

Strengthening and Restructuring- Central Pollution Control Board



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REPORT

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Chapter 1: Introduction

1.1 The organization in perspective

The Central Pollution Control Board (CPCB) has played a stellar role in technically supporting the formulation of India's environmental laws and policies since its inception. 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) 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.

While for many reasons the organization's apex role has not been clearly discernible, it has remained a trusted supplier of monitoring data, policy inputs, research outputs in critical clean technology and bio-remediation areas and study reports with recommendations to courts, to the Central Government, the Ministry of Environment, Forests and Climate Change (MoEF&CC), the States and State Pollution Control Boards (SPCB). And this legal feature inter alia invariably adhered to by courts all over the country, extends the National importance and apex nature of the CPCB over the SPCBs. But this place of eminence has over the decades been overshadowed by increasing responsibilities of the Central Board under burgeoning statutes, progressive litigation, public outcry against pollution and the Ministry's data and research requirements without corresponding enhancement of the organization's infrastructure. CPCB also acts as an advisory body to the central government and to the judiciary as and when required. Research and Development on core areas also falls in CPCB's line of work.

India is a developing nation with a burgeoning population. The past few decades have seen a growing quantum of environmental concerns and challenges. As a result a paradigm shift in pollution abatement and control is required to meet these challenges. The CPCB has played an astral role in shepherding India's environmental regulation for several decades and its efficiency is critical for India's environmental scenario. Since the time CPCB was first brought into being the plethora of its responsibilities has rocketed manifold therefore the organization itself faces a number of challenges. As the general public has become more conscious of the environmental concerns work for CPCB has multiplied as there is a rise in PILs and RTI Grievances.

As suggested by a few studies, there is lack of man power, limitations in terms of infrastructure, overburden of allotted work, wide jurisdiction and deficit in the number of zonal offices of CPCB to name a few. Current structure of CPCB was framed way back in 1987, over the time new challenges and threats have emerged requiring a totally different response. In fact, it requires a shift from responsive to pro-active environmental governance. Provisions should be made to incorporate these new challenges so as to ensure a more holistic development and reform of CPCB. The attempt in this report is to analyze the current state of affairs and build on the organization's strengths.

1.2 Objectives

1. To Re-structure/ Re-engineer Central Pollution Control Board with a vision to reinforce its competence, transparency and reliability.

To conduct comprehensive evaluation of the schemes, scope of work and relevance of the CPCB and its regional offices in the contemporary time. Rationalization of various divisions will be ascertained in order to inculcate new dimensions in the organization which shall deal in new thrust areas which require systematic attention on priority basis.

2. Requite assessment of manpower, resources and infrastructure of CPCB, RDs and SPCBs.

Organizational structure of CPCB, Regional Directorates and SPCBs will be studied in order to understand the gaps in the institution's human resources if any. Competencies of the man power will be assessed through interaction with Head/Directors of various Divisions of organizations, evaluation of their work load and expected deliverables.

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 action plan for the years to come. The linkages and the coordination amongst the various arms of CPCB would be studied.

3. Assessment of complete corporeal and monetary consequences

To assess the major monetary implications of the re-strengthening and restructuring of the organization which include the expenditure on various activities such as recruitment and other logistics.

4. To conduct SWOT analysis of the organizational structure of CPCB

Strengths, weaknesses, opportunities and threats of the organizational structure of CPCB will help understand foundations which are strong, gaps that need to be accounted for, untapped avenues of the organization and issues that threaten the existence of the organization.

1.3 Literature Review

To meet the needs of the CPCB to face the growing challenges a few studies have been undertaken both internally and externally since the late 1970s. Two reports of 1978 and 1982 studied the organizational needs of the SPCBs and the CPCB in these initial years. The 1982 report noted the delay in the transfer of Cess funds to the Boards, at that time too. The S.P Bhattacharya Committee report of 1984 essentially required a purely governmental set up and establishment of the CPCB with enhanced grant-in-aid. Other early reports like the Belliappa Committee report of 1992, the Oberoi Committee report of 1994, the DoARP report of 1996 and the Planning Commission Report of 2000 deal mainly with the reorganization of the SPCBs. Yet these have found issues which need attention commonly for the CPCB also, as the two centres of technical competence in the specialized area of environmental management are similarly structured and mandated. Later studies are discussed below.

1.3.1 The IIM Lucknow Report, 2010

The report focused on providing strategy and recommendations to strengthen the CPCB through upgrading its human and financial resources. It also laid emphasis on the role of CPCB according to its competency and mandate as an apex organization for control and abatement of pollution.

Key recommendations of the report are:

- The governing board of CPCB should have a qualified “think-tank” i.e. a Chairman, Member Secretary and other members
- Even though CPCB and SPCB are institutions working at distinct levels yet their functionality needs to be interconnected in nature. CPCB should have delegates in State Boards like being followed in Tripura
- An intrinsic performance review system needs to be developed between CPCB and MoEF

- Strengthening of CPCB's Regional Directorates in terms of infrastructure and freshly recruited trained human resources to justify the RDs as CPCB's extended arms
- To improve interaction between all bodies-CPCB, SPCBs and RDs setting up of a video-conferencing facility was suggested
- The report suggested sanctioning of 550 additional posts in order to meet CPCB's targets and recommended that steps be taken to retain and recruit qualified people
- The report required autonomy for the CPCB concerning recruitment, training and career development of its staff. Proper training and exposure to latest advances are crucial to keep the staff up to date
- Financial resources for CPCB should be made available in time to fulfill its time-bound mandate. Government funding needs to be augmented to strengthen labs, database management, digitization and expansion of the Head Office (HO) and the RDs.

CPCB should look forward to more opportunities to have some fund of its own by offering paid-for services in areas of training, legal sampling & analysis and by making various technologies available to stakeholders. This activity should not in any way affect its legal obligations

CPCB doesn't have adequate outreach and it enforces through SPCBs. Incompetence of SPCBs quite often rubs off on an overall inefficiency. There is need for stress on pollution-control strategies that are based on technologies instead of regulations. CPCB should play a pivotal role in development and demonstration of clean technologies.

- CPCB should work closely with NGOs and people at grassroots level to spawn awareness
- CPCB should be less dependent on MoEF&CC and should build a whole niche of pollution prevention and control
- Achievements and activities of CPCB should be available regularly on public domain to support the urge of transparency
- A list of priority programs was provided, which included preparing and monitoring critically polluted areas, encourage Public-private partnerships to develop and implement clean technologies

In general the IIM report looked at CPCB in a new way extending its total autonomy and an independent status that could be at odds with the established system of departmental governance that India has at the National and State levels. A phased programme of growth would have been easier to implement. Except perhaps the total dependence of the organization on Government

funding and relatedly on financial implications legally, a substantial progress on other recommendations could have been made without seeking permission from Ministry for each and every activity.

1.3.2 CSE Report, 2014

This study by the Centre for Science and Environment (CSE) a leading National NGO is a continuation of a report published in 2009 titled 'Turnaround: Reform Agenda for the Environment Regulators of India'. The study highlights the capacity gaps prevalent at the SPCBs which would eventually mirror the glaring incompetency of CPCB. The report recommends SPCB to have professional approach.

Key recommendations from the report are:

- An integrated and inclusive action plan to be devised by the SPCBs to maintain and improve the water and air quality by involving various stakeholders
- SPCBs across the nation need to have standardized protocols for collection of samples and monitoring
- Capacity building: SPCB officials and staff need to work on knowledge and skill development to supplement the counterparts at CPCB
- Audit procedures should be incorporated in compliance mechanisms; data should be updated regularly on websites and regular IT officials should be recruited
- For SPCBs interstate, learning should help in building knowledge evidence
- As SPCBs work on a smaller scale than CPCB engagement with stakeholders must be enhanced. Networks should be built among stakeholders to have a holistic approach
- Trainings, refresher courses and association with experts should be encouraged at SPCBs
- Annual plans should be devised to meet priority concerns on time
- Collaborations with various research organizations and universities will assist SPCBs to have a database of their own

The CSE report dwells mostly on process issues and suggests internal improvements which could have been implemented without additional funding or MoEF&CC involvement. A proactive, networked and collaborative outreach as suggested could have made the CPCB less dependent on new recruits and infrastructure. Except the strictly legal functions which would require a core staff of permanent, trained and experienced personnel, the outreach programmes can always be handled by networks of local civil society groups, SPCB officials, academic

technical persons from universities and the like. The Acts permit empowerment of organizations which would give necessary teeth to responsible members of the public to even regulate, monitor and report. The CSE report also lays emphasis on Human Resources Development (HRD) which is a continuous function and should be a priority.

1.3.3 Department-related Parliamentary Standing Committee (PSC) on Science and Technology, Environment and Forests, 2008

The committee expressed the following views:

It cannot be expected from CPCB to ensure environmental protection until its constituent members are placed by the central government and have the dominance of government representatives. CPCB needs to be given an appropriate statutory and legal back- up to strengthen its constitutional purpose and to prevent it from being a defunct body. The committee suggested that environment protection should be brought as an item of the concurrent list into the seventh schedule of the Constitution. Inadequate number of Regional Directorates has led CPCB to go ignored and unrecognized as a potent authority to curb pollution in the past three decades since its inception. Lack of technical and scientific Manpower to facilitate the operation of existing sophisticated equipment and to conduct research and development. Expertise at CPCB to be incentivized in terms of salaries, promotions and schemes for pension, etc. Multi-disciplinary trainings should be scheduled for officials and staff from time to time to bring them at par to deal with modern-day environmental problems. Finance Ministry's policy to eliminate any post that lies vacant for a year to be revisited and reviewed as abolishing the vacant post serves no purpose as the necessity for the post still remains unfulfilled. CPCB should be reorganized as an independent organization. Monitoring alone will not do any good unless there are measures for rectification and precautionary follow ups. Decentralization of responsibility at state or local levels will help to channelize the work effectively. Controlling delays and conflict through truncating multiple authorities. Technical committees to possess authority, so that the dependence on Ministry is abridged. Municipal solid waste and other streams of waste like bio-medical waste, e-waste are ever mounting and are likely to increase in the near future. For proper management of waste, collaborations such as Public-private partnerships should be encouraged for development of infrastructural and functional facilities for waste disposal. Successful technologies which are environment friendly and most of all cost effective should be adopted. CPCB should have the authority to hold SPCBs responsible, in case they are found to

be below par in performing their functions. CPCB should be allowed to impose fines like polluter pays and should work for the development of standards that are adopted nationwide.

Interestingly, the PSC study has touched upon critical needs of not only the CPCB but the MoEF&CC too, the latter indirectly. It has emphasized the need for decentralization and empowerment which will go a long way to lessen the burden on the centralized structure of Environmental Management in India. The report touches upon new types of waste and the need for their technologically different management protocols. HRD, public-private partnerships and very importantly applying economic instruments like pollution charges are progressive and need to be pursued.

1.4 IIPA Study Approach

IIPA has been entrusted by CPCB to suggest reform and strengthening of the organization to meet its present responsibilities. Clearly, this is a repeat exercise especially in a situation where previous study recommendations have still to be fully implemented. Preceding reports have highlighted common areas of weakness as also made progressive suggestions to make the CPCB lean, networked, efficient, effective and self-sufficient. Keeping these in view, the present study aims at suggesting measures for to build capacity in the organization in a phased manner which will enable the organization to fulfill its legal mandate and which may be acceptable to the Central and State Governments.

1.5 Methodology

1.5.1 Primary data collection

- Primary data from Head Office, Regional Directorates, State Pollution Control Boards has been collected via a questionnaire based surveys (Annexure-I) and interviews at the CPCB Head Office
- Discussions with the key stakeholders' viz. Officials of HO and Regional Directorates were held
- Brainstorming sessions with different stakeholders



Consultation Workshop



1.5.2 Secondary data collection

Reports from peer research organizations, CPCB and SPCB annual reports are taken into account.

1.5.3 Sources of Data

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

- Interaction and discussion with officials at CPCB headquarters
- Interaction and discussion with officials at CPCB Regional Directorates
- 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 within the scope of the study

Chapter 2 CPCB's Mandate: Command & Control

2.1 Origin and History

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 [E (P) Act] 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.

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.

2.2 Role of CPCB

2.2.1 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 E(P) Act;
- Co-coordinating role under rules framed under E(P) Act

2.2.2 Advisory

- To Central government and to judiciary (as per directions) on matters pertaining to abatement of pollution
- Co-ordination under bilateral/multi-lateral agreements

2.2.3 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 E(P) Act Labs/Proficiency test

2.3 Core Functions

- 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;

2.3.1 Additional Responsibilities given by MoEF&CC 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 Hazardous Waste Rules
13. Water quality monitoring under GAP / YAP of 16 cities for Air Pollution Control
14. STP performance set up under GAP / YAP
15. Annual Graded Response
16. Coordination cell for implementation and preparation of guidelines under newly notified Acts/ Rules

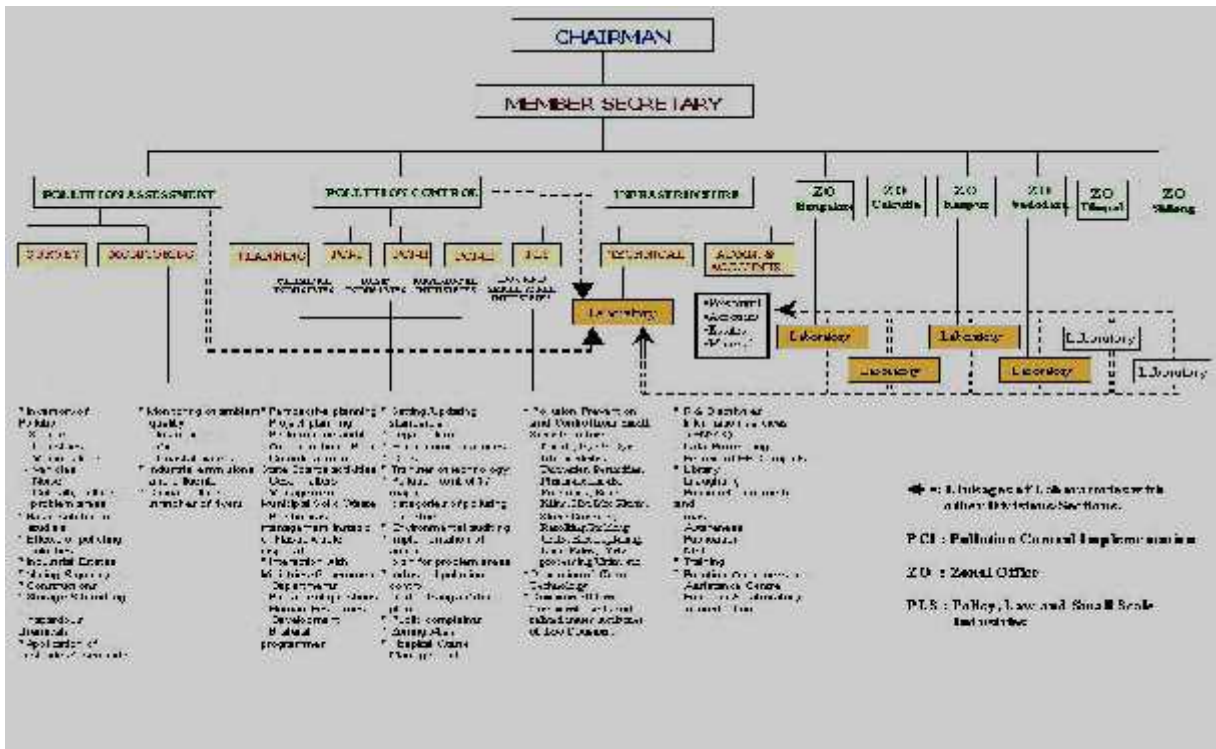


Figure 2.1 Erstwhile Divisional functions of CPCB

2.4 Current Workload trend

As discussed earlier the main role and functions of CPCB can be broadly categorized into three major heads namely

(i) *Environmental Research*

The Environmental Research and Development majorly comprises pollution Assessment (Survey and Monitoring), scientific, technical Activities and R&D Activities, Industrial Pollution Control (standards, enforcements and technologies); Development of Standards, Enforcement and Technology. There are thrust area linkages with other R&D institutions. It can be seen below that the workload in terms of environmental research has scaled up over the last few decades. The timeline is depicted as the decadal growth of environmental research and monitoring over a span of four decades as shown in Figure 2.2 (a), (b), (c) and (d).

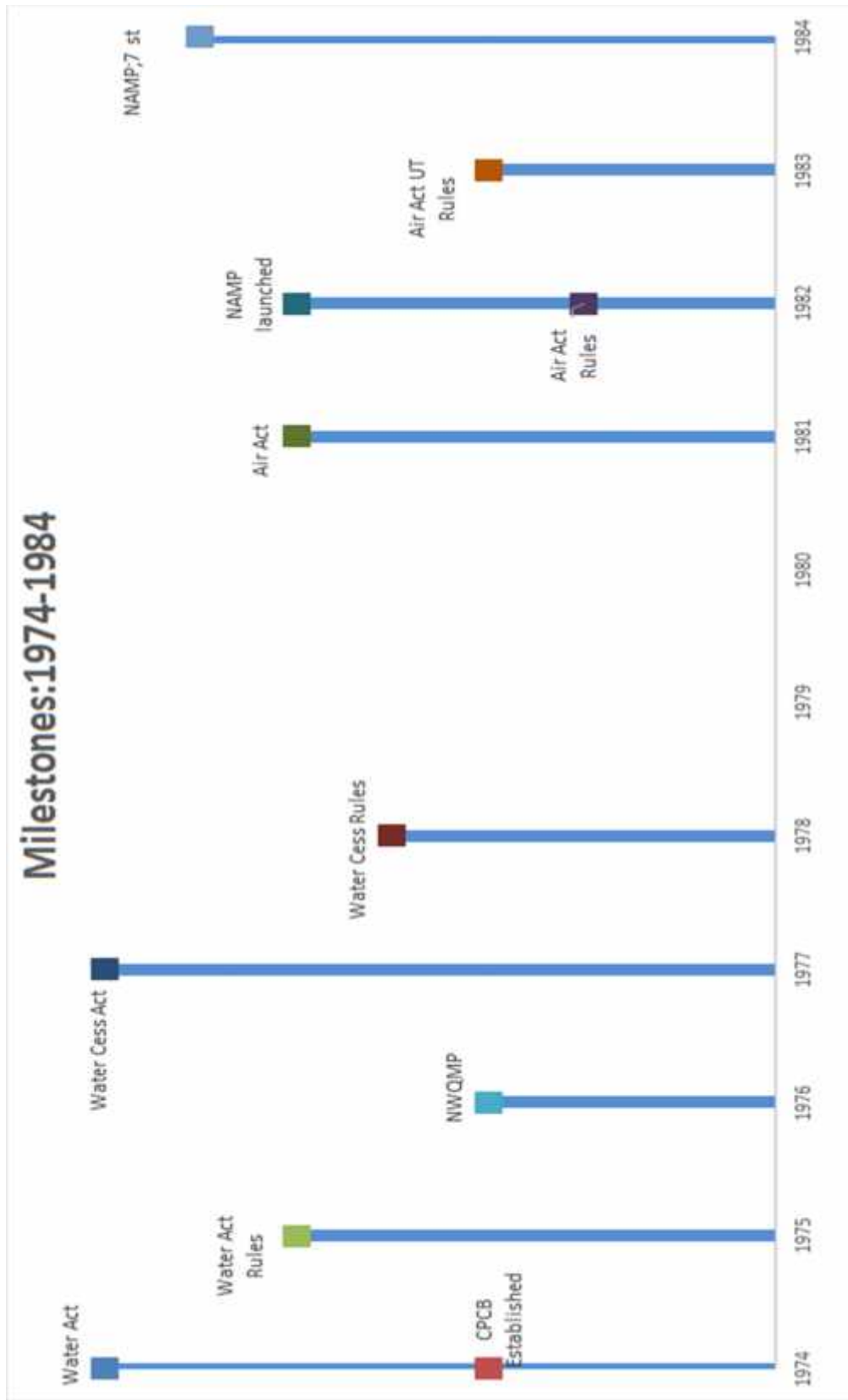


Figure 2.2 (a): Milestones: Decade 1974-1984

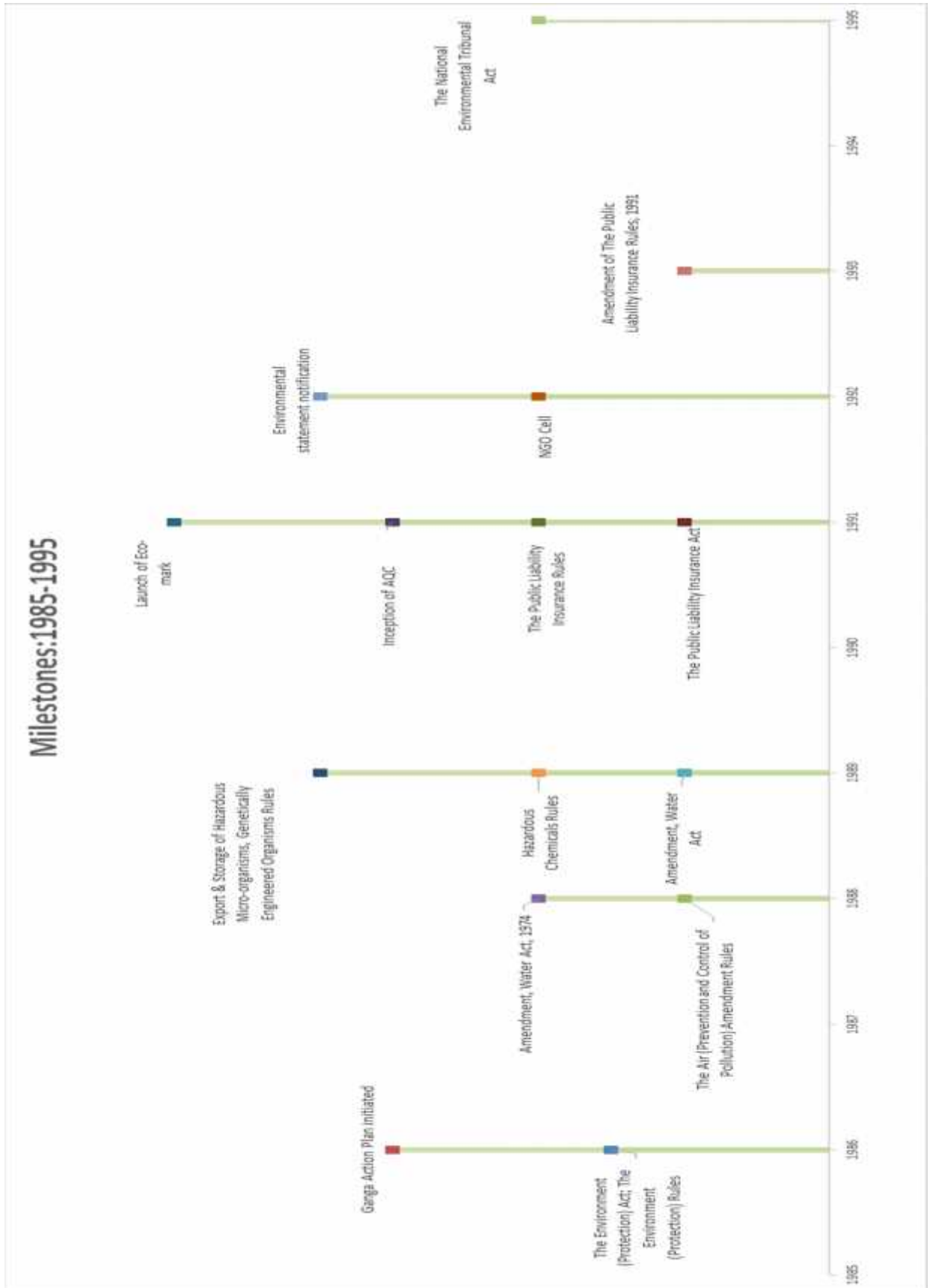


Figure 2.2 (b) Milestones: Decade 1985-1995

Figure 2.2 (c) Milestones: Decade 1996-2006

Figure 2.2 (d) Milestones: Decade 2007-2015

(ii) *Legal Functions*

Over the decades the numbers of cases under different jurisdiction are on a constant rise. The cases of different courts viz. Supreme Court, High Court, NGT, Benches and Tribunals over the years from 1984 to 2016 have shown an upward trend. A spurt in the legal activities is very clearly observed after the establishment of National Green Tribunal in 2010.

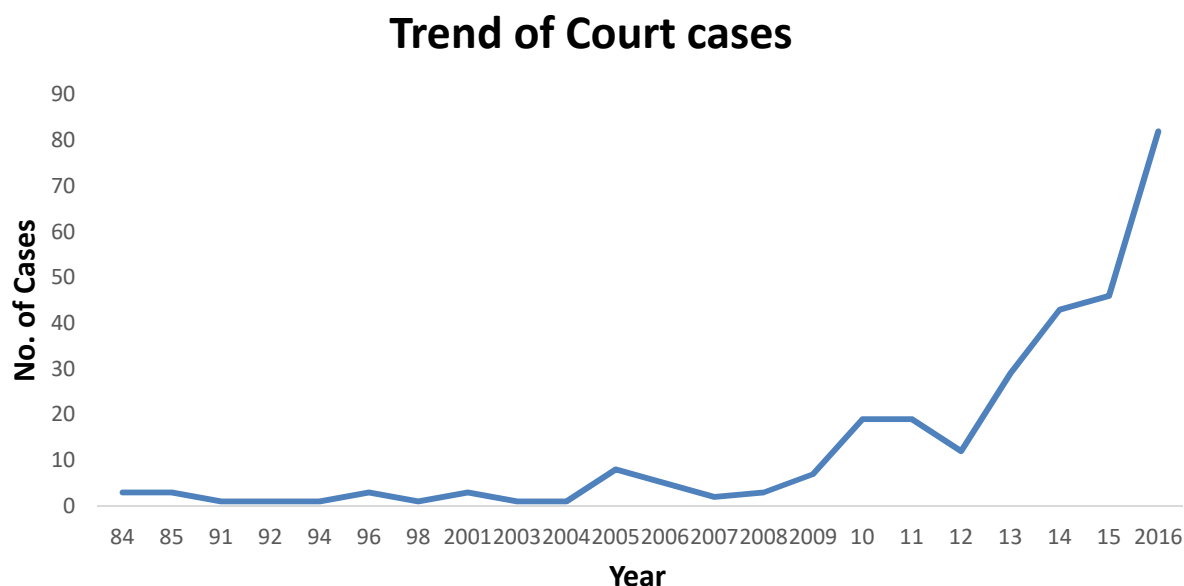


Figure 2.3 Trend of legal activities

(iii) *Training and dissemination*

Training is essential for human resource development of any organization. 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. As per Section 16 of the water Act of 1974 and the Air Act of 1981 also emphasize, 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

assesses and forwards the need of training to Environmental Training Unit (ETU). On job training as well as training for deputation is provided by this division.

As clearly depicted in the figure 2.4, the training and dissemination activities of CPCB have shown a progressive trend. It is remarkable to note that maximum number of trainings, sync with the formation of National Green Tribunal i.e. in the year 2010-2011. It is also seen that the number of trainings see a sharp dip in the year 2013-14 for the want of allocation of funds under ETU division.

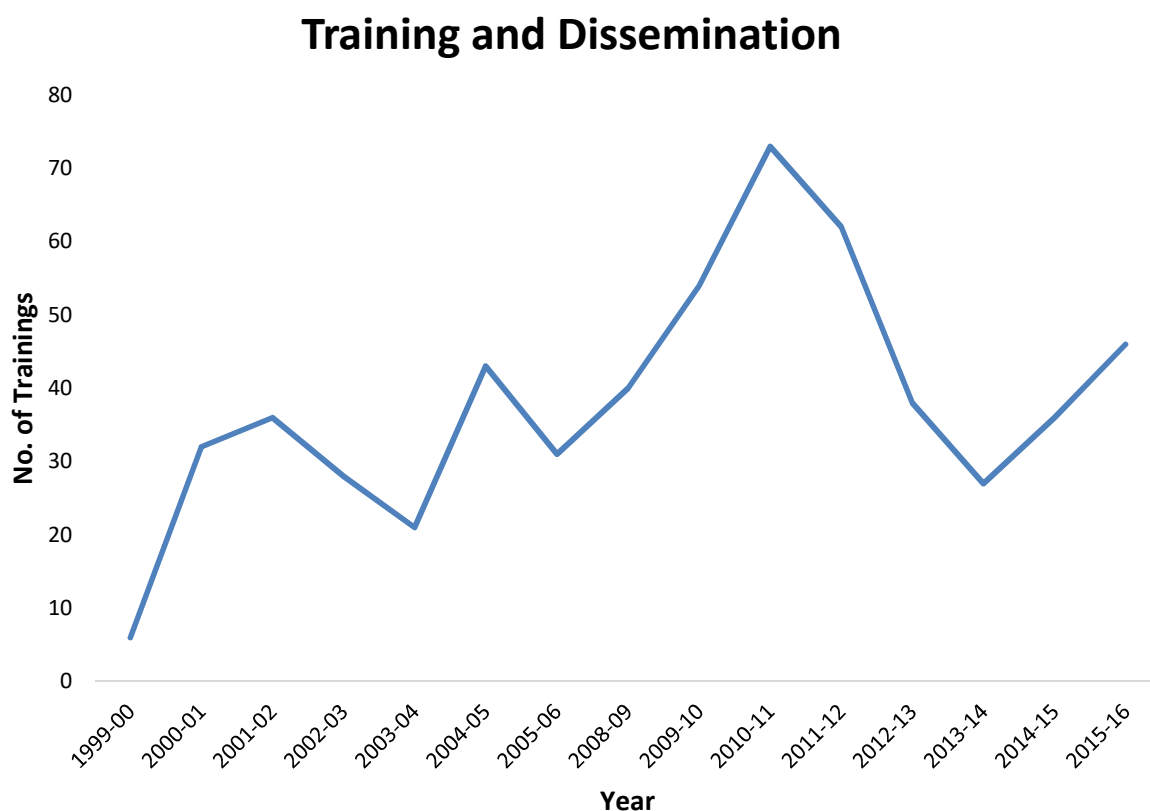


Figure 2.4 Trend of Trainings and Dissemination

As it is clearly depicted from the timeline of milestones and the line graphs that the workload has increased in all major sectors of CPCB. The recruitment of manpower does not commensurate with the increased workload.

The figure 2.5 shows the trend between the sanctioned and the in-position manpower. As it can be inferred from the graph the sanctioned posts show a decline from 2013 onwards. Although the workload was relatively lesser in 2011 with respect to 2013 the number of sanctioned posts shows a major decline.

Manpower: Sanctioned and In-Position

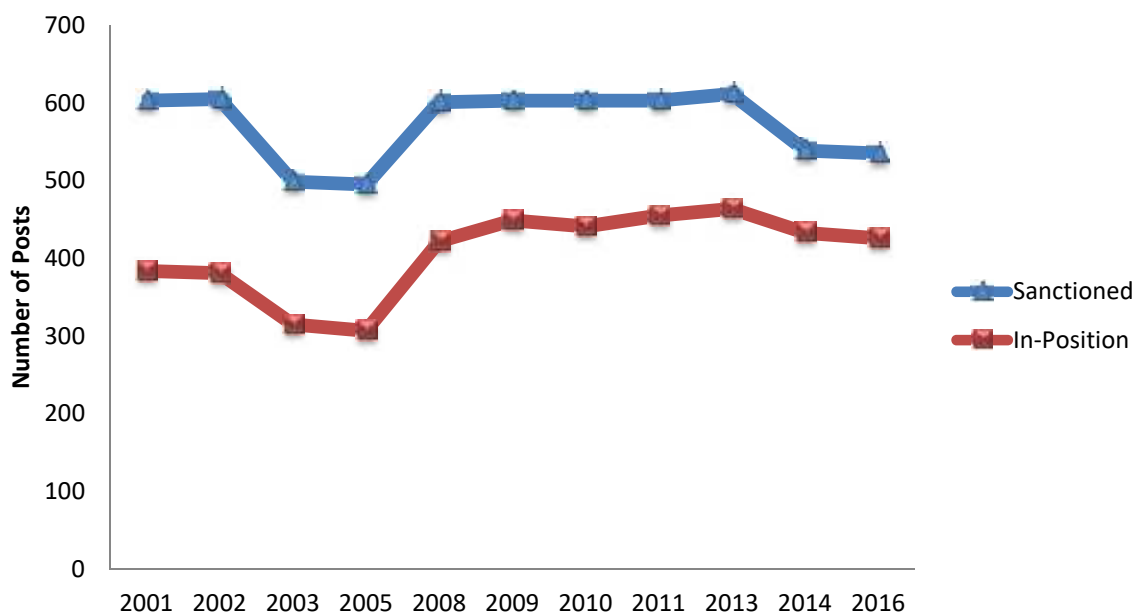


Figure 2.5 Status of staff sanctioned and in-positioned

The gap between the sanctioned and the in-position manpower has been a constant feature almost annually. It is disconcerting to note that there has been a gap in the sanctioned posts and the in-position staff over the years. The reasons may vary from non-availability of competent candidates to lack of funds or due to some internal reason. It is equally essential to probe for attrition within CPCB. The issue is how CPCB can attract and retain well qualified scientific /technical staff. This 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.

Chapter 3: CPCB: a citizen's perspective

3.1 The gap between expectations and solutions

In the ultimate analysis all State agencies work for the citizen and the Environmental agencies at the Centre and State levels are no exception. The citizen on the other hand, is more concerned with perceptible environmental outcomes rather than the process of achieving them.

