpose the zonal offices should also have video-conferencing facility.

Section 3: Strengthening Human and Financial Resources

4.3.1 A committed and qualified strong workforce is required if CPCB has to become a Centre for Excellence for pollution control. MoEF should sanction the additional 550 posts required as mentioned in Chapter 3 which may cost roughly Rs. 20.00 crore per annum. It has also been estimated that CPCB would be requiring 308 additional posts immediately if it has to achieve its targets in the short run. In order to maintain the functional growth as well as organizational growth, both MoEF and CPCB have to take sufficient steps to retain and attract qualified people. More than the financial reward, it is the recognition and respect for their work which the scientific community looks for.

4.3.2 In order to attract desired people there must be enough provision for training and exposure visits of the scientific staff so that they are updated with new technological development taking place across the globe. Accordingly CPCB has to develop a clear HR policy for requirement and retaining qualified staff. The CPCB should have full autonomy in terms of recruitment, training,

retaining and in career development of its staff with a high powered committee of experts and bureaucrats to be constituted for overall supervision.

4.3.3 Availability of financial resources should be ensured if CPCB has to perform its mandates efficiently. Presently CPCB is entirely dependent on Government for funds. Accordingly, there must be quantum jump in financial support by Government to CPCB. Government should provide funds for strengthening the labs of CPCB and its zonal offices, infrastructure expansion at CPCB head office and Shillong zonal office, and computerization and Environmental Data Base Management. It has been estimated that a one time grant of Rs. 80.00 crores (excluding the cost of additional technical manpower as mentioned in para 4.3.1 above) would be required to strengthen the CPCB on all the above counts.

4.3.4 It is also desirable that CPCB should reduce its dependency for funds on MoEF and look forward to other avenues. Besides, the grant from Government of India, CPCB should secure release of 20% of cess collected by the state boards and which is retained in consolidate fund of Government of India at Ministry of Finance. CPCB should also generate its own fund by providing technical services in the form of sample testing, trainings and providing technologies to various stakeholders. CPCB has to ensure that while utilizing its scientific experts to provide consultancy for fund generation, its core mandate and functions should not be sacrificed in terms of quality and quantity. For this purpose CPCB should have a clear policy of developing its own corpus over the years and should strictly adhere to it.

Section 4: Role of CPCB

4.4.1 By birth CPCB has been given the responsibility for abatement and control of air and water pollution in the country by generating relevant data, providing scientific information, rendering technical inputs for formation of national policies, training and development of manpower and organizing activities for promoting awareness at different levels of the government and public at large. Its role in compliance and enforcement has been mostly indirect through SPCBs. Given the not up to the mark performance of most of the SPCBs, in general, there is a feeling in CPCB that "It does not have sufficient teeth for controlling the pollution through direct compliance and enforcement".

4.4.2 In general, pollution control strategies are based on regulations as is evident from the enactment of a large number of regulatory laws over the years. Inadequate emphasis has been laid on strategies based on technologies or comprehensive information to stakeholders as is shown in Figure-4.4 to combat the growing menace of pollution.

Figure 4.4: Pollution Control Strategies

4.4.3 We suggest that CPCB should play a more active role in developing new low cost cleaner technologies as well as demonstrating latest technologies and provide relevant information related to causes of pollution and mechanisms to control pollution to the public and disclose the polluters publicly.

4.4.4 Environment being a common property resource can be handled properly through collective efforts rather than enforcing the regulations. Here the CPCB has to play a proactive role in the future. CPCB should work more closely with local communities and NGOs for creating awareness and knowledge about pollution abatement and control.

4.4.5 There is a need for closer coordination with other Ministries and organizations which are directly or indirectly related to pollution control. CPCB has to create its own space in the whole arena of pollution control. Let it not be too much dependent on MoEF directions.

4.4.6 In the present era of information technology, CPCB should have strong data base related to its activities and the same should be put in the public domain. Presently, the maintenance of data related to its functioning is not in a proper shape.To bring the transparency, MoEF should coordinate and facilitate computerization of state boards on top priority. CPCB should also disclose it achievements with clear benchmarking of the same achieved by the similar organizations across the different countries.

4.4.7 In brief we look at seven major functions being discharge by CPCB presently as given in Chart 4.1.

Chart 4.1: Functions of Pollution Management

1. Environmental Planning

(a) Development of standards and guidelines

(b) Development of laws, rules and regulations

2. Environmental Monitoring

(a) Environment surveillance (General)

(b) Ambient Monitoring

(c) Maintenance of data base

3. Environment Impact Assessment/Audit

(a) Identification and inventory of source of pollutant

(b) Impact Assessment on different components of environment (air, water, land and other natural resources)

4. Laboratory Management

(a) Quality control

(b) Research and development

5. Pollution Control Enforcement (Facility Specific)

(a) Inspection

(b) Prosecution

(c) Direction

6. Technological Intervention

(a) Design and development of appropriate technology

(b) Dissemination of appropriate technology

7. Environmental Awareness/Information

(a) Support to NGOs/Education Institutions

(b) Capacity building through training programs

(c) Mass awareness through media

4.4.8 CPCB should concentrate more on functions at no. 1(a), 2, 3, 4, 6 and 7 and less on 1(b) (to be primarily executed by MoEF) and 5 (to be primarily executed by SPCBs). CPCB should create its various functional divisions in the same line.

4.4.9 Suggestions for some priority programs of CPCB are listed below:

- Prepare and monitor action plans for Critically Polluted Areas (CPAs).
- Develop and implement, on a pilot scale, PPP models for setting up CETPs, CTDFs, CBMTDFs and STPs.
- Prepare and implement an action plan for major cities for treatment, reuse and recycling of sewage and effluents.
- Promote R&D in development of low cost technology for effluent and sewage treatment, including ZLD, wherever feasible.
- Explore outsourcing of functions such as training and awareness.
- Strengthen the monitoring and enforcement of emission and effluent standards both for point and non-point sources.
- Inventorize the 17 categories of highly polluting industries.

