Environment Monitor

Activities and Achievements of the Board
2005-2006

Maharashtra Pollution Control Board

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on behalf of the Maharashtra Pollution Control Board at
'Kalpataru Point', Sion (East), Mumbai.

Website: http://mpcb.mah.nic.in

FROM THE MEMBER SECRETARY'S DESK

YEAR 2005-2006 AT A GLANCE

Maharashtra Pollution Control Board (MPCB or "Board") achieved many milestones during the year 2005-2006, despite being faced with many challenges.

We accomplished these milestones by focusing not just on our mandated tasks such as monitoring and enforcement, raising public awareness and consent management, but often times going beyond the call of duty. We partnered and collaborated with national and international institutions to improve functional efficiency and build both internal and external capacity. We set up demonstration projects, funded new ventures, provided consultation to local bodies, proposed expansions of existing monitoring networks and common infrastructure, and recognizing the Information Technology (IT) age, placed vast amounts of data and resources on our website.

In all these endeavors, we were guided by our vision to move towards overall betterment and sustainability - better efficiency, better transparency, better responses and better protection of the State's environment.

Some specific examples of how we achieved our targets for the year are summarized in a table of highlights in the first chapter of this *Environment Monitor*.

The year 2005-2006 also saw a paradigm shift in the our thought process as a Board, in our quest to change in unprecedented ways. We reviewed the final report on institutional capacity building and re-engineered our internal set up, creating new divisions for pollution control and implementation, developed a Strategic Action Plan (SAP), added to our infrastructure such as the new Central laboratory at Navi Mumbai "Nirmal Bhavan", at which construction was completed. Many fundamental issues such as the need for MPCB to change our style of functioning to knowledge based rather than enforcement based, to change our role and position in the community from a regulator to a facilitator were also addressed.

Much of the work done by MPCB has been appreciated by different stakeholders and while a lot of progress has been made this year, we continue to work towards making our vision come to fruition.

It is my great pleasure and privilege to present this *Environment Monitor* of the Board.

Dr. Dilip Boralkar
Member Secretary
August 7, 2006

A • C • K • N • O • W • L • E • D • G • M • E • N • T • S

The Maharashtra Pollution Control Board (MPCB) would like to record the efforts of all its Regional Officers (ROs) who compiled and processed information needed to prepare the *Environment Monitor*.

MPCB also appreciates the hard work put in by its staff members - Ms. Madhurima Joshi, Ms. Vinita Dhupkar and Mr. A. A. Mokashi who assimilated and analyzed the information sent in by all ROs and prepared an initial draft of the *Environment Monitor*.

The Board is indeed proud of the way this *Environment Monitor* has shaped up. Towards this end, the efforts of M/s Environmental Management Centre (EMC) in re-visioning, developing and structuring the contents and the design inputs provided by M/s Globus Communications are gratefully acknowledged.

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LIST OF ABBREVIATIONS

ADB	Asian Development Bank
AILSG	All India Institute of Local Self Government
ASEM	Advisory Services in Environmental Management
MPCB	Maharashtra Pollution Control Board **(Board)**
BMW	Bio-Medical Waste
BOD	Biochemical Oxygen Demand
BOOT	Build Own Operate Transfer
BT	Bitumen Topped
CAAQM	Continuous Ambient Air Quality Monitoring
CBD	Central Business District
CBMWTDF	Common Bio-Medical Waste Treatment and Disposal Facility
CESE	Center for Environmental Science and Engineering
CETP	Common Effluent Treatment Plants
CHWTSDF	Common Hazardous Waste Disposal Facilities
CIFE	Central Institute of Fisheries Education
CMFRI	Central Marine Fisheries Research Institute
COD	Chemical Oxygen Demand
CPCB	Central Pollution Control Board
CSE	Centre for Science and Environment
CSPO	Central Sale and Purchase Organization
DA	Daily Allowance
DDGS	Distillery Dry Grain Solids
DIT	Department of Information Technology
DO	Dissolved Oxygen
DPR	Detailed Project Report
EMC	Environmental Management Centre
EMPA	Federal Laboratories for Materials Testing and Research
EPCA	Environmental Pollution (Control and Protection) Authority
E-waste	Electronic waste
ESP	Electrostatic Precipitators
EST	Environmentally Sound Technology
ESZ	Eco-Sensitive Zone
FCCU	Fluid Catalytic Cracking Unit
FGD	Flue Gas Desulfurization
FIR	First Information Report
GE	General Electric
GEMS	Global Environmental Monitoring System
GoI	Government of India
GoM	Government of Maharashtra
Govt.	Government
GSDA	Groundwater Survey and Development Agency
GTZ	Gesellschaft für Technische Zusammenarbeit
GmbH	(German Society for Technical Cooperation)
HCE	Health Care Establishments
HVS	High Volume air Samplers
HW	Hazardous Waste
IGIDR	Indira Gandhi Institute of Development Research

IIT	Indian Institute of Technology
IT	Information Technology
KDMC	Kalyan Dombivali Municipal Corporation
LSI	Large Scale Industry(ies)
MAIT	Manufacturers Association of Information Technology
MCGM	Municipal Corporation of Greater Mumbai
MCZMA	Maharashtra Coastal Zone Management Authority
MDR	Major District Road
MEDA	Maharashtra Energy Development Agency
MHADA	Maharashtra Housing and Area Development Authority
MIDC	Maharashtra Industrial Development Corporation
MINARS	Monitoring of Indian National Aquatic Resource Sampling
MIS	Management Information System
MMR	Mumbai Metropolitan Region
MoEF	Ministry of Environment and Forests
MoU	Memorandum of Understanding
MPCB	Maharashtra Pollution Control Board
MRSAC	Maharashtra Remote Sensing Applications Centre
MSEDC	Maharashtra State Electricity Distribution Centre
MSI	Medium Scale Industry(ies)
MSW	Municipal Solid Waste
MTPA	Metric Tons per Annum
MTPD	Metric Tons per Day
MTPH	Metric Tons per Hour
NAMP	National Air quality Monitoring Programme
NEERI	National Environmental Engineering Research Institute
NETL	National Energy Technology Laboratory
NGO	Non-Governmental Organization
NIMA	Nashik Industries and Manufacturers Association
NML	National Metallurgical Laboratory
NMMC	Navi-Mumbai Municipal Corporation
NTPC	Nashik Thermal Power Corporation
NWMP	National Water Monitoring Programme
OECD	Organization for Economic Cooperation and Development
PPP	Private Partner Project
PSO	Principal Scientific Officer
PTI	Press Trust of India
PVC	Poly Vinyl Chloride
RFP	Request for Proposal
RO	Regional Office
RS	Remote Sensing
SAMP	State Air Quality Monitoring Programme
SAP	Strategic Action Plan
SCMC	Supreme Court Monitoring Committee
SCN	Show Cause Notices
SDP	State Domestic Product
SEPP	Spatial Environmental Planning Program
SEZ	Special Economic Zone
SICOM	State Industrial and Investment Corporation of Maharashtra
SLF	Secure Landfill

SLO	Senior Law Officer
SRO	Sub-Regional Office
SRS	System Requirement Study
SSI	Small Scale Industries
STP	Sewage Treatment Plant
STPI	Software Technology Parks of India
TA	Traveling Allowance
ToR	Terms of Reference
TSDF	Treatment Storage and Disposal Facility
TTC	Trans Thane Creek
UDS	Underground Drainage System
UGC	University Grants Commission
ULBs	Urban Local Bodies
UNEP	United Nations Environmental Programme
USAID	United States Agency for International Development
USEPA	United States Environmental Protection Agency
WB	World Bank
WEEE	Waste Electronic and Electrical Equipment
WP	Writ Petition
WSAPL	Wilbur Smith and Associates Pvt. Ltd.
ZASI	Zoning Atlas for Siting Industries

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

The Environment Monitor of the Maharashtra Pollution Control Board (MPCB) for the year 2005-2006 is a compilation of the activities and achievements of MPCB for the said year. **Chapter 1 on About the Board** provides some background about the formation of the Board and describes its Vision Statement, constitution, organization and functions. Meetings conducted by the Board and Expert Committees constituted during the year 2005-2006 are also included.