With increasing emphasis on the speed of development, coupled with burgeoning urbanization and population concentrations, it is becoming apparent for the citizenry that the protection from clean air, clean water and the support of nature in their daily lifescape are being seriously compromised. Recurring instances of cities violating air pollution norms, rivers and other water bodies getting polluted due to discharge of untreated sewage and industrial wastewater, indiscriminate disposal of solid waste causing degradation and pollution of land and the like are a source of concern for health and ecology. In addition to pollution of ambient air, the pollution of indoor air, inter alia due to accumulation of smoke and aerosols from burning of biomass for cooking and waste disposal especially in rural and peri-urban households is a matter of concern because of its adverse health impacts faced by most vulnerable sections of society – women, small children and senior citizens. These issues have to be addressed in a timely, scientific and continuing format. Though not quite patent, citizens expect a clear commitment of the State and Governments to pursue a development agenda which is environmentally sustainable, based on a strategy that not only preserves and maintains natural resources but also provides equitable access to those who are generally denied.

In environmental reporting, the media has been very progressive and informative for the citizen. A time has come when courts, civil society, media on behalf of the citizens and often the citizens directly, challenge the Ministry, the CPCB and the SPCBs should do something. However responding adequately to environmental blights remains out of reach mainly because of a multiplicity of agencies responsible as also a total lack of capacity and infrastructure in these organizations. Beyond trading blame among local authorities and the Pollution Control

Boards; placing ambient monitoring results in the public domain and closing a few industries temporarily there is no further enforcement. Conversely, the CPCB with its meager 150 employees nationally and the SPCBs in the States together form perhaps the only technically competent and administratively experienced group of expertise that can bridge the gap between citizen expectation and Government responsiveness.

3.2 The holistic nature of the citizen-perspective

The Ministry of Environment, Forests and Climate Change (MoEF&CC) is the nodal agency in the administrative structure of the Central Government for the planning, promotion, co-ordination and overseeing the implementation of India's environment and forest -related policies and programmes. Though environmental issues are cross-sectoral, multi-dimensional and requires very flexible handling between being proactive and reactive, the Ministry like its technical arm the CPCB is structured like any other Government organization. Vertical and monolithic, the MoEF&CC needs horizontally competent technical enforcement which the CPCB can be geared and empowered to provide.

The Citizen's perspective is neither departmental nor sectoral. The problem is best appreciated by her/him holistically as air-pollution over Delhi, Ganga pollution, solid waste pile-ups in Bengaluru and the like. This would require an equally holistic response from the State agencies. As one Authority de-concentrated and technically, sectorally and administratively competent to deal with environmental problems on an area basis. The present division of responsibilities among Ministries, Departments, Boards, Centre-State Governments and local authorities make it difficult to develop the required synergies and seamless implementation of policies. An Area-based approach would entail the concentration of all environmental and sectoral agencies in specially polluted watersheds and airsheds. Concentrated monitoring and information dissemination in such areas, frequent sampling in industrial zones and estates; holistic application of remediation and rectification methods in polluted areas following time lines and action plans; making environmental and sanitary clean-ups especially in well-known polluted pockets perceptible and citizen friendly attitudes would go a long way to rectify affected areas progressively. The existing laws in the Water

Act, Air Act and the E(P)Act are adequate to achieve holistic area-based solutions thus making the Government-citizen relationship more of a partnership than clientelism.

The holistic nature of the problem cannot be met merely with a command and control approach against industry. Industrial pollution is a very small part of the problem. The CPCB and the SPCBs must grow into robust organizations which can technically and legally regulate any source of pollution on an area basis. New solutions through applied research and innovative economic instruments have to proceed simultaneously with regulation. Citizens 'and Civil Society participation in environmental regulation is also a crying need which organizations like the CPCB and SPCBs can be strengthened to support. In fact, the CPCB motto, "In pursuit of Clean Environment" is itself a commitment towards operating horizontally within natural boundaries rather than being constrained in a limited departmental mode. Only then would the Ministry be able to stand up to the citizens' pressure.

The total annual plan of the MoEF is currently of the order of Rs 2000 crores, which is about 0.25% of GoI's plan budget. The expenditure on environment in India is a very small fraction of the GDP, much below most developed and emerging economies. Currently, the percentage of GDP spent on environment in India is 0.012, whereas it is 1.0 in Japan, 0.4 in USA and 0.3 in Netherlands. (Strategic Planning 2012-13 to 2016-17, MoEF&CC) .To meet the growing pressure of responsible governance the capacity of crucial support agencies like the CPCB has to be strengthened legally, technically and managerially. Public Interest Litigation (PIL) and other court cases against CPCB and SPCBs are on the rise in many States, which - albeit a positive sign of civil activism - is further eroding the capacity of regulatory bodies to inspect and enforce as its already limited staff resources are re-allocated to dealing with court litigation. The CPCB's regular R&D outputs especially useful in the area of bio-remediation have almost stopped due mainly to pre-occupation of staff in courts. Notwithstanding that the volume and complexity of workload is growing disproportionately to the technical personnel, skills and resources, the problem is often exacerbated by indiscriminate recruitment embargoes of core technical staff.

Citizens 'understanding of environmental impacts, their origin, health-effects and other consequences besides their cost-effective mitigation strategies, while evolving gradually, is still incomplete, particularly with respect to cross-sectoral cumulative impacts.

All of this further complicates the formulation and delivery of an effective regulatory response that would benefit from a broad-based support. The lack of environmental management capacity in crucial delivery agencies today can lead to more lethal environmental conditions tomorrow. We are now living in a world where threats to our environment are clear to see. These threats —global warming, climate change, deforestation, ruptures in the ozone layer, water pollution, air pollution, soil degradation and acidification etc. are increasingly becoming matters of public debate that prompts us to mend our ways of living to mitigate stress on the environment we live in. In the long run there may be need for an empowered and technically competent Apex Authority growing out of an expanded CPCB or being supported by a much strengthened and robust CPCB which can do justice to the growing environmental woes of the citizen. With an increase in economic activity—Indian GDP has been growing at about 6.5 % —the environmental hazards can only escalate if existing resource-intensive practices continue (CSO &IMF, 2016).

3.3 Relationship between CPCB, MoEF& CC and the SPCBs

The CPCB serves as a technical adjunct of the Ministry and coordinates with the State Pollution Control Boards (SPCBs)/Pollution Control Committees (PCCs) for implementation of plans and programmes relating to abatement of pollution. It is the Nodal technical Agency for implementation of policies and programmes relating to environment protection and conservation of the country's natural resources. Ministry formulates policies and enacts legislation at the national level. Apart from the CPCB headquarters at New Delhi, it has six Regional Directorates at Bengaluru, Kolkata, Shillong, Bhopal, Vadodara and Lucknow. Central Pollution Control Board (CPCB) has been established under the Water (Prevention and Control of Pollution) Act, in November 1974 to implement the nation-wide programme on abatement of pollution. After the enactment of the Air (Prevention and Control of Pollution) Act, 1981, CPCB is also mandated with the responsibility of prevention and control of air pollution in the country. Emission/discharge standards are notified from time to time under the Environment Protection Act, 1981 for their implementation through the SPCBs. The CPCB coordinates with the SPCBs/PCCs on matters pertaining to prevention and control of pollution in the country. It undertakes random inspections for verifying compliance and adherence by industries to pollution-control norms and standards. The SPCBs/PCCs are given

responsibilities of prevention and control of air pollution under the Air Act. The State/UT Governments are required to review the functioning of the SPCBs/PCCs and also to strengthen them to achieve the objectives envisaged under the Water and Air Acts. SPCBs/PCCs implement the standards with respect to industries and local bodies as notified under the EPA through a mechanism of issue of consent and authorization. The monitoring of stipulated norms is carried out by SPCBs/PCCs and their zonal/regional offices through inspections.

Legislative back up for pollution control in the country commenced with the enactment of the Water (Prevention and Control of Pollution) Act, 1974, Air (Prevention and Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986 and recently the National Green Tribunal Act, 2010. To implement these legislations, the Ministry formulated various regulatory instruments (e.g., environment standards, consent administration, authorization, environment clearances, etc.) and created institutional infrastructures at the national, regional and state levels in the form of Central Pollution Control Board (CPCB), regional offices of MoEF&CC and CPCB, State Pollution Control Boards/Pollution Control Committees (SPCBs/PCCs), State Department of Environment, and Environmental Research Institutes/Organizations, etc. The Ministry has also launched several schemes to strengthen the regulatory mechanism for pollution abatement. These include institutional strengthening, creation of common treatment facilities, establishment of Environmental Commission and Tribunals, Industrial Pollution Abatement through Promotion of Clean Technology and Preventive Strategies. In addition to these, forward-looking and far-reaching initiatives like Charter on Corporate Responsibilities for Environment Protection (CREP), Comprehensive Environmental Pollution Index (CEPI) for estimation of pollution load in Industrial Clusters, recognition of environmental laboratories and a roadmap for Bharat Stage emission-norms are also being implemented. In addition to expansion and modernization of monitoring network and existing testing facilities, new laboratories are set up to augment the monitoring and testing infrastructure in the country. Officers of SPCBs/PCCs are imparted training covering both specialized and general thematic areas for augmenting their capabilities in improving compliance and enforcement. Though more than a hundred laws, rules, notifications, judicial case laws have developed in Environmental management in India enforcement remains a key

concern. The E (P) Act has been in force since 1986. Even after years, the penalties mandated for environmental violations remain unchanged. These penalties no longer act as a deterrent for defaulting industries, let alone Local Authorities in charge of domestic water and air pollution under the mandate of the 73rd and 74th Amendments. Effectiveness of SPCBs enforcement efforts is limited. Some states have employed a bank guarantee to ensure compliance with the SPCB directives on consent to operate. Under this, the non-complying firm needs to post a bank guarantee to ensure implementation of the corrective actions within the stipulated timeframe. In case of noncompliance, the guarantee is forfeited. This acts as a powerful disincentive for a violator and a deterrent against future non-compliance. Self-monitoring in industries, reporting and verification process needs to be refined and appropriate provisions are needed to be included in the E (P) Act itself. Disclosure statements need to be put in the public domain to ensure oversight by the civil society and its appropriate linkage with the regulatory regime. Enabling provisions are required to be made in the E(P)Act for regulatory authorities to levy and collect fees for providing specific services. These measures would improve the financial health of these agencies and thus, make them more effective. Ministry has notified the Municipal Solid Waste (Management and Handling) Rules, in 2000, which is applicable to every municipal authority responsible for collection, segregation, storage, transportation, processing and disposal of municipal solid wastes in the country.

Environmental Monitoring and Governance Project and programmes are executed through in-house efforts and with the assistance of Research Institutions like IITs, Engineering Colleges, Universities and R & D Institutions. In addition to the implementation of Water and Air Acts, CPCB has planned various programmes relating to implementation of Rules framed under the Environment Protection Act, 1986 such as Hazardous Wastes (Management, Handling & Trans-boundary Movement) Rules, Bio-medical Waste, Municipal Solid Wastes, Plastics Waste and others. The plans and programmes are formulated based on the thrust areas identified by the Ministry of Environment and Forests under the National Environment Policy, 2006 and also as per the issues raised by the State Pollution Control Boards (SPCBs) and Pollution Control Committees (PCCs). As per the Act, the SPCBs are the main implementing agency for prevention and control of pollution in a respective state,

while the major role of Regional Directorates 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 delay in conducting the analyses and to prepare time targeted actions, Regional Directorates are also equipped with laboratory facilities.

A World Bank Report has cited examples of several SPCBs to develop a medium term capacity strengthening action plan to meet the current and projected workload, including the requirements of the RTIA and the recent increases in court cases. These plans first explore the possible efficiency gains through: rationalizing processes, upgrading technology (e.g. full computerization of application processing, greater use of continuous environmental monitoring when possible); decentralizing responsibilities to regional offices, along with staff, resources and equipment; outsourcing certain non-core functions; training to upgrade skills, etc. (World Bank Report, 2006)

A system of oversight between the center and States needs to be strengthened to ascertain greater accountability for the level of performance by State environmental agencies, which varies greatly across states. The MoEF&CC and CPCB should consider introducing a performance-based program of support to SPCBs, which would be rewarded for achieving/exceeding the agreed performance targets, in addition to the “need-based” technical assistance to SPCBs with particularly low capacity (e.g. in new and/or poorer States).

Effective environmental enforcement requires informed consensus on environmental management objectives and policies that are based on a good understanding of the shared roles and responsibilities of all players, including the regulator, the regulated community (developers and polluters) and the affected community (general public). This fundamental notion of *shared responsibility* is currently challenged in India by the general perception among the public, project proponents, and development authorities alike that environmental ills are the sole responsibility of environmental agencies failing to effectively implement and enforce the laws. Public disclosure of environmental information and citizen participation in

monitoring has the power to motivate better compliance by holding the industry and government agencies accountable for their performance and decisions. It is important to continue supporting citizen-monitoring efforts that CPCB/SPCBs have initiated by promoting public-private partnerships for compliance monitoring and establishing public notification procedures for sharing relevant data. Mere monitoring without any corrective and preventive follow up action is not productive. There is also a need to have new and much more aggressive strategies to deal with the problem of air pollution in our cities. While monitoring is geared up to monitor Pollution in A class cities, smaller cities are fast catching up with the same critical pollution levels. Thus generating a greater need to decentralize the responsibility down to the municipal/local and district levels

Citizens' reports in media express serious concern over the way the problem of water pollution is being handled especially for large watersheds like the Ganga. River Yamuna over the years has virtually turned into a "*Nallah*" despite crores of rupees being spent on its cleaning and upkeep. The health of prominent rivers like the Ganga and others is not much better.

There are recommendations that programmes such as revamped river conservation should include a revised institutional design, which provides the State Governments with the legal mandate to ensure river cleaning. The State should be given incentives and disincentives for not meeting targets for river water quality standards. The programme must be geared towards ensuring that all urban wastewater is treated so that the health of waterbodies can be restored. The programme for sewage treatment must ensure that it is cost-effective and focused towards reuse and recycling of water.

As India's economy continues to accelerate, the performance of the environmental regulator will come under increased scrutiny and pressure. However unless the increasing public demand for better performance by environmental regulatory agencies is matched by adequate support to these agencies, conditioned on institutional reforms to increase efficiency, capacity, transparency and accountability, it would be naive to expect substantial progress and unfair to solely blame the regulator for the lack of it.

3.4 Global Institutes: Compare and Contrast

India is the pioneer nation to include provisions for the protection and improvement of environment in its Constitution (Pollution Control Act - Central Pollution Control Board). Although the actual existence of provisions to deal with issues of environmental pollution were set in after the Stockholm Conference on Human Environment (June, 1972), the need for uniform laws for environment protection across the nation was realized much before.

In 1974, the Parliament enacted The Water (Prevention and Control of Pollution) Act as its first endeavor in this regard. Through this act the CPCB and SPCBs were established.

The CPCB and the Ministry of Environmental Protection (MEP), China were established in the same decade as the United States Environmental Protection Agency (US EPA). Unlike CPCB which partly works as an advisory board to the MoEF&CC, the MEP is the only body that looks after environment protection in China.

Being the nodal agency for environment CPCB is required to lead by example for state boards and other allied organizations. Adopting sustainable measures in the functioning and infrastructure of the organization will help make colossal differences to start with. Taking the case of US EPA, it was the foremost federal agency to acquire renewable energy up to 100 percent of its projected annual electricity consumption across US (<https://www.epa.gov/greeningepa/renewable-energy>). Constructing and incorporating new infrastructural changes every time there is enhancement in technology, is not feasible instead incorporating sustainable features in the existing infrastructure should be considered in the CPCB main office and subsequently in the supporting offices in a phased manner.

Table: 3.1 Parity with Global Environmental Agencies

	Central Pollution Control Board	US Environmental Protection Agency	Ministry of Environmental Protection, China
Year of Establishment	1974	1970	1974
Mentor Ministry	MoEF&CC	Congress	State Council
Mission	To achieve desired Environmental goals	To improve human health and environment.	To improve environmental quality and build a beautiful China which enjoys blue sky, green land and clean water.
Infrastructure	Head Office Central Laboratory (6sub-sections) <ul style="list-style-type: none"> • Computer Facilities • Library • Environmental Planning studio i. 6 Regional Directorates ii. 1 Project Office	<ul style="list-style-type: none"> • Office of Administrator • 12 Head offices • 10 Regional offices 	<ul style="list-style-type: none"> • 20 Departments
Apps	<ul style="list-style-type: none"> • SAMEER • Ganga Shravan Abhiyaan • Bio-monitor 	<ul style="list-style-type: none"> • AIRNOW • UV INDEX 	No self-owned apps but there are Air Quality apps which use MEP's data of pollutants to display results.

Table 3.2: Mandates of the environmental agencies in India, US and China

CPCB	US EPA	MEP China
<ul style="list-style-type: none"> • Advise Central government on matters concerning prevention and control of water & air pollution and improvement of the quality of air. • Plan and ensure execution of countrywide programs. • Coordinate with SPCBs and resolve conflicts amongst them. • Provide technical assistance and guidance to State Boards; sponsor investigations and research relating to water and air pollution and for their prevention, control or abatement. • Plan and organize trainings of persons engaged. • Organize mass awareness programme. 	<ul style="list-style-type: none"> • Protect all Americans from the significant risks to human health and environment • Reduce environmental risk based on best available scientific information • Ensure enforcement of federal laws protecting human health and environment. • Make environmental protection a vital consideration in US • Provide sufficient information for all parts of society to participate in mitigating risks to human health and environment. • Ensure environmental protection adds to making communities and ecosystems 	<ul style="list-style-type: none"> • Establish basic system for environment protection. • Responsible for overall coordination, supervision and administration of major environmental problems. • Undertake responsibilities to attain national pollution reduction targets • Contribute opinions on size and direction of fixed asset investment, allocation of fiscal funds within purview prescribed by State council. • Take precautionary measures against pollution at source and control environmental damage. • Supervise and administer prevention and control of environmental pollution. • Guide, coordinate and oversee ecological conservation effort. • Supervise and administer nuclear safety and radiation safety.

<ul style="list-style-type: none"> • Collect, compile, publish technical and statistical data • Prepare manual, codes and guidelines • Disseminate information • Lay down, modify and annul standards • Establish/ recognize laboratories to enable the board to perform. • Perform such other functions as and when prescribed by the government of India. 	<p>diverse, sustainable and economically prolific.</p> <ul style="list-style-type: none"> • Ensure that United States plays a leadership role in working with other nations to protect global environment. 	<ul style="list-style-type: none"> • Environmental monitoring and information release. • Carry out environment protection science and technology activities. • Conduct international cooperation and communications on environmental protection. • Organize, guide and coordinate environmental communications and education. • Undertake tasks assigned by State Council.
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From Table 3.2 it is clear that the mandates of CPCB are laid on the lines of pollution prevention, control and abatement whereas the mandates of US EPA and MEP have a holistic perception of environment. As one of its mandate, CPCB plays advisory role to the central government of India which is not the case in case of US EPA but to some extent is a part of MEP's mandates. As the scope of work mandated for CPCB since its inception has increased manifolds, this necessitates CPCB to define its area of work to ensure effective functioning. This prevents overlap of work areas thus making grievance redressal easier. The present approach of CPCB is reactive rather than proactive, albeit the mandate mentions otherwise.

CPCB is responsible by reference of its mandate for prevention, control and abatement of pollution whereas US EPA and MEP include ecological conservation and nuclear safety domains too. CPCB needs to have credibility in terms its own standards that are recognized globally.

3.5 CPCB and SDGs: Vision 2030

Looking at the priorities it is marked that CPCB's operations are mapped along various Sustainable Development Goals (SDG). To achieve a true apex body stature CPCB needs to inculcate the SDGs in its role and its mode of operations. This could be accomplished through diminishing its environmental footprint, exhibiting authority among other federal agencies. CPCB can strategically plan and establish organization's internal goals to optimize its resource utilization, and other environmental impacts as adopted by the US EPA. After initiating a strategic plan CPCB can direct the RDs and SPCBs to incorporate sustainable features across its facilities, purchases and operations. It can tread on the path to emulate in novel thrust area viz. Climate change resilience, Electronics stewardship and the like. Table 3.3 highlights a few of the SDGs and how CPCB can work to contribute to fructify those goals.

Table 3.3 Achieving Sustainable Development Goals

Goal	Sustainable Development Goal Description	How is CPCB contributing or can contribute to fulfill these goals
SDG 6	Ensure access to water and sanitation for all	Develop necessary Guidelines and ensure its enforcement
SDG 7	Ensure access to affordable, reliable, sustainable and modern energy for all	Dynamic R&D on modern and sustainable sources of energy
SDG 8	Promote inclusive and sustainable economic growth, employment and decent work for all	Contract jobs to be encouraged
SDG 11	Make cities inclusive, safe, resilient and sustainable	Incorporate green building designs
SDG 12	Ensure sustainable consumption and production patterns	Incorporate Sustainable/ Green purchasing
SDG 13	Take urgent action to combat climate change and its impacts	Develop Climate Change adaptation Programs/plans
SDG 14	Conserve and sustainably use the oceans, seas and marine resources	Coordinate with Marine Research, Coast guard and other coastal agencies as a large amount of Sea-pollution is caused by land based sources.
SDG 15	Sustainably manage forests, combat desertification, halt and reverse land degradation, halt biodiversity loss	Proper monitoring of Waste lands, landfill sites
SDG 17	Revitalize the global partnership for sustainable development	Encourage local partnerships, PPP models and BOLT models

Chapter 4: Meeting citizen expectations

4.1 Transition in focus of Monitoring and Regulation: Point source to Area – based indexing

Environmental pollution has increased tremendously across India. A vast majority of cities are caught inextricably in the toxic web as environmental quality fails to meet health-based standards. Almost all urban areas are reeling under severe particulate pollution while other pollutants like oxides of nitrogen and environmental toxics have begun to add to the public health challenge. Research literature point to the abnormal state of the country's surface water quality which is more than 90% polluted, ranking India at 120th out of 122 countries compared for ambient water quality (Sabine *et al*, 2004). India's capacity to monitor and assess the problem of pollution remains inadequate and this impedes nationwide planning and action. The city-specific model of management, compliance and enforcement is still quite inadequate. This also exposes the fact that our industry and source-based concentration in pollution control needs a fresh look. . Environmental quality governance in India has not matured enough to aid composite Environmental quality planning. We may be missing the point that the ultimate objective of setting standards for both mobile and point sources is to meet the ambient health Standards over all receptors in a watershed (sub-micro watersheds) and airshed. Epidemiological studies are few and far between. But if undertaken routinely within natural boundaries the public health status results would be revealing of the devastation caused and which is going on. Natural boundaries and not administrative jurisdictions should be the criterion of monitoring and resultant regulation. National laws need to be supported by strong implementation plans. This is possible only if regional/area wise quality targets are set and more stringent prevention and remediation laws are enforced in problem areas. This is the overriding logic that governs the standard-setting processes in countries like the US (The Leapfrog Factor- Managing air quality, 2004)

Therefore, the Union government needs to develop a national environmental quality plan that should also set regional load standard and time- targets in partnership with State Governments. Necessary legal amendments may have to enable this change. On the basis of

these standards, non-attainment areas should be identified and remedial action should be taken to reduce pollution levels and clean-up embedded pollution in soil, water and groundwater.

On a nationwide scale, very few pollutants are monitored on a regular basis, making risk assessment difficult. The planners do not have a complete understanding of the whole range of local environmental and natural peculiarities to assess exposure levels. Future monitoring results need to come with health advisories. This practice is being followed in many Western countries with an air pollution problem, where health implications are studied based on actual ground-level concentration monitoring using mobile monitors. Apart from creating a health advisory, monitoring also helps in assessing the impact of pollution control decisions on Environmental quality. In India, despite advances in the scale and scope of quality monitoring in recent years, major hurdles persist in getting comprehensive data, which can pass the muster of rigorous quality control criteria. Poor data quality and weak institutional capacity to assess pollution source-liability especially in groups where source-segregation is difficult, creates fragmented planning and sometimes knee-jerk responses. It is not always clear from existing studies and without source-segregation as to which pollution sources are important in terms of maximum toxic exposure of the population. As a result, policy-makers are often not clear in interpreting and using the results of these studies for their decisions. For instance, contribution of vehicles to finer particulate pollution load in India is often played down to stave off hard decisions. It is clear that the regulatory authorities will have to develop the capacity for autonomous environmental quality planning, moving from point source to natural boundaries monitoring planning and regulation.

Effective environmental performance of regulating agencies would lie in moving from source-based monitoring and command and control to natural area (sub-watersheds and sub-airsheds) based participatory environmental governance. In India, it is common sense to acknowledge that in the regions of high population densities (urban-industrial zones) even if all sources discharge pollution within source standards the ambient receptor-media whether surface water or air are already too polluted to allow a difference. A comprehensive basin wide management approach, rather than a focus on point sources in isolation, provides opportunities to also achieve least-cost pollutant reductions. A comprehensive approach also provides

opportunities for targeting reductions in areas where they will be most effective and are most needed. Implementation mechanisms (including appropriate enforcement measures) are important in creating compliance incentives where economic incentives are absent or fail.

A watershed/ Airshed plan is a strategy and roadmap for achieving environmental quality resource goals. Watershed/Airshed plans provide the technical basis to guide work related to pollutant loads, sources, and Best Management Practices (BMPs) strategically prioritized in critical growth-projection areas that will have the greatest impact on water/air quality. Watershed/ Airshed plans lay out the roadmaps for water/air quality improvement and very importantly, maintenance and sustained performance.

Under a natural-boundary or landscape approach, equal emphasis is placed on protecting healthy water/ air and restoring impaired ones. Involving stakeholder groups, using economic instruments, cultural practice, local academia and civil society, local authorities, local industry associations and regional/lower officers of SPCBs all in relevantly empowered committees under the three major environmental Acts, monitoring and regulating small jurisdictions would be the publicly preferred de-centralized methodology of the future.

And the CPCB is ideally provisioned for achieving such a vision in partnership with the State Boards and local authorities.

There is enough evidence that non-point pollution from both urban and rural sources has always been the dominant source of water quality impairment (Incentive analysis for clean water act Reauthorization: Point -source/Non-point source trading for nutrient discharge reductions, Office of Policy, Planning and Evaluation, U.S. Environ). CPCB data shows that in surface water contamination only 30% of water pollution can be attributable to industry and the rest to domestic non-point discharge. Neither the CPCB nor the SPCBs conduct routine monitoring of non-point pollution and are unable to respond to public outcry against sudden discharges from domestic or agricultural sources. Hence, non-point regulation has to be added to the responsibilities of the CPCB and the SPCBs. An apex regulatory body like CPCB has to also get into environmental zoning to enable volumetric-load based standards and corresponding pollution charge modeling within critically polluted watersheds so that pollution remediation can be targeted and followed up.

The CPCB must leverage its legal status and deal with all legal issues in a holistic

manner rather than merely depending on data supply and reporting to courts. The Acts delegate responsibilities on CPCB, which must be complied with to ensure the desired environmental outcome. It should suggest the framing of appropriate amendments in all relevant statutes to enable the changes required in approach and in the processes of environmental governance. Besides covering industries and other private entities, it should also have the provision to impose heavy penalties on government agencies, local bodies and state-run institutions. These measures will help to deal with the challenge of urban pollution and industrial waste management. Historically, offences associated with non-compliance of environmental legislation have been addressed in the UK through criminal sanctions such as cautions or prosecutions. In order to provide regulators with an alternative to criminal sanctions, the Regulatory Enforcement and Sanctions Act was introduced in 2008, which made available a range of civil sanctions for environmental regulators, including monetary penalties and/or enforcement undertakings (a written undertaking of action by an organization or individual that is enforceable in a court), that do not require circuitous processes of prosecution. The latter enforcement undertakings provide regulators with greater flexibility in securing environmental compliance for a range of environmental offences, whilst reserving prosecution for the more serious offences. There is a dire need of a proper operational framework with fixed accountability and a clear-cut framework for delivery and compliance. Self-reliance rather than PIL or 'court-reliance' is recommended as the way forward.

4.2 Challenges, Issues and Constraints

Little can be achieved in restructuring and strengthening of CPCB without reforming the relationship between the Central Government-CPCB and the SPCBs. It may be noted that by empowering and making the CPCB robust, the Ministry would indirectly be strengthening itself as the technical arm has to work in tandem with the appellate body. Towards this mutually supportive move resources can be mobilized from existing sources like industry cess which as per Section 17 of Water Cess Act, 1947 (read with Order No Q-17011/1/88-CPW dated 28.12.1998 issued by the Ministry of Environment & Forests, Govt. of India) can be used for administrative support services and infrastructure. Studies have been conducted to chalk out reorganization plans ranging from in-house study conducted by CPCB way back in 1987 to the

most recent by IIM Lucknow in 2010. These studies and empirical enquiries including the current study of IIPA have revealed the following challenges ahead in the reform programme:

4.2.1 Human Resources

There has been an acute shortage of staff in CPCB. Though the Board has sophisticated equipment to monitor various types of pollution they do not have sufficient technical manpower to handle it. The strength of officer grade comprises 58 per cent of total technical staff (CPCB, Annual Report, 2014-15). A study to glean the number of days a scientific and Technical person individually and working together devote on monitoring, inspection, analysis and preparation of reports of an industry gave some startling revelations. A technical person in Gujarat PCB spares 1.77 days to monitor an industry in a year, in Karnataka PCB a technical persons gets 1.72 days while in Maharashtra Board the person spends only 1.23 days a year. (Turnaround Reform Agenda for India's Environmental Regulators, Centre for Science and Environment 2009) This average includes time taken on traveling to and fro. One reason for this meager time-allocation for field work is a shortage of technical and scientific human resources in the Board. The policy of Finance Ministry to abolish posts lying vacant for a year has taken a heavy toll. Due cognizance must be given to the fact that it may not be possible to find suitable technically qualified manpower and at any given moment a vacancy arises. But a post lying vacant for a year for want of non- availability of a suitable candidate does not mean that the need for the post is gone. Scientific and critical public services like the CPCB should be viewed with some priority as public health is endangered by environmental regulatory failure. Not just shortage, even decision-making positions are not always in the hands of technically competent or experienced officers in the CPCB. The Prof. M.G.K Menon Committee set up by the Supreme Court with regard to management of Hazardous waste notes that 77 per cent of Chairpersons and 55 per cent of Member Secretaries in different state pollution control boards are not qualified to hold the post. (Department-related PSC on Science and Technology, Environment and Forests, 192nd Report on functioning of Central Pollution Control Board, parliament of India, Rajya Sabha, April, 2008).

Second, the workload and public responsibility of a National environmental regulator like the CPCB would normally be very stressful and publicly and scientifically onerous and in no way less important than say research organizations under the CSIR set up. Yet, there is a gap between the CSIR and CPCB service conditions and perquisites. Experienced personnel from CPCB are hired by the corporate sector offering attractive remuneration and in the process valuable experience is lost. The Chairman, Member-Secretary and other Members of the Board should be persons who have rendered long-standing and distinguished service in the cause of Environment Protection. They should be persons of repute and known competence. They should be appointed for a fixed tenure. Members like Chairman should be full time. A suitable career progression scheme should also be so devised as to act as incentive for the officers and staff of the CPCB to attain the highest positions in the organizational hierarchy. Career planning is very important for morale and transmission of experience and in this CPCB has adopted the Flexible Complimenting Scheme (FCS) system with eligibility of up-gradation to the staff after a period of 3, 4, and 5 years respectively depending upon their present cadre. In FCS, there is no fixed structure and the number in each post varies with upgradations whereas the total number of scientific posts remain same. To meet the aspirations of the staff upgraded under the FCS and also to provide them opportunity to show their capability in handling various issues, a flexible structure is required to be in place. Although the system is in place for scientific posts no such scheme is available for technical posts. It is also observed by the IIPA team that the legal cell and public relations department lack dedicated staff. IIPA study team also observed that there is a dire need for skilled human resources in the field of Environmental- economic modelling, Urban and rural (agro-environmental) environmental management, statistics and standards development in both the Central and Regional Directorates of the CPCB, to enable it to extend holistic services. The need for additional senior posts like Scientist F and Scientist G has also been realized looking at the proportion of work mandated for CPCB and the kind of expertise required.

4.2.2 Absence of functional Autonomy

An important responsibility of the CPCB is enforcement but for that it is dependent on the SPCBs and other State agencies for infrastructure and person-power support. This could cloud

the organization's impartial enquiry or action. The CPCB needs to become more digital and digitized to be effective as a communicator and enforcer. ICT enabling is absolutely necessary for disseminating monitoring and scientific information, rendering technical inputs for national level policy making, training and development of manpower and organizing activities for promoting awareness at different levels of the government and public. Overall, while the organization has technical autonomy, its technical outputs and functional autonomy are hamstrung by large-scale dependence on State infrastructure and data. Given the fact that the Acts provide for CPCB opinion and data to be preferred over State level information, this kind of dependence can have adverse legal consequences. Legal responsibilities of the Pollution Control Boards include combating expected pollution. However, predictability of environmental conditions over landscapes has not been a strength area in CPCB. Recently, a collaborative network with IMD has helped in confirming the causes of the recent particulate haze in the National Capital Region. CPCB is able to interpret weather data to communicate near future conditions, but this capability should be enhanced to interpretation of terrestrial conditions in growth corridors and for informing public. In-house training and appropriate equipment is required for existing and new GIS specialists to develop in this important area.