4.4.10 There is a growing discussion now-a-days regarding the formation of National Environment Protection Authority (NEPA). There is lot of debate whether CPCB should be converted into NEPA or it should work only under the Water and Air Acts. We are not discussing this in this report as the mandate of this study does not match with it. However, given the complex role to be played by the proposed NEPA, MoEF should be cautious about taking the proper decision.

Appendix - 1

Indian Institute of Management, Lucknow

Evaluation of CPCB Activities – Checklist for collecting data from CPCB

1.1 **Origin and History** – Provide a brief account of the CPCB origin and history:

a. When and why the CPCB was originally created?
b. Has the CPCB name or structure changed since its creation? When and why did this occur?
c. What have been the major events or turning points in the CPCB recent history?
d. What have been the CPCB greatest obstacles and problems? What have been its greatest accomplishments?

1.2 **Organizational Structure** – Describe the CPCB organizational structure.

a. What is the CPCB current organizational structure? What are its major bureaus divisions and unit?
b. Is there a current organization chart? Does it reflect the way the CPCB actually functions?
c. Where the CPCB is geographically located? Are there regional offices?
d. What is the functional relationship with regional offices and the operational mechanisms?
e. What are the size and composition of the CPCB work force? What are the major categories of employees within the CPCB?

1.3 **Stakeholders -** Identify the CPCB major stakeholders and their expectations from the CPCB.

a. Who are the CPCB major stakeholders? What results do they expect from the CPCB? How well does the CPCB meet their expectations? What is their perception of the CPCB?
b. What are the needs of the CPCB's stakeholders? How are these needs met?
c. Have the CPCB's stakeholders changed overtime? Will the CPCB's stakeholders change in the future? What is the implication of these changes for the CPCB?
d. Does the CPCB have any un-served or underserved stakeholders? Is the demand for the CPCB's activities and services greater than the supply or vice-versa?

1.4 **Activities and Services** - Describe the CPCB's important activities and services.

a. What are the CPCB's major activities and services?
b. What needs and wants are the CPCB's activities and services designed to meet?
c. What are the costs of providing the CPCB's activities and services?
d. What is the level of satisfaction with the CPCB's activities and services?
e. By what methods, does the CPCB deliver its activities and services? How much does the CPCB do itself? How much is accomplished through contracting, purchase of service, or other means?
f. What are the CPCB's current and projected service levels?
g. Are the internal operations or contracting relationships expected to change over the next few years?
h. Does the CPCB need to build, maintain, harvest or divest any of its activity?

1.5 **Mission Statement –** State the CPCB's Mission.

a. What is the nature of your business? What business is the CPCB in?
b. What is its reason for being? What is the purpose?
c. What problems are the CPCB supposed to address? What needs are the CPCB supposed to fulfill?
d. Has the CPCB's mission changed since it was originally established?
e. What is the CPCB's current mission statement? Is it still valid? Does it need to be revised or updated?
f. Is the mission still the "right" mission for the CPCB?

1.6 **Core Functions -** Identify the CPCB's essential business activities and explain how they support the CPCB's mission.

a. What are the CPCB's core functions? What are the essential business activities that the CPCB must undertake in support of the mission?
b. Are the CPCB's core functions defined by the statute? If not, how are they determined?
c. Have the CPCB's core functions changed overtime? If so, how and why?
d. Are the CPCB's core functions still germane? Does the CPCB need to add, eliminate, or modify any of its functions?

1.7 **Other Mandates** - Itemize and describe any other CPCB responsibilities established by law, code, or regulation.

a. What other mandates affect the CPCB? When did they come into effect? Under what authority?
b. How do these other mandates relate to CPCB mission? Do they support the mission or not? How so? How not?

c. What is the CPCB's "position" in terms of these other mandates? Do they make sense for the CPCB? Are any changes warranted?

1.8 **Internal Environment –** Evaluate the CPCB's internal strengths and weaknesses.

a. What are the CPCB's strengths and weaknesses? What does the CPCB do best? Where does the CPCB need to improve?
b. What are the reasons for the CPCB's past successes or failures? What factors may cause the CPCB to succeed or fail in the future?
c. Do employees have the knowledge, skills and competencies that are required to fulfill the CPCB's mission?
d. Does the CPCB have the resources, space, equipment, technology it needs to operate effectively?
e. How effective are intra-CPCB communications?
f. How well do the various branches/divisions/units of the CPCB work together?

1.9 External Environment – **Identify and analyze opportunities and threats in the external environment.**

a. What is the impact of outside variables, factors, or trends on the CPCB?
b. What threats/ problems or risks will the CPCB face in the next 2-5 years? How can the CPCB minimize these threats?
c. What opportunities will the CPCB has in the next 2-5 years? How can the CPCB take maximum advantage of these opportunities?
d. What critical choices will the CPCB has to make in the short –term (during the next fiscal year) and long-term (during the next several years?
e. How may future legal or governmental actions (e.g budget, legislation mandates, regulation,) affect the CPCB?
f. Is the CPCB involved in any (threatened or pending) litigation, disciplinary action, or liability?

1.10 **Critical Issues** –Identify the fundamental policy questions or challenges facing the CPCB.

a. What critical issue (s) will the CPCB face during the next several years?
b. How will the issue (s) affect the CPCB? How broad or deep will the impact be on the CPCB?
c. What can the CPCB do to mitigate the impact? What will happen if the CPCB does nothing?

1.11 **Vision –** Develop a statement describing the CPCB's preferred future.

a. What are the CPCB's aspirations as an organization?

b. What will the CPCB look like in the future? What is the CPCB's ideal future?
c. How does the CPCB wish to be known or seen by its customers, clients and constituents?
d. Does the CPCB have a vision statement? Is it still valid? Does it need to be revised or updated?

1.12 **Goals –** List the CPCB's major goals (in priority order) for the short-term and long-term.

a. What must the CPCB do to achieve its mission?
b. What does the CPCB want to accomplish in the next 1-2 years? 3-5 years?
c. Are the CPCB's current activities consistent with events in the external environment? If not how must they change?
d. What direction must the CPCB take to satisfy its stakeholders?
e. What are the CPCB's current goals? Are they still valid? Do they need to be revised or updated? Do they relate to its mission?