The main text of the *Environment Monitor* follows the Driving Forces, Pressures, State, Impacts and Response (DPSIR) framework. DPSIR is a general framework that helps organize and layout information on the state of the environment in a methodical manner. In this Report, DPSIR is used such that DPS and I are talked about in Chapter 2, while R is taken up mostly in Chapter 3 with some links in Chapters 4 and 5.

The sections in **Chapter 2 on the State of the Environment in Maharashtra** talk about driving forces and pressures such as industrialization, urbanization and infrastructure building and enhancement to meet the demands of a growing population as some of the factors that have led to a heightened pace of environmental degradation. The resulting consequences are largely in the form of inadequate access to amenities such as drinking water and sanitation. The average road coverage in the State leads to environmental issues such as dust and particulate matter from unpaved roads.

The pressures cause severe impacts to the State's environment, as seen in poor water quality across the many sources of water such as river water, groundwater and sea water. Water quality monitoring at some major rivers in the State indicated that at 70% locations, water quality has deteriorated due to high levels of Biochemical Oxygen Demand (BOD). None of the water bodies met their target classes, showing a 100% non-compliance of water quality standards.

In the case of municipal sewage, most Sewage Treatment Plants (STPs) where available are only able to provide partial wastewater treatment (16 of 22 Corporations), on account of inefficient operations. Only about 25% hold valid consents. Of the 136 locations monitored for groundwater quality, 86 exceeded parameter limits. The only somewhat positive numbers came from coastal water monitoring where dissolved oxygen (DO) and BOD values both remained fairly constant compared to last year even though overall the standards were violated at 25% of the monitored locations.

The air quality status report showed that parameters such as oxides of sulphur and nitrogen, and particulate matter were within limits in only 48% of the monitored locations, which covered residential, commercial and industrial areas. Noise levels were only met at 35 of the 254 locations that were monitored.

In case of Municipal Solid Waste (MSW), at 223 Urban Local Bodies (ULBs) landfill sites have been finalized, while 27 await the final decision. These landfills are much needed given that the State as a whole generated about 18,000 ton/day of MSW, 50% of which was generated in the Mumbai and Pune regions alone. The per capita MSW generation in urban areas of the State is between 0.4 to 0.5 kg per day. In the State, MSW generation is highest in Mumbai city.

Through efforts of MPCB and partnering institutions, there are now 31 common Bio-Medical Waste (BMW) treatment facilities in the State, up from 17 facilities just two years ago. Even though this is a significant increase, the number is still small given that the State of Maharashtra generates about 31 ton/day of BMW.

Maharashtra's industrial sector contributes to 21% of the nation's output

Mumbai alone houses 28% of the State's 42% urban population.

Maharashtra's road coverage extends to 2.68 lakh km.

80% of the State's population has access to electricity

52 % of the locations monitoring air quality and 219 of 254 locations monitoring noise exceeded limits

The State generated 18,000 ton/day of MSW, 31 ton/day of BMW and 14 lakh ton/year of HW

The State has also started enforcing plastic waste under the Notification "Maharashtra Plastic Carry bag (Manufacture and Usage) Rules, 2006" of 3rd March 2006.

Overall, industrial pollution remains one of the biggest stressors to the State's environment. There are approximately 60, 000 industries in the State today, classified as "Red", "Orange" and "Green" categories of large-scale, medium-scale and small-scale industries, of which the latter two have a sizeable pollution potential. Under the Central Action Plan 714 units were identified as high polluting industries, of which 162 were closed and action was taken against 80 non-compliant units. Overall there were around 8,000 industries that added to water pollution, about 10,000 units that polluted the air, while about 4,500 industries contributed significantly to Hazardous Waste (HW). In fact, in the specific case of HW the State generates about 14 lakh ton/year of HW, with Thane, Ratnagiri and Raigad regions generating the maximum amounts. The total amount of HW from Maharashtra amounts to about 50% of the total HW generated in the country. In the case of another specific waste stream that of lead acid batteries, information from dealers reveals that in the year 2005-2006, 105, 244 batteries were bought while only 10,887 were returned, showing a huge disparity.

When returned, these batteries are recycled. There are 16 Lead acid battery recycling units with valid registration from Central Pollution Control Board (CPCB). The new waste stream of e-waste is also discussed and some initiatives taken by the Board are presented.

Changes at the industries in the State, based on the Board's enforcement actions are also documented. Some industries have adopted treatment and disposal technologies, while others have embraced cleaner technologies such as waste recycling, resource recovery and so on.

Overall, given the situation, the Board received a total of about 1,500 complaints on air, water, waste and noise pollution that it responded to in ways discussed in Chapter 3.

The layout of **Chapter 3 on Protecting the State's Environment** is in alignment with the response mechanism of the Board. Whether the response is to a public complaint, related to an environmental hot spot or routine, the Board starts by assessing the situation through monitoring and surveys. This year, the Board proposed the expansion of the National Air quality Monitoring Programme (NAMP) and State Air Monitoring Programme (SAMP) networks, as well as the National Water Monitoring Programme (NWMP) stations, to strengthen the monitoring systems in the State. It continues to make all NAMP and NWMP data available online and posts daily air quality data for 6 cities on its website. A number of water surveys were carried out including the Mithi River Study conducted in response to a public litigation.

Noise levels were monitored especially during festival times and a noise level study revealed that even though noise levels were still above the safe limits in most areas, in terms of the duration of noise and its intensity, this Diwali was less noisy than last year.

Industrial source monitoring is discussed next which is routinely performed in accordance with certain norms. Studies conducted to assess industrial pollution are also described, such as the one on evaluation of Common Effluent Treatment Plant (CETP) performance and the e-waste study.

On obtaining relevant data from monitoring and surveys, activities such as inventorization can be carried out which are discussed next in the Chapter. Specifically, the HW inventory compiled by the Board is described. Based on information from the inventory, directions were issued to 4,571 industries for non-compliance, which brings the discussion to enforcement actions of the Board. This sections starts by tabulating consents issued by the State (total of 10, 000) in various categories such as to establish and operate. The increasing number of consents underscores the industrialization occurring in Maharashtra.

Of the State's 60,000 industries, about 8,000 added to water pollution, around 10,000 units polluted the air and approximately 4,500 industries contributed significantly to HW.