A traditional shortcoming has been that CPCB and SPCB staff have been trained to focus on pollution control through a command and control system, while they were set up for prevention, abatement and control of pollution which requires a much more nuanced and public-participatory approach. The provision that CPCB may be asked by Central Government to act as a State Board for a limited purpose and time cannot be used effectively as the CPCB has no link with polluters individually and collectively. The power of directing the boards by the Central and State Governments should take this reality into account. The Central Board cannot and perhaps should not replicate the work of a State Board. It can guide and hand-hold for specific projects and programmes through its Regional Directorates and it can keep a check over large areas and sub-regions but will find it difficult if needed to start getting into the consent mechanism and other routine duties of State boards which we observe is the case with the Shillong Regional Directorate of the CPCB as stated by Shillong Regional Directorate official in the Brainstorming session held at IIPA on 24th November 2016.

There is also a provision that CPCB may issue directions to any or all state boards. However, in practice, the Central Government has an over-arching tendency to deal with the state boards directly, which has marginalized the role of CPCB. Both CPCB and SPCB work as independent and autonomous entities in their own capacity with no single overarching agency. CPCB is controlled by central government and SPCB by state government, resulting in problems of coordination. We also observed a dichotomy of control leading to division of work. The SPCB is entrusted with important and critical functions of enforcement and compliance, while CPCB maintains an advisory and coordination role. There is need to enhance the responsibilities and legally empower these organizations to function independently within their jurisdictions and to that extent be accountable to the public for environmental conditions therein.

4.2.3 Financial Autonomy

Environment protection should ideally be included as an item in the seventh schedule to the constitution in the concurrent list and CPCB be brought under its ambit with all necessary powers and functions to meet the challenges that pollution and its after-effects pose before us without disturbing the federal character of our constitution. This new body should be given functional as well as financial autonomy so that it can discharge its duties without fear or favour. The staff costs and compliance monitoring and enforcement activities of SPCBs are funded by grants from the state governments, very limited program-based allocations from the central budget and, for the most part, by revenues from the water cess, (80 percent of what is collected in the state is reimbursed to the respective States/SPCBs), administrative fees for consent processing and laboratory analysis services (different rates apply in different states), as well as funds forfeited through bank guarantee programs, where these exist. There are vast variations in the financial positions of SPCBs: some of them are heavily dependent on state government funding while others rely on their own resources. Some SPCBs like those of Maharashtra, Karnataka, and Uttar Pradesh have large own resources and even surpluses. On the other hand, PCBs of states like Kerala and Jammu and Kashmir receive over 80 percent of their funding in government grants (Planning Commission, 2001-2002). Even those few SPCBs that are self-sufficient are faced with spending restrictions imposed by the state governments. (OECD Report, 2006) .The expenditure patterns are also quite different from state to state. In most states, a major

share of the budget (60-70 percent on average) is allocated to administrative expenses, primarily salaries. Due to the shortage of funds, the PCBs lack adequate infrastructure (monitoring equipment, laboratories, etc.) to execute their responsibilities. An example of this is the Bihar PCB that does not have a single laboratory to test effluent samples (Gupta and Priyadarshini, 2003). The key challenge being absence of strong political will to address environmental challenges, funding limitations remain a significant challenge facing all environmental institutions. The variations in the financial status and sources of funding of the PCBs lead to horizontally inequitable treatment of the regulated community. An over-dependence on fees can also lead to mixed incentives and priorities for staff.

4.2.4 Capacity Building

The British have passed on a legacy of rigorous training and HRD systems for forest officials, but no such protocols exist for pollution control boards. IIPA study team found that adequate training is not provided to the personnel of Central Pollution Control Board. Considering that controlling pollution forms one of the most important functions of CPCB requiring scientific and technical expertise, multi-disciplinary training should be imparted to the personnel. The Study team is also of the view that creation of a trained cadre could also help in specialized monitoring and evaluation of environmental health-effects for example. The training should focus on providing special training at the time of induction after recruitment, refresher courses at various levels and stages, field trips, Certification of operators and technician, qualifying training for up-gradation and promotion, specialised training in legal, scientific and other technical areas. There is a dire need of proper Training Need Analysis (TNA) based on a detailed outcome based action plan for upgradation of the CPCB for the next five years to begin with. This TNA would help in revamping what is available and creating viable human inputs to set the necessary inter-connectivity with all environmental domains. Besides the physio-chemical aspects of air, water and soil, much attention needs to be paid to biological and bio-chemical aspects including ecology and biodiversity. Training for persistent and harmful types of pollutants e.g. black carbon, episodic pollution events, POPs, mercury convention and epidemiological studies should be introduced as a continuing feature.

Chapter 5: Gap Analysis

5.1 Strengths and Weaknesses Analysis

A detailed study of various aspects of functioning of CPCB conducted by IIPA study team brings out the following observations which have been broadly categorized under strength, weakness, opportunities and threats (SWOT). While the strengths and weakness are latent for any organization, the study team concluded these from brainstorming sessions, interviews and surveys. The opportunities and threats seem mainly external. The threats can be avoided or overcome and opportunities should be taken as stepping stones to improve through strategic planning and phased implementation. The lead in this regard would have to be taken by the MoEF&CC.

5.1.1 Strengths

- Experienced subject specific staff
- Presently adequate infrastructure in terms of laboratories and equipment to undertake field investigations
- Having expertise in developing standards and protocols besides for their enforcement
- Competent technically qualified pool of Scientists and Engineers, experienced in water and air quality management
- Maintaining air quality stations and water quality stations all over India by monitoring Ambient air quality upto prescribed standards.
- Having State of the Art Trace Organic Laboratory capable of monitoring VOCs, Poly Aromatic Hydro Carbon, Dioxins, Furans and other complex hazardous air pollutants
- Developed Effluent / Emission standards for 78 categories of industry
- Developing facilities for hazardous waste management and responsible for setting up of TSDFs
- Regularly conducting analytical quality control and participating in International Proficiency Testing (PT) Programme
- Set-up standards for fuel quality
- Facilitated setting up of common bio medical waste management facilities in India

- Capable of monitoring and conducting performance evaluation of CETPs, STPs, TSDF, etc.
- Developing clean technology and pollution prevention technologies for small scale industries in India
- Developed several 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 fuel quality norms
- Responsible for setting of continuous real time air quality monitoring station and centralized electronic transmission of the data

5.1.2 Organization's Weaknesses

- Shortage of science and technical personnel
- Lack of motivation among the senior staff
- Absence of financial autonomy in terms of timely availability of funds
- No thrust on high-end relevant technical and managerial capacity building of the existing staff
- CPCB often unable to attract and retain technically qualified human resources.
- Officials joining as Junior Research Fellow (JRF)/ Senior Research Fellow (SRF)/Research Associates as well as other qualified officials frequently resigning after getting experience
- Inadequate enforcement and compliance
- Low Priority at States and at Local level
- Pending litigations
- CPCB has not been able to prepare a well-defined mission and vision statement and as such appears to be direction less

- Despite 4 decades of its existence, CPCB has not been able to complete the Inventorization of polluting sources in terms of water, air and soils though it has been only following a source-based pollution control regime
- It has not developed expertise in micro-water shed and sub air shed level composite load-based environmental management.

5.1.3 Threats

- Imperative of high economic growth
- Urban sprawl resulting in increase in the levels of effluent and waste generation especially solid waste management
- Increased vehicular fleet, dust, climate uncertainties and wind and low pressure patterns bio-mass combustion and industrial growth is contributing to rising air pollution levels especially in the urban areas
- Increased concentrations of SO₂, NO and SPM have reached critical levels in some of the cities, impacting human health and ecosystems
- Growing demand of water for agriculture, industry, drinking water and hydroelectricity have severely impacted the ecological flows and water quality of rivers
- CPCB has identified 150 polluted river stretches in the country based on analysis of water quality data over 2002 to 2008. Presently, there is a huge capacity deficit in the sewerage network and sewage treatment infrastructure. Against sewage generation of over 38000 million litres per day (MLD) in the Class-I and Class-II towns, treatment capacity of only about 12000 MLD exists. (Strategic Planning 2012-13 to 2016-17, MoEF&CC)
- Waste streams are becoming increasingly complex, requiring specialized characterization and treatment
- Recent estimates show annual generation of 6.23 million tonnes of hazardous industrial waste against which treatment capacity exists only for about 35%. (CPCB, Annual Report, 2014-15)
- Large scale infrastructure deficit, compounded by lack of awareness and training
- Climate change and related issues

5.1.4 Opportunities

While the challenges are formidable, there are a number of positives, which provide the CPCB an opportunity to take forward the environmental agenda, building on the strengths and the experience of implementation accumulated over the last four decades. The opportunities are mainly the following:

- Increased public awareness and civil society pressure Need to align with global standards and practices
- Strong technology base
- Increased public pressure to strike a harmonious balance between rapid economic growth and protection of environment. This provides an excellent opportunity for the Government to mainstream sustainability concerns in development projects and improve compliance with environmental laws and standards
- Environmental governance is increasingly acquiring a global dimension. There are around 20 major MEAs in the areas of Biodiversity, Climate Change, Persistent Organic Pollutants, Hazardous wastes and chemicals, Ozone depleting substances, Wildlife, etc. The conventional approach of the developing countries has been to link compliance with the provision of financial and technical assistance. With the country's evolving economic and geopolitical profile, this approach can now be leveraged and we can look upon these MEAs as an opportunity to adopt global environmental standards
- India has a strong scientific base in the form of CSIR institutions, world class academic and scientific institutions (IITs, ISRO, IISc, etc.) and growing R&D facilities in the private sector and large pool of scientists. This potential is yet to be fully harnessed. There is an opportunity to promote synergy between these capabilities and the requirements of developing green technologies
- There are large reservoirs of domain knowledge with students, academia, communities, civil society and local authorities which have not been put to optimal use. There is huge opportunity of leveraging these strengths to promote the environmental agenda

Chapter 6: Justification of Manpower

Central Pollution Control Board, the meridian for environment standards and guidelines in India has diverse objectives to fulfill at the National Level. It plays an advisory role to the Central Government on any matter that concerns prevention and control of water and air pollution and improvement of the quality of air. It plans and executes nation-wide programme for the prevention, control or abatement of water and air pollution. CPCB also co-ordinates the activities of the State Boards and resolves disputes among them. CPCB additionally provides the State Boards with technical assistance and guidance to carry out, sponsor investigation and research relating to problems of water and air pollution, and for their prevention, control or abatement. It is mandated for CPCB to plan and organize training of persons engaged in programme on the prevention, control or abatement of water and air pollution.

To reach out to the public, CPCB is directed to organize comprehensive mass awareness programmes on the prevention, control or abatement of water and air pollution through mass media. The responsibility is to 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 is allocated to CPCB. Preparing manuals, codes and guidelines relating to treatment and disposal of sewage and trade effluents as well as for stack gas cleaning devices, are also amongst directives of CPCB functions. CPCB disseminates information in respect of matters relating to water and air pollution and their prevention and control through its website and other medium. The standards for stream or well, for the quality of air are laid down, modified or annulled by CPCB in consultation with the concerned State Governments. Apart from the above said activities CPCB is mandated to perform other functions as may be prescribed by the Government of India. It is mandatory for CPCB to develop reliable and economically viable methods of treatment of sewage, trade effluent and air pollution control equipment and to identify any area or areas as air pollution control area or areas to be notified under the Air (Prevention and Control of Pollution) Act, 1981. CPCB is to assess the quality of ambient water and air, and inspect wastewater treatment installations, air pollution control equipment, industrial plants or manufacturing process to evaluate their performance and to take steps for the prevention, control and abatement of air and water pollution.

As illustrative of the above mentioned exhaustive activities and mandate of CPCB the calculation of man-hour is not logically feasible. The reason being that calculation of man-hour is governed by various variables. To quote a few of them is the time required to travel. For example if an official is travelling from Delhi to Ghaziabad and the other from Delhi to Gujarat. The travel time for one may be only couple of hours whereas for the other it may vary from half a day to a couple of days, albeit the quanta of work done would be same. Standardizing such great deal of dissimilarities might prove to be a herculean task with little or no possibility of coming at a conclusion to provide a logical justification for man-hour calculation.

The other variable for Laboratory officials is the collection and sampling time involved. For instance for collecting a sample for air quality the number of staff required is more in comparison to the number of samples obtained. The same may not be the case with water quality sample. As CPCB has to check the implementation of standards by different industrial sectors a third variable may also be involved, i.e. technical issues with industries or even instruments used for analysis. Sometimes the instruments may falter mid-sampling rendering the entire working day useless. But these variables cannot be neglected as they play a major role especially for man hours of a field staff.

During the Parliamentary session, various questions are directed towards CPCB as it is the apex body concerning pollution prevention, control and abatement. During the sessions the officials stay back beyond the prescribed hours to fulfil their job demand. Apart from these another major factor governing manpower efficiency and overall affecting man hour calculation is the workload.

Court cases usually take years to complete and for all court dates the officials are required to be present which is a hindrance as they are required to fulfill other duties. Industrial accidents like Bhopal Gas tragedy cause huge impacts on human life as well as environment making them a obstacle to execute environmental strategies.

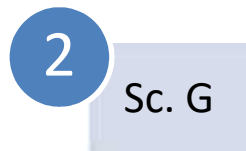
6.1 Justification of manpower

IIPA study team has found on interaction with the Head Office, the six Regional Directorates and the divisional heads that 207 additional posts are required in addition to the 109 vacant posts.

According to the recent reshuffle of the divisions in CPCB, vide circular no. C-22017/02/2011/Admin. P/ dated 19th January, 2017 and circular no. C-22017/02/2011/Admin. P/2654 dated 10th February, 2017. The major divisions are listed in Annexure-II. The division - wise justification of the scientific technical posts are as follows:

6.1.1 Manpower Justification: Head Office

I. Group A (Technical and Administrative)

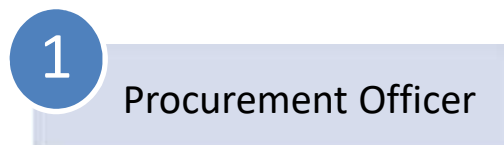


Scientist G (1)

The recruit shall supervise, coordinate and evaluate activities of the following divisions: Industrial Pollution Control, Urban Pollution Control, Waste Management, Air Quality Management, and Water Quality Management. The scientist shall be responsible for overall environmental governance issues and would coordinate with the Ministry on different issues of environment.

Scientist G (2)

The recruit shall supervise, coordinate and evaluate activities of the following divisions: Laboratories, Pollution Control Planning, IT, Law, Building and Quick Response Team. The recruit is responsible for evaluation of the guidelines, setting up standards of the pollution control norms. He/ she shall be responsible for the overall coordination and would look into the detailed action plan of the said divisions.



Procurement Officer (1)

The following also principally relates to procurement activities (tendering, contracting, access to agreements, etc.) which are undertaken with the involvement of the procurement function. The duties of a procurement officer would be far beyond the traditional belief. It would include supporting the business requirements to buy products and services at the right price, from the right source, at the right specification that meets users' needs, in the right quantity to be delivered at the right time to be delivered at the right time. He/ She shall manage the Procurement Process and the Supply Base efficiently and effectively by identifying opportunities, Managing internal operations and Achieving objectives. The recruit will also be responsible for evaluation and selection of suppliers; Review of specifications or statement of work; Acting as the primary contact with supplier; Review the requirements for the material or service being provided; May be able to suggest alternative standardized materials that can save the organization money.

Industrial Pollution Control(IPC)



Scientist F (1)

In pursuit of self-reliance in critical technologies relevant to national environmental governance, the recruit shall formulate and supervise execution of programmes for scientific research, design development, testing and evaluation of various industrial pollution control systems and devices. He/ She would look after the overall coordination of all IPC sub divisions. He/ She shall support in preparation of Agenda, Standards, Comprehensive Industrial Documents (COINDs), Evaluation of Technologies, etc. The recruit shall guide Scientist B and C in interpreting the scientific data properly and in drawing draft action plans and policies.

IPC-I: Chemical Industries



The division caters to the following Sectors: Chloralkali, Dyes & Dye Intermediate, Fertilizer, Oil Refineries, Pesticides, Petro-Chemicals, Pharmaceuticals, Paints & Enamel and all industries of Chemical nature (Organic and Inorganic). There is a requirement of one scientist at the level of Scientist-B. The Scientist would be responsible for execution of projects, monitoring, assessment of industries such as dyes & dye intermediates, fertilizers and oil refinery. He/she shall assist Scientist D and C to reply to Parliament Questions, Parliament Committees. He/she shall also provide technical information on RTI; He/she shall supervise activities related to Installation of Online Monitoring systems in 17 categories in Oil Refineries, Fertilizer and Dye & Dye Intermediates industries. Under the guidance of Scientists C/D he/she shall aid in bringing out Expert committee reports, assist or head development/renewal of environmental standards related to the sectors looked over by the division. He/she shall be fundamental in exploring avenues to reduce pollution in the above said sectors and conduct meetings to discuss and brainstorm the ideas.

IPC-II: Energy, Metallurgical



The division caters to the following Sectors: Aluminium, Copper, Zinc, Integrated Iron & Steel, Dust (PM) Emitting Industries, Mining, Cement, Thermal Power Plants, Coal Mining, Non-Coal Mining: Environmental issues, Asbestos, Lead & Zinc Industries. The division requires one scientist –D, and three Scientist –B. The job profile of each new appointee would be as follows:

Scientist D (1)

Being the senior staff he/she shall ensure enforcement/implementation of pollution control measures in the industries looked after by the division. He/she will be required to take steps to strengthen grant of consent procedure and develop or revise the standards/rules/guidelines for various sectors and processes.

Scientist B (1)

He/she shall be looking after the installation of online emission & effluent monitoring system in the industries. He/she shall conduct assessment of pollution level, verification of compliance with the environmental standards and take further necessary actions by issuing directions in the non-ferrous metals industries located all over the country. He/she will be required to Prepare guidelines for Fly Ash nuisance free Transportation , Revise guidelines for fugitive emissions from cement plants and guidelines for Odour pollution control.

Scientist B (2)

He/she shall be responsible for compilation of information received from SPCB, Mines etc. and to provide secretarial assistance for Court cases. To gain a better understanding of industry requirements he/she shall visit industries, interacting/correspondence with different stake holders for getting information. The scientist B will assist to provide matter Parliament committee, Annual report etc. He/she will evaluate relevant reports and literature and provide information for RTI applications, parliament questions, etc. He/she shall also verify public complaints/VIP references, in order to address the issues raised in the public complaints, received directly or through MoEF, against the industries. He/she will compile and provide the information as required by the applicants under the RTI Act.

Scientist B-3 (Assistant Environmental Engineer)

He/she will assist in regulatory and technical work on sponge iron plants, Integrated iron & Steel Plants such as projects, ESS, online monitoring system, parliament question, RTIs, court cases, conducting National Task Force meeting etc. He/she shall carry out other activities related to development of standards, pollution control technologies, etc. He/she shall be fundamental in

exploring clean technology options and test methods of utilization of industrial solid waste in cement manufacturing and other allied industries.

IPC-III: Agro



The division caters to the following sectors: Sugar, Distilleries, Textiles, Pulp & Paper, Food & Beverages and Soft Drinks. The division has the requirement of one Scientist-C and two Scientist-B. The job profile of each new appointee would be as follows:

Scientist C (1): Soft Drinks

He would coordinate the preparation and revision of COINDs for development of industry specific standards and guidelines either through *in-house* or through reputed institutions in soft drink sector as per the need and demand of industry. He/she would be engaged in conducting *in-house* or outsourced projects related to soft drinks industries/sector. The recruit would be instrumental in developing nexus between health impacts of soft drink consumption, nutrition studies and shall oversee the organizing of interaction/workshops on subjects of different issues related to environment/ standard development/implementation in soft drinks sector. He/she would be involved in preparation of guidelines on emerging technologies and shall address issues by focusing projects on Zero Liquid Discharge, Water conservation, Process optimization, Recycling and conservation etc.

Scientist B (1) and Scientist B (2): Distilleries Sector and Sugar Sector

The recruits would coordinate the preparation and revision of COINDs for development of industry specific standards and guidelines either through in-house or through reputed institutions in the specified sector as per the need and demand of industry.

The recruit dealing with distilleries shall explore options of inculcating green chemistry initiatives in guidelines and would check enforcement of existing norms for different raw

material based distilleries. He/she shall also investigate possibilities of replacing raw material for one with better quality and treatment of spent wash.

The recruit looking after Sugar Industry shall be responsible for assessing the development and expansion of existing sugar mills. He/she would be instrumental in researching opportunities to optimize the process and improve recycling and water conservation. They would be elemental in organizing interaction/workshops on subjects of different issues related to environment/ standard development/implementation in the sector concerned.

IPC-IV: Animal Products



The division engages in activities related to the following sectors: Tanneries, Slaughter Houses and Dairies. The division has the requirement of one Scientist-D, one Scientist-C and one scientist at the level of Scientist-B. The job profile of each new appointee would be as follows:

Scientist D (1): Slaughter House

He/she shall oversee that an inventory/manual with basic information on slaughter houses be published with their location, quantum of daily slaughtering, production of Skin/Hides and the type of waste generated and its management (Solid Waste Management) in Slaughter House. The recruit would coordinate the preparation of COINDs for development of industry specific standards and guidelines. He/she would be involved in preparing guidelines for this sector by conducting studies on hygiene within and outside the slaughter houses, waste disposal and infrastructure.

Scientist C (1): Tanneries

The recruit shall engage in the preparation and revision of COINDs for development of industry specific standards and guidelines. In context of tanneries he/she would develop and test ways to curb chromium pollution caused by chrome tanneries. As the industry is water intensive, it would

be the recruit's look out to test technologies which help in reducing water usage. As the waste from tanneries puts the residents of neighbouring areas at a risk of contamination.

Scientist B (1): Dairies

For the dairy industry the recruit shall conduct research on the relationship between animal agriculture and various environmental issues such as land degradation, deforestation, water stress, pollution and loss of biodiversity. He/she would be elemental in organizing interaction/workshops on subjects of different issues related to environment/ standard development/implementation in dairy industry. He/she would assist concerned scientists to prepare and revise COINDs for dairy industry.

IPC-V: SSI



The division caters to the following sectors: Foundry and Furnaces, Stone Crushers, Hot Mix Plants, Brick Kilns, Rice Mills and other Small Scale Industries, Siting Policies & Technology Development. The division has the requirement of one Scientist-D and two scientists at the level of Scientist-B. The job profile of each new appointee would be as follows:

Scientist D (1): Foundry and Furnaces

Scientist D would coordinate the preparation of COINDs for development of industry specific standards and guidelines. He/she shall be responsible for monitoring and enforcement of emission standards of harmful and poisonous gases, dust and particles. The recruit would also be required to develop an inventory of foundries and their waste generation and disposal methods.

Scientist B (1) and Scientist B (2): Brick Kilns, Rice Mills and Other SSIs

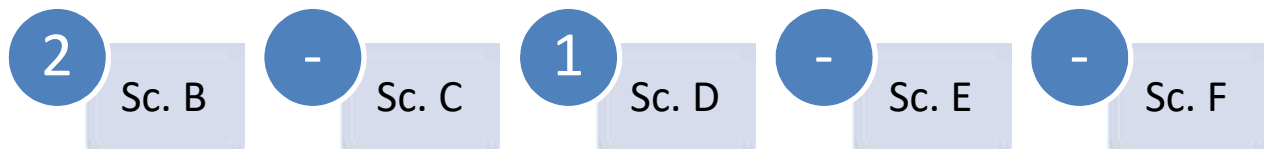
The recruits would coordinate the preparation and revision of COINDs for development of industry specific standards and guidelines.

The Scientist B (1) shall handle activities of the Brick Kiln Factories. Brick kilns are responsible for huge quantity emissions of toxic elements which causes serious health hazards. The recruit shall conduct monitoring and enforcement drills to check for toxic fumes that contain suspended particulate matter which is rich in Carbon monoxide and SO_x (Sulphur oxides) and is harmful to the eyes, lungs and throat.

Scientist B (1) shall also oversee the Environment Pollution Control Authority (EPCA) activities and would be responsible to bring improvement in design of Clamp Kiln.

The other Scientist B would handle activities related to Rice mills and other SSIs. The recruit shall ensure that rice shelling units in the state practice proper handling, storage and transportation of rice husk and rice husk ash so as to check environmental pollution. To keep up with emerging technologies and issues the recruits shall focus on issues through projects on Air Pollution Control Devices, Charter on specific sectors, Process optimization etc.

IPC-VII: Industrial Clusters and Enforcement



The division looks after activities of Critically Polluted Industrial Clusters, Common Effluent Treatment Plants (CETPs), Vigilance and Directions, Environmental Clearances, Enforcement Issues, Ecomark Scheme. The division requires one Scientist-D and two scientists at the level of Scientist-B. The job profile of each new appointee would be as follows:

Scientist D (1)

Scientist D shall supervise surprise inspection of industries to check whether they conform to CPCB specified norms and would oversee the matters related to Comprehensive Environmental Pollution Index (CEPI). He/she shall be elemental in identification and reduction of pollution in Critically & Severely Polluted Areas and Other Polluted Industrial Clusters. He/she would administer the Inventorization of 17 categories of highly polluting industries and grossly polluting industries. He/she shall also be responsible for keeping records of overall directions issued by CPCB including all divisions with the assistance of Scientists C and B. He/she would

delve into NGT matters issues related to categorization of industries and development of Software and Application for IPC-VII and CEPI activities

Scientist B (1)

He/she shall be responsible for coordination of all activities related to surprise inspection of industries i.e. selection of industries, interaction with Regional Directorate, processing of Inspection Reports, Action Taken Reports to assist Scientist D. He/she will be pivotal in conducting thorough inventorization of 17 categories of highly polluting industries and grossly polluting industries for preparation of Master data base. He/she will support Scientist D in record keeping of overall directions issued by CPCB including all divisions. Along with the above said work he/she shall process applications received under NGT matters, RTI, Parliament Questions, and complaints under VIP references.

Scientist B (2)

Scientist B shall be responsible to look after matters related to CEPI, monitoring in identified Critically, Severely and other Polluted industrial areas and for evaluation of CEPI scores in CPAs, SPAs and others. He/she would oversee the implementation of Action Plans in Critically Polluted Areas (CPAs). He/she would be fundamental in developing Software and App for CEPI activities and to compile Technical Projects on IPC-VII Activities.

Urban Pollution Control



Scientist F (1)

He/she shall be responsible for supervising the formulation, planning, implementation and coordination of the R&D activities and the service activities of the division under his responsibility. The recruit would be involved in planning & implementing guidelines in a time bound manner. He/she will be the nodal officer giving guidance and novel thrust for all technical

and field level activities in each sub-division for activities related to MSW management, C&D waste management, urban noise assessment and Sewage management given from time to time.

The division's supervision includes more areas of work which necessitates the appointment of one Scientist –F, one Scientist –D, one Scientist-C and two scientists at the level of Scientist-B amongst the sub-divisions. The job profile of each new appointee would be as follows:

UPC-I

The sub-division caters to activities related to Urban Slaughter Houses (other than slaughter house Industry), Urban Noise Assessment and Control including Diesel Generating (DG) Sets, Railways & Airports, and Odour from MSW, Sewage /other industries.

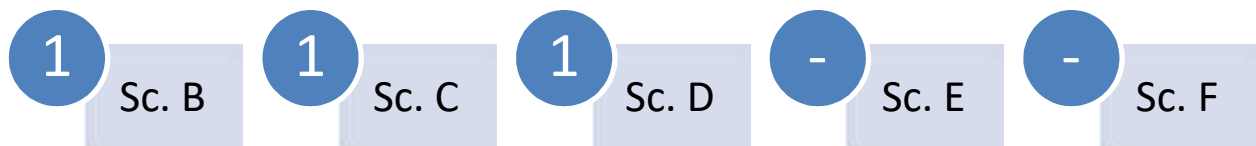


Scientist B (2)

The recruit shall be fundamental in conducting research to develop standards for Urban Noise Assessment and Control including DG Sets, Railways & Airports. He/she would be involved in urban noise mapping and planning as noise would serve as an integrated tool to manage road traffic and construction noise. He/she shall collect information and revise the existing Rules and see to it that the standards are adhered to.

UPC-II

The sub-division engages in the following sectors/activities: MSW Management, Construction and Demolition Activities, Sewage Management (Other than Ganga) and Municipal Solid Waste.



Scientist D (1)

The recruit shall be engaged in researching and testing methods to reuse and recycle Construction and Demolition (C&D) debris. He/she would supervise overall C&D Activities. He/she shall also supervise research on a water-energy nexus, green infrastructure to reduce and efficiently use water and energy.

Scientist C (1)

He/she shall draft changes that could be incorporated whenever MSW legislations are revised. The recruit shall contribute to conduct environmental audit of MSW and landfills by testing them in pilot study phase. He/she would partner with private companies in order to come up with solutions to manage Municipal solid waste and allied issues.

Scientist B (1)

He/she shall engage in activities related to Sewage management and would assist Scientist D and C in collecting, compiling, monitoring and enforcing legislations.

Waste Management



Scientist F (1)

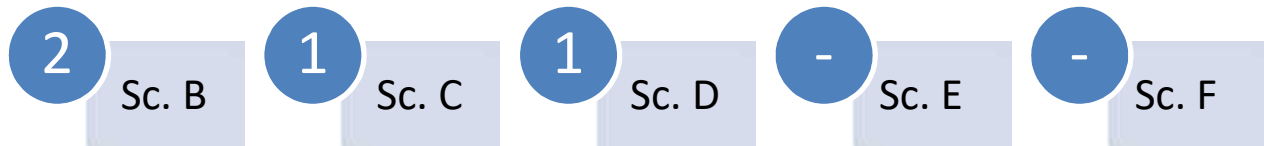
As head of division the recruit shall exercise overall control on scientific and technical activities of all three sub divisions. He/ She would supervise the plan of action and shall check execution of the action plan and projects. Owing to the concerns regarding Hazardous waste management the recruit shall be fundamental in approving new disposal/utilization methods. He/she shall ensure actions on complaints, VIP references and would provide information under RTI Act, 2005. He/she would further be responsible to provide technical inputs in Parliament related matters and to administer overall enforcement of the BMW Rules and CPCB Guidelines.

To manage its current activities the division requires the appointment of one Scientist –F as the nodal head and one Scientist –E, one Scientist- D, two scientists at the level of Scientist-C and

five scientists at the level of Scientist-B. The job profile of each new appointee in each sub-division would be as follows:

WM-I

The sub-division looks after the following sectors/activities: Hazardous Waste Management, Remediation & Policies, Ship Breaking, Bio-Medical Waste and Batteries.



Scientist D (1)

He/she shall have to review proposals concerning new technologies, supervise finalization of the emission or operating standards and forwarding to MoEF&CC for further notification under E(P)A, 1986 with the approval of the Board.

He/she shall supervise Scientist C and B .Coordination of activities of SPCBs and identification of issues on implementation of various provisions of the HOWM Rules will be the responsibility of this recruit. He/she would be required to follow-up on implementation of Rules/ Guidelines/ MoEF Directions / CPCBs directions / decisions of C-MS conference, etc. and also Supreme Court / High Court / NGT matters pertaining to HOWM rules. He/she shall prepare a consolidated review report on management of hazardous and other wastes and forward it to the MoEF&CC along with its recommendations .Along with the above said responsibilities this recruit would supervise the preparation of State wise Inventory of Hazardous waste, compilation of Annual Inventory and reports.

Scientist C (1)

The recruit shall recommend standards and specifications for treatment and disposal of wastes and leachates and would ensure implementation of above standards in the country. He/she shall be fundamental in preparation of standards for treatment & disposal of various hazardous wastes and leachate, and time to time up-gradation of the same.

He/she shall grant approval to financial penalties levied by SPCB upon occupier and the operator of the disposal facility for any violation of the provisions under the HOWM Rules. He/she shall evaluate and process the proposals received from SPCBs/PCCs on violation of provisions of the Rules. He/she would be engaged in evaluation, assessment and enforcement of Environmental Liabilities. He/she shall assist SPCBs/PCCs in finalizing scope of assessment and remediation works.

He/she shall recommend Procedure for Characterization of Hazardous Waste and would be required to oversee the up-gradation of manual for Sampling of Hazardous Waste and for developing methods of for testing of hazardous waste. He/she shall coordinate with laboratories & facilitate sampling and analysis of hazardous waste and would assist a SPCBs/PCCs/Regional Directorates, CPCB in development of laboratories infrastructure. He/she shall aid in sampling and analysis of air/water/waste during trial utilization / pre-processing / Treatment / Disposal of hazardous waste. He/she would also administer Performance Evaluation of TSDFs including Common Hazardous Wastes.

Scientist B (1)

He/she would be required to undertake field visits and develop draft reports. He/she shall assist to coordinate activities of SPCBs. He/she would analyze data as per a given format and compile the annual report and follow-up. He/she would also look after the disposal of parliament matters (Lok Sabha/ Rajya Sabha Committee) / CAG matters/ VIP references.