1.13 **Objectives –** List the CPCB's major objectives (in priority order) related to its goals.

a. What specific and measurable targets must the CPCB accomplish in support of its short-term and long-term goals?
b. What are the interim steps toward achieving the CPCB's goals?
c. Do the CPCB's goals require more than one (multiple) objectives?
d. What are the CPCB's current objectives? Are they still valid? Do they relate to the CPCB's goals? Do they need to be revised or updated?

1.14 **Strategies –** Identify the CPCB's methodology for achieving its stated goals and objectives.

a. What are the practical alternatives (methodologies) that the CPCB can pursue to address its goals and objectives? What are the costs and benefits of these alternatives?
b. Do existing programs, products, services or projects support the CPCB's goals and objectives? Which ones can be retained in their present from? Modified in some way? Eliminated? Transferred to other programs or legal entities?
c. Do the strategies require any internal reorganization of the CPCB? Are there any existing CPCB operations, procedures, or processes that must change during implementation?
d. What are the obstacles to achieving CPCB's goals and objectives? What can be done to overcome these obstacles?

1.15 **Priorities -** Organize the CPCB's strategies in priority order.

a. What are the CPCB's most important goals and objectives? Which strategies relate to these goals and objectives?

b. Which strategies would make the most progress toward achieving the goals and objectives? Which would make the least?
c. Which strategies, if any, must the CPCB deploy? Is the CPCB mandated to pursue certain strategies?
d. Which strategies have proven successful in the past? Are they likely to be successful in the future?
e. What are the most important activities the CPCB must undertake right away? Which can wait until later?
f. Are there any time frames the CPCB must consider? Is there any logical sequence or order for implementing the strategies?

1.16 **Resource Requirements** –Describe the personnel and other resources the CPCB will require to carry out its strategies.

a. What resources (financial, technological, human, physical, etc) are required to implement the CPCB's strategies? Are these resource assured?
b. Who is going to do what must be done? Will the CPCB need to recruit, place, and train management and personnel?
c. What is the physical impact of the CPCB's action plan? Does the implementation of the action plan require the reallocation of resources within the CPCB?
d. In view of the CPCB's available resources, do the goals, objectives, and strategies continue to make sense?

1.17 **Funding -**Provide financial statements of the CPCB's funding, including internal and external resources

1.18 **Expenditures -**Provide a financial statement of the CPCB's activity wise expenditures.

1.19 Organizational Results - **List the measures for gauging the overall performance and productivity of the CPCB as an organization.**

a. What are the CPCB's performance criteria? How does the CPCB gauge its efficiency and effectiveness as an organization?
b. What performance targets has the CPCB set for the future?
c. What measures does the CPCB use to demonstrate its success or failure?
d. What criteria do the CPCB customers and stake holders use when evaluating the CPCB? How are these criteria measured?
e. How does the CPCB measure customer's satisfaction?
f. How is the benefit or impact of the CPCB's activities and services measured?
g. How does the CPCB measure the quality, reliability, accuracy, responsiveness, sufficiency, or timeliness of its activities and services?.
h. Are there accepted professional, national, or accreditation standards that apply to the CPCB?

i. Do central or state govt. statutes, regulations, or official guidelines set any performance standards for the CPCB?

1.20 **Plan Implementation-** List the key measures for gauging progress toward the CPCB's goals and objectives.

a. What kinds of data does the CPCB collect and analyze to monitor achievement of its goals and objectives?
b. What are the critical variables for success in achieving the CPCB's goals and objectives?
c. How does the CPCB measure these variables?
d. If data on actual results are not available, what proxy or surrogate measures does the CPCB use?
e. Are existing or historical data available to establish a baseline?

1.21 Monitoring And Tracking - **Describe how the CPCB will manage the implementation of its strategic business plan.**

a. What methods or mechanisms will the CPCB use to determine if implementation of the strategic business plan is on track?
b. What new operations, procedures, or processes must be put in place to monitor and track implementation?
c. What types of information about plan implementation will be reported? To whom? When and how?
d. What types of action will be taken if the CPCB does not perform according to plan?

Appendix – 2

Break-up of the Manpower Requirement for the Different Divisions of CPCB as well as Various Zonal Offices

Consolidated Manpower Requirement for Central Pollution Control Board Head Office

S. No.	Post	Chairman	MS & Law Section	Director PCI	Director Planning & Coordination	Director Waste Management	Director (Labs)	Director Pollution Monitoring & Assessment	Director HR-I	Director HR-II	Total Requirement
1.	Advisor	-	-	-	-	-	-	-	-	-	2
2.	Director	-	-	1	1	1	1	1	1	1	7
3.	Additional Director	-	-	4	3	3	3	2	-	-	15
4.	Joint Director / SS / SEE	1	-	10	5	8	8	2	-	2	36
5.	Additional Director (Law) - MoEF	-	1	-	-	-	-	-	-	-	1
6.	Sr. Administrative Officer	-	-	-	-	-	-	-	1	-	1
7.	Administrative Officer	-	-	-	-	-	-	-	3	-	3
8.	Finance & Accounts Officer	-	-	-	-	-	-	-	-	1	1
9.	Sr. Law Officer	-	2	-	-	-	-	-	-	-	2
10.	Law Officer	-	2	-	-	-	-	-	-	-	2
11.	Deputy Director / Sc. C'/ EE	-	1	22	7	13	17	6	-	-	66
12.	Accounts Officer	-	-	-	-	-	-	-	-	2	2
13.	Assistant Director / Scientist `B' / AEE	-	1	26	11	23	31	14	-	9	115
14.	Sr. Hindi Officer	-	-	-	-	-	-	-	1	-	1
15.	Hindi Officer	-	-	-	-	-	-	-	1	-	1
16.	Assistant Law Officer	-	2	-	-	-	-	-	-	-	2
17.	SPS	1	-	-	-	-	-	-	-		1
18.	Section Officer	-	-	-	-	-	-	-	5	1	6
19.	PS / PA / Steno	1	4	5	4	4	3	4	5	3	33
20.	Assistant Accounts Officer	-	-	-	-	-	-	-	-	4	4