The Board's Response Mechanism A reiterative approach following these steps:

1. *Monitoring and Surveys*
2. *Developing inventories*
3. *Enforcing relevant legislation*
4. *Developing common infrastructure facilities*
5. *Conducting research and development activities*
6. *Implementing projects based on sound planning and well laid out policies*

Specific enforcement actions such as directions issued to industries under various Acts, and the corresponding actions taken by specific industries relating to pollution of all the different environmental media are discussed.

This section also compiles the prosecutions launched by the Board, complaints made by the Board and judicial Orders that were decided in legal matters between the Board and the opposing party.

In the course of the Board's enforcement actions ranging from persuasion to legal action, dialogue between stakeholders often pointed to the inadequacy of environmental infrastructure to manage pollution. Hence MPCB got involved in developing common infrastructure for the State. This is discussed next in the Chapter, where STPs, CETPs, MSW landfills, Common Bio-Medical Waste Treatment and Disposal Facilities (CBWTDF) and Common Hazardous Waste Treatment Storage and Disposal Facilities (CHWTSDFs) are described in detail.

Once infrastructure is in place to manage emissions, effluents and wastes, the Board focuses on other specialized enhancement or improvement projects and carries out research in new areas internally or in partnership with national and international organizations. This is laid out in the next section which talks about programmes such as the creation of a plastics cell to start enforcing the Plastics Rules, the ongoing MSW demonstration projects and Zoning Atlas activities. Finally planning and policy development follow, which the Board took up this year by developing action plans for Chandrapur and Kolhapur along the lines of the ones for Pune and Solapur, as reported in the section on planning. The planning done at religious places for their environmental improvement is also summarized here. Finally, the SAP developed for MPCB is laid out in some details.

This Chapter closes by citing some of the key partnerships that the Board engaged in this year, as well as the ongoing policies that form the backbone of the overall functioning of the Board.

Chapter 4 on Internal Capacity Building continues with a detailed discussion on how the Board builds its internal capacity. In this context, the newly created Environmental Information Centre (EIC) is described which takes on website management, consent management and computerization activities for the Board, the library procurement of the Board and some of its publications are listed, infrastructure enhancements of the Board such as the new laboratory in New Mumbai is described, institutional restructuring laid out in the CRISIL report and the SAP done by Environmental Management Centre (EMC) are explained.

Chapter 5 on External Communication then looks at the external communication efforts made by the Board. These include the environmental training conducted by the Board, its public awareness campaigns, its efforts to interact with the press and Non Governmental Organizations (NGOs) and finally the website as a portal of information.

Chapter - I

About the Board

1.1 Background

Maharashtra is one of the most highly industrialized and urbanized states in India. The State led the foundation for an environmental management framework in the nation, with the enactment of the Maharashtra (Prevention and Control of Water Pollution) Act of 1 6 by the State legislature. Under this Act, on 7 September, 1 70, the Maharashtra Water (Prevention and Control of Pollution) Board was established to monitor and control water pollution. In 1 74, Parliament passed a Central enactment in the form of the Water (Prevention and Control of Pollution) Act, which was subsequently adopted by Maharashtra in 1 81. With this, Maharashtra began implementing the provisions of the Central Act and also re-named the board created under the 1 6 Act as the "Maharashtra Pollution Control Board" (hereafter referred to in this document as the "Board" or "MPCB").

1.2 Vision Statement

MPCB is a dynamic organization that is focused on efforts to improvise functional efficiency and introduce a knowledge based form of regulation, while at the same time concentrating on increasing public awareness and expanding the common infrastructure needs of the State. Hence, coining an appropriate Vision Statement for the Board that reflected some of these broader goals and objectives was accomplished in 2003. This statement is cited in Box 1-1.

Maharashtra Pollution Control Board

Box 1-1
Vision Statement

Improvement in the Board's functional efficiency, transparency in operation, and adequate response to growing needs of environmental protection and sustainable development in the State of Maharashtra

1.3 Constitution

MPCB comprises of a Chairperson, Members and a full-time Member-Secretary, who functions as its Chief Executive Officer in accordance with the Water (Pollution and Control of Pollution) Act, 1 74. The composition of the Board is as under

- **Chairperson:** (Part-time or full-time) A person with technical knowledge or practical experience in matters relating to environmental protection or in administrative functions of institutions dealing with environmental matters
- **Member Secretary:** A person with the requisite qualifications, knowledge and experience in scientific, engineering or management aspects of pollution control
- **Representatives of the State Government** (not exceeding five)
- **Representatives of local bodies** (not exceeding five)
- **Representatives of companies or corporations of the State Government** (two)
- **Members representing interests of agriculture fishery or industry or trade etc.** (not exceeding three)

For the year 2005-2006, due to reasons not within the control of MPCB, the Board could not be re-constituted according to the composition under the Act. The present constitution of the Board is presented in Table 1.1.

1.3.1 Organizational Structure of the Board

In addition to the composition of the Board stated above, MPCB is supported by several divisions and wings as presented in Figure 1.1. Figure 1.2 shows the field

Maharashtra was the first state in India to have a Water revention and Control of ollution ct in 1969, and establish a Board, whereas the Central ct was only introduced in 19 4.

Overall, Maharashtra shows a trend towards appointing more technical Board members than in other CBs in India.

M CB has a total of 11 Os and 41 S Os. our additional Os have been proposed, one each at anded, Chandrapur, atnagiri and Solapur.

Table 1.1 Present Constitution of the Board

Smt. Sharwaree Go hale IAS	Chairperson, MPCB and Principal Secretary, Environment Department, Government of Maharashtra (GoM), Mumbai. (Shri. B.P. Pandey upto December 2005)
Dr. Dilip. B. Boral ar	Member Secretary, MPCB
Principal Secretary	Urban Development Dept. GoM Room No. 423 (Main), Mantralaya, Mumbai.
Principal Secretary	Home (Transport) Dept. GoM Room No. 229, Mantralaya, Mumbai.
Principal Secretary	Public Health Dept. GoM Room No.108, Mantralaya, Mumbai.
Chief Executive Officer	Maharashtra Industrial Development Corporation (MIDC), Mahakali Caves Road, Andheri (E), Mumbai.
Managing Director	State Industrial Investment Corporation of Maharashtra (SICOM) Nirmal , 1st Floor, Nariman Point, Mumbai.

offices of MPCB, while Figures 1.3 and 1.4 map the locations of Regional Offices (ROs) and Sub-Regional Offices (SROs) of MPCB .

Staff strength of the Board at the Headquarters and Regional Offices is shown in Figure 1.5, while more details can be seen in Annexure 1-1.

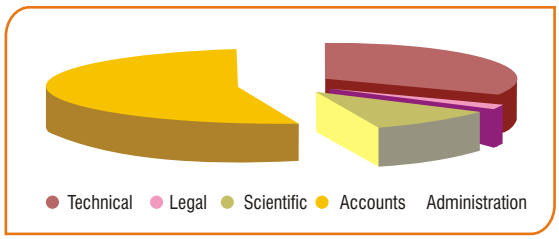

Figure 1.5 Staff Strength at MPCB

1.4 Functions, Activities and Achievements

MPCB primarily functions as the environmental enforcement agency for the State of Maharashtra. Accordingly, it is responsible for the implementation of all Rules and Notifications issued by the Ministry of Environment and Forests (MoEF) of the Government of India (GoI) under the various environmental Acts enacted by the Parliament, as explained in Figure 1.6, and their subsequent amendments. Environment Department in the State Government is the administrative nodal department for the Board. The State Government has also entrusted the Board with the responsibility of manufacturing aspects of Plastic Rules, 2006 as well as Administrative Orders, Policy and such other matters related to environmental regulation.