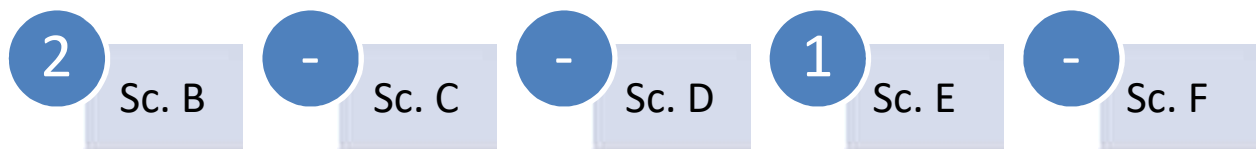
Scientist B (2)

The recruit shall look after the activities related to Extended Producer Responsibility (EPR) Authorization such as grant and renewal. His / her role would be to scrutinize applications and list short comings in the applications and submission of files to competent authority for grant of EPR Authorization. His duty would also include maintaining digital information. The recruit shall enforce provisions regarding reduction in use of hazardous substances in manufacture of electrical and electronic equipment and would coordinate with Producers for submission of self-declaration certificate and all other related documents as required under EN 50581. He/she shall coordinate with DeitY for testing of electronic equipment (EEE) for Restriction of Hazardous

Substances (RoHS) parameters till CPCB labs are ready and shall also coordinate with Regional Directorate for sampling of EEE and submission of same to Centre for Materials for Electronics Technology. He/she shall interact with Directorate General of Foreign Trade (DGFT)/Customs for obtaining list of importers importing EEE as covered under rules and would issue notices/directions to defaulters. The recruit shall also forward information of compliance to EPR section and would Interaction with Customs regarding non-compliant producers. He/she shall be instrumental in setting and revising targets for collection of e-waste from time to time. The recruit would be responsible to compile and scrutinize returns. He/she would assess generation of e-waste through secondary survey and shall be required to submit reports. He/she would also be making amendments in EPR Authorization from time to time and shall communicate the same to Producers/SPCBs/PCCs/Regional Directorate.

WM-II

Authorization of Re-cyclers and Treatment, Storage & Disposal Facility (TSDF) & Waste-to-Energy related matters in coordination with Urban Pollution Control Division dealing MSW.



Scientist E (1)

The recruit shall be responsible for developing and publishing standards for waste to energy plants. As in developed countries, environmental concerns rather than energy recovery is the prime motivator for waste-to-energy facilities, which help in treating and disposing of wastes. He/she shall be responsible for exploring Energy generating options in the form of biogas, heat to improve the viability of Waste to Energy Projects. He/she would be elemental in authorizing recyclers and TSDF facilities.

Scientist B (1)

The recruit would assist Scientist D and C to coordinate activities. He/she would follow-up on implementation of Rules / guidelines/ MoEF Directions / CPCBs directions / decisions of C-MS conference. He/ she would be responsible to follow up on Supreme Court / High Court / NGT

matters pertaining to HOWM rules and shall compile data pertaining to development inventory of contaminated sites and development of soil guidelines. He/she would follow-up on MoEF&CC directions and draft replies to Parliament matters (Lok Sabha/ Rajya Sabha Committee) / The Comptroller and Auditor General (CAG) matters/ VIP references. Shall engage in preparation and revision of guidelines to prevent or minimize the generation and handling of hazardous and other wastes.

He/she would be elemental in developing guidelines for handling, storage, utilization and disposal of Red Mud, Pyrometallurgical slags, Mine Tailings, Jarosite and other wastes as and when required. He/she would periodically update existing guidelines currently 10 guidelines needs revision and published documents. He/she would oversee development of Guidelines for closure and post closure phase of TSDF and sector specific documentation to identify waste for inclusion in these rules (at least 2 sectors per year).

Scientist B (2)

He/she would be instrumental in preparing and revising guidelines/ Standard Operating Procedures (SoPs) for recycling, utilization, pre-processing, co-processing of hazardous and other wastes. He/she shall be responsible for updating online application, preparing status reports, processing of cases and for preparing protocol for trial run monitoring. The recruit would be involved in compilation of compliance status of hazardous waste and other wastes utilization in the country. He/she would be providing technical inputs on the matter related to International conventions i.e. Basel, Stockholm, Rotterdam and Minamata. He/she shall oversee matters regarding disposal of Union Carbide India Ltd (UCIL) waste and Endosulphan Waste. He/she will be fundamental in compiling status of Waste to Energy plants and development & enforcement of environmental standards – Inspection /monitoring /report preparation etc. He/she would administer other Projects assigned to Waste Management Division from time to time.

WM-III

The sub-division looks after activities related to Electronic Waste Management.



Scientist C (1)

The recruit shall administer compliance of E-Waste Rules wherein he/she would conduct random check for ascertaining compliance of the e-waste rules; he/she would visit producers facilities of collection, take backs, dealers for their effective functioning and to ascertain whether they are as per information submitted to CPCB earlier and shall verify Producers target claim. He/she would be responsible to conduct random inspection of dismantler/recycler of e-waste and to coordinate visits with Regional Directorates for verifying facilities of dismantler and recyclers. He/she shall set and revise targets for compliance to the reduction in use of hazardous substance in manufacture of electrical and electronic equipment from time to time and coordinate with IT industries for collection of samples through Regional Directorate/HO for testing of RoHS parameter. He/she shall be instrumental in bringing in international best practices.

Scientist B (1)

He/she shall assist Scientist C in the above-said activities. He/she would be required to follow up for notices and direction and shall be fundamental in filing cases in NGT/High Court/Supreme Court. He/she shall be responsible to take actions against violation of rules. He/she would be authorized write a letter to Regional Directorate for regular inspection for ensuring compliance under the rules. He/she shall be engaged in scrutinizing inspection reports and submission of facts before Competent Authority for issuing of notices and directions. He/she would monitor compliance conditions in the notices and directions. The recruit shall be actively involved in filling and pursuing of cases in NGT/High Court/Supreme Court. He/she would participate in design improvement of EEE shall be done in cognizance of digital India.

Air Quality Management



The division provides for the following sectors: Air Quality Management Policy & related Bilateral issues, Air Quality Management Plan, Source Apportionment Studies, Vehicular Pollution Control, Climate Change, Utilization of Energy performance contracting (EPC) funds, National Air Quality Monitoring Programmes (Manual Stations) - other than Delhi and NCR, Co-ordination of Grid Monitoring Plan and Court Matters.

The division's supervision inculcates more areas of work which necessitates the appointment of one Scientist –F, one Scientist –D, three scientists at the level of Scientist-C and two scientists at the level of Scientist-B. The job profile of each new appointee would be as follows:

Scientist F (1)

The recruit would be involved in reviewing existing ambient air quality standards and update them time to time. He/ she shall ensure execution of monitoring programmes and maintenance of stations. The Officer would also be responsible to undertake surprise field visits for technical study and evaluation for successful implementation of the Project. The recruit would develop and revise the vehicular exhaust emission standards specially Bharat Stage VI and onwards. He/she shall be in- charge of implementation of project activities for Judicial Cases/Legal Cases on Air Pollution. Coordination with SPCBs/PCCs & agencies involved in calibration will also be a part and parcel of the Scientist F's responsibilities. He/she would also work towards achieving alternatives to obtain renewable energy to be in sync with India's 2022 Renewable Energy Targets which would eventually merge with achieving SDGs. He/she shall also be required to actively engage in Climate modelling to develop a proactive stance for CPCB.

Scientist D (1)

Scientist D shall be responsible for supervising the progress of strengthening, Operation and maintenance of AAQM project under NAM. He/she would be in- charge for overseeing the

progress of Action Plan for control of air pollution in non-attainment cities. He/she would coordinate and interact (both within and outside) with the agencies responsible for different activities, communication, maintaining the relation for timely execution of project and decision making in concurrence with the Scientist E.

Scientist C (1)

Scientist C shall coordinate among the team members. He/she will communicate and maintain the relation for timely execution of project on strengthening of AAQM project under NAMP and decision making. He/she would be accountable for financial allocation which involves responsibility of the assets and optimization of resources. He/she shall be in charge for timely execution of judicial cases related to air pollution projects under NAMP and decision making.

Scientist C (2)

Scientist C would coordinate among the team members and would be accountable for timely execution of project on calibration and evaluation of NAMP- 629 operating stations in 264 cities/towns in 29 states and 5 Union Territories of the country (<http://www.cpcb.nic.in/Network.php>) and decision making during the field visit. He/she shall assist Scientist D as per need.

Scientist C (3)

The recruit shall be responsible for working and enforcing the concept of Sustainable cities and would investigate factors affecting climate change. He/she would oversee the new projects on emerging technologies like climate modelling. The recruit shall be required to develop and revise Fuel quality standards especially for transportation fuel (such as petrol, diesel) furnace oil etc.

Scientist B (1)

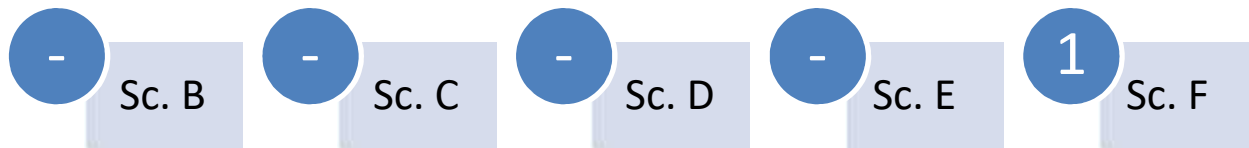
Scientist B would be responsible for implementation of project activities for Strengthening, Operation and maintenance of AAQM, field inspection, reporting of output of activities, analysis and interpretation of data. He/she shall be involved in preparation of time bound action plan for smooth completion of project. He/she would also be responsible for implementation of project activities for Action Plan for control of air pollution in non-attainment cities and would be liable

to maintain financial outlets for the division. The recruit shall work on improving Climate Change resilience assisting Scientist C and D. he/she would explore the concept of Sustainable cities and investigate the link between disasters and climate change.

Scientist B (2)

He/she would be responsible for implementation of project activities for preparation of Air Quality Atlas of India, mapping & drafting. He/she shall be engaged in preparation of time bound action plan for smooth completion of project. He/she shall oversee that project activities for Statistical evaluation of Air Quality data are implemented, software for statistical interpretation of air quality data is developed and maintained. He/she is accountable to report output of activities, analyze and interpret the data. He/she will supervise field visits related to courts hearing, reporting of output of activities, preparation of comments & affidavits. He/she will be liable evaluation and calibration of AAQM project activities.

Water Quality Management



Scientist F (1)

He/she would supervise in providing on-job training to junior and middle level officers, in routine and specific projects. The recruit shall conduct regular evaluation of on-going programmes and shall make necessary amends as and when required. He/she would engage in field visits/study of programmes implemented on pollution abatement like that of maintaining minimum ecological flows in the river Ganga with the aim of ensuring water quality and environmentally sustainable development. He/she shall be the guiding force behind coordinating training and awareness programmes.

The division's management involves various areas of work which dictates the need for appointment of one Scientist- F as a nodal officer and one Scientist-D and five at the level of

Scientist-B amongst the two sub-divisions. The job profile of each new appointee would be as follows:

WQM-I: Water Quality Assessment and Monitoring



The sub-division caters to the following activities: Water Quality Monitoring of rivers, lakes, groundwater and coastal waters; Setting up of Real Time Water Quality Monitoring Stations; Water Quality Restoration Plan; Water Quality Monitoring of river Ganga including RTWQM

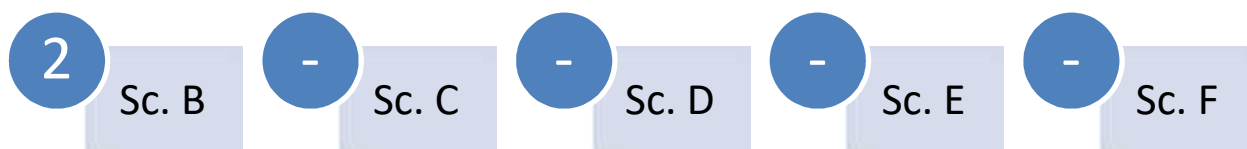
Scientist D (1)

The recruit would be involved in reviewing existing water quality objectives. He/she would be responsible for NWMP including Real Time Water Quality Monitoring. It shall be his/her responsibility to co-ordinate and manage NWMP (CPCB in collaboration with concerned SPCBs/PCCs established a nationwide network of water quality monitoring comprising 2500 stations in 28 States and 6 Union Territories. The monitoring is done on monthly or quarterly basis in surface waters and on half yearly basis in case of ground water. The monitoring network covers 445 Rivers, 154 Lakes, 12 Tanks, 78 Ponds, 41 Creeks/Seawater, 25 Canals, 45 Drains, 10 Water Treatment Plant (Raw Water) and 807 Wells. Among the 2500 stations, 1275 are on rivers, 190 on lakes, 45 on drains, 41 on canals, 12 on tanks, 41 on creeks/seawater, 79 on ponds, 10 Water Treatment Plant (Raw Water) and 807 are groundwater stations (<http://cpcb.nic.in/water.php>) including RTWQM and proposed expansion activities .

Scientist B (1), Scientist B (2) and Scientist B (3)

New recruits at Scientist B level shall assist senior scientist to coordinate and manage NWMP including RTWQM. They would be accountable for strengthening of data management activities so that day to day and proposed activities are managed effectively. They would have to plan expansion activities and shall have to review new activities. They would be engaged publication of water quality index.

WQM-II: Rejuvenation of Ganga (Namami Ganga)



The sub-division engages in the following sectors: Sewage Treatment of Ganga Towns and Drains (118 Towns); Industrial Pollution Control (Pollution Control Enforcement of Industries of Main Stem) (Independently to cover 764 GPI).

Scientist B (4) and Scientist B (5)

The recruits shall ensure effective abatement of pollution and rejuvenation of the river Ganga by monitoring that river basin approach is adopted to promote inter-sectoral co-ordination for comprehensive planning and management. They would assist Scientist E and D in fulfilling the objectives of Ganga Rejuvenation Programmes. He / She would be instrumental in maintaining minimum ecological flows in the river Ganga with the aim of ensuring water quality and environmentally sustainable development.

Laboratories

Air Quality-I (Ambient & Source)



The lab caters to the collection, sampling and reporting of: Ambient Air Quality (NCR); CAAQMS (Nation-wide), stack monitoring, calibration facilities and method standardization. The lab covers number of parameters to be tested which necessitates the appointment of four scientists at the level of Scientist-B. The job profile of each new appointee would be as follows:

Scientist B (1) and Scientist B (2)

The appointments shall assist the scientist – C on projects and activities related to expansion of CAAQMS network. They shall test and standardize methods for sample testing. One of the scientists would compile and analyze results from industrial stack monitoring while the other would look after activities of AAQ stations.

Scientist B (3)

He/ She would assist Scientist C. The recruit shall be responsible to upgrade of IT infrastructure in regard to AQI monitoring, conduct regular NAQI and annual audit of the CAAQMS. He/ She would organize training programs for data validation and shall be involved in bill processing for all concerned including finalization bill formats, authorized signatories, release of payments etc. He/she may be assisting in other activities as need arises from time to time.

Air Quality-II (Air Toxic)



Scientist C (1)

The recruit shall engage in assessment of hazardous air pollutants known to cause cancer and other serious health impacts. Exposure assessment studies and health impacts studies would be conducted by this recruit.

Scientist C (2)

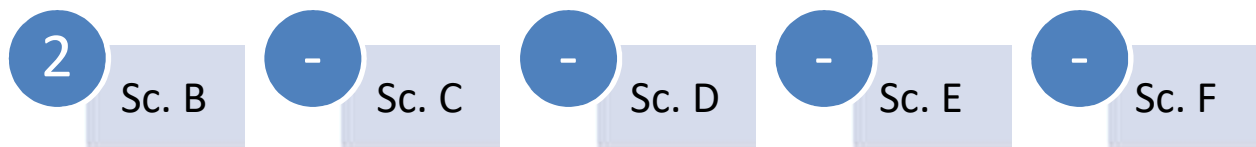
The recruit shall be responsible for monitoring QA/QC of labs nation wide. He/she shall conduct surprise checks to assess the labs for Accreditation.

Scientist B (1) and Scientist B (2)

The Scientist B recruits shall take up all legal cases including NGT directions besides routine support services for various implementation divisions with respect to the development of emission standards, performance of pollution control devices, introduction of new parameters etc. The young and energetic staff would be required to be involved in the monitoring and also

associate with SPCBs / PCCs for joint inspection, monitoring and to provide training to them time to time.

Instrumentation



The lab caters to the test heavy metals and the appointment of two scientists at the level of Scientist-B is required for proper functioning of the lab. The job profile of each new appointee would be as follows:

Scientist B (1)

As the department has superannuation in 2017, the workload would be delegated to Scientist B who would be handling the ‘Trace Metal characterization of waste water and sludge generated from CETPs using Inductively Coupled Plasma-Optical Emission Spectrometer (ICP-AES)’. He/she would also be involved in sample analysis, upkeep & maintenance of Inductively coupled Plasma Atomic Emission Spectrometer (ICP-AES), Atomic Absorption Spectrometer (AAS), Quality Control Part i.e. NABL activities with respect to chemical testing particularly in the field of trace metal analysis. Recruit shall be associated with purchase of standards, Chemicals, glassware calibration and equipment calibration etc. Furthermore, two new Instruments have been installed in the laboratory; ICP-MS and AOX Analyzer, therefore the officials are required to operate the existing instruments ICP-AES as well as the new instruments.

Scientist B (2) (For HOWM Lab)

He/she would be involved in implementing the project that has been proposed to augment Laboratory facilities at CPCB for testing of Hazardous Waste and Contaminated Soils in order to develop the facility to characterize hazardous waste for the toxic constituents and characteristics listed at Schedule-II as per the Hazardous Waste (Management and Transboundary Movement) Rules, 2016, Hazardous Waste & Management Division. The project suggested to procure three

major instruments to be handled and operated by the Instrumentation Lab; Inductively Coupled Plasma – Mass Spectrometry, Atomic Absorption Spectrophotometer, X-ray fluorescence Spectrometer.

Biological Laboratory



The lab caters to the sample testing and standard setting for the following sectors: Microbiology, Toxicity, Bio-monitoring, Inter-state Yamuna Monitoring. The laboratory supervision includes extensive work necessitating the appointment of one Scientist-C and five scientists at the level of B. The job profile of each new appointee would be as follows:

Scientist C (1)

The recruit would oversee the performance evaluation of STPs in terms microbiological contents and toxicity reduction. He/she shall be engaged in bio-monitoring and bio-mapping of Rivers with priority to river Ganga and its tributaries. He/she shall supervise the evaluation of toxicity status in various water bodies and up-gradation of Android mobile-phone based Bio-monitoring application over the time. He/she would be responsible to check that the lab conforms to the standards of Occupational health & safety management system (OHSMS).

Scientist B (1)

The recruit shall supervise analysis/testing of samples for biological parameters as per NABL accreditation scope and some parameters beyond NABL scope. The Scientist would survey/monitor various water bodies and inspect industrial establishments under National Ganga River Basin Authority (NGRBA).

Scientist B (2)

The recruit shall be fundamental in organizing Inter-laboratory comparison exercises for microbiological, bio-monitoring and toxicological parameters. He/ She would also provide assistance /training to the SPCBs/PCCs staff, students etc.

Scientist B (3)

He/she shall oversee water quality assessment of river Yamuna in Delhi stretch on monthly basis at four locations of the river, one location of Agra canal and 21 major drains of NCT-Delhi along with two drains of Ghaziabad as per Supreme Court directions. He/she shall assist Scientist C and D in compliance of Hon'ble NGT directions.

Pollution Control Planning (PCP) & Public Relations & Grievances & ETU



The division oversees the following activities: Annual Plan, Regional Directorate Coordination, Bilateral (Global Convention), Cess, R&D, Parliament Matters, Annual Report, Mass Awareness, Coordination Activities, Publication & Media Interaction, VIP References, RTI/NGO, Conferences, Board Meetings, Environmental Training Unit (ETU), ENVIS. The division's vast expanse of activities calls for one Scientist-C and three scientists at the level of Scientist-B. The job profile of each new appointee would be as follows:

Scientist C (1)

Scientist C will help consolidate the Annual Review Report and the Annual Action Plan. He/she will be involved in addressing concerns or commitments of Bilateral (Global Convention) programmes. He/she would handle the Parliament Matters and coordinate as required. He/she would be supervising Publication & Media Interaction.

Scientist B (1)

He/she would assist Scientist C in addressing Parliament matters and will co-ordinate with SPCBs. He/she will assist in matters of VIP references.

Scientist B (2)

He/she shall oversee the activities of Environmental Training Unit (ETU) and plan for R&D activities in areas deemed necessary.

Scientist B (3)

He/she would be responsible to supervise data management for ENVIS portal and shall manage Cess Related Matters

Information Technology



The division caters to the following activities: Networking, updating the Website, Enterprise Resource Planning, SPCB Support, GIS Development, Data Storage and Security, E-Samiksha and Management Information System -SPCBs. The division necessitates one Scientist-E, one Scientist-C and one Scientist-B. The job profile of each new appointee would be as follows:

Scientist E (1)

Scientist E shall be responsible for supervising the following activities: Data Centre Management which is presently active, Network management, Video Conferencing, Cyber Security, Operation of core IT Devices (Switches, Routers, and UPS), and management of the Website. He/she would oversee Software Development for e-Governance, digitization, creation and maintenance of Environmental Data Bank. The recruit will administer the maintenance of user nodes regarding viruses, compatibility, up-gradation etc. at CPCB Head Office and will ensure that training on Computer to the staff of various divisions in CPCB is provided.

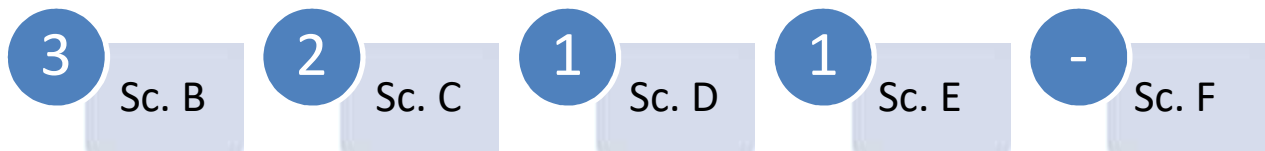
Scientist C (1)

Scientist C would be required to conduct the requirement analysis of projects, would be expected to have basic understanding of Standards and Instrumentation. He/she should have deep knowledge of GIS domain and would serve as an Industry level Interface. He/she would also be expected to monitor On Line Data Transmission from CAAQMS.

Scientist B (1)

Scientist B will be responsible for Server Software Management, Security Systems- Firewall operations and System/Software utilities Development for Maintenance issues. He/she would also assist in Biometry, website, Antivirus and Virtual Machine Management with the help of supporting staff. He/she shall be responsible for strengthening of LAN and Internet facility within CPCB and to provide technical support to Regional Directorates and SPCBs.

Quick Response Team (QRT)



In case of emergency, like in cases of industrial disasters or environmental disasters the situation calls for an immediate response especially from nodal authorities like CPCB. To align the response and for the purpose of quick checks/ speedy reporting there is a need for highly trained, motivated, young, fit and fully equipped team to tackle such problems. Keeping in mind the specialization required for this division one Scientist-E, one Scientist-D, two at the level of Scientist-C and three recruits at the level of Scientist-B are required. The job profile of the new appointees is listed below:

Scientist E

The recruit shall ensure that team responds in the shortest time, moves by fastest means, takes action to collect tactical information and neutralizes the impact of the hazard/problem at the earliest as environmental harm can sometimes be reduced by a quick response and application of appropriate clean-up techniques. He/she shall coordinate the engineer troop, logistics and advisers for effective functioning. He/she would evaluate the response and recovery effort of each operation and shall initiate promoting and facilitating self-help drills in the community to enhance preparedness.

Scientist D

He/she shall be an experienced technical recruit to provide immediate assistance in responding to environmental emergencies. The recruit would head the engineer troop of the QRT in order to guide the team. He/she along with Scientists C and B shall aid in first response services, such as provide primary health care and potable water in the affected area with the help of local governments and humanitarian agencies as far as reasonably practicable, protecting property; identifying and taking action to implement lessons identified.

Scientist C (1) and C (2)

The recruits shall be trusted experts in air and water management who are able to stabilize the primary effects of the environmental hazard in co-operation with national and regional governments and non-governmental agencies. They would assist Scientist E and D in developing restoration plans for the affected area and shall conduct quick studies to prevent the onset of secondary effects of the hazard.

Scientist B (1), Scientist B (2) and Scientist B (3)

The recruits may either be field engineers (with sections for Water Supply, Heavy Equipment and Field Engineering) or construction engineers. They shall deploy field-based logistics, communications and management and operations to support emergency operations. They would be the first ones to help contain the emergency – limiting its escalation or spread and mitigating its impacts. They shall aid in providing the public and businesses with warnings, advice, information and maintaining or restoring critical activities. They shall facilitate investigations and inquiries (e.g. by preserving the scene and effective records management) and the recovery of the community with special emphasis on environmental impacts. The additional requirement is depicted in table 6.1 (a)

Law Division

Referring the Figure 2.5 it can be seen that after the establishment of NGT there has been a tremendous rise in the number of PILs, RTIs, etc. Since there is a requirement of regular staff to support these activities the division requires one official at the rank of Additional Director-Law,

two Senior Law Officer and two Law Officers distributed amongst the two sub-divisions as follows:

Law-I



Additional Director-Law (1)

AD Law would be responsible for litigations in Supreme Court, Delhi High Court, All High Courts (except Delhi High Court.), Central Administrative Tribunal (CAT) Principal Bench, NGT Principal Bench, and New Delhi. The recruit shall be the reporting officer for Senior Law Officers in all legal matters.

Senior Law Officer (1)

One Senior Law Officer shall assist AD-Law in all legal matters at Delhi.

Law Officer (1)

The recruit shall be responsible for NGT Principle Bench Cases. He/she would report to Senior Law Officer in these matters.

Law-II



Senior Law Officer (2)

One Senior Law Officer shall assist AD-Law in all legal matters other than those of Delhi. NGT Zonal Benches, NGT Circuit Benches and all District and Session Courts in India

Law Officer (2)

The recruit shall be responsible for Supreme Court matters. He/she would be responsible for CAT Principle Bench Matters. He/she would report to Senior Law Officer in the concerned matters. The additional requirement is shown in table 6.1(b)

Table 6.1 (a) Scientist Requirement Group A: Head Office

S.No	Division	Scientist B	Scientist C	Scientist D	Scientist E	Scientist F	Scientist G	Total
							2(0)	2(0)
	Procurement Officer	1(0)	-	-	-	-	-	1(0)
1.	Industrial Pollution Control (IPC)					1(0)	- (0)	1(0)
1.1	IPC-I : Chemical Industries	1(0)	-(2)	- (1)	- (2)	-(0)	-(0)	1(5)
1.2	IPC-II : Energy, Metallurgical	3(0)	-(2)	1(1)	-(1)	-(0)	-(0)	4(4)
1.3	IPC-III : Agro	2(0)	1(2)	-(1)	-(1)	-(0)	-(0)	3(4)
1.4	IPC-IV : Animal Products	1(0)	1(1)	1(0)	-(1)	-(0)	-(0)	3(2)
1.5	IPC-V : SSI	2(0)	-(0)	1(0)	-(1)	-(0)	-(0)	3(1)
1.6	IPC-VI : Industrial Pollution Coordination	-(1)	-(0)	-(1)	-(1)	-(0)	-(0)	-(3)
1.7	IPC-VII : Industrial Clusters and Enforcement	2(0)	-(0)	1(0)	-(2)	-(0)	-(0)	3(2)
2.	Urban Pollution Control					1(0)	-(0)	1(0)
2.1	UPC-I	1(0)	-(3)	-(1)	-(1)	-(0)	-(0)	1(5)
2.2	UPC-II	1(0)	1(0)	1(0)	-(1)	-(0)	-(0)	3(1)
2.3	UPC-III	-(1)	-(0)	-(0)	-(1)	-(0)	-(0)	-(2)
3.	Waste Management					1(0)	-(0)	1(0)
3.1	WM-I	2(0)	1(2)	1(1)	-(1)	-(0)	-(0)	4(4)
3.2	WM-II	2(0)	-(2)	-(1)	1(1)	-(0)	-(0)	3(4)
3.3	WM-III	1(0)	1(0)	-(1)	-(1)	-(0)	-(0)	2(2)
						1(0)	-(0)	1(0)
4.	Air Quality Management	2(0)	3(2)	1(0)	-(1)	-(0)	-(0)	6(3)

5.	Water Quality Management					1(0)	- (0)	1(0)
5.1	WQM-I: Water Quality Assessment and Monitoring	3(1)	- (0)	1(0)	- (1)	- (0)	- (0)	4(2)
5.2	WQM-II: Rejuvenation of Ganga (Namami Ganga)	2(0)	- (0)	- (1)	- (1)	- (0)	- (0)	2(2)
6.	Laboratories							
6.1	Air Quality-I (Ambient & Source)	3(5)	- (5)	- (1)	- (1)	- (0)	- (0)	3(12)
6.2	Air Quality-II (Air Toxic)	2(0)	2(0)	- (0)	- (1)	- (0)	- (0)	4(1)
6.3	Trace Organic	- (2)	- (1)	- (1)	- (1)	- (0)	- (0)	- (5)
6.4	Water and Waste Water	- (1)	- (0)	- (1)	- (0)	- (0)	- (0)	- (2)
6.5	Instrumentation	2(2)	- (2)	- (0)	- (1)	- (0)	- (0)	2(5)
6.6	Biological	3(2)	1(0)	- (2)	- (1)	- (0)	- (0)	4(5)
7.	Pollution Control Planning (PCP) & Public Relations & Grievances, and ETU	3(0)	1(1)	- (1)	- (5)	- (1)	- (0)	4(8)
8.	Information Technology	1(0)	1(2)	- (2)	1(1)	- (0)	- (0)	3(5)
9.	Law							
9.1	Law- I	- (0)	- (0)	- (0)	- (1)	- (0)	- (0)	- (1)
9.2	Law -II	- (0)	- (0)	- (0)	- (1)	- (0)	- (0)	- (1)
10.	Building	- (0)	- (1)	- (0)	- (1)	- (0)	- (0)	- (2)
11.	Quick Response Team (QRT)	3(1)	2(0)	1(0)	1(2)	- (0)	- (0)	7(3)
Total		43(16)	15(28)	9(17)	3(34)	5(1)	2(0)	77(96)

* Parenthesis represents existing workforce

Table 6.1(b) Administration Requirement Group A: Head Office

S.No	Division	AD-Law	Senior Law Officer	Law Officer	Total
1.	Law				
1.1	Law- I	1	1	1	3
1.2	Law –II		1	1	2
Total					5

II Group B (Technical and Administrative)

Accounts Division



Accounts Officer (1)

The recruit shall aid in preparation of salary bills for project staff, maintenance of saving details for exemption in income tax and computation of income and deductions. He/she would file quarterly return of income tax deduction from salary and shall prepare form no 16 of Tax Deduction at Source to be issued to employee. He/she shall be responsible for preparation of DA arrear bills and leave encashment, gratuity. Bonus, leave salary pension contribution etc.

Accounts Officer (2)

The recruit shall engage in preparation of Nominal Roll for non-plan expenditure, maintenance of salary registers/ record and books of accounts of Central Provident Fund (CPF) and bank reconciliation. He/she would be responsible for audit of CPF accounts and for maintenance of subsidiary ledger of CPF. He/she would process withdrawal/ final settlement from CPF and would be required to oversee subsidiary records of New Pension Account.

Assistant Accounts Officer (1) and Assistant Accounts Officer (2)

The recruits shall be responsible for processing of project payment to State Boards and other agencies and for opening of LCs for import of equipment. They would be involved in processing purchase bills & other bills /claims. They shall also supervise the processing of TA/DA & LTC, medical claims, children education allowance and telephone bills. They would look after Annual Maintenance Contract (AMC) of Instruments, office appliances, repairing & maintenance of vehicles. They shall coordinate with the Travel Agency in case of any training / seminars/ meeting. They would oversee the building maintenance, timely payment of electricity and water bills. They would aid in settling security service and guest house maintenance bills. The recruits would be engaged in clearing monitoring allowance and overtime allowance. They shall settle all printing and advertisement bills, legal fee bills and miscellaneous contingencies.

Law Division



Assistant Law Officer (1) and Assistant Law Officer (2)

The recruits shall assist Law Officer for NGT Principle Bench Cases. They would report to Senior Law Officer in all concerned matters.

Assistant Law Officer (3)

The recruit along with Law Officer will be responsible for Supreme Court cases. He/she will be report to Senior Law Officer in all concerned matters.

Assistant Law Officer (4)

The recruit along with Law Officer shall be responsible for CAT Principle Bench and Delhi High Courts Matters. He/she would report to Senior Law Officer in all concerned matters.

Assistant Law Officer (5)

The fifth recruit of the rank ALO with Law Officer shall be responsible for All High Courts (except Delhi High Court) matters. He/she would report to Senior Law Officer regularly in all related matters.

Assistant Law Officer (6)

The sixth recruit of the rank ALO with Law Officer would be responsible for all District & Session Courts of India matters. He/she shall report to Senior Law Officer regularly in all related matters.

IT Division



SSA (1)

The Senior Scientific Assistant shall be engaged in integration/configuration of Industries for monitoring and compliance purposes. He/she would also aid in preparation of reports and gap analysis both off-line/live.

NRTOL



SSA (1)

The recruit shall look after operation, maintenance, calibration and analysis of allocated trace organic compound groups by Gas Chromatography Coupled to Low Resolution Mass Spectrometry (GC-LRMS) / High-Performance Liquid Chromatography with Mass Spectrometry (HPLC-MS/MS). He/she would be responsible for Quality Assurance/Quality Control (QA/QC) related to assigned compound groups and data processing. He/she shall be engaged in report preparation, writing and presentations about their respective assigned compound groups.