S. No.	Post	Chairman	MS & Law Section	Director PCI	Director Planning & Coordination	Director Waste Management	Director (Labs)	Director Pollution Monitoring & Assessment	Director HR-I	Director HR-II	Total Requirement
21.	STS	-	-	-	-	-	5	-	-	1	6
22.	Assistant	-	-	-	-	-	-	-	12	7	19
23.	Accounts Assistant	-	-	-	-	-	-	-	-	4	4
24.	Publication Assistant	-	-	-	-	-	-	-	-	1	1
25.	Sr. Scientific Assistant	-	-	4	-	-	15	7	-	-	26
26.	Technical Supervisor	-	-	-	-	-	6	-	-	-	6
27.	Data Proc. Assistant	-	-	-	6	-	-	-	-	-	6
28.	Junior Scientific Assistant	-	-	7	-	3	34	7	-		51
29.	Hindi Translator (Sr./Jr.)	-	-	-	1	-	-	-	2	-	3
30.	Sr. Technician	-	-	-	-	-	8	-	-	3	11
31.	Dr. Sup/Sr. D. Man/Jr.	-	-	-	-	4	-	-	-	-	4
32.	Deputy Librarian	-	-	-	-	-	-	-	-	1	1
33.	Data Entry Operator	1	2	2	8	1	2	4	6	6	32
34.	Cashier	-	-	-	-	-	-	-	-	2	2
35.	Upper Division Clerk	1	2	-	-	-	-	-	9	4	16
36.	Lower Division Clerk	2	1	1	1	1	-	2	11	8	27
37.	Hindi Typist	-	-	-	-	-	-	-	3	-	3
38.	Junior Technician	-	-	-	-	-	4	-	-	4	8
39.	Junior Engineer	-	-	-	-	-	-	-	-	2	2
40.	Senior Laboratory Assistant	-	-	-	-	-	15	-	-	-	15
41.	Junior Laboratory Assistant	-	-	1	-	-	32	-	-	-	33
42.	Field Attendant	-	-	-	-	-	6	-	-	1	7
43.	Attendant	2	3	6	3	4	17	1	4	9	49
44.	Driver	2	1	-	-	-	2	-	1	6	12
45.	Plumber	-	-	-	-	-	-	-	-	1	1
46.	P&WVOP	-	-	-	-	-	-	-	-	1	1
Total		11	22	89	50	65	209	50	65	84	647

Manpower Requirement for Chairman, Member Secretary & Law Section

S. No.	Post	Chairman		Member Secretary		Law Section	TOTAL
		Secretarial	Technical	Secretarial	Technical		
1.	Joint Director	-	1	-	-	-	1
2.	Deputy Director	-	-	-	1	-	1
3.	Assistant Director	-	-	-	1	-	1
4.	Addl. Director (Law) (MoEF)	-	-	-	-	1	1
5.	Sr. Law Officer	-	-	-	-	2	2
6.	Law Officer	-	-	-	-	2	2
7.	Assistant Law Officer	-	-	-	-	2	2
8.	SPS	1	-	-	-	-	1
9.	PS	1	-	1	-	-	2
10.	PA	-	-	1	-	-	1
11.	Steno	-	-	1	-	1	3
12.	Data Entry Operator	-	1	-	1	1	2
13.	Upper Division Clerk	1	-	2	-	-	3
14.	Lower Division Clerk	2	-	-	-	1	3
15.	Attendant	1	1	1	1	1	5
16.	Driver	2	-	1	-	-	3
Total		**8**	**3**	**7**	**4**	**11**	**32**

Manpower Requirement for Director PCI

S. No.	Post	PCI-I	PCI-II	PCI-III	PCI-SSI	TOTAL
1.	Director	-	-	-	-	1
2.	Additional Director	1	1	1	1	4
3.	Joint Director	1	4	3	2	10
4.	Deputy Director	7	7	4	4	22
5.	Assistant Director	7	8	6	5	26
6.	PA / PS	2	1	-	-	3
7.	SSA		2	-	2	4
8.	Junior Scientific Assistant	1	3	1	2	7
9.	Steno		1	1	-	2
10.	Data Entry Operator		1	1	-	2
11.	Lower Division Clerk	1		-	-	1
12.	Junior Laboratory Assistant	1		-	-	1
13.	Attendant	1	4	1	-	6
14.	Driver	-	-	-	-	-
	Total	**22**	**32**	**18**	**16**	**89**

Manpower Requirement for Director Planning & Coordination

S. No.	Post	AD Planning	AD Coordination including Zonal Offices	AD Computer & Information Management	TOTAL
1.	Director				1
2.	Additional Director	1	1	1	3
3.	Joint Director	2	1	2	5
4.	Deputy Director	3	1	3	7
5.	Assistant Director	3	1	7	11
6.	PS	-	1	-	1
7.	Data Processing Assistant	-	-	6	6
8.	Hindi Translator	-	-	1	1
9.	Steno	2	-	1	3
10.	Data Entry Operator	-	-	8	8
11.	Lower Division Clerk	1	-	-	1
12.	Attendant / Field Attendant	1	1	1	3
Total		**13**	**6**	**30**	**50**

Manpower Requirement for Director Waste Management

S. No.	Post	AD UPCD	AD HWMD	AD Env. Infra & Ind. Estate Planning	TOTAL
1.	Director				1
2.	Additional Director	1	1	1	3
3.	Joint Director / SS / SEE	2	3	3	8
4.	Deputy Director / Sc. C'/ EE	4	6	3	13
5.	Assistant Director / Scientist `B' / AEE	8	9	6	23
6.	Dr. Sup/Sr. D. Man/Jr.	-	-	4	4
7.	Junior Scientific Assistant	-	2	1	3
8.	PA	-	1	-	1
9.	PS	-	-	-	
10.	Steno	1	1	1	3
11.	Data Entry Operator	-	-	1	1
12.	Lower Division Clerk	1	-	-	1
13.	Attendant	2	1	1	4
	Total	**19**	**24**	**21**	**65**

Manpower Requirement for Director (Labs)