Consequently, the Board carries out a set of mandated functions such as monitoring and enforcement through inspections, monitoring networks, consent management, and public hearings.

In addition, the Board, in its quest to change its style of regulation from enforcement-based to knowledge-based and using its Vision Statement as the guiding principle, is also performing several other functions. Some of these include the following

1. Improving functional efficiency through fast track mechanisms for clearing consents and decentralizing the process of consent management.

2. Expanding on the State's knowledge base for example by developing inventories in HW, publishing books on hazardous substances, and so on.

3. Increasing public awareness by conducting a variety of public awareness campaigns through the publication of posters, release of films, through street plays, responding to public complaints in a timely manner, and in general educating the public on environmental issues.

4. Developing common environmental infrastructure - engaging in public-private partnerships to develop facilities such as STPs, CETPs and CHWTSDFs among others. Some special highlights of the Board's activities for the year 2005-2006 are recorded in Table 1.2

The additional environmental protection responsibilities that emerge out of judicial directives are also taken over by the M CB.

Table 1.2 Highlights of MPCB 2005-2006

Activity	Highlight
Consents	Granted generally within 15-30 days, sometimes even earlier
Air	Expansion of the NAMP and SAMP networks proposed, calibration laboratory for air quality monitoring stations proposed, work on CAAQMS undertaken
MSW	Completed 3 of 5 demonstration projects.
BMW	Strict enforcement of BMW Rules
HW	HW management and compliance efforts appreciated by SCMC
Lead acid batteries	Recovery rate up 10 from last year to 75 .
Maharashtra Plastic Carry Bag (Manufacture Usage) Rules", 2006	Strict enforcement – notices, registrations, training, street plays
E-Waste	MoU with United Nations Environmental Programme (UNEP) for e-waste study in Mumbai-Pune regions
CETPs	5 CETPs constructed and commissioned
Revenue generation	Rupees 82 crores, up from Rs. 32 crores in the last year
Infrastructure	Construction of Central laboratory building at Navi-Mumbai completed
Action Plans prepared	Chandrapur and Kolhapur
Environmental improvement programme for religious places.	Project report of Shirdi, Shani Shinganapur Alandi completed
Research and development	Partnering with institutions such as WB, ADB, NEERI, USEPA, CPCB, MoEF, MIDC
Mass awareness	Programmes organized for World Environment Day, Ozone Day, interactions with press and NGOs, publications, short films
Institutional Capacity Building	Report submitted

M CB was recently honoured with Environmental eadership ward by nited States sia Environmental artnership, for the contribution made towards Environment protection and ollution Control

Dr. Dilip B. Boralkar, Member Secretary, M CB, was individually honoured with Environmental eadership ward by nited States sia Environmental artnership for his contribution in Environment rotection and ollution Control

ppreciation by High Court in the case of environmental protection at Mahabaleshwar and anchgani

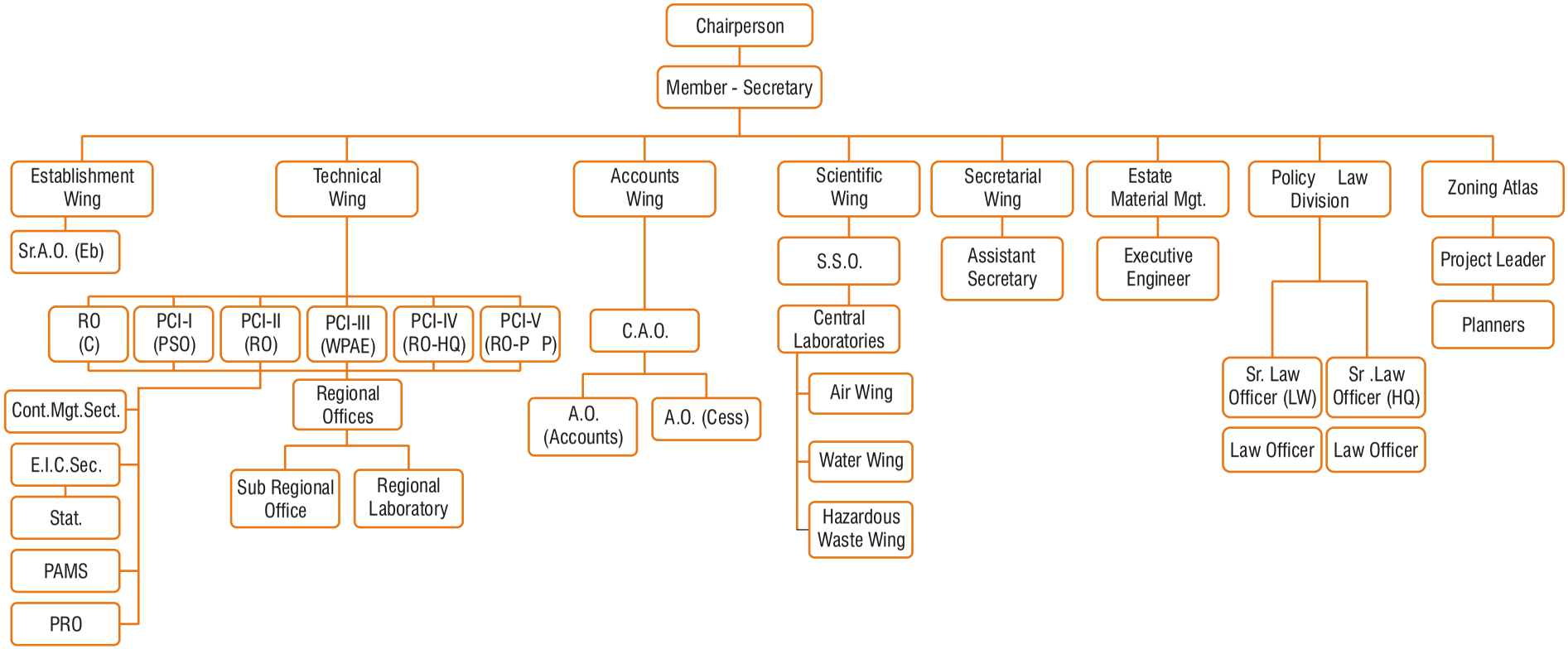

Figure 1.1 Organizational Structure of MPCB

WPAE - Water Pollution Abatement Engineer
APAE - Air Pollution Abatement Engineer
RO (HQ) - Regional Officer (Head Quarter)
PCI - Pollution Control Implementation
RO (P P) - Regional Officer (Project Planning)
EIC -Environmental Information Center
St. O.- Statistical Officer

Sr. A. O. - Senior Administrative Officer
CAO - Chief Accounts Officer
AO (Cess) - Accounts Officer (Cess)
AO (Accts.) - Accounts Officer (Accounts)
SSO - Senior Scientific Officer
PAMS - Pollution Assesment Monitoring Surveillance