Instrumentation Lab



SSA (1)

The recruit shall assist the officers, in operation of existing instruments as well as the newly purchased instruments. The official would also be responsible for quality Control activities i.e. NABL records, audits, calibration of equipment & instruments. He/she shall also assist in the purchase of chemicals, glassware, consumables etc. and would also assist to carry forward the project study. He/she shall procure instruments and would be involved in preparation of technical specifications, evaluation of technical & financial bids, installation of instrument including the arrangements of prerequisite, procurement of accessories, consumables, chemicals, glassware and other miscellaneous items and finally their operation and maintenance.

Waste Management

WM-I



SSA (1)

The recruit shall aid in work related to guidelines/ Standard Operating Procedures (SoPs) for recycling, utilization, pre-processing, co-processing of hazardous and other wastes. He/she shall assist the concerned scientists in updating online application and preparing status reports. He/she would be involved in preparation of draft protocols for trial run monitoring and for compilation of compliance status of utilization of wastes and data pertaining to Basel, Stockholm, Rotterdam and Minamata.

He/she shall assist in the on-going projects. The recruit would engage in work related to new technologies in waste management and Waste to Energy plants which involves submitting Annual Report to the MoEF & CC, compiling and examination of annual returns. He/she shall be responsible to prepare guidelines and to conduct literature survey on various thematic areas as required under the rules. He/she would assist in preparation of guidelines, upgrading of information and going for field visits for verification.

He/she would be required to document, compile data on e-waste and uploading on websites of Central Pollution Control Board. He/she shall prepare and verify the list of dismantlers, recyclers, collection centres of producers along with their address and capacity. The recruit would also be responsible for placing the list on web site of CPCB and for its periodic updates. He/she shall also fulfill any other function delegated by the Ministry under these rules from time to time.

Air Quality (Ambient & Source) Lab



SSA (1)

The NAMP monitoring is currently carried out by Junior Level Officials (mostly promoted from Attendant level to JLA), although this activity should be done by at least by JSA / SSA level. On appointment of new staff, the existing NAMP staff may be posted in the laboratory for other routine activities.

Air Quality-II (Air Toxic) Lab



SSA (1)

The recruit shall aid in work related to assessment of air toxic compounds like benzene, PAH, etc. He/she shall also assist the concerned scientists in monitoring of molecular markers. The additional numbers are depicted in table 6.2 (a) and 6.2(b)

Table 6.2(a) Technical/ Scientific Requirement Group B: Head Office

S.No	Division	SSA	Technical Supervisor	Total
1.	Waste Management			
1.1	WM-I	1	-	1
2.	Laboratories			
2.1	Air Quality-I (Ambient & Source)	1	-	1
2.2	Air Quality-I (Air Toxic)	1	-	1
2.3	Trace Organic	1	-	1
2.4	Instrumentation	1	-	1
3.	Information Technology	1	-	1
	Total			6

Table 6.2(b) Administration Requirement Group B: Head Office

S.No	Division	Accounts Officer	Assistant Accounts Officer	Assistant Law Officer	Total
1	Law	-	-	6	6
2	Accounts	2	2	-	4
	Total		2	2	6
					10

III Group C (Technical and Administrative)

IT



Junior Technician (1)

The recruit shall be responsible for LAN/WAN management.

Water and Waste Water Lab



JLA (1)

The recruit shall be analyzing physio-chemical parameters of fresh water samples (average 150 samples per month). He/she would be required for Soil & Solid Waste analysis Section of Water Lab, at present only two recruits of the rank SSA are available. He/she shall assist in analysis of the samples which are to the tune of 60 plus, per month.

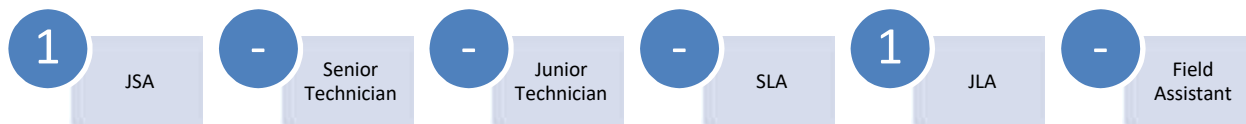
He/she would be required to assist in activities of Fresh Water & & Soil Section of Water lab which includes laboratory cleaning, cleaning of glassware, lab tables, instruments & equipment. He/she shall also assist in sample collection and distribution of analysis report.

Field Attendant (1) and Field Attendant (2)

They recruits shall assist in execution of projects, monitoring, assessment and inspection of industries Petrochemical, Pharmaceutical, Chlor-alkali, Organic Chemicals ,Oil and Drilling, Soda Ash, Manmade fibre. They would be fundamental in compiling baseline data for development & revision of Environmental Standards (Effluent and Emission) etc. They would be responsible to assist Scientists in providing information on RTI questions and implementation of Directions and other routine activities related to above mentioned sectors. They shall be involved

in activities to assist in installation of Online Monitoring systems in 17 categories in Petrochemical, Pharmaceutical & Chlor-Alkali industries.

NRTOL



JSA (1)

The recruit shall be responsible for operation, maintenance, calibration and analysis of allocated trace organic compound groups. He/she would oversee the QA/QC related to assigned compound groups. The recruit would engage in field sampling of Stationary Emission Sources, Ambient Air, River / Lake/ Pond / Well / Drain / Industrial Effluent etc.

JLA (1)

He/she would be managing activities related to sample processing, pre-treatment, extraction, concentration, clean-up and final extract make up etc., and field sampling of stationary emission sources, ambient air, rivers, lakes / ponds / wells / drains / industrial effluent etc. shall be his duty. He/she shall be responsible for transportation, preservation and storage of samples collected from field visits.

Instrumentation Lab



JSA (1)

The recruit shall be responsible for looking after the new File Tracking System introduced in the CPCB, HO-Delhi. He/she would also be utilized for data record of sample receiving. As, there is lots of data on various elements , heavy metals, AOX and TOC generated he/she would also assist in maintaining the files of Environmental labs & Computer work.

Air Quality Management

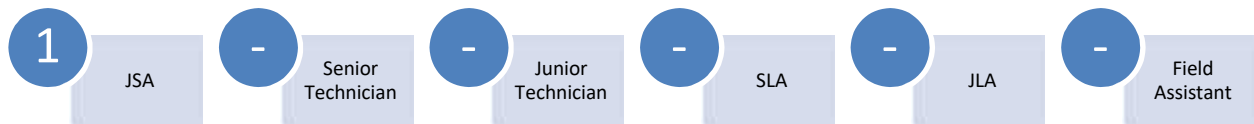


JSA (1) and JSA (2)

The recruits shall assist Scientist D and Scientist C in the collecting data for source apportionment studies, vehicular pollution management and manual stations of National Air Quality Monitoring Programmes.

Water Quality Management

WQM-I (*Water Quality Assessment and Monitoring*)



JSA (1)

The recruit shall assist Scientist D and Scientist C in the aforesaid activities.

WQM-II (*Rejuvenation of Ganga (Namami Ganga)*)



Field Attendant (1)

The recruit shall assist Scientists in performance evaluation of STPs which are gradually increasing in number on regular basis.

Waste Management

WM-I



JSA (1)

The recruit shall be responsible to maintain a list of registered recyclers and manufacturer for keeping records submitted by importers. He/she would assure that the list is updated on CPCB website. He/she would engage in inspection or monitoring of the Health Care Facility (HCFs)/ Common Bio- Medical Waste Treatment Facility (CBWTFs)/ Armed Forces Health Care Establishments (AFHCEs) and collection of water/ash/stack emission samples during inspection/ monitoring. He/she would be fundamental in sample analysis of samples collected during the visits and shall prepare visit reports. The recruit would also be required to compile data relating to the BMW Management and to identify gaps in BMW generation and treatment.

Field Attendant (1)

The recruit would be responsible for collection of water/ash/stack emission samples during inspection/ monitoring. He/she would also collect data for different streams of waste like e-waste, BMW, etc. He/she shall also aid in setting up of instruments at field location and related activities like climbing the stack.

IPC-VII: Industrial Clusters and Enforcement



JSA (1)

The recruit shall assist Scientist D and Scientist C in collecting data from Critically Polluted Industrial Clusters.

Air Quality-I (Ambient & Source)



JSA (1)

The NAMP monitoring is carried out by Junior Level Officials (mostly promoted from Attendant level to JLA), while this activity should be done by at least by JSA / SSA level. On posting of new staff, the existing NAMP staff can be posted in the laboratory for routine activities.

Senior Technician (1)

The recruit shall be responsible for continuing and supervising Source Emission Monitoring.

Air Quality-II (Air Toxic)



Field Attendant (1)

The recruit shall collect sample and ground data for QA/QC. He/she would assist in setting up probes for assessment of air toxic compounds.

Biological Lab



JSA (1), JSA (2) and JSA (3)

The recruits would collect data on the performance evaluation of STPs to assist Scientist C. They shall participate in gather records on bio-monitoring and bio-mapping of Rivers.

The recruits shall aid Scientist B in analysis/testing of samples for biological parameters as per NABL accreditation scope

Field Attendant (1)

The recruit would be responsible for sample collection for the water quality monitoring. He/she would also ensure safe transportation and storage of samples. He/she shall also add any chemicals required to store the samples and prevent them from spoiling. The requirements are shown in table 6.3.

Table 6.3 Technical/ Scientific Requirement Group C: Head Office

S.No	Division	JSA	Senior Technician	Junior Technician	SLA	JLA	Field Assistant	Total
1.	Industrial Pollution Control (IPC)							
1.1	IPC-VII : Industrial Clusters and Enforcement	1	-	-	-	-	-	1
2.	Waste Management							
2.1	WM-I	1	-	-	-	-	1	2
3.	Air Quality Management	2	-	-	-	-	-	2
4.	Water Quality Management							
4.1	WQM-I: Water Quality Assessment and Monitoring	1	-	-	-	-	-	1
4.2	WQM-II: Rejuvenation of Ganga (Namami Ganga)	-	-	-	-	-	1	1
5.	Laboratories							
5.1	Air Quality-I (Ambient & Source)	1	1	-	-	-	-	2
5.2	Air Quality-I (Air Toxic)	-	-	-	-	-	1	1

5.3	Trace Organic	1	-	-	-	1	-	2
5.4	Water and Waste Water	-	-	-	-	1	2	3
5.5	Instrumentation	1	-	-	-	-	-	1
5.6	Biological	3	-	-	-	-	1	4
6.	Information Technology	-	-	1	-	-	-	1
Total								21

The scientist population pyramid (existing v/s proposed) is developed on the basis of the table 6.4 shown below.

Table 6.4 Existing and Recommended Positions: Scientific / Technical

S. No.	Post	Existing	Proposed/Recommended
1.	Scientist G	0	2
2.	Scientist F	1	5
3.	Scientist E	34	3
4.	Scientist D	17	9
5.	Scientist C	28	15
6.	Scientist B	16	42
7.	Procurement Officer	00	01
TOTAL		96	77

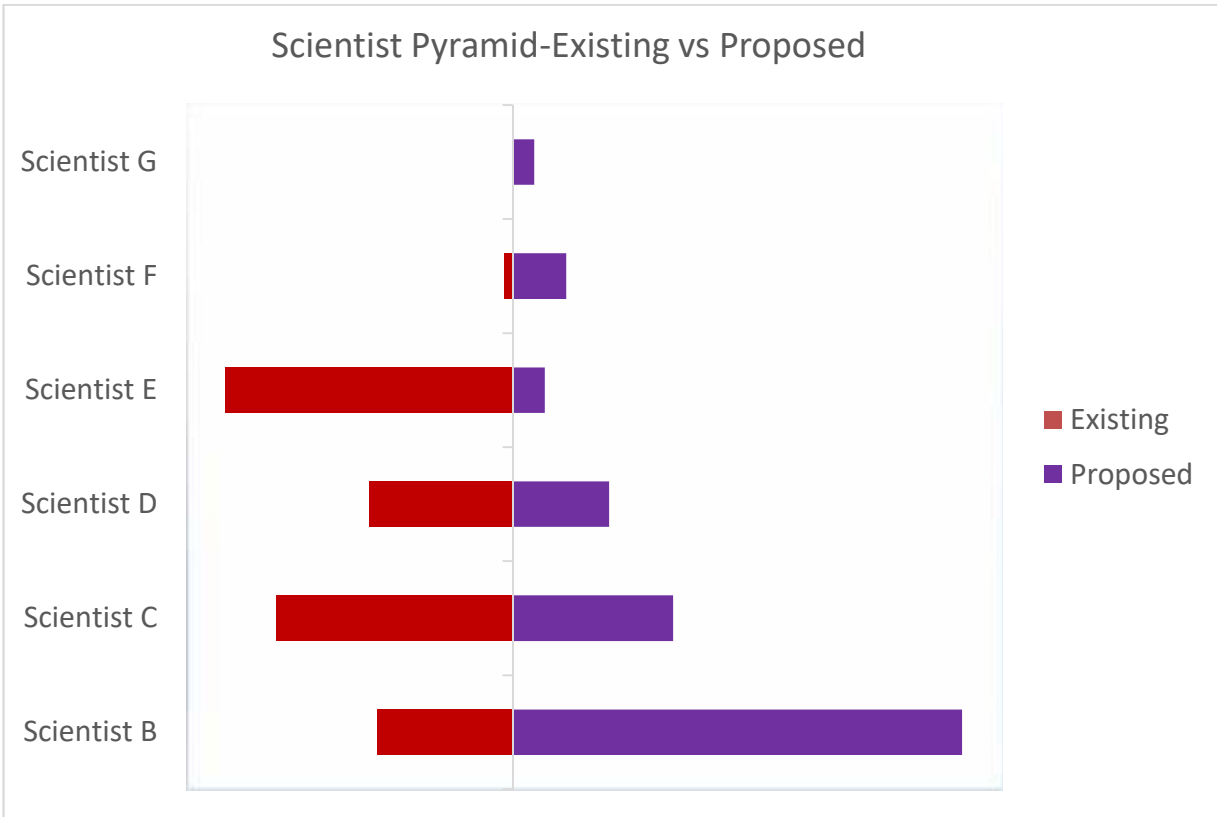


Figure 6.1 Scientist Population Pyramid

The Figure 6.1 shows the existing and proposed scientist population pyramid as depicted by red and purple bars respectively. The scientist population pyramid clearly highlights that the existing hierarchy of different levels of Scientists ranging from B to G is skewed. It is constrictive and does not follow a bottom heavy structure. As it is clearly seen the number of Scientist E is the highest which reflects that a poor population distribution of Scientists. On the contrary IIPA study team proposes an expansive Scientist population pyramid with more young officials. The existing structure at CPCB would lead to loss of information as there would not be a second in line individual ready when the senior attains superannuation. Whereas the approach suggested by IIPA would help the seniors of the divisions to be able to groom the juniors and share their rich experiences. If the gap is not bridged the future generations of the organizations would not be able to imbibe the necessary skill and knowledge thus hampering the flow of legacy.

6.1.2. Manpower Justification: Regional Directorates

The growing urbanization and industrialization leading to the ever-rising pollution started posing challenges before CPCB. To meet the uphill task of effective pollution control, CPCB set-up its Regional Directorates in the country during late nineties. CPCB has 6 Regional Directorates located at Bengaluru, Kolkata, Shillong, Bhopal, Lucknow, Vadodara catering to various States and a Project Office at Agra. Regional Directorates are regional/field offices of CPCB which execute all schemes and plans prepared by CPCB Head office. Regional Directorates undertake on ground investigation and send reports on Water Quality Monitoring, Air Quality Monitoring, Industrial Inspection and other associated activities to the Head office for further action. Each Regional Directorate has a defined area of jurisdiction under its ambit.

I. Group A (Technical/Scientific and Administrative)

1. Bengaluru

Jurisdiction: Karnataka, Andhra Pradesh, Tamil Nadu, Kerala, Goa, Puducherry & Lakshadweep covering a total area 639474 Sq km and vast coastal stretch of 3025 km.

Established in October 1988

The Bengaluru Regional Directorate currently has around 30 officials including Scientific, technical and supporting administrative staff. It also has a well-established laboratory which is recognized under E(P)A, 1986 and is equipped with sophisticated instruments like Ion Chromatography, Gas Chromatography, Toxicity characteristic leaching procedure (TCLP) equipment, Mercury Analyzer, Microwave digester, Atomic Absorption Spectrophotometer, OX analyzer and Volatile Organic Compounds (VOC) analyzer. The Laboratory is at present under the process of obtaining NABL accreditation.

The Regional Directorate also has a mobile laboratory which enables it to perform analysis of immediate parameters in the field itself and thus facilitates meticulous monitoring and analysis.

The South Regional Directorate is primarily entrusted with the responsibility of co-ordination with all concerned SPCBs as well as other organizations engaged in Pollution Control Activities.

The major activities are:

- Monitoring of centrally sponsored projects like National Ambient Air Monitoring, Global Environmental Monitoring & Monitoring of National Aquatic Resources, facilities created under National River Action Plan etc.
- The office directly takes up monitoring of aquatic resources like rivers, lakes, ground water and coastal waters leading to preparation of action plans for pollution mitigation.
- Preparation of Environmental status report for various cities in the zone.
- Monitoring & review of critically polluted (Problem) areas.
- Monitoring of common facilities like Common Effluent Treatment Plants, Sewage Treatment Plants, Common Biomedical Waste Treatment Facilities & TSDF for Hazardous Waste etc.
- Environmental Surveillance activities like surprise inspection of industries on random basis, investigation of VIP complaints and joint monitoring with MoEF for the projects cleared under EIA.
- Follow-up of court directives.
- Associating with various committees appointed by state governments or honourable courts.
- Additionally, this office also provides platform for research students to get exposed to new technologies by involving them in various innovative projects like low cost wastewater treatment, E-Waste Characterization, Bio-monitoring of Lakes in Bangalore City, Impact of immersion of *Ganesh* Idol in Bangalore lakes etc

The current requirement of the scientific technical staff of Bengaluru is as shown below:



Scientist F (1)

He/ she would be involved in NGT inspection and routine inspection & monitoring. He shall look after timely redressal of public complaints, supervise activities of Environment Surveillance Squad and shall administer the compliance verification of industries in the respective states. He/ She shall be the Regional Directorate Nodal officer for Bengaluru to communicate and interact with Chairman CPCB.

Scientist C (1)

The Regional Directorate requires a scientific officer in the rank of Scientist - C to take care of day to day activities for adhering and following the norms set by the accreditation bodies exclusively. He/she shall conduct internal & external calibration of all equipment and procurements. The recruit would ensure that the laboratory is ready for National and International participation in Proficiency Tests (PT) and also for NABL accreditation. He/she shall be fundamental in conducting internal and external trainings for the lab staff and would conduct quality control checks regularly. The recruit would be engaged in preparing quotations for instruments, maintaining lab imprest, finalizing rate contract and shall prepare archive schedule and disposal methods.

Scientist B (1)

The recruit shall assist Sc.-E/Sc.- D in the matters of state co-ordination with respect to Pollution Control Boards of the following states. One of the recruit shall coordinate with PCBs of Tamil Nadu, Andhra Pradesh and Telangana and the other would synchronize with PCBs of Karnataka, Kerala, Goa, and Puducherry & Lakshadweep PPCC.

He/ she would assist Scientist F in NGT inspection & monitoring. He shall further aid in redressal of public complaints, Environment Surveillance Squad follow-up, compliance verification of industries, common treatment facilities etc. in the respective states. The additional requirement is depicted in Table 6.5(a).

2. Lucknow

Jurisdiction: Uttar Pradesh (UP), Uttarakhand, Haryana, UT-Chandigarh, Himachal Pradesh, Jammu & Kashmir, Delhi. The project Office at Agra is also covered under this.

Infrastructure: Has 54 dedicated members, the Regional Directorate has its permanent establishment at Gominagar, Lucknow. The office setup possesses State of Art Administrative and Laboratory Infrastructure. The Laboratory has achieved NABL Accreditation as per International Standard ISO/IEC 17025:2005 for Chemical and Biological Testing. The Regional Directorate is entrusted with following activities:

- Co-ordination with SPCBs and PCC
- Pollution Assessment, Survey & Monitoring
- Pollution Control Enforcement
- Hazardous Waste Management
- Bio-medical Waste Management
- Laboratory Management and Testing
- Data Base Management
- Training & Mass Awareness Activities

Industrial Scenario: The North Zone is dominated with Agro-based industries and their ancillary units. Other major industries include Integrated Aluminium Smelter, Chlor-alkali plant, Fertilizer, Cement and Stone Crushers.

Project Office, Agra

Established in November, 2001

The Project Office-cum-Laboratory at Agra is responsible for monitoring AAQ on all week days at four identified locations at Agra as delegated by the Supreme Court. Consequently, in April 2003 the Supreme Court abridged the monitoring activity to 208 days in a year at three locations, while the monitoring continued for all days at Taj Mahal. As maintained by verdict adopted at the 132nd Board Meeting, currently monitoring is done for 104 days in a year at three trans-Yamuna stations and for all days (except one weekly holiday) at Taj Mahal. The fund for this

extensive monitoring was jointly shared by MMB (Govt. of UP) & MoEF up until March, 2005. Since April, 2005 the entire activity has been under operation as per plan activities of CPCB and fund is being met from the grant-in-aid of CPCB. CPCB Project office-Agra has its jurisdiction over Taj Trapezium Zone (TTZ) in the state of Uttar Pradesh.

Mandates: Important aspects of the project office involve association with TTZ authorities to address the local issues besides coordination efforts towards environmental protection and pollution problems around Taj Mahal.

The Board in its 132nd meeting resolved to continue the office with following objectives:

- The office shall have entire TTZ area under its jurisdiction
- The mandate of the office would be to deal with the environmental issues of Taj Mahal and its surroundings
- To continue with the AAQ monitoring activity at four locations (Taj Mahal for all days except holidays and 104 days at other 3 locations)
- To look after the functioning of the infrastructure created under CIDA project and other bilateral projects including automatic air quality monitoring station and data display system (proposed in future).
- To carry out the source apportionment study of PM10 and emissions inventory in Agra and TTZ in particular
- Establishment of continuous air quality monitoring and on line data display system at Agra including data transfer to CPCB head office
- To coordinate with the State Board and District Administration towards implementation of various Rules & Regulations pertaining to environment
- ESS activities in the jurisdiction and gradual establishment of water laboratory, data base management system, training infrastructure with calibration facilities with special reference to Air Quality.

The current requirement of the scientific technical staff of Lucknow is as shown below:



Scientist F (1)

The recruit shall head the activities of Lucknow Regional Directorate and Project Office, Agra. He/she shall ensure Co-ordination with SPCBs and PCC in order to aggregate and disseminate information. For timely completion of projects and methodological execution the recruit shall engage in surprise visits to check for compliance of stated norms. As this regional directorate has an additional and important area TTZ under its jurisdiction, the development and revision of inventory of factories around the area would be administered by this recruit.

Scientist C (1)

The recruit shall coordinate with SPCBs and PCCs and shall supervise up-gradation of database management for proper dissemination of information. He/she shall also aid in providing training to officials of SPCBs and to conduct Mass awareness activities.

Scientist B (1)

He/she shall supervise operation and maintenance of microbiology laboratory & Bio-monitoring of rivers/aquatic resources including management of laboratory as per ISO/IEC 17025 and IS 18001 in the proposed separate Bio Lab. The recruit shall oversee the operation & maintenance of sophisticated instruments like AAS, Gas Chromatograph, Ion chromatograph etc. including management of laboratory as per ISO/IEC 17025 and IS 18001 in the proposed separate Instrumentation Lab.

Scientist B (2)

He/she shall look after the enforcement activities (implementation of various Pollution Control Acts and EPA Rules) including field activities and data management. The recruit shall supervise O & M and visits of NWMP, NAMP, Interstate River monitoring, stack monitoring, calibration

laboratory including management of laboratory as per ISO/IEC 17025 and IS 18001 in the proposed separate air lab. The additional requirement is depicted in Table 6.5(b).

3. Bhopal

Jurisdiction: Madhya Pradesh, Chhattisgarh & Rajasthan

Established in February 1995

Central Zone comprises of three states namely, Chhattisgarh, Madhya Pradesh and Rajasthan. Major categories of industries include Thermal Power Plants, Cement, Distilleries, and Pharmaceuticals, Sponge iron and Pulp & paper. Mining activities are done extensively in entire zone including coal, limestone, copper, zinc, quartz and other minerals. Soya bean processing units in MP, rice mills in Chhattisgarh and textile processing, dyeing and printing units in Rajasthan are other specific industries.

Major activities taken up at Regional Directorate, Bhopal include:

- Preparation of Environment Status Reports, Industry Specific Reports, Area Specific Reports
- Performance Evaluation Reports on Common Effluent Treatment Plants, Sewage Treatment Plants, Common Hazardous Waste TSDFs and Common Biomedical Waste Treatment Facilities.
- Inspection and monitoring of industries under 17 categories of industries
- Inspections carried out along with the Regional Offices of MoEF&CC for the investigations of public complaints with VIP reference, surprise inspections under Environmental Surveillance Squad activities, inspections of monitoring stations under NAMP and NWMP programmes, conducting mass awareness programmes and imparting training to the target groups.

The Regional Directorate has 24 officials working at Bhopal, 15 of them are from scientific and technical streams. The laboratory attached of the office is equipped to analyze all the essential physico-chemical parameters including advance instruments like Atomic Absorption Spectrophotometer, Gas Chromatograph etc. The office has the latest monitoring equipment for

ambient air quality, source emissions and noise level. Regional Directorate Laboratory is certified under IS 9001:2008 & OHSAS 18001:2007.

The current requirement of the scientific technical staff of Bhopal is as shown below



Scientist F (1)

He/she shall oversee activities related to E-Waste management which includes updating the Central Zone inventory of E-waste and ensuring the implementation of E-waste management regulations. The recruit shall oversee the inspection of Environmental sound Technologies E-waste processing units in Central Zone. He/she would assist in creating awareness on recycling of E-waste. Activities related to Battery Waste management which include updating the Central Zone inventory of battery waste and ensuring implementation of battery waste management rules and regulations and organizing workshops on battery waste recycling.

Scientist D (1)

The recruit shall be specifically for laboratory management (Management Representative). He/she would coordinate with HO & other organizations for laboratory development, AQC and accreditation. He/she shall ensure that the lab is prepared and developed for NABL accreditation. He/she would conduct field studies, surveys, monitoring and would engage in compilation of scientific reports. The recruit shall supervise activities related to after HOWM which includes implementation of HW rules and guidelines. He/she shall aid in updating central zone inventory of hazardous waste. He/she would oversee inspection of industries under Rule 11 for utilization of hazardous waste and during trial runs for co-processing of hazardous waste as a raw material or energy recovery. He/she shall deal in matters related to TSDFs, captive Sanitary Landfills and incinerators and would be administering the creation of hazardous waste data bank. He/she would work on remediation of hazardous waste contaminated dump sites at Ratlam under National Clean Energy Fund project and shall coordinate for disposal of UCIL waste.

Scientist C (1)

He/she shall be the coordinating officer (with state boards and government departments) for the state of Rajasthan. The recruit would supervise works related to Solid waste management and shall work on “Digitalization & E-Governance of Regional Directorate” in association with the support staff. He/she would coordinate the office welfare activities including sports/interaction meet and other functions in coordination with Regional Directorate Officer. He/she shall compile reports pertaining to Scientific /Technical work done in past & current year by the Regional Directorate with assistance from Scientist B and would be liable for all other duties assigned by Regional Directorate Officer from time to time.

Scientist B (1)

He/she shall assist Scientist “C” and supervise activities related to solid waste management which includes Municipal solid waste management and Domestic Sewage. The recruit shall develop an inventory of municipal solid wastes and sewage generation in central zone and would oversee the monitoring of existing MSW dumpsites to know the impact on ground water. He/she would follow up with the local bodies etc. for preparation of action plans for 100% collection, treatment of sewage & MSW and disposal of MSW as per the Rules. The recruit shall be elemental in organizing workshops for creation of awareness on guidelines.

He/she would be supervising the activities related to BMW management which includes implementation of biomedical waste management rules and monitoring of common biomedical waste treatment facilities for enforcement of guidelines. The recruit shall develop an inventory of BMW and its management scenario. He/she would be pivotal in organizing workshops on BMW and shall also ensure inspection and monitoring of Military hospitals for verification of compliance.

He/she shall oversee activities related to Plastic waste management which included preparation of central zone inventory of Plastic waste and implementation of Plastic waste management rules and regulations. He/she would aid in creating awareness by organizing workshops on Plastic waste management and recycling in cement plants. The additional requirement is depicted in Table 6.5(c).

4. Shillong

Jurisdiction: Arunachal Pradesh, Assam, Nagaland, Mizoram, Meghalaya, Manipur, Tripura & Sikkim

- Pollution Survey and Inventorization of the oil - drilling units in Upper Assam, owned by OIL and ONGCL.
- Groundwater Quality Monitoring in Digboi area (one of the identified problem areas).
- Water quality monitoring of Dhansiri River at the up-stream and downstream of Numaligarh Refinery Limited (NRL) to study the impact in the water quality due to discharge of refinery effluent.
- Study on "Status of Implementation of Bio-medical waste (Management & handling) Rules" in Health Care Units of major cities in the North eastern Region.
- Coordination with the NE State Boards with respect to establishment, development of laboratories, infrastructure facility etc. under the scheme of strengthening of SPCBs.
- Follow-up action for implementation of management of MSW & BMW and regarding the ban on recycled-plastic use in the North eastern States
- Surveillance of NAAQM and MINARS stations in north eastern States.
- Water quality monitoring of Barak River.
- Conducting Mass awareness programme in the North eastern Region.

The current requirement of the scientific technical staff of Shillong is as shown below:



Scientist F (1)

The recruit shall look after activities related to monitoring programs for groundwater quality and ambient air quality of the North eastern states. He/she would work for regular operation and development of Regional Directorate Laboratory and shall be responsible for coordinating with SPCBs/PCCs. He/she would ensure that the Regional Directorate of Shillong is strengthened.

Scientist C (1)

He/she would supervise regular operation of NAMP and NWQM stations in the North eastern region. He/she shall be fundamental in surveillance of NAAQM and MINARS stations in NE states and would be required to conduct Mass awareness programme in the North eastern Region.

Scientist B (1)

The recruit shall be responsible to conduct research relating to BMW Management of major cities in the North eastern Region and oversee all activities related to the same. He/she would be required to ensure action for implementation of management of MSW & BMW and regarding the ban on recycled-plastic use in the North eastern States. The additional requirement is depicted in Table 6.5(d).

5. Vadodara

Jurisdiction: Maharashtra, Gujarat, Daman & Diu and Dadra & Nagar Haveli

Established in year 1988

As the widest spectrum of industrial sectors/categories is housed in west zone, hence the west zone office carries out diversified activities related to environmental pollution and enforcement. The areas covered range from industrial pollution, urban & vehicular pollution, bio-medical waste, hazardous waste, common environmental infrastructure facilities, coastal pollution (oil spills), import/export of waste, economic industrial zones to ship-breaking.

Major activities dealt by this Regional Directorate are:

- Pollution Control Enforcement.
- Inspection and monitoring with reference to Public/VIP complaint, Court cases.
- Review of implementation of status of action plan of critically polluted/CEPI areas.
- Inspection & monitoring of common environmental infrastructure facilities
- Inter-state river monitoring.
- Surveillance of National Air & Water Quality monitoring stations.

- Execution of other projects as per annual action plan.
- Inspection, Monitoring as desired by CPCB-HO and MoEF&CC under various activities such as recognition of environmental laboratories, development of standards, inputs to various expert committees constituted by MoEF&CC, projects etc.
- Assessment of laboratories for recognition under Environment (Protection) Act, 1986.
- Monitoring & follow-up of HW co-processing activities.
- Compilation of information and making it available under 'Right to Information (RTI) Act'.
- Co-ordination with SPCBs & PCCs
- Strengthening, operation and maintenance of laboratory.
- Conducting mass awareness programme & training programmes.
- To deal with matters pertaining to parliament and parliamentary standing committee

The office has faced many challenging issues in the environmental sector and will remain in future activities to promote the protection, management and enhancement of the environment. The challenges of rapid economic growth coupled with an ever increasing population, has had a strong impact on the environment. Uncontrolled urbanization and the changing lifestyles of this population have led to an aggravated problem of Waste Management.

The current requirement of the scientific technical staff of Vadodara is as shown below:



Scientist F (1)

The recruit shall ensure that necessary data for proposed calibration laboratory and other instruments etc. Is collected and would coordinate activities including enforcement for the State of Maharashtra. He/she shall deal with matters related to NABL accreditation.

Scientist C (1)

The recruit shall aid in day to day operation and maintenance of the lab. He/she would ensure verification of Lab analysis results and will supervise record up-keeping at the Regional Directorate. In spare time the official would be utilized for the monitoring under various projects of Regional Directorate. He/she shall be elemental in the up keep, maintenance and strengthening of ISO related certification work.

He/he would be required to make separate teams for field work as well as laboratory analyses work in the laboratory, so as to distribute the work load among the officials. Sometimes two or three teams are also required for filed monitoring simultaneously.

Scientist B (1)

He/she shall oversee operation and maintenance of GC & GC-MS, AAS (02 Nos.), AOX Analyzer, Bomb calorimeter etc. The recruit shall have expertise is in handling sophisticated instruments. When the sophisticated instruments are not operational, the recruit will be utilized in the monitoring of CETPs, STPs, BMW Incinerators, ESS, inspection of NAMP, NWMP stations etc.