S. No.	Post	AD-I	AD-II (Air)	AD-III	TOTAL
1.	Director				1
2.	Additional Director	1	1	1	3
3.	Joint Director	2	3	3	8
4.	Deputy Director	4	7	6	17
5.	Assistant Director	7	14	10	31
6.	STS	-	5	-	5
7.	Technical Supervisor	1	4	1	6
8.	Senior Scientific Assistant	5	6	4	15
9.	Senior Technician	2	5	1	8
10.	Junior Scientific Assistant	11	13	10	34
11.	Junior Technician	-	4	-	4
12.	PS/Steno	1	1	1	3
13.	DEO	-	-	2	2
14.	Senior Laboratory Assistant	4	7	4	15
15.	Junior Laboratory Assistant	8	16	8	32
16.	Field Attendant	2	2	2	6
17.	Attendant	6	6	5	17
18.	Driver	-	2	-	2
Total		**54**	**96**	**58**	**209**

Manpower Requirement for Director Pollution Monitoring & Assessment

S. No.	Post	AD Monitoring	AD Assessment	TOTAL
1.	Director			**1**
2.	Additional Director	1	1	2
3.	Joint Director / SS / SEE	1	1	2
4.	Deputy Director / Sc. C'/ EE	1	5	6
5.	Assistant Director / Scientist `B' / AEE	3	11	14
6.	Senior Scientific Assistant	3	4	7
7.	Junior Scientific Assistant	3	4	7
8.	PS	1	-	1
9.	Steno	1	2	3
10.	Data Entry Operator	1	3	4
11.	Lower Division Clerk	2	-	2
12.	Driver	-	-	
13.	Attendant	1	-	1
Total		**18**	**31**	**50**

Manpower Requirement for Director HR-I

S. No.	Post	AO Personnel	AO Recruitment	AO Materials	TOTAL
1.	Director	**1**			1
2.	Senior Administrative Officer	1	-	-	1
3.	Administrative Officer	1	1	1	3
4.	Sr. Hindi Officer	-	1	-	1
5.	Hindi Officer	-	1	-	1
6.	Section Officer	3	1	1	5
7.	Assistant	7	3	2	12
8.	Hindi Translator	-	2	-	2
9.	PS / PA	1	1	1	3
10.	Steno	2	-	-	2
11.	Data Entry Operator	3	2	1	6
12.	Upper Division Clerk	4	1	4	9
13.	Lower Division Clerk	5	2	4	11
14.	Hindi Typist	-	3	-	3
15.	Driver	1	-	-	1
16.	Attendant	2	1	1	4
Total		**30**	**19**	**15**	**65**

Manpower Requirement for Director HR-II

S. No.	Post	Building & Estates	Finance & Accounts	Public Relations & Mass Awareness	Training & Welfare	TOTAL
1.	Director					1
2.	Joint Director	1	-	-	1	2
3.	Assistant Director	2	-	4	3	9
4.	Finance & Accounts Officer	-	1	-	-	1
5.	Accounts Officer	-	2	-	-	2
6.	Assistant Accounts Officer	-	4	-	-	4
7.	Section Officer	-	-	1	-	1
8.	STS	1	-	-	-	1
9.	Assistant	-	3	4	-	7
10.	Accounts Assistant	-	4		-	4
11.	Senior Technician	3	-	-	-	3
12.	PA	-	-	-	1	1
13.	PS	1	-	-	-	1
14.	Publication Assistant			1		1
15.	Steno	-	-	1	-	1
16.	DEO	-	4	2	-	6
17.	Cashier		2			2
18.	Junior Engineer	2				2
19.	Deputy Librarian			1		1
20.	Junior Technician	4	-	-	-	4
21.	Upper Division Clerk	3	-	-	1	4
22.	Lower Division Clerk	2	-	2	4	8
23.	Driver	6	-	-	-	6
24.	Attendant / Field Attendant	4	2	3	1	10
25.	Plumber	1	-	-	-	1
26.	P&WVOP	1	-	-	-	1
	Total	**31**	**22**	**19**	**11**	**84**

Manpower Requirement for Major Zonal Offices

S. No.	Post	Bangalore	Kolkata	Lucknow	Vadodara	Total
1.	Additional Director	1	1	1	1	4
2.	Joint Director	3	3	3	3	12
3.	Deputy Director	6	6	7	6	25
4.	Assistant Director	12	12	13	12	49
5.	AO	1	1	1	1	4
6.	STS	1	1	-	1	3
7.	SO	1	1	1	1	4
8.	AACO	1	1	1	1	4
9.	Technical Supervisor	1	-	1	-	2
10.	Assistant	2	2	3	2	9
11.	Senior Scientific Assistant	12	12	13	12	49
12.	Senior Technician	2	2	2	2	8
13.	PS	2	-	-	-	2
14.	Junior Scientific Assistant	12	12	18	12	54
15.	Accounts Assistant	2	2	2	2	8
16.	Steno	-	1	1	1	3
17.	Data Entry Operator	2	2	2	2	8
18.	Cashier	1	1	1	1	4
19.	Upper Division Clerk	2	2	2	1	7
20.	Lower Division Clerk	1	1	1	2	5
21.	Junior Technician	-	-	1	-	1
22.	Senior Laboratory Assistant	12	12	14	12	50
23.	Junior Laboratory Assistant	12	12	18	12	54
24.	Driver	3	3	3	3	12
25.	Attendant	6	6	7	6	25
Total		**98**	**96**	**116**	**96**	**406**

Note: ZO Lucknow includes Project Office - Agra

Appendix – 3

Project Proposal

Submitted to

Central Pollution Control Board

for

Computerization of CPCB

Version 1.0
8 Feb 2010

Submitted By:
National Informatics Centre Services Inc.
(A Government of India Enterprise under NIC)
Department of Information Technology
Ministry of Communication and Information Technology
6th floor, NBCC Tower, 15-Bhikaiji Cama Place,
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Table of Contents

1. Introduction

The Central Pollution Control Board (CPCB) intends to automate its offices by means of state of art technology based systems. CBCP is a statutory organisation constituted in September, 1974 under the Water (Prevention and Control of Pollution) Act, 1974. Further, CPCB was entrusted with the powers and functions under the Air (Prevention and Control of Pollution) Act, 1981. The key objectives of the organization are:

a. To promote cleanliness of streams and wells in different areas of the States by prevention, control and abatement of water pollution.

b. To improve the quality of air and to prevent, control or abate air pollution in the country.