PCI-I - Chemicals and Petrochemicals
PCI-II - Minerals and Metals
PCI-III - Agro Based Industries
PCI-IV - Hazardous Substances Management
PCI-V - Impact Assessment

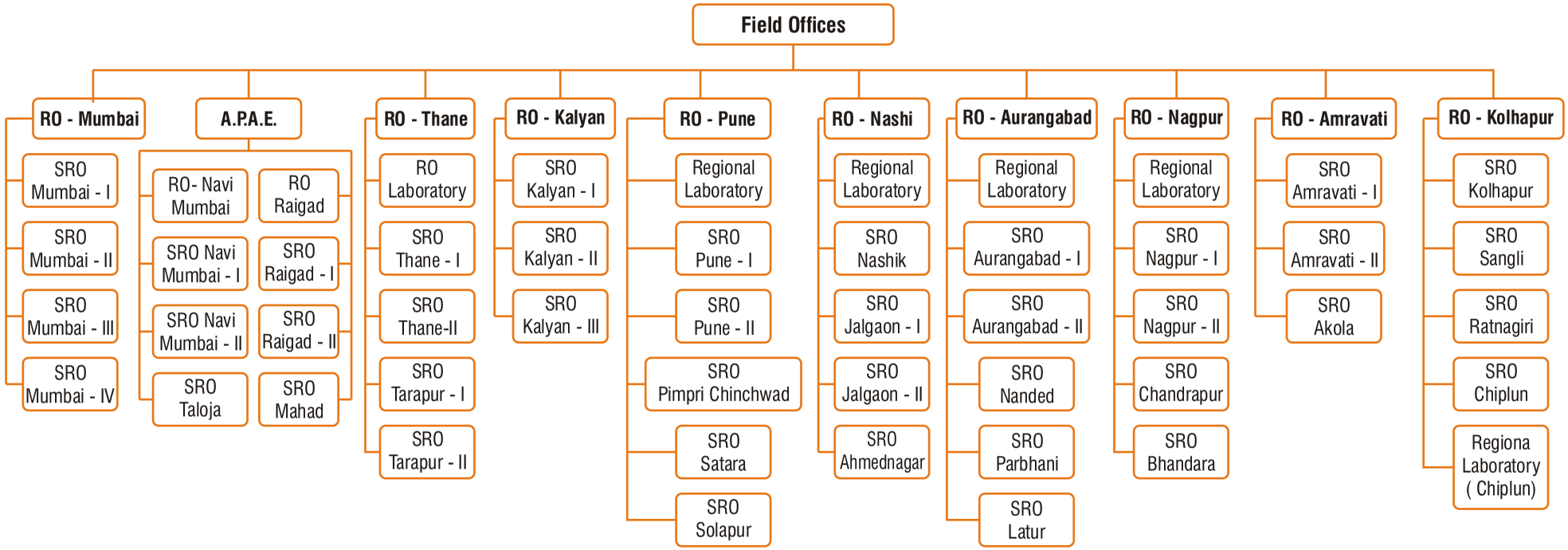

Figure 1.2 ROs SROs of MPCB

M B
E A E

MA

E E
State Boundry
District Boundry
District ead uarter
e ional ffice ead uarter

risdiction of e iona ffice
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Pune
a pur
Kolhapur
Kalyan
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A E -

Kilometers

E A E A -

A A
Maharashtra Pollution Control Board
a i Mumbai

Date : / /

Figure 1.3 ROs SROs of MPCB

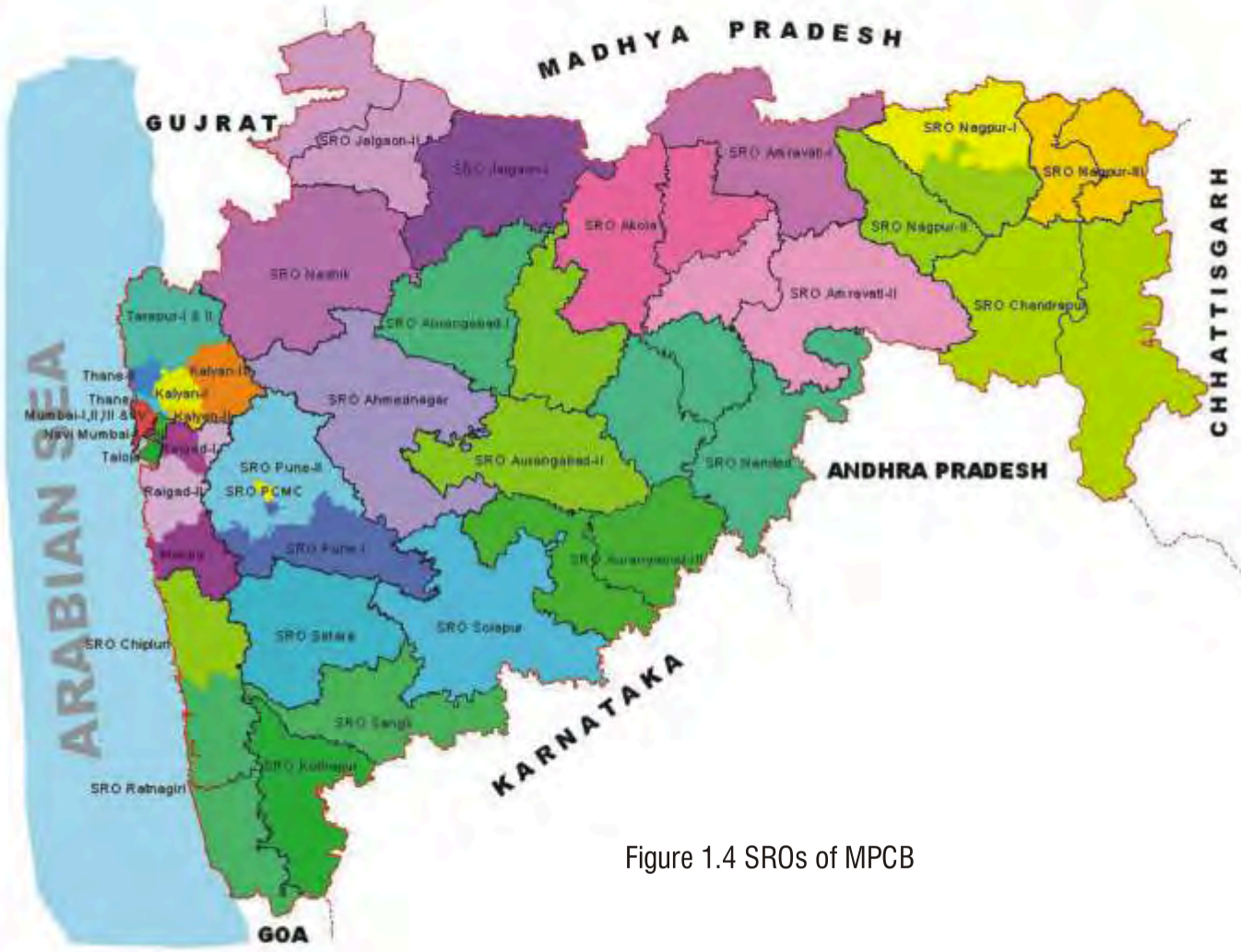


Figure 1.4 SROs of MPCB

1.5 Meetings

As stated in Section 1.2, the Board has not been re-constituted as per the provisions of the Act for the year 2005-2006. Board meetings could not be held. Some of the major decisions are reported below