Scientist B (2)

He/she shall coordinate activities including enforcement for the State of Gujarat and UT of DDNH. The recruit would supervise the works related to common infrastructure facilities such as CETPs, STPs, TSDFs, BMWFs, MSWs, etc. in the West Zone. The additional requirement is depicted in Table 6.5(e).

6. Kolkata

Jurisdiction: West Bengal, Orissa, Jharkhand, Bihar, Andaman and Nicobar Islands

Established in September 1983

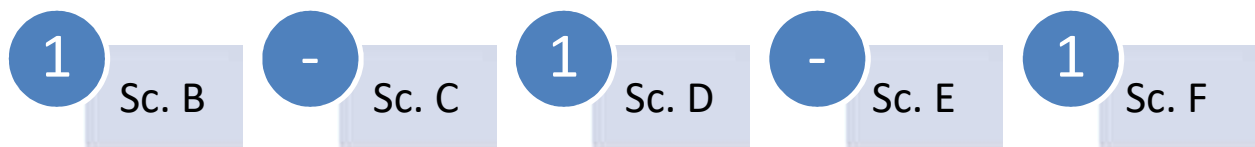
The Regional Directorate Kolkata (then Calcutta) started as a very small establishment, with a handful of staff till 1986. Earlier there were 11 Eastern and North Eastern States of the Country viz. Assam, Arunachal Pradesh, Bihar, Manipur, Meghalaya, Mizoram, Nagaland, Orissa,

Sikkim, Tripura, West Bengal and the Union Territory of Andaman & Nicobar Islands under its jurisdiction which were later reallocated when Regional Directorate at Shillong was constituted.

The Regional Directorate Kolkata Laboratory was the first laboratory set-ups of CPCB among the other Regional Directorates and was upgraded later with the support under GTZ project. It was specially designed to measure micro pollutants in air, soil, water and marine waters. The capacity of this laboratory to analyze more number of parameters has gradually increased every year specifically for the air-related analysis. Department of Ocean Development of the Union Government entrusted this Regional Directorate with the responsibility of monitoring the quality of off-shore water along the entire east coast of the country. CPCB played a key role in this off-shore water study and the laboratory was extensively used in DOD's COMAPS project and sophisticated equipment like AAS, GC, TOC etc. were installed and being operated.

Mobile Laboratory “SHODHAN” was constructed and commissioned on January 14, 1988. The refurbishing work of office cum laboratory was assigned Central Public Works Department. The office and laboratory shifted to new office premises in the beginning of 2008.

The current requirement of the scientific technical staff of Kolkata is as shown below:



Scientist F (1)

The recruit shall supervise monitoring and implementation of HOWM rules, E-waste rules, Biomedical etc. He/ She would be responsible for coordinating overall activities of the Kolkata Regional Directorate.

Scientist D (1)

He/she shall be involved in supervising the up-keep of the laboratory for analysis and accreditations. The recruit would also revise and update regional study reports.

Scientist B (1)

He/she would look after monitoring & implementation Municipal Solid Waste management rules, 2016, STP, Drains etc. The additional requirement is depicted in Table 6.5(f).

II Group B (Technical/Scientific and Administrative)

1. Lucknow + Project Office Agra



SSA (1)

The recruit shall assist in operation & maintenance of Bio Lab including management of laboratory as per ISO/IEC 17025 and IS 1800118001.

SSA (2)

The recruit shall assist in enforcement activities including field activities and compilation of data etc. and shall be required to aid in operation & maintenance of Air Lab including visits to NWMP, NAMP and Interstate River monitoring, stack monitoring etc.

Accounts Officer (1) Project Office Agra

As currently no administrative staff is available at PO Agra the recruit shall be required to support in administration and procurement related activities.

Assistant Accounts Officer (1)

Currently no accounts officer is available at Regional Directorate, Lucknow so the recruit shall be responsible for execution of Finance and Accounts activities at Regional Directorate Lucknow and P.O. Agra including tax deductions, salary of project staff & processing of other payments besides extending support of financial audit to HO from Regional Directorate.

Assistant Law Officer (1)

The recruit shall be responsible for the execution of Court Orders, co-ordination with CPCB Standing counsels and associated legal matters, as the number of court cases have increased significantly.

2. Bengaluru



SSA (1)

The recruit shall exclusively handle GC-MS, Bomb Calorimeter and TCLP and would be required to assist Scientist C in internal calibration. He/she shall be instrumental in maintaining of stock of stores of chemical, glassware, plastic wares, filter papers etc.

SSA (2)

The recruit would be required to selectively handle AOX Analyser, Flashpoint apparatus and Atomic Absorption Spectrometer. He/she shall assist Scientist C in uncertainty measurements and to carry out analysis of critical parameters.

Technical Supervisor (1)

The Technical Supervisor shall be responsible for maintenance and repair of laboratory instruments/equipment. He/she would be responsible for calibration of glassware and shall be involved in supervising instrument use in field monitoring.

3. Vadodara



SSA (1)

The recruit shall aid in calibration and maintenance of laboratory equipments and field monitoring instrument/equipment, including proposed calibration lab. He/she shall be responsible for laboratory result compilation and record maintenance for ISO and other requirements.

SSA (2)

The recruit would be responsible for field monitoring of source emission, AAQ and water/wastewater. He/she shall be utilized for conducting analysis of various parameters of water and air in the laboratory.

Technical Supervisor (1)

He/she shall be required to look after the proposed calibration laboratory and lab instrument maintenance. He/she would also provide necessary assistance for field monitoring of NAMP/NWMP stations.

Assistant Accounts Officer (1)

The recruit shall carry out all finance & accounts related works including tax deductions, salary of project staff & processing of other payments besides extend support of financial audit to HO from Regional Directorate.

Assistant Law Officer (1)

The recruit shall be responsible for the execution of Court Orders, co-ordination with CPCB Standing counsels and associated legal matters, as the number of court cases have increased significantly.

4. Bhopal



SSA (1)

The recruit shall be responsible for inspection of monitoring stations under NAMP/NWMP and other facilities including Interstate River monitoring and report preparation. He/she shall be instrumental in maintaining of stock of stores of chemical, glassware, plastic wares, filter papers etc. and for the up keep of the Regional Directorate laboratory.

Assistant Law Officer (1)

Currently 36 NGT cases are pending in NGT, Central bench Bhopal, Jodhpur & Circuit bench High Court, Jabalpur, Gwalior, Indore and Bilaspur. To look after the above cases and for co-ordination with the Head office, one assistant law officer shall be recruited.

5. Kolkata



SSA (1)

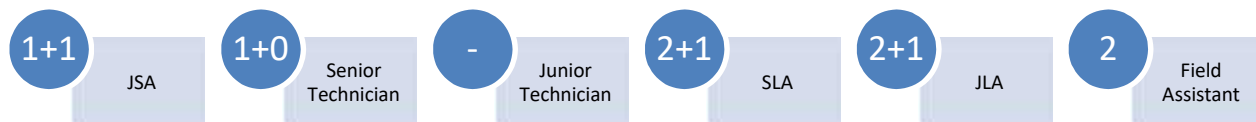
The recruit shall be involved in preparation of glass wares and other requisites of sample analysis. He/she would be required to aid in execution of projects participate activities and shall supervise sample collection. He/she shall also provide support information to the concerned scientists for projects like interstate monitoring of rivers in the eastern region.

Assistant Law Officer (1)

The Assistant Law Officer shall be required to deal with High Court & NGT cases in Eastern region and would also be responsible to attend the court sessions as and when required.

III Group C (Technical/Scientific and Administrative)

1. Lucknow + Project Office Agra



JSA (1)

The recruit shall engage in processing and analysis of water samples as well as ambient air/source emission and water quality monitoring etc.

JSA (2) Project Office Agra

The recruit shall be involved in monitoring activities at all stations & TTZ. He/she would be responsible for sample analysis, record management & Quality Assurance of Monitoring System at all stations.

He/she shall aid in instrument management and calibration of lab instruments, O&M of IC, assistance in aerosol profile, NO_x monitoring, rainwater characterization projects. The recruit shall be responsible for proper functioning of stations and lab of Agra office.

Senior Technician

The recruit shall aid in operation & maintenance of equipment/instruments and shall assisting in executing ambient/stack monitoring activities. He/she would ensure optimum operation and maintenance of Computer Systems, EPABX system, Data transmission, Local Area Networking, associated infrastructure and data management.

SLA (1)

He/she would be required to look after operation of AAQM station and assist in various monitoring programmes.

SLA (2)

The recruit would be utilized in processing and analysis of air and water samples including reagent preparation and laboratory maintenance and shall be of assistance in different monitoring programmes.

SLA (3) Project Office Agra

The recruit shall assist in AAQM activities all stations and TTZ and in analysis of samples. He/she would be responsible for management of store (chemicals, glassware and filter paper), and shall provide assistance in aerosol profile & Rain water characterization projects and data base management.

JLA (1)

He/she would assist SLA in operation of AAQM station and assist in various monitoring programmes.

JLA (2)

The recruit would assist SLA in processing and analysis of air and water samples including reagent preparation etc. and shall be of assistance in various monitoring programmes.

JLA (3) Project Office Agra

He/she would be responsible for sample collection and shall aid in monitoring activities. He/she shall also maintain records at stations and assist in analysis of samples, preparation of reagents and chemicals. The recruit would also assist in routine activities of laboratory.

Field Assistant (1) and Field Assistant (2)

The recruits would assist in field activities and day to day lab mechanism and photocopying. They shall be responsible for maintenance of equipments on field and shall collect baseline data. They would help with setting up of probes and instruments at the stack.

2. Vadodara



JSA (1) and JSA (2)

The recruits would be utilized for carrying out field activities for Inter-state River monitoring and surveillance of National Air & Water Quality monitoring stations in the following states: one of the Junior Scientific Assistant would be responsible for conducting the activities in Maharashtra whereas the other work area would be Gujarat and UT of DDNH.

JSA (3) and JSA (4)

They shall be responsible for analytical works in laboratory for all the samples received. The recruits shall aid in execution of other projects as per annual action plan. They shall also assist the concerned scientists in monitoring & follow-up of HW co-processing activities and also of critically polluted/CEPI areas.

Senior Technician (1)

The recruit shall assist in assessment of laboratories for recognition under Environment (Protection) Act, 1986. He/she shall support in activities related to proposed calibration laboratory and lab instrument maintenance and field monitoring.

SLA (1)

He/she shall assist in collecting samples to study pollution potential from Fishing Harbor to the Coastal Waters along with scientists concerned. The recruit shall be employed for carrying out field activities in Maharashtra and Gujarat and UT of DDNH along with the recruits of the rank JSA.

JLA (1)

He/she would assist the officials in sampling in field and shall aid in assessment of pollution potential in industries like textile industries in Surat.

JLA (2)

He/she shall assist in the laboratory in analytical works along with other support staff. He/she would aid in sample analysis to support case studies like that on Marine National Park, Gulf of Kutch, Jamnagar, and Gujarat.

Field Assistant (1)

The recruit shall aid in sample collection, maintenance and up keep of the lab.

3. Bhopal



JSA (1)

The recruit shall assist Lab In-charge in developing laboratory facilities and in obtaining accreditation for the laboratory. He/she shall aid inspection of NAMP stations and would be responsible for up keep of the laboratory.

JSA (2)

The Junior Scientific Assistant shall aid in analysis of air, water and waste water samples for required parameters as directed by the officer to be reported. He/she shall also assist in preparation of training needs of the staff from time to time.

SLA (1)

The recruit shall assist Lab In-charge in record maintenance and laboratory file management for the Air lab. He/she would maintain lab reagents, assist in the analysis, field studies, surveys, monitoring and other visits.

JLA (1)

The Junior Lab Assistant shall aid in the analysis of air samples and would ensure proper cleanliness in wet laboratory. He/she shall maintain log books of instruments, field studies, surveys, monitoring and other visits.

Field Assistant (1)

The recruit would be responsible for sample collection for the projects. He/she would also ensure safe transportation and storage of samples. He/she shall also aid in setting up of instruments at field location and related activities like climbing the stack.

4. Kolkata



JSA (1)

He/she shall assist in providing and compiling data for the concerned scientists for projects like Studies of red categories of industries in the Eastern Region and performance evaluation of CETPs.

JSA (2)

He/she shall be responsible for collecting data for surveillance of air and water quality monitoring stations including AAQM in Kolkata. He/she would be required to develop/update the inventory for Biomedical Waste Generation, Treatment and Disposal facilities in Eastern Region.

SLA (1)

The recruit shall assist in preparing of reagents and would be responsible for operation and maintenance of Arsenic Removal Plant (ARP) and STPs in West Bengal.

JLA (1)

He/she would be assisting the concerned scientists in testing parameters of water, parameters of sediments and parameters of air.

Field Assistant (1)

The recruit would be responsible for sample collection for the projects. He/she would also ensure safe transportation and storage of samples. He/she shall also aid in setting up of instruments at field location and related activities like climbing the stack to collect the sample.

5. Shillong



JSA (1)

The recruit shall be responsible to provide support for executing Pollution Survey and Inventorization of the oil - drilling units in Assam. He/she would assist scientists in keeping records up to date.

JSA (2)

The recruit would aid in collection and testing of samples for Groundwater Quality Monitoring in an identified problem area-Digboi.

JSA (3)

He/she would assist in the concerned scientists in surveillance of NAAQM and MINARS stations in NE states.

SLA (1)

The recruit shall aid to conduct research relating to BMW Management of major cities in the NE Region and shall assist the concerned scientist in developing an inventory for BWM generation and disposal.

JLA (1)

He/she shall aid in studying the impact in the water quality due to discharge of refinery effluent. The recruit would be instrumental in collecting data and shall provide assistance in report preparation.

JLA (2)

He/she would be required to look after the O&M and up-keep of Regional Directorate Laboratory for its regular operation and development.

Field Assistant (1) and Field Assistant (2)

Two attendants or Multi-Tasking Staffs shall aid in regular and proper management of Office. They shall assist the concerned staff in sample collection, transportation and storage.

6. Bengaluru



The present status is that, there are about 123 NGT and HC cases handled by Bengaluru office, which demands field monitoring and analysis and timely submission to report to the Hon'ble Court. In view of the same, the IIPA study team recommends four scientific staff in the rank of JSA.

JSA (1), JSA (2) and JSA (3)

They would be responsible to carry out routine works and to further assist in air quality and water quality monitoring in the lab. The recruits shall be appointed to prepare reagents and to

look after the up keep of the following labs. One would be handling the Water, Wastewater and Soil lab- Testing of samples for Bio-monitoring of Lakes in Bangalore City. The second recruit would be focussing dedicatedly to the **Air** lab and the concerned monitoring of the same. The Microbiology lab and the activities related to it would be administered by the third appointee.

JSA (4)

He/she would assist in activities related to Quality Control, field monitoring, project work and for preventive maintenance.

Senior Technician (1)

The recruit shall look after the activities of Water, waste water and Soil Lab. He/she shall aid in calibration of balance and spectrophotometer. He/she shall be of assistance in operation of IC, Bomb Calorimeter & TCLP.

Senior Technician (2)

The recruit shall look after the activities of Air Lab. He/she shall assist in development of Ring test facility and would aid in operation of instruments for air quality sample testing. He/she would also assist in activities of Microbiology Lab.

SLA (1)

The recruit shall assist activities related to Water lab which includes sample preparation for heavy metals, extraction and clean-up of organic extracts. He/she shall also look after decontaminating biological samples. He/she would also be utilized in maintenance of respective Soil lab instruments.

SLA (2)

The recruit shall assist in field monitoring, measuring field parameters maintenance of Air lab instruments. He/she would aid in field bio-monitoring, maintenance of respective Microbiology lab instruments.

JLA (1), JLA (2) and JLA (3)

The recruits would support technicians in keeping instruments in good working conditions and shall keep a record of maintenance & other environmental conditions in the following labs respectively. One of the recruitments would be responsible for Water and Soil lab. The other would look after the activities of Air laboratory. Microbiology laboratory activities would be furthered by the third recruitment.

Field Assistant (1)

The recruit shall assist in sample collection and monitoring activities.

Regional Directorates

Table6.5 (a) Manpower Requirement: Bengaluru

Bengaluru						
Group A (Technical/Scientific)						
Scientist B	Scientist C	Scientist D	Scientist E	Scientist F	Total	
1	1	-	-	1	3	
Group A (Administration)						
-Nil-					0	
Group B (Technical/Scientific)						
SSA	Technical Supervisor				Total	
2	1				3	
Group B (Administration)						
-Nil-					0	
Group C (Technical/Scientific)						
JSA	Senior Technician	Junior Technician	SLA	JLA	Field Assistant	Total
4	2	-	2	3	1	12
Group C (Administration)						
-Nil-					0	
Grand Total					18	

Table6.5 (b) Manpower Requirement: Lucknow

Lucknow+ Project Office						
Group A (Technical/Scientific)						
Scientist B	Scientist C	Scientist D	Scientist E	Scientist F	Total	
2	1	-	-	1	4	
Group A(Administration)						
-Nil-						0
Group B (Technical/Scientific)						
SSA	Technical Supervisor					Total
2+0	-					2
Group B (Administration)						
Accounts Officer	Assistant Accounts Officer	Assistant Law Officer			Total	
0+1	1+0	1			3	
Group C (Technical/Scientific)						
JSA	Senior Technician	Junior Technician	SLA	JLA	Field Assistant	Total
1+1	1+0	-	2+1	2+1	2+0	11
Group C (Administration)						
-Nil-						0
Grand Total						20

Table6.5 (c) Manpower Requirement: Bhopal

Bhopal							
Group A (Technical/Scientific)							
Scientist B	Scientist C	Scientist D	Scientist E	Scientist F	Total		
1	1	1	-	1	4		
Group A(Administration)							
-Nil-						0	
Group B (Technical/Scientific)							
SSA	Technical Supervisor					Total	
1	-					1	
Group B (Administration)							
Accounts Officer	Assistant Accounts Officer		Assistant Law Officer		Total		
-	-		1		1		
Group C (Technical/Scientific)							
JSA	Senior Technician	Junior Technician	SLA	JLA	Field Assistant	Total	
2	-	-	1	1	1	5	
Group C (Administration)							
-Nil-						0	
Grand Total						11	

Table6.5 (d) Manpower Requirement: Shillong

Shillong						
Group A (Technical/Scientific)						
Scientist B	Scientist C	Scientist D	Scientist E	Scientist F	Total	
1	1	-	-	1	3	
Group A(Administration)						
-Nil-						0
Group B (Technical/Scientific)						
-Nil-						0
Group B (Administration)						
-Nil-						0
Group C (Technical/Scientific)						
JSA	Senior Technician	Junior Technician	SLA	JLA	Field Assistant	Total
3	-	-	1	2	2	8
Group C (Administration)						
-Nil-						0
Grand Total						11

Table6.5 (e) Manpower Requirement: Vadodara

Vadodara						
Group A (Technical/Scientific)						
Scientist B	Scientist C	Scientist D	Scientist E	Scientist F	Total	
2	1	-	-	1	4	
Group A(Administration)						
-Nil-						0
Group B (Technical/Scientific)						
SSA	Technical Supervisor					Total
2	1					3
Group B (Administration)						
Accounts Officer	Assistant Accounts Officer	Assistant Law Officer			Total	
-	1	1			2	
Group C (Technical/Scientific)						
JSA	Senior Technician	Junior Technician	SLA	JLA	Field Assistant	Total
4	1	-	1	2	1	9
Group C (Administration)						
-Nil-						0
Grand Total						18

Table6.5 (f) Manpower Requirement: Kolkata

Kolkata						
Group A (Technical/Scientific)						
Scientist B	Scientist C	Scientist D	Scientist E	Scientist F	Total	
1	-	1	-	1	3	
Group A(Administration)						
-Nil-						0
Group B (Technical/Scientific)						
SSA	Technical Supervisor				Total	
1	-				1	
Group B (Administration)						
Accounts Officer	Assistant Accounts Officer	Assistant Law Officer			Total	
-	-	1			1	
Group C (Technical/Scientific)						
JSA	Senior Technician	Junior Technician	SLA	JLA	Field Assistant	Total
2	-	-	1	1	1	5
Group C (Administration)						
-Nil-						0
Grand Total						10
Regional Directorates Grand Total						88

6.2 General Infrastructure

General infrastructure of CPCB comprises of laboratories, computer facilities, library, and Environmental Planning studio. The CPCB laboratory at the Head office is the first Environmental Lab in the country that has been granted as IS 18001:2007 by BIS.

CPCB's foremost objectives include monitoring sources of pollution and to check ambient environmental quality. Laboratories are imperative to perform these tasks. The Central Laboratory of CPCB at Delhi has six sections of laboratories currently which are:

1. Water and Wastewater Laboratories
2. Air Quality-I Laboratory
3. Air Quality-II Laboratory
4. Bio-Science Laboratory
5. Instrumentation Laboratory
6. National Reference Trace Organic Laboratory

These labs support CPCB's mission and mandates by developing knowledge base, conducting assessments, and developing scientific tools that shape the underpinnings of CPCB. The labs identify research priorities and directly aid in national level regulatory implementation, enforcement and compliance.

6.2.1 Water and Waste Water Lab

The Water and Waste Water Laboratory has three analytical sections: Fresh water section, Waste Water section and Soil and solid waste section. The lab provides services to other labs and divisions of CPCB and conducts R&D project activities. The lab analyzes physio-chemical parameters in wastewater samples, fresh water samples and Soil solid wastes & Hazardous waste samples to provide reliable analytical data.

The division has adequate resources, infrastructure, equipment and technology to operate. Laboratory fulfills the performance Criteria as mentioned in CPCB Action Plan. The lab has qualified and experienced analysts and it follows NABL IS 17025:2005 Accreditation guidelines. The lab boasts of state of art Energy Efficient Construction without using wood. The Laboratory

work area is ergonomic with Modular Furniture supplemented with energy saving fixtures and furnishings. The Hot water supply in laboratory area is from dedicated solar water heater system. There is a provision for specially designed dedicated Energy efficient Variable Refrigerant Volume (VRV) Centralized Air conditioning system. There is a Cold Room with temperature control at 4°C for storing the samples. Maintenance of negative pressure in all the 03 laboratory sections and positive pressure air supply in sitting rooms. A dedicated provision for vapour collection treatment and exhaust System. The lab has Low Constant Volume (LCV) Fume Hoods with Digital Flow Monitor, Control Panel in Sample Pretreatment & Processing Rooms. Ducts for exhausting Vapours from laboratory area are present. There is a presence of Occupational Safety Equipment – Emergency Showers, Eyewashes, Face shield, Goggles, Respirators, and Aprons. Selected rooms have sensitive fire alarm & firefighting system and fire Proof Electrical Gadgets. The lab has uninterrupted Power Supply (UPS) System for instrument and lighting. Dedicated 100% Captive Power backup through DG Set. Convenient and elegant Cable Management System (CMS) for electrical and Data / communication system. The lab is equipped with advanced sophisticated latest instrumentation. The lab has aesthetic settings with Epoxy coated, acid & alkali proof, laboratory working table with chemical storage rack and glassware cleaning sink facility

Android mobile-phone based Bio-monitoring App. and Ganga Shravan Abhiyaan App. developed and launched on its website

6.2.2 Air Quality-I Laboratory

The Air Quality-I Laboratory of CPCB is recognized under the provisions of Environment (Protection) Act, 1986. The Air lab assists all CPCB divisions to carryout monitoring in the industries for compliance of the parameters. Quality is inbuilt in the Lab as it is ISO 17025 certified and fulfils the requirements as per ISO 18001.

The Lab works on the mandates prescribed by Air statutes. The lab caters to the collection, sampling and reporting of: Ambient Air Quality (NCR); CAAQMS (Nation-wide), stack monitoring, calibration facilities and method standardization.

The lab is well equipped with infrastructure facilities to carryout following parameter such as PM, SO₂, NO₂, sulphuric acid mist (including SO₃), Acid mist as HCl, Halides, and metals in the source emission monitoring. All information regarding research and data is made available through CPCB website.

Establishment of Monitoring and Lab facilities in all states and UTs have been major milestones of division. Changes in mandates of the laboratories with respect to rules and regulations are dynamic as what is advancement for today may not be valid as advancement tomorrow. Manpower and scientific expertise are major impediments for the division.

Although future targets for the division are mainly stipulated by MoEF through annual action plan yet the divisions endeavors to regularly update data and publish reliable nationwide air quality data. To check for quality of the lab internal audits are conducted.

Allocated budget is always less than asked. Therefore time span of implementation increases.

Android mobile-phone based App. SAMEER developed and launched on its website. The App. is a digital tool and can be employed in AQI evaluation.

6.2.3 Air Quality-II Laboratory

The lab caters to the Monitoring of molecular markers, assessment of Air Toxic Compounds, and QA/QC and accreditation of Labs. Its responsibilities include:

1. Routine Implementation of Quality in CPCB Laboratories in accordance with NABL 17025
 - a. Documentation.
2. Carrying out Internal Audit/ External Audits
3. Renewal application fee for NABL accreditation continuation
4. Organizing NABL related trainings
 - a. Quality Management and Internal Audit
 - b. Uncertainty measurement
 - c. Lead Accessor's Course.
5. Assessment and strengthening of NABL accreditation at ZO Laboratories

- a. Technical/Documentation/Trainings Support
6. Issuing of New Sample Receiving Formats, Analysis Report.
7. Revision of SOPs & Work Instruction
8. Revision of Quality Policy
9. Management Review Meetings
10. Proficiency Testing and Inter Laboratory Quality Control

NABL certifications and scope of testing include chemical and biological parameters.

The infrastructure for QA/QC have been improved, facilities like static injection for primary calibration and ring test facility for conducting Proficiency Testing (PT) exercise have been developed & work has been initiated. The division however requires adequate manpower & needs to be accorded importance.

There is no dedicated “Quality Management Division (QMD) with National Quality Reference Laboratory (NQRL)” at Central level in CPCB, hence the work of QA/QC is not paid much attention in any of the PCBs. Many labs are not accredited by the NABL or so.

Infrastructural requirements & mechanism to deliver have to be developed in order to strengthen the NABL Cell. A push from top management is required.

The cell implements ISO 17025, OHSAS 18001 and EPA 1986 criteria, conducts internal audits, surveillance audits and external audits, PTs/ILC, Renewal of Accreditation etc.

A dedicated “Quality Management Division (QMD) with National Quality Reference Laboratory (NQRL)” at Central level in CPCB for conducting calibrations, Inter-comparisons & Proficiency Testing (PT) exercise at national level is required to be setup. Some automation softwares like LIMS are required to keep up with technological advancements.

Infrastructure up gradation for this cell may require 30- 40 Lakh.

6.2.4 Bio Lab

The Bio-science laboratory is NABL accredited (ISO 17025) and it functions as per the guidelines of NABL by adopting Occupational health & safety management system (OH&SMS). Laboratory is equipped with temperature control facility, sterilized/ contamination free environment auto on-off illumination facility (for toxicity test) etc. The glass wares, instruments etc. available in the facility are periodically calibrated through NABL accredited calibration

laboratories. Adequate technological and other resources available in the lab which are partially assured.

Environmental samples and data of aquatic environment are collected and analyzed by this division. Majority of parameters are tested in-house. The quality of data collection and analysis has improved since the lab now has more sophisticated instruments. The Bio-science lab was recently renovated. Various Test methods of the bio lab have been adopted by BIS. Workload of the division has increased since new departments and divisions have come to know about the lab and its services. Since national standards/methods for certain parameters are unavailable or not widely accepted, international standards and procedures are used as proxy.

Currently to gauge performance and quality NABL audits are conducted. Performance targets of the lab for future are directed towards producing more reliable data and improve quality of information disseminated.

Android mobile-phone based Bio-monitoring App. developed and launched on its website. The Bio-monitoring App. is a digital tool and can be employed in biological water quality evaluation of inland surface freshwater bodies based on the Biological Water Quality Criteria. To improve quality of work external audits should be conducted. It is essential to promote Innovation and Research Input & Adopt new technologies. To gain international level acceptance and recognition of CPCB results it is absolutely mandatory that technical personnel get international exposure either by going abroad for training or by organizing expert lectures in the country itself.

6.2.5 Instrumentation Lab

The lab is equipped with instruments like Inductively Coupled Plasma- Atomic Emission Spectroscopy, Atomic Absorption Spectrometer, Mercury Analyzer, Adsorbable Organic Halides and TOC Analyzer which help in analyzing parameters within the scope of NABL. Apart from these the lab has an Energy Dispersive X-ray Fluorescence for PM_{2.5} and soil sediment analysis and Inductively Coupled Plasma- Mass Spectroscopy instrument for water and waste water analysis.

6.2.6 National Reference Trace Organic Laboratory

The development of National Reference Trace Organics laboratory (NRTOL) in collaboration with Indo-German Bilateral Programme GTZ-ASEM (now GIZ-ASEM) and with the assistance of Japanese Debt Relief Grant Assistance for Procurement of Instruments was an important milestone for capacity building and strengthening of CPCB Laboratories. The laboratory is first of its kind in India and having State of the Art facilities and International Standards Infrastructure facilities for analysis of trace organic pollutants as well as for analysis of Persistent Organic Pollutants in various environmental matrices including hazardous waste.

CPCB's National Reference Trace Organics Laboratory play an important role in assessing the status of environment comprising analysis of Trace Organics, POPs, VOCs in various environmental matrices such as water, air, soil, hazardous waste, solid waste, waste oil etc. It provides analytical support and services to other Divisions / laboratories of CPCB, SPCBs, PCCs and Govt. Organizations. The division also undertakes analysis related to legal cases, environmental surveillance etc. The lab currently sustains analytical activities for more than 210 trace organics belonging to various groups for present requirements.

The lab is endowed with State- of - Art, highly sophisticated infrastructure of International Standards and has expertise and trained manpower for Trace Organics Micro-pollutants analysis. There are however limitations in extension of lab activities due to shortage of technical & scientific manpower. The division's resources, infrastructure, equipment needs to be strengthened in relation to requirements/expectations. The lab has sufficient financial resources but there is a need for a plan for substitution of old, ageing instrumentation, adoption of advanced technologies

The NRTOL is recognized under the E(P)A, 1986 and is NABL accredited as per ISO 17025. The Lab is OHSMS/OHSAS 18001 certified from Bureau of Indian Standards, New Delhi and is enlisted in UNEP's POPs Laboratory Database.

Internal & External QA/QC are conducted to account for the division's quality and reliability of the data produced. Performance in National & International PT Participation provides evidence of Lab's accuracy.

NRTOL Division develops its Action Plan, which is integrated in CPCB's Annual Action Plan.

The Lab proposes an initiative to expand analytical activities for analysis of additional trace organics parameters of regulatory importance.

Future performance targets of the Lab include good quality Analytical output facilitated through Internal/External QA/QC and maintenance and periodical renewal of Accreditations/Certifications as per International Standards.

The lab pursues in-house, sponsored and collaborative R&D Projects Studies and helps in standardization of new methodologies for analysis of specific pollutants. The lab reviews and remarks National / International Technical reports, documents etc. and provides Scientific Training and laboratory related services to State Pollution Control Boards / Committees. It also works to provide Scientific Services for mass awareness.

6.2.7 Computer Facilities: IT Lab

Responsibilities of the IT Division include:

1. Creation of Environmental Data Bank
2. On Line Data Transmission from Continuous Ambient Air Quality Monitoring Stations
3. Online access of emission data from major industries
4. Website Management
5. Software Development for e-Governance
6. Strengthening of LAN and Internet facility
7. Maintenance of user nodes regarding viruses, compatibility, up gradation etc. at CPCB Head Office
8. Providing training on Computer to the staff of various Divisions in CPCB.
9. Technical support for procurement of system hardware & software and utility package.
10. Technical Support to Regional Directorates of CPCB and SPCBs on Computer related activities.

The IT Lab at CPCB head office is equipped with LAN connecting computer systems. There are 600 LAN nodes and Wi-Fi access points at the head office. LAN system exists at the Regional Directorates of CPCB as well. Internet access mainline with a speed of 34 mbps has been endowed through port connectivity of NIC. A backup line of 8 mbps has been set up in case of

mainline failure. Incorporating technological advancements is indispensable to maintain the stature of an apex body like CPCB. In the same regard optical fibres have been laid down from the ISP to the main incoming internet router.

All data available is uploaded and made available through the CPCB website. No special link to share information exists between Regional Directorates, Divisions and CPCB Head office.

Future Targets: to lay down optical fibres in the remaining network; to replace old switches ; A proposal is in pipeline to have a provision of video conferencing facility between head office and ZOs. But none exists to connect SPCBs, CPCB HO and MoEF.

Scope of work has changed, it has increased many folds but structure has remained same. IT division thus requires infrastructure up gradation. Although workload of IT facilities has increased, i.e., additional work has been brought under its realm yet the equipments are not upgraded and often develop glitches. The estimated cost of upgrading IT infrastructure is INR 2.5-3 cr. And the allocated budget to the division in the year 2015-2016 was only 98 Lakhs. Releasing the need for resources for this division in CPCB's Annual Action Plan for 2016-17, the allocated budget for IT has been raised to 195 Lakh.

Antivirus Protection: Online Active Antivirus protection facility has been provided to all computers through centralized facility.

Maintenance: Online Complaint system is being followed for effective maintenance of Computers & peripherals.