CBCP has identified the area of computerization. They have offered NICSI to undertake the assignment of computerizing of CBCP offices. The proposed IT solutions would help CPCB in the following ways:

a. Present Infrastructure would be enhanced and bring about more transparency, accuracy and timeliness in each activity.

b. Support for better Information dissemination and decision making process by the management.

c. Better human resource management and better work quality.

The IT solutions would help CPCB to realize its ultimate goal of a clean environment through better information sharing and dissemination at all levels including the government, the public and internally to all offices and departments.

NICSI has offered to carry out the Computerization of CPCB. The cost of computerization will be submitted after the approval of system study document.

2. About NICSI

National Informatics Centre Services Inc. (NICSI) was set up in 1995 as a Section 25 Company under National Informatics Centre, Department of Information Technology, Ministry of Communications & Information Technology, Government of India to provide total IT solutions to various Government organizations.

Main Objectives

- ☐ To provide the economic, scientific, technological social and cultural development of India by promoting the utilization of Information Technology, Computer-Communication Networks, Informatics etc. by a spinoff of the services, technologies, infrastructure and expertise developed by the National Informatics Centre of the Government of India including its computer-communication network, NICNET and associated infrastructure and services.
- ☐ To promote further development of services, technologies, infrastructure and expertise supplementing that developed by NIC, in directions which will increase the revenue earning capacity of NIC.
- ☐ To develop and promote value added computer and computer-communications services over the basic infrastructure and services developed by NIC including NICNET.

In furtherance of these objectives, NIC Services Inc. has been providing following Products & Services to organizations in the Central Government, State Governments and PSUs of India:

Products and Services

- Hardware
- Systems Software
- Application Software
- Software Development Support
- Local Area Networking
- Wide Area Networking
- Videoconferencing
- Customized Software Applications
- I.T. Training
- I.T. Consultancy
- I.T. Implementation Support

Strategic Alliances with leading networking and software solutions providers of the world like HP, CISCO, Microsoft, Oracle, IBM, Red Hat, Adobe, Trend Micro, SAP, NIIT-GIS, CDAC, Samsung etc., to provide state of the art technology at affordable prices. Central and State Government Organizations,

PSUs, Government aided Organizations are amongst our esteemed customers.

3. Scope of Work

A brief write-up on Computerization of CPCB was provided to us, through email dated 2nd Feb 2010 from Mr. Aditya Sharma, Assistant Environmental Engineer, CPCB which specifies the areas on which computerization is intended along with the required details.

CPCB has identified its requirements for the proposed IT system. The key requirements of the system are:

1. **Implementation of Upgraded LAN at HQ which includes**:

a. **High Speed Internet Access**: to be upgraded from the present 2 Mbps bandwidth, using high speed servers.

b. **No. of LAN Nodes**: to be increased from the present 230 Nos. to 500 Nos.

c. **Switches**: to be introduced using 16 Gpbs routers.

d. **Backbone Strengthening**: using Optical Fiber technology based data connectivity.

e. **Data Backup Line**: for alternate/parallel connectivity of Internet access.

2. **Introduction of LAN systems in Zonal Offices which includes**:

a. **2 * 2 Mbps Data Line connectivity**: for all 7 locations of CPCB Zonal Offices and Project Office, Agra for data communications and video conferencing.

3. **Provision of tools to employees for online data exchange which includes**:

a. **On-site inspection updating system**: through GPRS enabled system to identify the location of employees with time and transmission of data in both directions.

4. **System for efficient management of manpower which includes**:

a. System for saving repeated manpower efforts.

b. Provision of specifically defined tasks with time frame for each employee.

5. **Enhancement to the Ambient Air Quality and Emission Quality monitoring networks which includes**:

a. **Scalable Online data Management**: using Dot Net/ open source technology based software system on LAN/ Internet environment, which should include software and hardware procurement for existing/planned systems in Continuous Ambient Air Quality/ Emission Monitoring stations.

6. **Web Application development which includes**:

a. **Home page** for each Zonal office.

b. **Website updation**: using CMS based data uploading facility.

c. **Web space** for each Zonal Office of CPCB.

d. **Intra-portal** for CPCB.

e. **Data Centre development**: in each zonal office for LAN, Internet and other activities.

f. Specific **activity based infrastructure**.

g. **Manpower recruitment and deployment**: for administration of LAN/ WAN and other activities.

We understand that CPCB is looking for **end-to-end Infrastructure solutions** along with software development and maintenance to support its endeavor for empowerment of people with information on its web-portal and implementation of various projects in the fields of air/water quality monitoring, urban/industrial environment management, environmental planning and sound/waste pollution prevention.

For the above identified requirements of CPCB, NICSI can provision services for the following requirements:

a. Implementation of LAN at HQ.

b. Introduction of LAN systems in zonal offices.

c. System of efficient management of manpower.

d. Enhancement to the Ambient Air Quality and Emission Quality monitoring networks.

e. Web Application development.

The **present scope of work is to carry out a system study** to assimilate the efforts required for computerization of the desired areas.

NICSI shall submit the System Study report to CPCB. On **approval** of the report, **final effort estimation along with cost** will be worked out for the computerization of the identified areas.