1. Setting up of CAA M stations in collaboration with CPCB at Mumbai, Pune and Solapur.
2. Increasing the number of Ambient Air uality Monitoring Stations from 26 to 82 in collaboration with CPCB.
3. Conducting rapid e-waste assessment studies for MMR and the Pune and Pimpri-Chichwad Municipal Corporation areas with partial financial assistance from UNEP.
4. Carrying out environmental remediation at the Dabhol Power Plant at the cost of Rs. 1.4 crores received from General Electric (GE), Bechtel.
5. Constructing and refurbishing a new Central Laboratory at Mahape, Navi Mumbai.
6. Preparing an inventory of HW generated in Maharashtra based on the latest amendments in the Hazardous Waste (Management and Handling) Rules of 2003.
7. Legal action against non-compliant industries.
8. Refurbishing of offices and staff quarters.
. Strengthening of field equipment and transport.
10. Provision of Rs. 18 crores for Employees Pension Fund.
11. Release of subsidy to CETPs.
12. Technical and financial assistance to Ullhasnagar and Kolhapur Municipal Corporations for cleaning of sewage streams.

1.6 Committees

In accordance with Section of the Water (Prevention and Control of Pollution) Act of 1 74 and Section 11 of the Air (Prevention and Control of Pollution) Act of 1 81, the Board has constituted various committees for the efficient and effective implementation of the Acts and Rules. During the year 2005-2006, the following committees were constituted

1. Expert Committee for Construction Projects and Industrial Estates
2. Expert Committee on E-Waste
3. Expert Committee on E-Governance
4. Expert Committee on MSW
5. Expert Committee on BMW
6. Expert Committee for procurement of CAA MS

Additional details on each of these expert committees are provided below.

1.6.1 Expert Committee for Construction Projects and Industrial Estates

In pursuance of the civil Writ Petition (WP) No. 482 of 2005 regarding construction projects on Mill Lands in Mumbai, 56 Mill Land sites were visited by the Board and a report was submitted to the Hon'ble Court. During inspections, it was observed that the construction activity had already started in certain cases. Accordingly, MPCB issued SCNs to the concerned project proponents. The Board has now decided to give these project proponents an opportunity for public hearing to decide the further course of action. Members of this Expert Committee included the following

1.	Dr. D.B. Boralkar, Member Secretary, MPCB, Mumbai	Chairman
2.	Shri. K. R. Chaudhari, Director, Engineering Services and Project (ESP), Municipal Corporation of Greater Mumbai (MCGM)	Member
3.	Shri. K. D. Lala, Addl. Municipal Commissioner and City Engineer, Thane Municipal Corporation, Thane.	Member
4.	Shri. Mohan Dagavkar, City Engineer, Development Plan, Navi Mumbai Municipal Corporation (NMMC), Navi Mumbai.	Member
5.	Dr. S. B. Katoley Expert Member of Highrise Committee, Under State Government.	Member
6.	Shri. D. T. Devale, Sr. Law Officer, MPCB, Mumbai	Member
7.	Shri. S. S. Doke Regional Officer (Project and Planning), MPCB, Mumbai	Convener

This Committee also looked into the representations made by the project proponents concerning the construction projects and new industrial estates covered under serial No. 31 and 32 of Environmental Impact Assessment Notification (EIA) of 1 4, as amended on July 7, 2004.

During the year, the committee met 7 times and passed decisions on 114 proposals.

1.6.2 Expert Committee on E-Waste Management

Mumbai is the economic capital of India and also the largest port city. The Mumbai-Pune belt of the State has seen a very rapid growth in the IT sector, in addition to the growing numbers of industries manufacturing electronic and consumer durables. The ports in the vicinity are also important gateways for the import of a variety of electronic goods in the country. As a result of these activities and the large scale consumption of electronic goods and consumer durables in this region, as well as the rapidly expanding cities of the State, viz. Nagpur, Aurangabad, Nashik, Kolhapur and others, large quantities of electronic and electrical equipment e-waste is generated in Maharashtra and particularly in the Mumbai-Pune belt. Currently, there are no regulations to manage this e-waste nor are there any scientifically designed e-waste facilities for its collection, treatment, recycling, reuse and final disposal. In this regard, MPCB initiated discussions with the agencies like Federal Laboratories for Materials Testing and Research (EMPA) of Switzerland, Deutsche Gesellschaft f r Technische Zusammenarbeit GmbH (GTZ) (German Society of Technical Cooperation) of Germany and Advisory Services in Environmental Management (ASEM) of India on how to tackle such waste in an environmentally compatible manner.

MPCB further decided to initiate a pilot study on the rapid assessment of e-waste generation in Mumbai and Pune regions under an MoU signed with the UNEP. The Expert Committee constituted under this premise consists of the following members

1.	Dr. D.B. Boralkar, Member Secretary, MPCB	Chairman
2.	Mr. Vinnie Mehta, President, Manufacturers Association of Information Technology (MAIT), Delhi	Member
3.	Shri Kishor Wankhede, Toxic Links, Mumbai	Member
4.	Shri B.K.Soni, M.D., Infotrek Syscom Ltd.	Member
5.	Shri Markandeya, Chief Engg. (SW), MCGM, Mumbai	Member
6.	A representative from CPCB, Delhi	Member
7.	Dr. Rakesh Kumar, Dy. Director, National Environmental Engineering Research Institute (NEER)I, Mumbai	Member
8.	Dr. V.K. Sharma, Prof., Indira Gandhi Institute of Development Research (IGIDR), Mumbai	Member
9.	Mr. Sandeep Tandon, Mumbai	Member
10.	Ms. Lalita Vaidyanathan, Press Trust of India (PTI)	Member
11.	Ms. Nidhi Jhamwal, Centre for Science and Environment (CSE) Delhi	Member
12.	Ms. Deepali Khetriwal, representative of EMPA	Member
13.	Mr. P. Venugopal, Director, Software Technology Parks of India (STPI), Navi Mumbai	Member
14.	A representative from UNEP, Delhi	Member
15.	Dr. Ajay Deshpande, Regional Officer, I/c. PCI-II, MPCB	Member - Convener

The Terms of Reference (ToR) of this Expert Committee are as follows

1. Finalize the protocols for the study and assess the cost component of the study (on the rapid assessment of e-waste generation in Mumbai and Pune regions).
2. Study the legislative requirement within a local State Government needed for setting up of the facility for recycling and collection system in Waste Electronic and Electrical Equipment (WEEE).
3. Monitor the progress of the e-waste assessment study.
4. Examine the issues related to development of a recycling facility for e-waste in Maharashtra.
5. Develop a Private Partner Project (PPP) proposal with the help of appropriate institutions.
6. The Committee shall meet as frequently as required to accomplish the above tasks.
7. TA (traveling allowance) / DA (daily allowance) and honorarium as per rules shall be paid to the private members of the Expert Committee.

1.6.3 Expert Committee on E-Governance

In its 13 th meeting, the Board took a policy decision to computerize the operations and activities of the Board so as to increase work efficiency and streamline activities while making them more transparent. The Board accordingly issued a tender notice to design, develop, supply, install and operate an integrated Management Information System (MIS) solution for MPCB and its offices within Maharashtra. The following expert committee was constituted to review and provide suitable recommendations on the received tenders.