6.2.8 Library

The Central Pollution Control Board (CPCB) Library is well quipped to facilitate lending, and reference service to its officials. The Library has a specialized collection of 10000 information resources comprising books, reference resources, reports, in-house technical reports and international and national journal on environmental science and engineering and related disciplines. The main objective of CPCB Library is to provide information support to Scientific & Engineers consulting, learning and borrowing. Apart from books, and journals available for

the regular duration, CPCB library also getting Newsletters, Annual Reports of State Pollution Control Boards' and other Institution/Academic Institutions working in the field of environment.

6.3 Financial Implications

The current Budget allocation of CPCB under various heads of salary, capital assets and general are as shown in table 6.6

Table 6.6 Budget Allocation

Budget Head	Allocated Budget
Salary	45.30 crores
Capital Assets	4.00 crores
General	25.00 crores
Total	74.30 crores

Table 6.7 Monetary implication of additional posts at Head Office

Group A										
Scientist G	2	PB-4	37400-67000	10000	47400	62568	14220	7424	131612	263224
Procurement Officer	1	PB-3	15600-39100	5400	21000	27720	6300	7424	62444	62444
Scientist F	5	PB-4	37400-67000	8900	46300	61116	13890	7424	128730	643650
Scientist E	3	PB-4	37400-67000	8700	46100	60852	13830	7424	128206	384618
Scientist D	9	PB-3	15600-39100	7600	23200	30624	6960	7424	68208	613872
Scientist C	15	PB-3	15600-39100	6600	22200	29304	6660	7424	65588	983820
Scientist B	42	PB-3	15600-39100	5400	21000	27720	6300	7424	62444	2622648
Additional Director Law	1	PB-4	37400-67000	8700	46100	60852	13830	7424	128206	128206
Sr. Law Officer	2	PB-3	15600-39100	7600	23200	30624	6960	7424	68208	136416
Law Officer	2	PB-3	15600-39100	6600	22200	29304	6660	7424	65588	131176
Group B										
SSA	6	PB-2	9300-34800	4200	13500	17820	4050	3712	39082	234492
Technical Supervisor	0	PB-2	9300-34800	4200	13500	17820	4050	3712	39082	0
Accounts Officer	2	PB-3	15600-39100	5400	21000	27720	6300	7424	62444	124888
Assistant Accounts Officer	2	PB-2	9300-34800	4600	13900	18348	4170	3712	40130	80260
Assistant Law Officer	6	PB-2	9300-34800	4600	13900	18348	4170	3712	40130	240780
Group C										
JSA	11	PB-2	9300-34800	4200	13500	17820	4050	3712	39082	429902
Sr. Technician	1	PB-2	9300-34800	4200	13500	17820	4050	3712	39082	39082
Jr. Technician	1	PB-1	5200-20200	2400	7600	10032	2280	1392	21304	21304
SLA	0	PB-1	5200-20200	2400	7600	10032	2280	1392	21304	0
JLA	2	PB-1	5200-20200	1900	6100	8052	1830	1392	17374	34748
Field Attendant	6	PB-1	5200-20200	1900	6100	8052	1830	1392	17374	104244
Total	119									7279774

Table 6.8 Monetary implication of additional posts at Regional Directorates

Post	Additional Requirement	Pay band	Pay band scale	Grade Pay	Pay in pay band	DA (132%)	HRA	TA	Gross Salary	Additional fund Requirement (Monthly)
Group A										
Scientist F	6	PB-4	37400-67000	8900	46300	61116	13890	7424	128730	772380
Scientist E	0	PB-4	37400-67000	8700	46100	60852	13830	7424	128206	0
Scientist D	2	PB-3	15600-39100	7600	23200	30624	6960	7424	68208	136416
Scientist C	5	PB-3	15600-39100	6600	22200	29304	6660	7424	65588	327940
Scientist B	8	PB-3	15600-39100	5400	21000	27720	6300	7424	62444	499552
Additional Director Law	0	PB-4	37400-67000	8700	46100	60852	13830	7424	128206	0
Sr. Law Officer	0	PB-3	15600-39100	7600	23200	30624	6960	7424	68208	0
Law Officer	0	PB-3	15600-39100	6600	22200	29304	6660	7424	65588	0
Group B										
SSA	8	PB-2	9300-34800	4200	13500	17820	4050	3712	39082	312656
Technical Supervisor	2	PB-2	9300-34800	4200	13500	17820	4050	3712	39082	78164
Accounts Officer	1	PB-3	15600-39100	5400	21000	27720	6300	7424	62444	62444
Assistant Accounts Officer	2	PB-2	9300-34800	4600	13900	18348	4170	3712	40130	80260
Assistant Law Officer	4	PB-2	9300-34800	4600	13900	18348	4170	3712	40130	160520
Group C										
JSA	17	PB-2	9300-34800	4200	13500	17820	4050	3712	39082	664394
Sr. Technician	4	PB-2	9300-34800	4200	13500	17820	4050	3712	39082	156328
Jr. Technician	0	PB-1	5200-20200	2400	7600	10032	2280	1392	21304	0
SLA	9	PB-1	5200-20200	2400	7600	10032	2280	1392	21304	191736
JLA	12	PB-1	5200-20200	1900	6100	8052	1830	1392	17374	208488
Field Attendant	8	PB-1	5200-20200	1900	6100	8052	1830	1392	17374	138992
Total	88									3790270

As clear from the Table 6.7 and 6.8, CPCB will have to bear an additional amount of INR 8,73,57,288/- for Head Office and INR 4,54,83,240/- for Regional Directorates annually to meet its new requirement of 119 personnel at head office and 88 personnel at Regional Directorates. It is also to be noted that these figures are as per the Sixth Pay Commission.

Chapter 7: Way Forward

The world today is confronted with many different emerging environmental issues including new problems to solve and new solutions to evaluate and possibly implement. The questions of concern are, which emerging issues are most important? Which require our attention? Although 'emerging issues' is a subjective concept. What qualifies as 'emerging' to one community may be yesterday's news to another. Across the globe today, nations are encountering numerous up-and-coming environmental issues necessitating their evaluation, providing solutions and possibly implementing them before it is too late.

This makes the role of CPCB all the more challenging. Huge responsibilities surmount CPCB under existing acts like Water, Air, E(P)Act, Hazardous and Bio-medical waste etc. the contemporary challenges hovering over are management of sewage, vehicular pollution, air quality index, fly ash management and so on. Apart from these the pending court cases especially after the establishment of NGT are of major concerns. The new approach of CPCB is more proactive and instead of only regulatory body, the organization wants to provide solutions to above mentioned problems. As it will be covering vast area of environmental management, support of academic and scientific institutions, IITs may be required. At some stage CPCB may establish few Professor Chairs in different research institutes to assist them on regular basis.

7.1 Existing Structure of CPCB

CPCB is presently organized pyramidically under broad subject heads, too broad to cover the organization's variegated responsibilities at the Centre and in regions under the six Regional Directorates. Due to the nature of increasing responsibilities, technical persons often depend on out-sourced assistance and consultants. The State Pollution Control Boards/Committees are also entrusted execution of certain components to get State specific feedback. Figure7.1 depicts the existing hierarchy of CPCB with additional inputs from IIPA.

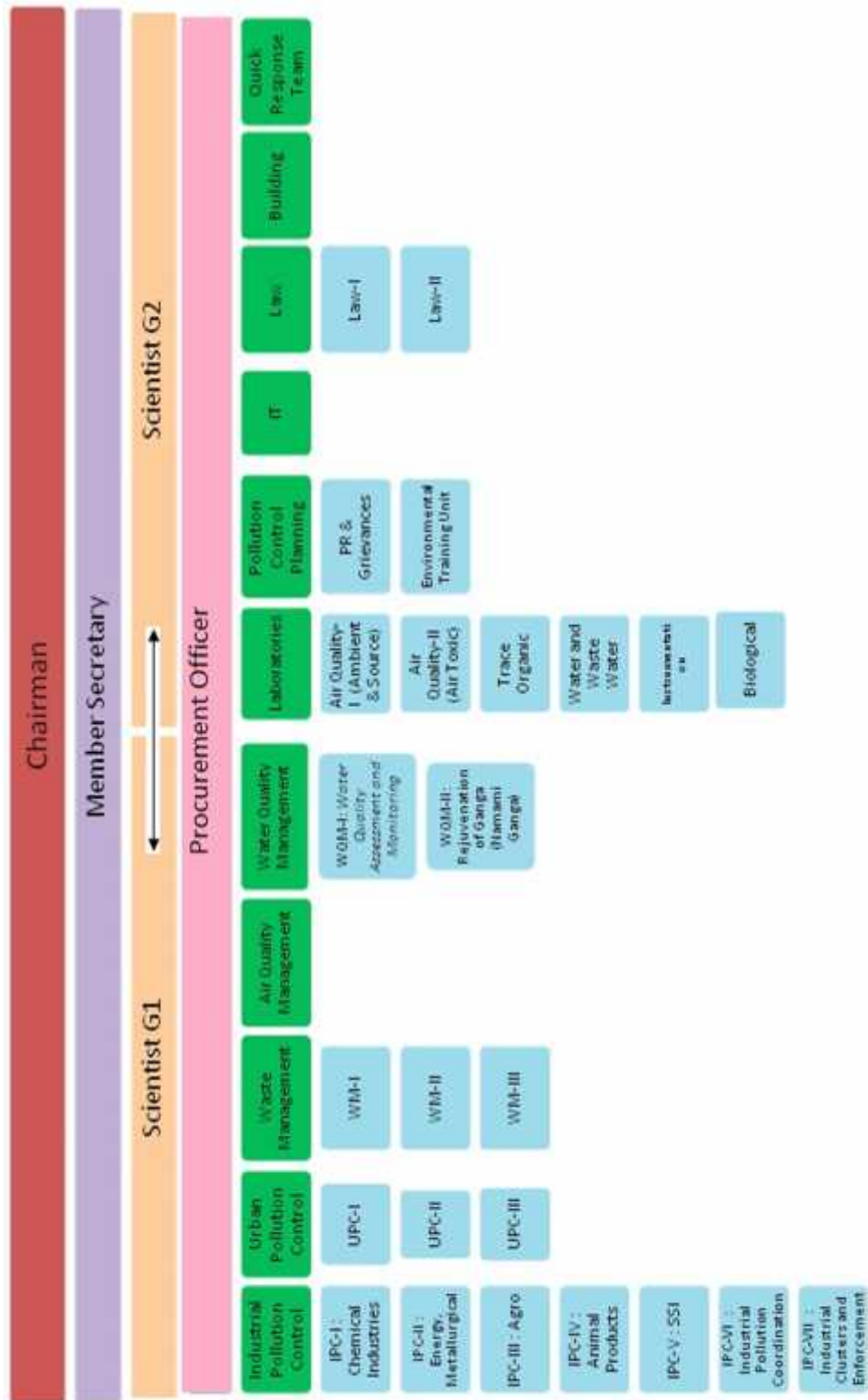


Figure 7.1 Structure of CPCB: Existing and Proposed

7.2 Need for New Regional Directorates

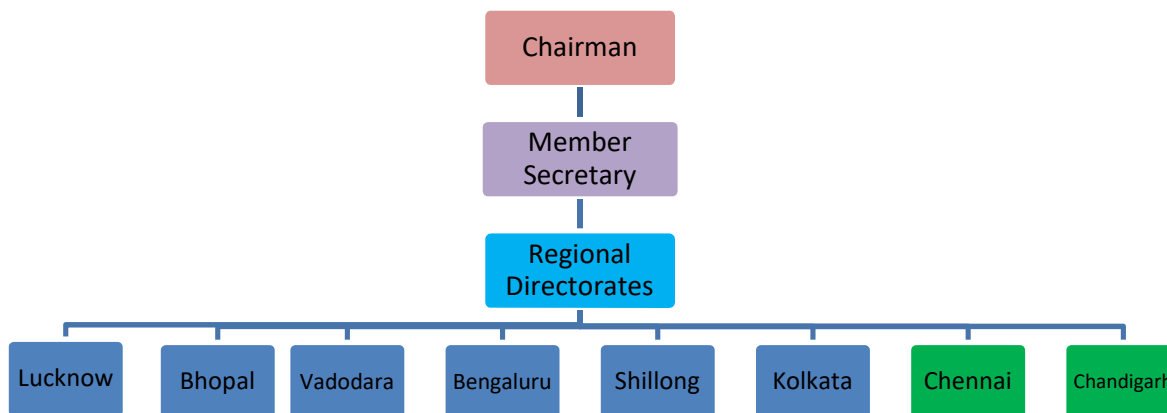


Figure 7.2 Regional Directorates: Existing and Proposed

Ideally, the divisions are reorganized based on broad components of pollution control management, in general and specific mandate and key objectives of the CPCB, in particular. CPCB has established 6 Regional Directorates (RDs) catering to various states as presented in Table 7.1. RDs are field offices of CPCB and all schemes prepared at HO are executed by them. RDs 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 besides conducting independent investigations on its own or on behalf of the Central Office or Ministry.

Table 7.1 Regional Directorates of CPCB and jurisdictions

Regional Directorates	States Covered
Bangalore	Karnataka, Kerala, Tamil Nadu, Andhra Pradesh, Lakshadweep, Goa, Pondicherry
Kolkata	West Bengal, Orissa, Bihar, Jharkhand, Andaman & Nicobar
Shillong	Assam, Meghalaya, Tripura, Nagaland, Arunachal Pradesh, Manipur, Mizoram, Sikkim
Bhopal	Madhya Pradesh, Chhattisgarh, Rajasthan
Lucknow	Uttar Pradesh, Uttarakhand, Haryana, Chandigarh, Punjab, Himachal Pradesh, Jammu & Kashmir, Delhi
Vadodara	Gujarat, Maharashtra, Daman Diu, Dadra and Nagar Haveli

As per the analysis of the secondary data, it is found by IIPA study team that at present there is significant change in the awareness of the people on environmental issues with enactment of RTI tool, increase in number of Court Cases. The e-governance has strengthened hands of people staying even in remote locations to act as whistle blowers in the interest of environment and public in general. The awareness and activism is also reflected in the increase in number of public complaint cases highlighted by Hon'ble Members of Parliament and other VVIPs including PMO. It is also observed that people of states/UTs have higher expectations towards Ministry/CPCB for redressal of complaints in a fare and expeditious manner. The establishment of the National Green Tribunals Bench has resulted in more field activities and monitoring for providing inputs for cases. Hence, the time has come to gear-up for expected challenges with more pro-activeness and well preparedness. The opening of new offices of CPCB could be a major step in the context, which will also help in post environmental clearance monitoring of the projects cleared by the Centre. The need for strengthening of CPCB is also felt by the Parliamentary standing committee on Science, Technology and Environment & Forests. Considering the quantum of work load CPCB can consider establishing one office in the highly industrial states of Maharashtra and Gujarat. Looking at the problem faced by the existing RDs, it is recommended to open three new RDs i.e. Chennai in Southern region and another at Chandigarh in Northern region and Pune in the western Region as shown in figure 7.2. The proposed redistribution of States is given in Table 7.2

Table 7.2 Proposed Locations of RDs and its Jurisdiction

Regional Directorates Location	Existing Jurisdiction/	Proposed Jurisdiction
Kolkata (Existing)	West Bengal, Orissa, Jharkhand, Bihar, Andaman and Nicobar Islands	West Bengal, Orissa, Jharkhand, Bihar, Andaman and Nicobar Islands
Bangalore (Existing- Redistribution)	Karnataka, Andhra Pradesh, Tamil Nadu, Kerala, Goa Puducherry & Lakshadweep	Karnataka, Andhra Pradesh
Chennai (New Office)	NA	Tamil Nadu, Kerala, Puducherry & Lakshadweep
Bhopal (Existing)	Madhya Pradesh, Chhattisgarh & Rajasthan	Madhya Pradesh, Chhattisgarh & Rajasthan
Chandigarh (New Office)	NA	Haryana, UT-Chandigarh, Himachal Pradesh, Jammu & Kashmir, Delhi

Lucknow (Existing-Redistribution)	Uttar Pradesh & Uttarakhand, Haryana, UT-Chandigarh, Himachal Pradesh, Jammu & Kashmir, Delhi	Uttar Pradesh & Uttarakhand
Shillong	Arunachal Pradesh, Assam, Nagaland, Mizoram, Meghalaya, Manipur, Tripura & Sikkim	Arunachal Pradesh, Assam, Nagaland, Mizoram, Meghalaya, Manipur, Tripura & Sikkim
Vadodara –Pune (new Office) (Existing)	Maharashtra, Gujarat, Daman & Diu and Dadra & Nagar Haveli	Maharashtra, Gujarat, Goa, Daman & Diu and Dadra & Nagar Haveli

7.3 Cross cutting issues and Frontiers:

- a) **Global Sustainability Challenges and Governance:** The present system of environmental governance in India is perplexed with linked multilateral agreements. Since these were developed in the 20th century there is a dire need to align them with the needs of the 21st century issues. The governance system has to be modeled in a way that it is representative, accountable and effective for the switch to be sustainable. New models of governance are being tested, ranging from public-private community partnerships to alliances between environmentalist and other civil society groups. However, the effectiveness of novel governance arrangements is unclear and requires further scrutiny. For the effectiveness of the above arrangements to work in tandem with global sustainability new challenges have to be met with.
- b) **Crumbled Links: Reaffirming connect between Science and Policy:** There is an urgent need to reconnect Science and Policy to cope with global environmental change; the society needs strategies and policies that are reinforced by a strong science and evidence base. The bond between the policy and science communities is inadequate or even deteriorating, and this is hindering the development of solutions to global environmental change. This requires a re-look at the way, science is organized and how the science-policy interface may be improved.
- c) **New Challenges for Climate Change Mitigation and Adaptation:** When scaled up, mitigation and adaptation measures may have unintended consequences. For example, large scale wind farms may disrupt the migratory behavior of birds; new massive sea walls will protect the populations but may also eliminate valuable natural wetlands; and large scale geoengineering schemes could have many unintended impacts. These potential negative side

effects should be assessed, and then minimized or avoided in order to maintain support for climate policies.

- d) Accelerating the Implementation of Environmentally Friendly Renewable Energy Systems** As the world seeks solutions to climate change, it looks increasingly towards renewable energy. But regardless of the large potential for renewable energy worldwide, this potential has not been realized due to many barriers. An important task is to identify the means to eliminate the economic, regulatory and institutional barriers to renewable energy that undermine its competitiveness with conventional energy sources.
- e) New Challenges for Ensuring Food Safety and Food Security:** Although food security is a longstanding issue, the world needs to confront a new set of challenges such as climate change, competition for land from bioenergy production, heightened water scarcity, and possible shortfalls of phosphorus for fertilizer. Food safety also faces new challenges from increasing disease transmission from animals to people and food contamination. There is an urgent need to increase the security and safety of the world's food supply by setting up more comprehensive early warning systems, supporting smallholder farmers, reducing food waste, and increasing agricultural efficiency.
- f) Boosting Urban Sustainability and Resilience:** The sustainability of cities has to do with both the environmental quality within cities that city residents have to live with, and the environmental changes caused by cities outside of their borders. Today neither aspect is particularly sustainable. The key to sustainability lies in the concept of 'green cities' or 'eco cities' which differ from conventional cities in that they are more compact, have a vital mix of land uses within their boundaries, provide many different low-energy transportation opportunities, and produce some of their own renewable energy. Such cities would provide their citizens with a high level of environmental quality and livability, and have a lower environmental footprint outside their borders.
- g) Waste Mining:** Increased demand for high-tech and renewable energy equipment is contributing to a depletion of strategic minerals, including rare earth metals. This is compounded by planned obsolescence and other wasteful manufacturing habits. The increased exploitation of minerals is also causing greater waste management problems, in particular, the build-up of electronic wastes (e-wastes). A promising option is to maximize

the recovery of metals and other materials from electronic and other waste streams .This will slow down the extraction and depletion of minerals, reduce the quantity of their wastes, and thereby lessen their associated environmental and other impacts.

- h) Responding to New National and International Pressures:** Concerns over future energy and food supplies have led to a new rush for acquiring lands in developing countries by both foreign and national investors. There is a need to better understand the scale of the phenomenon, the main countries at risk, and the trade-offs involved. It is also important to grasp how this trend will affect livelihoods, food security, ecosystem services, and conflicts. Putting safeguards in place, such as assessing the potential environmental, economic and social impacts of land deals before they are finalized, could minimize the drawbacks to the host country while allowing the investing countries to gain the food and energy security they aim for by acquiring land.

7.4 Specific Domains: Issues and Concerns

There are several issues posing both challenges and concern which need to be looked into with greater details. The concerns would have to look into specific domains such as:

a) Air Pollution

Air quality Management calls for a distinct peculiar strategy more strategic than we have witnessed in past decades. The aforesaid plan shall relevantly explain the multiple sources of emissions released into the atmosphere, the natural and anthropogenic sources of those emissions, and shall also account for the impacts on the affected systems. The scale at which this integrated management must take place ranges from an urban airshed to the globe.

In the domain related to atmosphere and Air Pollution, in the coming years R&D shall be focused on topics like chemical characterization of PM10 & PM2.5 (for Organic Carbon, Elemental Carbon, Sulphate, Nitrate etc.) to understand the origin of PM10 and PM2.5. As for fuel quality standards pertaining to vehicular pollution studies should be conducted to gauge the impact of implementation of BS (IV) fuel and BS (IV) vehicle standards on ambient air quality vis-à-vis impact of BS (VI) fuel and BS (VI) vehicle standards. Various clean coal technology

options for air pollution control (coal beneficiation regulation, CFBC, PFBC boiler etc.) shall be explored and reviewed. Latest technologies like Flue Gas Desulphurization / Denitrification technology should be reviewed in order to meet 2017 TPP standards for SO₂ and NO_x including options for solid waste disposal. To improve the condition of critically polluted areas (CPAs) it is necessary to examine options to reduce the air pollution in those areas and for better efficiency and accurate results calibration of CAAQM analyzers is required along with development of a standard calibration protocol. The sampling and analysis protocol for toxic pollutants like Volatile Organic Compounds (VOC) and Hazardous Air Pollutants etc. needs to be developed. The other issues that need to be addressed are solvent uses / solvent balance and its relation to VOC emission in chemical Industry zone; review of control options for VOCs / odorous gases from chemical industry; sulphur balance in oil refinery and review of SO₂ emission load prescribed in various oil refineries. The status of fly ash disposal options including utilization of fly ash from coal based thermal power plants as per Fly Ash Management Rules, 2009 needs to be pondered upon. Besides these the development of calibration protocol for continuous emission monitoring system (CEMS) in various industrial stack needs to be done.

b) Water Pollution

Scientists and policymakers across the globe are cultivating methods for judicious water use keeping in mind the interrelated nature of diverse human activities and the dynamics of natural systems. Dynamic research is required in order to provide useful treatments of the challenges involved. Regional water planning seeks an explicit allocation of watershed resources to a variety of water applications, including withdrawals for agriculture, industry, and urban use, as well as in-stream activities such as waste assimilation, ecosystem and species maintenance and preservation, and recreation. Successful regional water planning will require major changes in the way water is valued, allocated, and managed. Apart from these innovative approaches, effective R&D shall be conducted on along the lines of various thrust areas mentioned below:

Performance studies of ZLD system installed at Pharma, pesticides and Dye and Dye intermediate industry and development of procedure shall be conducted to check the adequacy of the system (Increasing Stripper efficiency, limit on COD values on effluent going to MEE from stripper, limit on organic content in drier salt etc.). ZLD policy should be reviewed with a special

reference to salt disposal / utilization and issues related to increase of carbon footprint. Options shall be explored for managing TDS in chemical industry and to minimize generation of TDS and disposal of inorganic TDS / organic TDS. For existing CETPs performance studies shall be carried out and standard performance protocol for CETP needs to be developed. Guidelines shall be developed for segregation of high COD & TDS waste along with Solvent balance in chemical industry. There is a need to calibrate continuous effluent monitoring system (CEMS) and study the co-relation of Total Organic Carbon data with COD and BOD.

c) Hazardous and other Solid Wastes Management

The growth in the manufacturing of high-tech and green energy products has had some unexpected consequences. New goods, such as hybrid cars, rechargeable batteries, wind turbines, mobile phones and plasma televisions, have greatly increased the demand for some strategic minerals, including rare earth elements such as lanthanum, cerium, lithium, neodymium, indium and gallium. Global demands for rare earth elements have been reported to be increasing. Another consequence is that the disposal of hazardous chemicals and materials from these manufactured products is creating new waste management problems. The waste streams from the manufacturing, use and disposal of electronic products consist of a hazardous mixture of mercury, lead and other heavy metals; endocrine disrupting substances such as brominated flame retardants; and other toxic substances. There is need to review of various options to increase ash utilization from thermal power plants. There is need to study the options to increase co-processing of waste (hazardous and non-hazardous) in cement plants. Inventory of waste generated from industries which can be co-processed in cement plants. Performance evaluation of TSDF especially quality of primary and secondary leachate and way to reduce COD & TDS in leachate to be carried out. The study of impact of inorganic and organic salt disposal in TSDF. Performance evaluation of Common Hazardous Waste Incinerator specially emission of Dioxin and Furan. Clean technology options to minimize hazardous waste generation from chemical industry to be explored.

d) Legal cases/court matters

Over the years the number of court cases in which CPCB has to file investigative reports on pollution assessment have increased many folds. CPCB has to submit regularly affidavits to Hon'ble Supreme Court / High Courts / NGT adding to the herculean work it already caters to. The law division of CPCB should be strengthened and senior level environmental engineer / scientists having special knowledge on environmental law should be posted in policy and law division

Considering the fact that all the above activities would require expertise and there is an urgent need to incorporate the thrust area covering the wide ranged scope mentioned above. Also there would be an equal and urgent need to recruit more working personnel. IIPA study team suggests an increase of 30 % till 2020 and a further increase of 25 % till 2025 in the scientific /technical staff. This increase will help CPCB in realizing its goal and be key instrumental in achieving the goals of sustainable development .similarly an increase of 15% by 2020 and 10%by 2025 is recommended by the IIPA study team for administrative staff.

7.5 Incorporation of new Thrust area

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 time (Figure 7.1). There are several added responsibilities under New Rules / Legislation such as E-waste Management, Hazardous Waste Management, Plastic waste management, Solid waste management, Bio-Medical waste and Construction and Demolition (C&D) Waste Management, 2016 that need to be positioned suitably in a new organogram. The new challenges such as rapid industrialization and urbanization, increasing number of Court cases RTI/Public Grievance are also to be taken care of.

The New thrust areas of concern are Resource Efficiency, Climate Change Data management, Cleaner technology, Ozone depletion, Implementation of International Commitment to Conventions, epidemiological monitoring and analyses, episodal health effects studies, Strategic Environmental Impact Assessments (SEIAs) and landscape impact assessments. The salient features of the new structure will include the old and the new in a phased manner with emphasis on strengthening of ICT for Data storage & security, GIS Development etc. The divisions

concerning Water and Air Quality Management would deal with issues comprehensively and in close coordination with the R&D wing. Prominence shall be given on addressing air quality issues of the National Capital (Delhi) in coordination with media and civil society. The CPCB Research and Development wing needs to be reoriented for conducting in-house or sponsoring problem oriented research. This was a practice earlier and very erudite and useful research results have come out of CPCB especially in the area of Bio-remediation. Pollution Prevention Planning has to be strengthened along with coordination activities, outreach and awareness creation and HRD, both in-house and externally sponsored.

It is also recommended that

- Regional Labs should be established so as to provide scientific data that supports the Regional environmental programs that needs for immediate information to make decisions.
- IT personnel to be appointed in each division to look after division specific IT activities will reduce excess workload of IT division
- A dedicated Hazardous Waste Testing Lab , RoHS Lab for E-waste Testing should be established

A RoHS Testing Lab is required to be setup for analysis of E-waste samples. There is a need for support staff for sampling and sample processing. CPCB as of now is not equipped to measure all notified emission and discharge parameters e.g. TOC in Stack, Schedule II parameters specified in HW management Rules. There is an immediate requirement of instruments dedicated for HW material testing as this division has max number of samples of samples. There is a dynamic need to upgrade industry documents from time to time to inculcate technological and resource utilization and disposal improvements.

Regional Directorates can be given landscape and watershed jurisdictions in addition to their present responsibilities to specialize in area-based monitoring and data management. They should be supportive of SPCBs without duplicating their functions in respective jurisdictions. In addition to their present duties, they should expand regional monitoring stations to build volumetric databases of micro-watersheds within their regions. They should supply data to SPCBs and public as needed for the region as a whole and have a media interface in close coordination with the Head Office and the concerned SPCBs.

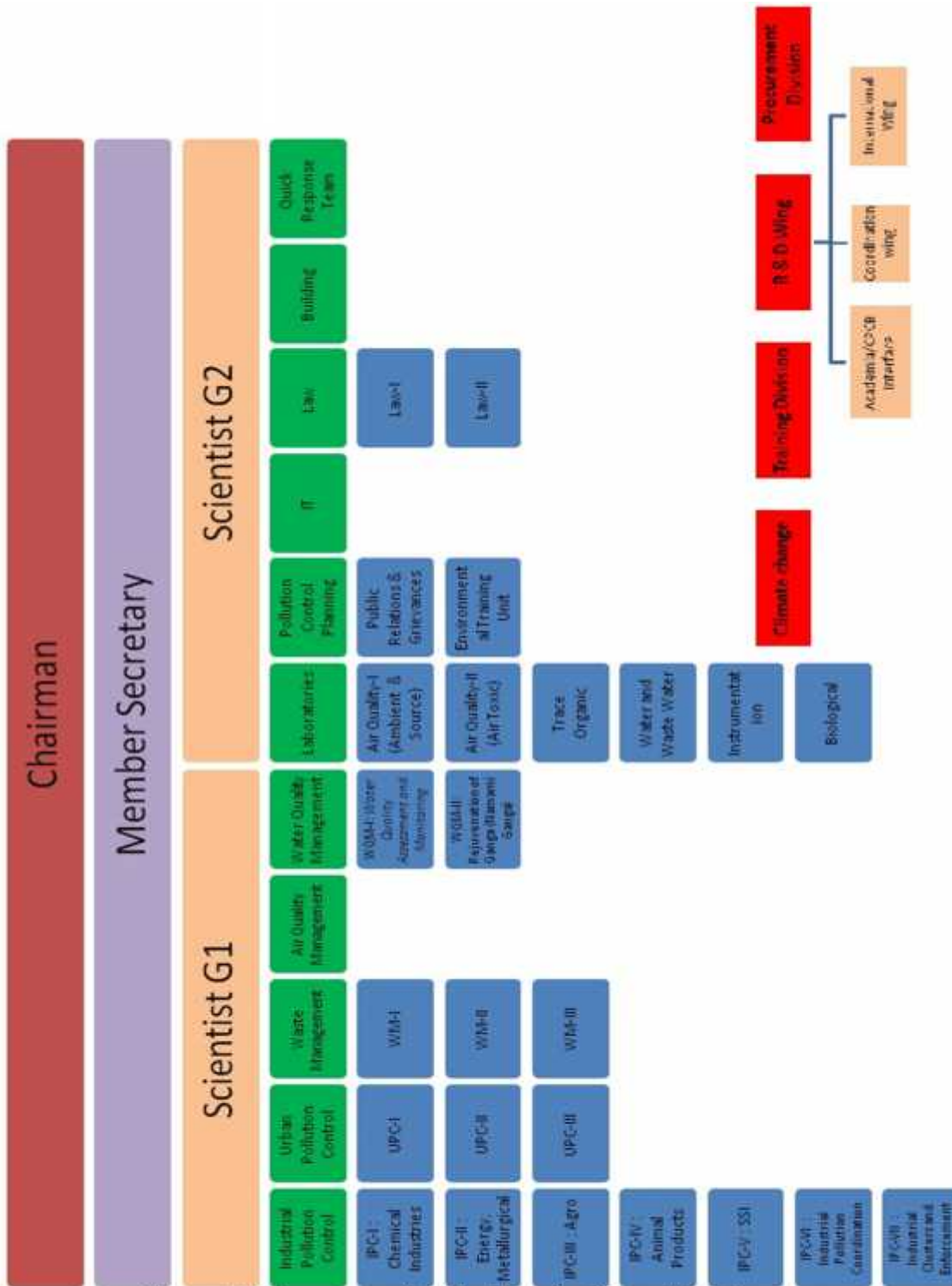


Figure 7.3 Recommended Divisions for Phased development

7.5.1. Orientation courses for Fresh Recruits / Induction Training:

To acclimatize to rapid global environmental changes and to achieve a sustainable economy, India requires revolutionizing the capabilities of its human capital and closing their skill gaps. Instilling up-to-the-minute job skills, introducing novel teaching and learning methods, developing innovative management concepts and influencing and participating in research efforts will act as triggers to empower the work force. Even before giving power to the working individuals the conditions necessitate revising the efforts of educational institutions to enhance learning requirements. It is indispensable to coach new executives with induction training courses to be fully equipped before contributing to the field and to provide refresher courses to existing staff so that they can better recognize and counter global environmental changes. Exposure visits or study tours must be organized for exchange of information, knowledge and skill development. These efforts would also encourage research to address the sustainability issues.

It has been studied by the IIPA team that there is a lack of induction courses for the fresh recruits of CPCB, specially the scientists and technical persons. Environmental governance regulation may be accomplished through the exchange of expert knowledge of environmental quality management strategies, tools, information, and programs. The overarching component under this cooperative agreement is good environmental governance. Improving environmental governance may be accomplished through the exchange of expert knowledge of environmental quality management strategies, tools, information, and programs. In the current scenario, to ensure environmental stability, regulatory institutions such as CPCB are entrusted to protect the natural environment from degradation by ensuring implementation of Environmental regulations. Thus the capacity constraints of these institutions need to be identified and addressed, so that effective compliance, monitoring and enforcement can be warranted.