4. Commercial Proposal

A. It is proposed that the following **human resources** will be required for this project along with cost:

S.No	Cost Head	Numbers	Time (Calendar months)	Amount* (In Rs.)
1.	Asst. Programmer	2	12	17,350*2*12= 4,16,400.00

B. Hardware Costs:

S. No.	Resource	Proposed Configuration	Numbers	Amount* (In Rs.)
1.	Servers	**Blade Server Config-B**: (INTEL XEON MP) 1U size based on Dual Intel Xeon MP Quad Core E7330 (2.4GHz, 6MB L2 cache) processor, M/s based on Intel 7300 chipset supporting Quad Processor, 8GB of FB DDR2-667 memory with ECC expandable to 32GB. Graphic Controller with minimum 16MB graphic memory, 2x146 GB Hot Swap SAS drives supporting RAID	10	366045*10= 36,60,450.00 (Price all inclusive and 3 yr warranty).
		0/1, Dual Gigabit Ethernet ports, Minimum three expansion slots for HBA and/or NIC Card connectivity.		
3.	Desktops Replacing old P-II & P-II Computers	**Config-B** (Desktop System with Intel Core2 Duo E7500 (2.93GHz speed, 3MB L2 cache &1066MHz FSB) or higher processor, 2GB DDR-II 800 MHz or higher Memory, 250GB or higher SATA-II HDD, TCO-03 certified 17" TFT color monitor, DVD Writer, Gigabit Ethernet Port & 4xUSB, Keyboard & Optical Mouse with Mouse pad, Preloaded Windows Vista Business Edition & Preloaded Anti Virus S/W with 60 days validity. Complete System with 3 Year Warranty on site warranty support.	100	31243*100= 31,24,300.00 (Price all inclusive and 3 year warranty).
4.	Desktops for New Recruitees	-do-	50	31243 * 50= 15,62,150 (Price all inclusive and 3 yr warranty).
5.	Desktops for Recruitments to be done	-do-	100	31243 * 100 =31,24,300.00 (Price all inclusive and 3 yr warranty).

6.	Workstations*	**Workstation W2:** AMD Optron W2380 Quad Core (2.5 GHz speed, 8MB cache) or higher processor, NVIDIA nForce Professional 3600 or higher chipset based motherboard with minimum two PCI/PCIx slots , one PCI Express x1 and one PCI Express x16 slots, PCI Express x16 Graphics Accelerator Card (minimum 128 bit, 512 MB Onboard Video memory and 25 Gbps memory bandwidth), Integrated Gigabit Ethernet controller, 1x fast serial port, 4x USB 2.0 ports (2 ports on front), 1xKeyboard port, 1xMouse port, Integrated quad port SATA-II controller, 2x2GB DDRII 800MHz, 2*250GB or higher	10	
		SATA II HDD 7200 RPM, 104 Keys OEM Keyboard and OEM Optical Scroll Mouse with Mouse pad, 21" TFT (16:9 aspect ratio) LCD Flat Monitor with 8 ms or better response time, TCO 03 certified, System with Power management features & Desktop Management Interface implementation, Windows (VISTA / 7) , Linux OS.		
6.	Printers	**HP LaserJet P1505 Printer** (A4, Mono, 23 PPM in A4, 1200 x 1200 DPI, min 150 sheets input tray, 2 MB RAM, 8000 PPM duty cycle, USB interface cable & driver software).	250	7,120.00 * 250 =17,80,000.00 (Price all inclusive and 1 year warranty).
7.	High End Scanners & Simple Scanners	**Scanner** **Config-B** Model Number-Cannon DR 5010C.	25	234343 * 25 =58,58,575.00 (Price all inclusive and 1 year warranty).
8.	UPS systems 10 KVA 2 hrs backup	**10KVA Online UPS** with 120 minute backup (One year Warranty on Battery).	07	312000.00 * 07 = 21,84,000.00 (Price all inclusive and 5

				year warranty).
9.	Video Conferencing in HQ/Zonal Office	a)HD Videoconferencing Systems (Polycom HDX7002XL). b) 40 HD LCD (Samsung 40B530). c) Multipoint Software License for4 sites (IP/ISDN).	07	(1,71,231 + 54,000)*07 +40,040 = 16,16,657.00 (Price all inclusive and 5 year warranty).

* Workstation charges will be specified only after empanelment with an appropriate vendor.

C. LAN Costs:

S. No.	Resource	Numbers	Amount* (In Rs.)
1.	LAN in Zonal Offices Active & Passive Components *	07	
2.	2 Mbps line connectivity 2 HQ & 07 Zonal Offices **	09	

* LAN Rates would be provided after actual survey. Then Bill of Material (BOM) would be prepared after which costing can be done for LAN works.

** This service **cannot** be provided by NICSI.

D. Application Development Costs:

S.No.	Resource	Numbers	Amount* (In Rs.)
1.	Software & Software Customization for CAAQM, OEDM Network, EDB, ESS etc. *	02	

☐ After the system study only the rates can be provided.

E. Data Centre/Server Room Development:

S. No.	Resource	Numbers	Amount* (In Rs.)
1.	Development of Web site portals for each Zonal Office*	01	
2.	Development of existing website with CMS based data uploading and creation of website administration cell*	01	
3.	Server Room development*	01	

* After the system study only the rates can be provided.

5. Terms and Conditions

5.1 Payment Terms

A. For Hardware Items:

a) Delivery on 100% Advance Payments through demand draft in favour of " National Informatics Centre Services, New Delhi along with P.O. (Charges towards the demand draft to be borne by the user).

b) Delivery within 8 weeks of placement of purchase order.

c) Hardware-Octroi, Sales tax, Freight, Entry Tax, Service Tax & Other Govt. levies extra at actuals, whenever applicable.

d) In case of any rate revision due to expiry of empanelment or taxes, the rates at the time of placing the order will be applicable. The difference may be settled at the time of raising the final bills to the user.

e) Kindly arrange to send Road Permit/Way bill etc. from the commercial tax department, item wise and location wise.

f) NICSI will send a copy of the purchase order which is placed on the behalf of the user to the various vendors, and for faster delivery the vendor representative will remain in touch with the user and necessary declarations /entry tax/octroi certificate will be issued by the user department. The vendors/their representative may be contacted by the user for the warranty support issues.