1.	Dr. D. B. Boralkar, Member Secretary, MPCB	Chairman
2.	Dr. Sanjay Gehlot, Director, National Informatics Center, CGO Complex, New Delhi	Member
3.	Director or his representative, IT, GoM, Department of Information Technology (DIT), Mantralaya, Mumbai	Member
4.	Shri Dilip Badwe, Flat No. 201, Nyati Hermitage II, NDA Road, Bavdhan, Pune	Member
5.	Representative, Central Sale and Purchase Organization (CSPO), GoM, Mumbai	Member
6.	Shri C.B. Pandey, Chief Accounts Officer, MPCB	Member
7.	Shri A. M. Deshpande, Air Pollution Abatement Engineer, MPCB	Convener

The ToR for this committee are

1. Open, evaluate and recommend the successful bidder from the bids received
2. Any other issue related to completion of the bids evaluation process
3. TA/DA and honorarium as per the Rules shall be paid to members.

1.6.4 Expert Committee on MSW

The Board took a policy decision to take up demonstration projects for the management of MSW in towns identified during its meetings on and before the 13 th meeting. Various options to find the MSW demonstration projects were discussed and it was decided that MPCB would invite proposals from municipalities of the already identified towns. The committee was tasked with evaluating the proposal received from the municipalities before granting financial assistance. The committee members are as follows

1.	Prof. Dilip Biswas, Former Chairman, CPCB	Chairman
2.	Shri. A. K. Jain, Senior Adviser, Solid Waste Management Cell, All India Institute of Local Self Government (AILSG), Mumbai	Member
3.	Dr. A. D. Bhide, Retired Deputy Director, NEERI, Nagpur	Member
4.	Dr. Avinash Akolkar, Additional Director, CPCB, Delhi	Member
5.	Dr. D. B. Boralkar, Member Secretary, MPCB, Mumbai	Member
6.	Shri. B.B. Nimbarte, MPCB, Mumbai	Convener

The ToR of the committee are as follows

1. Evaluation of technical and commercial proposal submitted by the municipalities for the management of solid waste in their region.
2. Recommend the proposal for financial support to the Board
3. Any other issue related to completion of the proposal evaluation process
4. Any other issue related to solid waste management submitted by Member Secretary for consideration and recommendation
5. TA/DA and honorarium as per the Rules shall be paid to members.

1.6.5 Expert Committee on BMW

The Board decided to constitute an expert committee to guide and evaluate the technical, scientific, and financial aspects of the bids submitted by bidders in response to a request for proposal issued by MPCB for establishment of four CBMW Collection, Transportation, Treatment Disposal Facilities for managing BMW in Mumbai. The composition of this committee is as follows

1.	Shri. Subroto Ratho, Additional Municipal Commissioner, MCGM, Mumbai	Chairman
2.	Shri. Sunil Soni, Director Municipal Administration, GoM	Member
3.	Dr. A. K. Jain, Sr. Adviser, AILSG, Andheri, Mumbai	Member
4.	Secretary, Environment Department, GoM or his representative	Member
5.	Dr. Rohini Kelkar, TATA Memorial Hospital, Mumbai	Member
6.	Dr. V. K. Iya, 21, Saras Bagh, Deonar, Mumbai	Member
7.	Shri. S. B. Patil, Executive Engineer, MIDC, Mumbai	Mumbai
8.	Smt. Deepika D'Souza, Med-Waste NGO, Mumbai	Member
9.	Prof. S.K. Gupta, Indian Institute of Technology (IIT), Mumbai	Member
10.	Dr. Shenoy, Representative of Indian Medical Association, Mumbai	Member
11.	Dr. K. R. Shetty, Representative of Hospitals Association, C/o –Bombay Hospital, Marine Lines, Mumbai	Member
12.	Dr. D. B. Boralkar, Member Secretary, MPCB, Mumbai	Member Convener

The ToR for the above committee are as follows

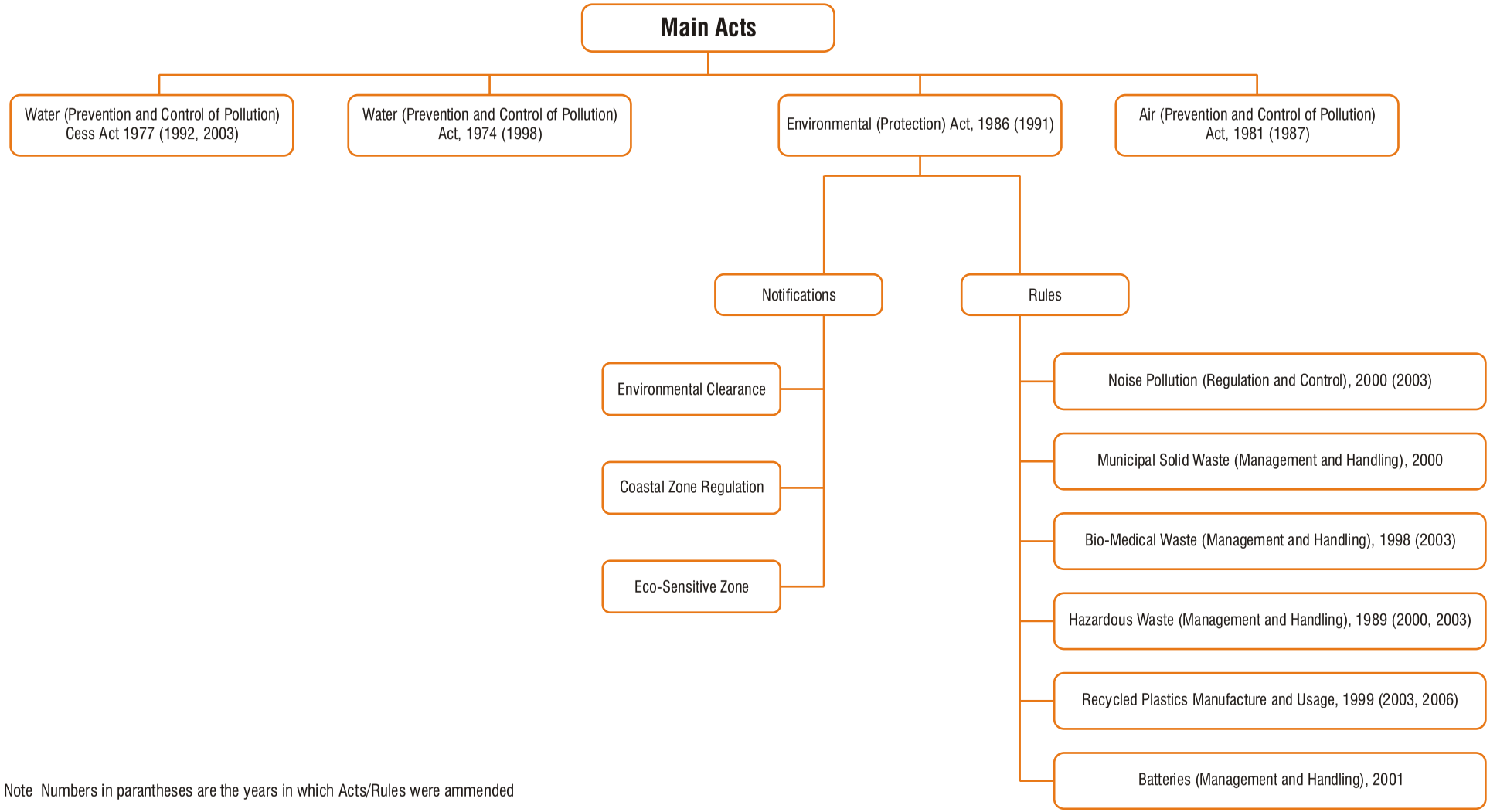
1. To evaluate proposals submitted by interested bidders on technical and financial capabilities as per BMW Rules 1 8, guidelines published by CPCB and Request for Proposal (RFP) document issued by MPCB.
2. To evaluate techno-business proposal submitted by interested bidders as per RFP document issued by MPCB
3. To evaluate the commercial offers submitted by interested bidders as per RFP document issued by MPCB