Refresher courses can be organized at regular intervals to update scientist knowledge and on their each promotion level. There should be at least three to four promotion level for technical and administrative personnel of CPCB. It will motivate them to work more and grow in the organization.

7.5.2. R&D Wing

R&D is an important means for achieving future targets and challenges to maintain a relevant image to counter environmental apprehensions. The R& D should be aimed at all the three niche viz. basic, applied and developmental research. This would help in better utilization of the targets. R&D includes creation of new body of knowledge about existing products or processes, or the creation of an entirely new product. Investment in R&D is extensive and a long term commitment. Often, the required knowledge already exists and can be acquired for a price. Setting up a R&D wing strengthens the department in all its future ventures. The R&D may take months or years to yield fruitful results. The basic framework of R&D evolves around fostering ideas, focusing on them and developing them further .A formal R&D function adds great value to any organization. It significantly contributes towards sustained organizational growth. A full-fledged R& D wing in CPCB would help in making CPCB a proactive organization with relevance to the environmental issues and concerns.

i. International Wing

CPCB requires a special wing to coordinate International matters. The division shall specifically deal with matters that concern national and international welfare like research on future energy sources, Climate Change, biodiversity, international treaties and protocols. The division would be responsible for coordinating with institutions conducting research in the related matters to compile and disseminate necessary information. As for any environmental challenge there is a need to comprehend the degree of the phenomenon, the main countries at risk, and the trade-offs involved. The international wing shall synchronize these activities and shall be involved in activities to seize how such trends and collaborations would affect livelihoods, food security, ecosystem services, and conflicts within and outside the nation.

ii. Co-ordination Wing

The Coordination wing refers to the processes of decision-making involved in the control and management of the environment and natural resources. Environmental Governance is a 'Multi-level interactions (i.e., local, national, international/global) among, but not limited to, three main actors, i.e., state, market, and civil society, which interact with one another, whether in formal

and informal ways; in formulating and implementing policies in response to environment-related demands and inputs from the society; bound by rules, procedures, processes, and widely accepted behavior; possessing characteristics of “good governance”; for the purpose of attaining environmentally-sustainable development'. The major features of Coordination eing would be embedding the environment in all levels of decision-making and action, conceptualizing cities and communities, economic and political life as a subset of the environment, emphasizing the connection of people to the ecosystems in which they live, promoting the transition from open-loop/cradle-to-grave systems (like garbage disposal with no recycling) to closed-loop/cradle-to-cradle systems (like permaculture and zero waste strategies).

iii. Procurement Division

A specialized procurement division is required to obtain goods and services in response to internal needs. The divisions needs to be established at CPCB to provide responsive, effective, and quality expert procurement services to the Head office as well as Regional Directorates. While achieving best value for money and ensuring a competitive, fair and transparent process in accordance with established regulations, rules and procedures the Procurement Division shall function far beyond the traditional belief that procurement's primary role. Evaluation and selection of suppliers must be such that it aids the organization to fulfill its mandate.

iv. Academia/CPCB Interface: Sponsor a chair/ Ph.D

IIPA study team is of the view that there exist strong linkages and interactions between resources and human activities across many different issues and sectors. Efforts to reach the goal of environmental sustainability cannot be expected to succeed if they are pursued within narrow disciplinary or sectoral frameworks that ignore these interactions. Rather, society and its decision makers must recognize that agricultural, urban, industrial, and ecosystem processes interact with each other and must be evaluated as place-based integrated systems.

To move forward, a research and development structure needs to be developed that allows and encourages the accounting of linkages among all sectors and that takes advantage of those inter-linkages in a regional research, planning, and problem solving context. Thus in order to facilitate

the same there should be an academia /CPCB interface which would help in broadening the horizons of research winged with practical dimensions.

7.5.3 Eventual Up -gradation to the Status of a Central Authority

IIPA recommends that CPCB should be upgraded to the status of an Authority, wherein all the aspects of environmental governance are clubbed in the wider interest of the nation. The Authority would be at the front line of environmental protection and policing. Ensuring that the nation's environment is protected. The authority would have the mandate to monitor changes in environmental trends to detect early warning signs of neglect or deterioration.

Protecting the environment is a huge responsibility, and work should be carried out with a number of organizations that carry out specific environmental functions. IIPA Recommends CPCB to be an independent body deriving its mandate from the umbrella of Environmental Acts. The Authority should follow the tradition of consultation and cooperation of government bodies, stakeholder organizations, and citizens. Within this framework, policy on national and international issues should be prepared.

CPCB as an authority should be responsible for developing policy in the national context and the Regional Directorates should be responsible for translating these guidelines into the regional context. Close cooperation between all levels of government inherent in the governance system should ensure the necessary checks and balances. On similar lines the SPCBs should also be upgraded as state authorities.

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Divisional Questionnaire

SECTION 1: FOUNDATION AND HISTORY

1. What is the nature of business of CPCB? How do these business activities support CPCB's mission?
2. Has the mission of CPCB changed since its establishment?
 - i. Yes
 - ii. No
3. Is the CPCB's current mission still valid?
 - i. Yes
 - ii. No
4. Is there a need to revise or update?
 - i. Yes
 - ii. No

SECTION 2: ROLE AND RESPONSIBILITIES WITH SPECIAL REFERENCE TO YOUR DIVISION

1. What are CPCB's core functions?
2. Are these functions defined by statute?
 - i. Yes
 - ii. No
3. If not how are these functions determined?
4. Are CPCB's core functions still relevant?
 - i. Yes
 - ii. No
5. Have CPCB's core jobs changed overtime?
 - i. Yes
 - ii. No
6. If so how and why?
7. Is there a need for CPCB to add, modify or eliminate any of its functions?
 - i. Yes
 - ii. No
8. Itemize and describe any other CPCB responsibilities established by law, code or regulation.
9. What other mandates affect the CPCB? When did they come into effect and under what authority?
10. How do these other mandates relate to CPCB's mission?
11. Do they support the mission?
 - i. Yes
 - ii. No

12. If so how and why?
13. What are the major milestones of CPCB?(with reference to your division)
14. What are the advancements/nuances of CPCB in the recent past?(w.r.t your division/)
15. What have been the greatest hindrances in the functioning of CPCB? (w.r.t your division)
16. What have been its paramount endeavors? (w.r.t your division)
17. List the major goals (in priority order) for short term and long term of your division.

SECTION 3: ORGANIZATIONAL STRUCTURE

1. Is a change in the existing organogram required?
 - i. Yes
 - ii. No
2. What is the hiring frequency of man power?
3. What are the avenues of promotion? Are you satisfied with the current promotion policy? Give reasons, if no.
4. Is the workload evenly distributed? If No, any specific reasons for the same.
5. If the workload related anomaly exists, what do you recommend to remove the same?
6. What are the strength and weaknesses of your division and of the organization at large?

SECTION 4: DIVISION'S STAKEHOLDERS

1. Who are the major stakeholders of CPCB with reference to your Division? What are their anticipations?
2. How well does your division meet their expectations?
3. What is their outlook and perception about your division?
4. Has your division's clientele changed over the span of time?
5. Is there any scope for change in the near/ distant future?
 - i. Yes
 - ii. No
6. What will be the consequences of these changes?
7. Does your division have any un-served or undeserved stakeholders?
 - i. Yes
 - ii. No
8. What initiatives should the division take to satisfy its stakeholders?
9. How do stakeholders and customers of division, evaluate you?
10. What are the criteria for the same and how is it measured?

SECTION 5: DIVISION'S SERVICES

1. Is the demand for activities and services greater than the supply or vice-versa?
2. What are the financial implications for providing the CPCB's activities and services?
3. By what procedures, does the division deliver its activities and services?
4. Account for the amount of services and activities provisioned in –house?

5. What amount of services and activities are outsourced? (Contracting, purchase of service, or other means)
6. Is there a benchmark that sets the baseline for tasks for which outsourcing is required?
 - i. Yes
 - ii. No
7. What is your division's current and projected service levels?
8. What is the scenario of change in internal operations and contracting/ out sourcing relationships over the next few years?
9. Evaluate the division's internal strengths and weaknesses?
10. In which avenues does division needs to improve?
11. What reasons can be attributed to division's past successes and failures?
12. What factors can cause your division's to succeed or fail in future?

SECTION 6: DIVISION'S RESOURCES

1. Do employees have the knowledge, skills and competencies that are required to fulfill the division's mandate?
 - i. Yes
 - ii. No
2. Does the division have adequate resources, infrastructure, equipment's and technology to operate effectively?
 - i. Yes
 - ii. No
3. How effective is intra/inter divisional communication?
4. What is the impact of external variables, factors, or trends?
5. What the resource requirements in division in terms of personnel, financial, technological and other resources to carry out its strategies?
6. Are these resources assured?
 - i. Yes
 - ii. No
 - iii. Partially
7. What is the physical impact of CPCB's action plan on your division?
Does the implementation of the action plan require the reallocation of resources within the CPCB?
8. With reference to CPCB's available resources, do the goals, objectives and strategies continue to make sense?

SECTION 7: PERFORMANCE AND EVALUATION OF THE RESPECTIVE DIVISION

1. List the measures for gauging the overall performance and productivity of the division.
2. What are CPCB's performance criteria? How does division gauge its efficiency and effectiveness as an organization?
3. What performance targets has the division set for future?
4. How does division measure customer's satisfaction?
5. How is the quality, reliability, accuracy, responsiveness, sufficiency or timeliness of division activities and services measured?

SECTION 8: PERFORMANCE AND EVALUATION OF CBCB

1. Are there any accepted professional, national or accreditation standards that apply to the CPCB?
2. Do any central or state government statutes, regulations or official guidelines set any performance standards for CPCB?
3. List key measures for gauging progress towards CPCB's goals and objectives.
4. What kind of data does the CPCB collect and analyze to monitor achievement of its goals and objectives?
5. How does CPCB measure the critical variables for success in achieving its goals and objectives?
6. If data on actual results (of what?) are not available, what proxy or surrogate measures does the CPCB use?
7. Are any existing or historical records (of what?) available to establish a baseline?
8. Are internal audits conducted for self-evaluation of CPCB's divisions?
9. What methods do the CPCB use or shall use to determine if implementation of the strategic business plan is on track?
10. What new operations or procedures should be put in place to monitor and track implementation effectively?
11. To whom will the plan implementation be reported to and at what intervals? What type of information should be reported?
12. Which action is taken or should be taken if CPCB does not perform according to the plan?

SECTION 9: MISCELLANEOUS

1. What threats does CPCB face in the next 2-5 years? How can these be averted or minimized?
2. What opportunities does CPCB have in the next 2-5 years? How can these be optimized?
3. What will CPCB look like in future? What is the ideal case scenario?
4. How does CPCB wish to be perceived by its customers, clients and its constituents?
5. What steps should CPCB take to achieve its mission?
6. What are the targets of CPCB to be accomplished in the next 1-2 years and 3-5 years?
7. Are CPCB's current activities consistent with events in external environment?
 - i. Yes
 - ii. No
8. If not how must they change?
9. What specific and measurable targets must the CPCB accomplish in support of its short term and long term goals?
10. Identify CPCB's methodology for achieving its stated goals and objectives.
11. What are the practical alternatives (methodologies) that CPCB can pursue to address its

- goals and objectives? What are the estimated costs and benefits of these alternatives?
12. Which strategies relate to the most important goals and objectives?
 13. Which strategies would help make the most and least progress towards achieving the goals and objectives?
 14. Give an account of strategies that have proven to be successful in the past and are they likely to be successful in future?
 15. What are the activities that require immediate action by the CPCB and which are the ones that can be taken up later?
 16. Is there a time frame to which CPCB confers to?
 17. If yes please elaborate on the time frame followed? If no please suggest what kind of time frame should the CPCB confer to?
 18. Is there a time frame to which CPCB confers to or should confer to?
 - i. Yes
 - ii. No
 19. Is there a logical sequence or order for implementing the strategies?

SECTION 10: Additional remark

1. How do you anticipate shaping CPCB, in case you're given a free hand?
2. What are your recommendations to strengthen CPCB as an organization?
3. How do you envisage the capacity building of the organization?

Questionnaire _Administration (Recruitment)

1. What is the hiring frequency of man power in CPCB?
2. Does any workload distribution exist for Group A officers? If yes, kindly please specify.
3. Does CPCB has any policy reflecting the appointment ratio of Group A officers? If Yes, kindly specify
4. Does the section have adequate resources, infrastructure, equipment's and technology to operate effectively?
5. How effective is intra/inter-sectional communication?
6. How do you anticipate shaping Administration (Recruitment) CPCB?
7. What are your recommendations to strengthen CPCB as an organization?

Questionnaire _Administration (Material)

1. Does the department have adequate resources, infrastructure, equipment's and technology to operate effectively?
2. How effective is the intra/ inter-sectional communication?
3. What is the general policy followed in CPCB with regard to your section?
4. How do you anticipate shaping CPCB, in case you're given a free hand?
5. What are your general recommendations to strengthen CPCB as an organization?

Questionnaire _Administration (Personal)

1. What are promotion avenues at CPCB? Is it time bound?
2. What are the service conditions of the officers and staff of CPCB in terms of:
3. Leave
4. LTC
5. Career advancement
6. FDPs/ Conferences / Seminars etc.
7. Any other
8. Is there an administrative policy to secure the personal database?
9. How effective is intra/ inter sectional communication?
10. Does the section has adequate resources, infrastructure, equipment's and technology to operate effectively?
11. What are your general recommendations to strengthen CPCB as an organization

Questionnaire Administration (PR)

1. What is CPCB's purchase policy?
2. How many days on an average are required for procurement?
3. What is the process to be adopted by Group A officers and staff for procurement?
4. How are small purchases handled?
5. Is there any provision for AMC (Annual Maintenance Contract)?
6. Does the procurement section has any provision for online purchase?
7. Is there any provision for E- procurement?
8. Does the procurement section has a list of registered bidders?
9. Does the head office procures for Zonal Offices too? If no, what procurement policy is adopted at Z.O.s
10. How effective is intra/inter-Sectional communication?
11. Does the department have adequate resources, infrastructure, equipment's and technology to operate effectively?
12. How do you anticipate shaping Administration (PR) CPCB?
13. What are your general recommendations to strengthen CPCB as an organization?

Questionnaire IT Division

1. How does environment database management take place at CPCB?
2. Is the data updated on public domain on a regular basis?
3. If no please elaborate the trend and periodicity of updating information on the official website.
4. How efficient is the CAAQM system? On a scale of 1 to 10
1: extremely inefficient and 10: extremely efficient
5. How many real time monitoring stations are currently operational?
6. How can your division improve the above said system?
7. Is there enough manpower in IT Division?
8. What percentage of work is outsourced?
9. Are there any benchmarking parameters for outsourcing?
10. Does outsourcing affect efficiency and credibility of your department?
11. What is present internet access speed at the CPCB office?
12. Account for the number of LAN nodes and switches in the CPCB Head office.
13. Is there a data backup line or an alternate connectivity arrangement for internet access?

Questionnaire _Accounts

1. Provide a record of financial statements of the CPCB's funding including internal and external resources.
2. Provide a record of financial statements of the CPCB's activity wise expenditure.

Questionnaire _Law Division

1. What critical choices does CPCB have to make in the short term (during the next fiscal year) and the long term (subsequent years)?
2. How may future legal or governmental actions (e.g. budget, legislation mandates, and regulations) affect the CPCB?
3. Is CPCB currently involved in any (threatened or pending) litigation, disciplinary action or liability?

Annexure-II

Central Pollution Control Board
(Ministry of Environment, Forest & Climate Change, Govt. of India)
Parivesh Bhawan, East Arjun Nagar,
Delhi - 110032

No.C-22017/02/2011/Admn.P/2654

the 10th February, 2017

OFFICE ORDER

This is in supersession to Office Order of even number dated the 19th January 2016. The Competent Authority, CPCB has further re-grouped the Scientific and Technical activities of CPCB at Head Office, Delhi forming 29 Divisions as per the enclosed Annexure. All the Divisional Heads identified in the enclosed Annexure are hereby directed to send files/references directly to the Member Secretary/Chairman and on return, the files will be routed through the Nodal Officers for information only.

The subordinate staff, project staff, other than identified in the enclosed Annexure and Outsource staff (at places assigned with activities prior to this Order and earlier Order dated 19.01.2017), will continue with the activities already assigned. They will report to the officers to whom the activities are now assigned. Further changes if necessary, will be done by the Member Secretary as per need.

This issues with the approval of the Chairman, Central Pollution Control Board.



(R. D. Pandey)
Administrative Officer(P)

Distribution:-

1. All the Nodal Officers :
2. All Divisional Heads : With a direction to circulate it among the group identified.
3. All the Regional Directorates of CPCB
4. Incharge IT : With a request to upload it on CPCB Intraportal
5. PS to CCB
6. PS to MS
7. Master file of AO(P)
8. Office Order file.
9. Reception

Sh. P.K. Behra, SD, I/c water and wastewater Lab

CENTRAL POLLUTION CONTROL BOARD
Regrouping of Activities at HQ CPCB

S.No.	Division	Activities	Officers in the Division	Nodal Officer
1.	INDUSTRIAL POLLUTION CONTROL (IPC)	STANDARDS, TECHNOLOGIES AND COMPLIANCE		
1.1	IPC-I : Chemical Industries	<ul style="list-style-type: none"> Chromic acid Dyes & Dye intermediates Fertilizer Oil Refineries Pesticides Petro-Chemicals Pharmaceuticals Paints & Enamel Industries of Chemical in nature (Organic and In-organic) 	Shri Gurnam Singh, SE (Divisional Head) Shri Dinabandhu Gouda, SE Smt. Anjana Singh, SD Shri Ashok Singh, SC Shri Muneesh Dabodhi, SC	Shri Gurnam Singh, SE
1.2	IPC-II : Energy, Metallurgical	<ul style="list-style-type: none"> Aluminum Copper Zinc Integrated Iron & Steel Dust (PM) Emitting Industries Mining Cement Thermal Power Plants 	Shri N.K. Gupta, SE (Divisional Head) Dr. S.K. Pathwal, SD Dr. P. Mani, SC Shri Ankur Tiwari, SC	

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 15/2/19

S.No.	Division	Activities	Officers in the Division	Nodal Officer
1.3	IPC-III : Agri Based	<ul style="list-style-type: none"> Coal Mining Non-Coal Mining/Quarries Sugar Distilleries Pulp & Paper Textiles Food & Beverages Soft Drinks 	Dr. M. Madhusudan, SE (Divisional Head) Shri Kamlesh Singh, SD Smt. Reena Gatarani, SC Shri Vivek K, SC	
1.4	IPC-IV : Animal Products	<ul style="list-style-type: none"> Dairies Tanneries Slaughter Houses 	Shri Nazimuddin, SE (Divisional Head) Shri Anurag Tiwari, SC Smt. Hemwala, SSA	
1.5	IPC-V : SSI	<ul style="list-style-type: none"> Foundry and Furnaces Stone Crushers Hot Mix Plants Brick Kilns Rice Mills & other Small Scale Industries Siting Policies & Technology Development 	Shri Abhey Singh, SE (Divisional Head) Smt. Alka Srivastava, SSA	
1.6	IPC-VI : Industrial Pollution Coordination	<ul style="list-style-type: none"> 17 Categories of Industries Red Categories of Industries Categorization of Industries Review of Standards On-line Installations Grossly Polluting Industries (other than Ganga) 	Shri P.K. Gupta, SE (Divisional Head) Ms Smriti Upadhyay, SD Shri Y.N. Mishra, SB	
1.7	IPC-VII : Industrial Clusters and	<ul style="list-style-type: none"> Critically Polluted Industrial Clusters 	Shri Ajay Agarwal, SE (Divisional Head)	

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 15/2/19

S. No.	Division	Activities	Officers in the Division	Nodal Officer
	Enforcement	<ul style="list-style-type: none"> CETPs Vigilance and Directives Environmental Clearances Enforcement Issues Ecomark Scheme 	Shri A. K. Sinha, SE Dr. (Ms.) V. Neelambari, RA Shri Vipin, JRF	
2. URBAN POLLUTION CONTROL				
2.1	UPC-I	<ul style="list-style-type: none"> Urban Slaughter Houses (other than slaughter house industry) Urban Noise Assessment and Control including DG Sets Railways & Airports Odour from MSW, Sewage/other industries 	Smt. Mita Sharma, SE (Divisional Head) Shri Debroy, SD Shri Sharandeep Singh, SC Shri K.N. Dault, SC Shri. Vishal Gandhi, SC	Smt. Mita Sharma, SE
2.2	UPC-II	<ul style="list-style-type: none"> MSW Management Construction and Demolition Activities Sewage Management (Other than Ganga) Municipal Solid Waste 	Shri M.K. Chaudhury, SE (Divisional Head) Ms. Supriya Singh, JRF	
2.3	UPC-III	<ul style="list-style-type: none"> Plastic Waste Management 	Dr. S.K. Nigam, SE (Divisional Head) Shri S. Dixit, SE	
3. WASTE MANAGEMENT				
3.1	WM-I	<ul style="list-style-type: none"> Hazardous Waste Management Remediation & Polices 	Shri B. Vinod Babu, SE (Divisional Head) Shri Rumbabu, SC	Shri B. Vinod Babu, SE

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S. No.	Division	Activities	Officers in the Division	Nodal Officer
		<ul style="list-style-type: none"> III. Bio-Medical Waste IV. Batteries 	Smt. Yashika, SC Sbi K.M. Udarkumar, SDI	
3.2	WM-II	<ul style="list-style-type: none"> Authorization of Re cyclers and TGMF & Waste-to-Energy related matters in coordination with UPCD dealing MSW. 	Shri Bharat Sharma, SE (Divisional Head) Shri D.K. Ahuja, SD Smt. P. X. Saini, SC Smt. Deepi Kaur, SC Smt. Vineta, BSA	
3.3	WM-III	<ul style="list-style-type: none"> Electronic Waste Management 	Shri Anand Kumar, SE (Divisional Head) Shri Vinay Gargal, SD	
4.	Air Quality Management (AQM)	<ul style="list-style-type: none"> Air Quality Management Policy & related bilateral issues Air Quality Management Plans Source Apportionment Studies Vehicular Pollution Control Climate Change Utilization of EPC Funds National Air Quality Monitoring Programmes (Manual Stations) other than Delhi and NCR. Co-ordination of Grid Monitoring Plan Court matters 	Dr. Prashant Gargava, SE (Divisional Head) Ms. Gauri Sharma, SC Shri Tarun Darbar, SC Smt. Meetu (Jain), BSA Smt. Rakshi Bhatta, SSA	Dr. Prashant Gargava, SE
5. WATER QUALITY MANAGEMENT				
5.1	WQM-I	Water Quality Assessment and Monitoring	Shri R.M. Bhardwaj, SE (Divisional Head) Smt. Sunil Parmhar, SB	Shri R.M. Bhardwaj, SE

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S.No.	Division	Activities	Officers in the Division	Head Officer
		<ul style="list-style-type: none"> Water Quality Monitoring of rivers, lakes, groundwater and coastal waters. Setting up of Real Time Water Quality Monitoring Stations Water Quality Restoration Plan Water Quality Monitoring of River Ganga including RTWQM 	Sr. Aljuna Narula, USA, NCRBA, 2006	
5.2	WQM-II	Rejuvenation of Ganga (Namami Ganga) <ul style="list-style-type: none"> Sewage Treatment of Ganga Towns and Districts (118 Towns) Industrial Pollution Control (Pollution Control Enforcement of Industries of Main Stem) (Independently to cover 764 GPs) 	Shri A.K. Vidyarthi, SE (Divisional Head) Shri M.K. Biswas, SE, NGRBA Staff	
6. LABORATORIES				
6.1	Air Quality-I (Ambient & Source)	<ul style="list-style-type: none"> Ambient Air Quality (Dohi and NCR) - CAAQMS & Manus CAAQMS (Nation wide) Stack Monitoring Calibration Facilities Method Standardization 	Dr. D. Saha, SE (Divisional Head) Shri M.N. Mohanan, SE Shri R.C. Srivastava, SC Shri P. Krishnamurthy, SC Shri S.K. Sharma, SC Sh D.C. Jakhwal, SC Shri Abhijit Patnak, SC Shri M. Satishkumar, SE	Dr. D. Saha, SE

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S.No.	Division	Activities	Officers in the Division	Head Officer
6.2	Air Quality-II (Air Toxic)	<ul style="list-style-type: none"> Monitoring of molecular monitors - coordination of study Assessment of Air Toxics (Benzene, PAHs, etc.) QA/QC Accreditation of Labs 	Shri Ramesh Chand, SE Shri Laxesh Kumar, SE Shri Pankaj Bhawan, SE Shri Usharajendra Gupta, SE Dr. S.K. Tyagi, SE (Divisional Head)	
6.3	Trace Organic	<ul style="list-style-type: none"> Pesticides Organic Micro-pollutants 	Dr. C.S. Sharma, SE (Divisional Head) Shri Sanjay Kumar, SD Shri B. Kumar, SC Shri Dev Prakash, SD Shri N.K. Singh, SE	Dr. C.S. Sharma, SE
6.4	Water and Wastewater	<ul style="list-style-type: none"> Water Wastewater Soil 	Shri P.K. Behra, SD (Divisional Head) Shri J.K. Bhunia, SE	
6.5	Instrumentation	<ul style="list-style-type: none"> Heavy metals Elements & ions in Ambient Particulate Matter 	Shri B.K. Jakhmola, SE (Divisional Head) Shri Namita Mishra, SD Dr. Sumendra Singh, SD Shri S.S. Sharma, SE Shri B.K. Jena, SD	
6.6	Biological	<ul style="list-style-type: none"> Microbiology Toxicity Bio-monitoring (to be reported to Incharge WQM I) Inter-state Yamuna Monitoring 	Dr. Sanjeev Aggarwal, SE (Divisional Head) Shri N.C. Durgapat, SD Dr. Dilip Markanday, SD Shri Y.D. Pandey, SD	Dr. Sanjeev Aggarwal, SE

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S.No.	Division	Activities	Officers in the Division	Nodal Officer
		(Supreme Court Matter ADF/HR)	Dr. Yogita, SO	
7.	Pollution Control Planning (PCP), Public Relations & Grievances, and ETU	<ul style="list-style-type: none"> Annual Plan Zonal Office Coordination Bilateral (Global Convention) Cess R&D Parliament Matters Annual Report Mass Awareness Coordination Activities Publication & Media Interaction VIP References RT/NGO Conferences Board Meetings ENVIS 	Shri J.S. Kamyotra, SE (Divisional Head) Shri Paritosh Kumar, SE Shri V.P. Yadav, SE Shri Shranoo Jain, SE Smt. Divya Sinha, SE Shri G. Ganesh, SD Smt. Anamika Sagar, SC Shri Satish Kumar, Pub. Asst.	Shri J.S. Kamyotra, SE
		• Env. Training Unit (ETU)	Dr. S.K. Tyagi, SE (Divisional Head) Shri M. Varghese, A.O	
8.	Information Technology	<ul style="list-style-type: none"> Networking Website updation Enterprise Resource Planning SPCB Support GIS Development Data Storage and Security E-Samiksha 	Shri A. Sudhakar, SE (Divisional Head) Shri Aditya Sharma, SD Shri U.A. Ansari, SD Shri Archi Upri, SC Smt. Kavita B.V., SC Smt. Shashi Goel, DPA	Shri A. Sudhakar, SE

Shri A. Sudhakar
19/01/17

S.No.	Division	Activities	Officers in the Division	Nodal Officer
		<ul style="list-style-type: none"> E-Samiksha MIS - CPCBs 	Shri Shashi Goel, DPA	
9.	LAW			
9.1	Law-I	• All Court Cases in Delhi	Shri Gurnam Singh, SE (Divisional Head)	Shri Gurnam Singh SE
9.2	Law-II	• All Court Cases Other than Delhi	Shri A. Sudhakar, SE (Divisional Head)	
10.	Building	<ul style="list-style-type: none"> Office Maintenance Vehicle Maintenance Security Estate 	Dr. D. Saha, SE (Divisional Head) Shri S.K. Sharma, SC	Dr. D. Saha, SE
11.	Quick Response Team (QRT)	• Follow up on references to be immediately responded or quick inspections	Shri Suneel Dave, SE (Divisional Head) Shri S.K. Arora, SE Shri Ratnesh Kumar, SB	Shri Suneel Dave, SE

Note: The regular subordinate staff & project staff other than identified and the Outsource staff will continue with the activities already assigned to them at their present places and will report to the officers to whom now the activities is assigned as per this Order. Further, the Member Secretary as per need will do changes if necessary.

Shri A. Sudhakar
19/01/17

Annexure III

Converted posts and their salary component at Head Office

Name of post	Sanctioned Strength	Pay Band	Pay Band Scale	Grade Pay	Pay in Pay band	Total	HRA+DA	TA	DA on TA	Gross Salary	Total salary expenditure
Group B (Scientific/Technical)											
Draughting Supervisor	1	PB-2	9300-34800	4600	9300	13900	22518	1600	2112	40130	40130
Total	1										
Group C (Scientific/Technical)											
Senior Draughtsman	2	PB-2	9300-34800	4800	9300	14100	22842	1600	2112	40654	81308
Plumber	1	PB-1	5200-20,200	2400	5200	7600	12312	600	792	21304	21304
Pump & Wheel Valve Operator	1	PB-1	5200-20,200	1900	5200	7100	11502	600	792	19994	19994
Total	4										
Group "A" ADMINISTRATIVE / SUPPORTING											
Sr. Administrative Officer	1	PB-3	15600-39100	7600	15600	23200	37584	3200	4224	68208	68208
Administrative Officer	7	PB-3	15600-39100	6600	15600	22200	35964	3200	4224	65588	459116
Total	8										
Group "B" ADMINISTRATIVE / SUPPORTING											
Private Secretary	18	PB-2	9300-34800	4600	9300	13900	22518	1600	2112	40130	722340
Section Officer	8	PB-2	9300-34800	4600	9300	13900	22518	1600	2112	40130	321040
Senior Hindi Translator	1	PB-2	9300-34800	4600	9300	13900	22518	1600	2112	40130	40130
Total	27										
Group "C" ADMINISTRATIVE / SUPPORTING											
Assistant	21	PB-2	9300-34800	4200	9300	13500	21870	1600	2112	39082	820722
Personal Assistant	03	PB-2	9300-34800	4200	9300	13500	21870	1600	2112	39082	117246
Accounts Assistant	08	PB-2	9300-34800	4200	9300	13500	21870	1600	2112	39082	312656
Junior Hindi Translator	01	PB-2	9300-34800	4200	9300	13500	21870	1600	2112	39082	39082
Publication Assistant	01	PB-2	9300-34800	4200	9300	13500	21870	1600	2112	39082	39082
Driver Special Grade	01	PB-1	5200-20,200	2800	5200	8000	12960	600	792	22352	22352
Data Entry Operator Grade-I	02	PB-1	5200-20,200	2800	5200	8000	12960	600	792	22352	44704
Driver Grade-I	06	PB-1	5200-20,200	2800	5200	8000	12960	600	792	22352	134112
Driver Grade-II	02	PB-1	5200-20,200	2800	5200	8000	12960	600	792	22352	44704
Stenographer	03	PB-1	5200-20,200	2400	5200	7600	12312	600	792	21304	63912
Upper Division Clerk	24	PB-1	5200-20,200	2400	5200	7600	12312	600	792	21304	511296
Data Entry Operator Grade-II	06	PB-1	5200-20,200	2400	5200	7600	12312	600	792	21304	127824
Driver (Ordinary)	13	PB-1	5200-20,200	1900	5200	7100	11502	600	792	19994	259922
Lower Division Clerk	20	PB-1	5200-20,200	1900	5200	7100	11502	600	792	19994	399880
Senior Attendant	15	PB-1	5200-20,200	1800	5200	7000	11340	600	792	19732	295980
Attendant	22										
Total	148									Total	50,07,044
Grand Total	188										

ANNEXURE-IV

Converted posts and their salary component at Zonal Office

Name of post	Sanctioned Strength	Pay Band	Pay Band Scale	Grade Pay	Pay in Pay band	Total	HRA+DA	TA	DA on TA	Gross Salary	Total salary expenditure
Group "B" ADMINISTRATIVE / SUPPORTING											
Section Officer	1	PB-2	9300-34800	4600	9300	13900	22518	1600	2112	40130	40130
PA/PS	1	PB-2	9300-34800	4600	9300	13900	22518	1600	2112	40130	40130
Total	2										
Group "C" ADMINISTRATIVE / SUPPORTING											
LDC	3	PB-1	5200-20,200	1900	5200	7100	11502	600	792	19994	59982
UDC	1	PB-1	5200-20,200	2400	5200	7600	12312	600	792	21304	21304
DEO-Grade I	9	PB-1	5200-20,200	2800	5200	8000	12960	600	792	22352	201168
Driver (Ordinary)	4	PB-1	5200-20,200	1900	5200	7100	11502	600	792	19994	79976
AdA (Assistant)	2	PB-2	9300-34800	4200	9300	13500	21870	1600	2112	39082	78164
Hindi Typist (Jr. Hindi Translator)	1	PB-2	9300-34800	4200	9300	13500	21870	1600	2112	39082	39082
Computer Expert (DEO-Grade I)	1	PB-1	5200-20,200	2800	5200	8000	12960	600	792	22352	22352
Total	21									Total	582288
Grand Total	23										