B. For Human Resources:

a) 100% advance as per NICSI's PI is to be remitted. Draft charges are to be borne by the User department. Cheques/Drafts are to be issued in favor of NICSI, New Delhi. Advance will be settled on the project closure.

b) Appointment Letters/Experience Certificates, if required, will be provided by NICSI empanelled Agency to the deployed support professionals.

c) Experience Certificate to the hired individuals will be issued by the empanelled vendors. However, NICSI has no objection if a User department issues the experience certificate.

d) In case of any revision of rates during the period of contract, revised rates will be applicable.

e) In case TDS is being invoked, the TDS amount should be clearly indicated in the covering letter; otherwise the work order will be issued for the reduced time period matching the funds received.

f) It will not be possible for NICSI to process the manpower hiring/extension cases which are more than one month old from the date of receipt in NICSI.

g) Joining Certificate/Leaving Certificate will be issued by the user Dept. to the agency for the disbursement of salary.

h) Manpower through empanelled agencies will be provided for a minimum period of 6 months unless it is an extension. There is no employment obligation either on NICSI or its Users by the hired manpower. NICSI doesn't take any responsibility for job completion by the hired manpower.

i) Satisfactory performance and duty certificate will be provided by the user to the agency through email/post to enable the agency to release the payment of the deployed candidates.

j) Services to be provided for a minimum period of 6 months. Identity Card to the candidate deployed for technical support will be provided by NICSI empanelled agency.

k) The above rates are inclusive of service tax @10.3%. Any upward revision will lead to revision of rates.

l) The rates quoted are only for budget provision. Revised rates, on account of government directives like minimum wages act, service tax etc. will be applicable from the date of the government directive.

m) User department may send the monthly satisfactory performance report of each individual to the NICSI vendor on the last working day of the month to enable release of salary within 10 days of the receipt of the report. In case the report is not received by the 5th of the succeeding month, the salary will be processed in the next month.

n) User departments are requested not to hire any person without an appointment letter from NICSI's empanelled vendor, issued on the basis of NICSI's work order. User departments will inform the date of joining in each case to NICSI and the empanelled vendor. In case a hired individual leaves or doesn't turn up without information, NICSI and the NICSI vendor may be informed for replacement.

o) Any additional manpower requirement will attract additional cost on Pro-rata basis.

p) Expenses on Outstation Travel and Daily Expenses will be chargeable extra and will be on actual basis.

5.2 Price Validity

The price submitted through this proposal is valid only for 30 days from the date of submission of this proposal.

5.3 Current Assumptions

The above pricing has been provided based on the information made available

to us through email dated 2nd Feb 2010.

5.4 Intellectual Property Rights

Department along with NICSI/ NIC shall retain all copyright and other intellectual property rights in everything developed either before or during the course of our engagement, including systems, methodologies, software and know-how.

5.5 Official Start of Project

NICSI along with its partners will start the project within three weeks upon receiving the formal approval along with advance money.

5.6 Project Completion

Upon submission and presentation of the final report, the department shall sign a Project Completion Report, thereby signaling the end of the project.

5.7 Information and Access

CPCB shall provide promptly with any information, which we may reasonably require from time to time to enable us to precede expeditiously with the performance of its obligation under the contract.

The personnel related to this project shall be available during normal working hours. Full and safe access to site shall be provided for all consultants related to this project. Adequate work space and all such facilities necessary for execution of the project shall be provided by the client.

5.8 Availability of Data

Client shall provide all required documents and data for the execution of the project. Non-availability of this might lead to proportionate delays in the project and delay will be treated as “Interruption of Work” for the purpose of meeting the obligation as per this proposal.

5.9 Confidentiality

All deliverables as well as information including advice, recommendation, observations and comments transferred by us to the Client will be for the sole and exclusive use of Client at the designated site. Client will not disclose the said-transferred items to any other organization without the written consent of us. In case, Client discloses any of the said transferred items without consent of us, then, Client will be liable to pay us a sum not exceeding the full consideration for this proposal, for each transfer to a third party.

Client will not duplicate or otherwise reproduce, directly or indirectly, in whole or part, the deliverables or any material relating thereto except as and

for the use specified in the proposal.

Client will take all reasonable steps to ensure that all authorized personnel including its employees and agents having access to the deliverables or any material relating thereto will refrain from disclosure, duplication, or reproduction in any form.

5.10 Changes in Scope of Contract

Any additions and/or changes in the scope of contract shall be requested for in writing. We would communicate in writing to Client, on receipt of Client requests, the effect this would have on the Project Schedule and Cost. On receipt of written authorization from Client, we would proceed with the changes.

5.11 Escalation Mechanism

Any problem related to the execution of the project will be dealt with in all seriousness by NICSI and/or its partners. The Project Lead will highlight any problem, intractable in nature, to the Management Review Committee (Comprising of NICSI, NIC and DIT Representatives) for resolution. The Management Review Committee will decide on the possible solution for the problem.

5.12 Security and Immigration Clearance

Client will assist us and its staff in obtaining necessary security clearances. Any delay/non-performance of work on account of security clearances will be treated as “Interruption of Work” and will absolve us from any penalties that may be associated with such delays.

5.13 Limitation of Liability

The liability of our organization (including its directors, staff and associated entities) in respect of breach of contract or breach of duty or fault or negligence or otherwise whatsoever arising out of or in connection with this engagement shall be limited in total to the engagement fee to cover claims of any sort whatsoever (including interest and costs) arising out of or in connection with this engagement.

5.14 Force Majeure

If at any time, during the continuance of this contract, the performance in whole or in part by either party of any obligation under this contract be prevented or delayed by reason of:

- ☐ any war or hostility
- ☐ acts of public enemy, civil commotion, sabotage, explosions

- ☐ effects of flood, epidemics, quarantine restrictions, freight embargoes
- ☐ general strikes, *Bandhs*
- ☐ acts of God

herein after referred to as EVENT, neither party shall, by reason of such EVENT, be entitled to terminate this contract, nor shall any party have any claim to the damages against the other in respect of such non-performance or delay in performance, - provided that notice of happening, of any such EVENT is given by either party to the other within 7 (Seven) days form the date of occurrence of the EVENT

If a Force majeure event occurs, the NICSI shall promptly notify Client in writing of such conditions and the cause thereof. Unless otherwise directed by Client in writing, the contractor shall continue to perform its obligations under the contract as far as reasonably practicable and shall seek all reasonable alternative means for performance not prevented by the Force majeure EVENT.

Expected work and deliveries under this contract shall resume as soon as practicable after such EVENT comes to an end or ceases to exist.

The decision of the Client as to whether the situation has become normal or not, shall be final and conclusive.

If the performance in whole or part of any obligation under this contract is prevented or delayed by reason of any such EVENT for a period exceeding 90 (ninety) days, Client may, at its option, terminate this contract.

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