To examine and advice Board on any technical matter and select the successful bidders as per the terms of RFP documents, referred to it by Chairman, Member Secretary of the Board.

1.6.6 Expert Committee for procurement of CAAQMS

MPCB had invited tenders for supply and service of CAA MS in Mumbai, Pune and Solapur. The RFP document for the same is prepared and also placed on Board's website. The high level screening committee constituted for this appraisal consisted of notable professionals in the field of air quality monitoring, bureaucrats and the consultants as given below.

1.	Dr. D. B Boralkar, Member Secretary, MPCB	Chairman
2.	Prof. A. D. Sawant, Institute of Science, Mumbai and Joint Director, Higher Technical Education	Member
3.	Representative of CSPO, GoM	Member
4.	Prof. S.K. Gupta, IIT, Mumbai	Member
5.	Mr. C. P. Pandey, Chief Account Officer, MPCB, Mumbai	Member
6.	Mr. A. M. Deshpande, Air Pollution Abatement Engineer, MPCB	Member Convener



Note Numbers in parantheses are the years in which Acts/Rules were ammended

Figure 1.6 Some of the Legislations Implemented by the Board.

Chapter - II

State of the Environment
in Maharashtra

2.1 Introduction[1]

The State of Maharashtra is located in the western region of India, as depicted in Figure 2.1. It spreads over a total area of 3,07,713 sq. km. and is the third largest state in the country. Being one of the larger states in India, Maharashtra is sub-divided into 35 administrative districts (as shown in Figure 2.1), agglomerated into 5 socio-economic divisions, namely, Greater Mumbai Region, Marathwada Region, Konkan Region, Vidarbha Region and Western Maharashtra.

This chapter provides a general overview of the state of the environment in Maharashtra including factors such as industrialization, urbanization, infrastructure development, and tourism that have contributed to the degradation of natural resources such as water, air and land in the State, and led to severe environmental impacts and deteriorating public health.

Figure 2.1 Maharashtra

2.2 Industrialization in Maharashtra

Maharashtra is one of the most industrialized states of the nation. Mumbai, the capital of Maharashtra, is known as the business and financial capital of India. The service sector dominates the State's economy accounting for 6 % of the value of output in the country. The manufacturing sector also leads the way accounting for 21% of the nation's output. The major manufacturing industries located in Maharashtra include refined petroleum products, chemicals and chemical products, equipment, sugar, food products, basic metals, motor vehicles and textiles. Small scale industries (SSI), specifically developed in clusters throughout the State also contribute greatly to the State Domestic Product.

The principle industrial zone in Maharashtra is the Mumbai-Thane-Pune belt, which contributes to more than 60% of State's industrial output. Efforts are also being made to promote other industrial areas such as Nagpur, Nashik, Aurangabad, Solapur, Raigad, Amravati, Jalgaon and Ratnagiri. The Industrial Policy for Maharashtra, formulated by the State Government in 2001, emphasizes sustainable industrial growth and development in the State by encouraging investments in IT, biotechnology and hi-tech knowledge based industries.
While industries are essential for economic development of the State, industrial pollution by way of waste disposal and emissions is causing health hazards and environmental degradation and depletion.

Maharashtra is one of the most industriali ed states of the nation. Despite being home to only 9.6% of the country's population, Maharashtra's industrial sector contributes 20% to the et alue dded to organi ed sectors in India.

[1] The following publications have been referred to extensively while preparing this chapter

a) The State of the Environment Report prepared for the State of Maharashtra by IGIDR, under directions from MoEF, and inputs from MPCB and the Government of Maharashtra.

b) The Maharashtra State Development Report prepared by IGIDR, Gokhale Institute of Politics and Economics, Jamnalal Institute of Management Studies and Tata Institute of Social Sciences under the aegis of the Planning Commission.

c) Situation Analysis Report prepared by Dr. Prasad Modak of EMC, with inputs from the Board.

2.3 r anization in Maharashtra

Maharashtra is also amongst the most urbanized states in the nation. According to Census 2001, 42.40% of the State's total population is urban. In fact, the Mumbai region alone houses 28% of this urban population in the State.

The consequences of urbanization are largely in the form of inadequate access to amenities such as drinking water and sanitation. This is mainly true for the slums / squatter colonies in larger cities of the State. A little over 10.6 million persons lived in slums in 62 out of 65 urban units in the State in 2001. Together, 6 of the 7 million-plus cities accounted for about 73% of the slum population living in the 62 cities of the State. Even at present, the incidence of such pockets is extremely high, almost up to 50% in Mumbai, and considerably high in the cities of Nagpur and Thane.

Uncontrolled population growth (mainly due to migration) and imbalance in availability of affordable housing can be cited as two most significant factors of slum development in urban areas. Urbanization thus induces increased pressures on the environment.

The rapid pace of urbani ation in the last decade in particular is an alarming trend in Maharashtra the average decadal growth in urbani ation in Maharashtra, from 1991 to 2001, is almost 50%, with minimum growth in alyan Dombivli 1 .6 % and maximum growth in impri Chinchwad 95.06% .

dding to the existing network of roads, railways, energy supply systems and sanitation needs is important. However, this places a high level of stress on the natural resources in the State, as forests and/or mangroves make way for the new developments

2.4 Infrastructure evelopment in Maharashtra

As stated in the above sections, a growing industrial and urbanized state is constantly in need of new infrastructure.

2.4.1 oads, ail a s and Ports

Maharashtra's road coverage extends to 2.68 lakh km, of which a major section of the roads (2.25 lakh km) is maintained by the Public Works Department and *illa arishads*, while remaining is maintained by ULBs. Despite these numbers, Maharashtra's road coverage per 100 sq. km. is considered average in comparison to other states. There is also a high level of disparity between the road networks and volume of vehicles. One reason for the growing number of vehicles is a dearth of public transportation facilities in urban and suburban areas.

On the other hand, Maharashra's rail network is well developed, especially in the Mumbai region. The Konkan Railway Project, the largest railway project undertaken by the Indian Railways in the current century, has been one of the biggest railway infrastructure development projects in Maharashtra, linking Roha to Mangalore in Karnataka, and thus connecting the entire coastline of Konkan which had till then restricted access through a sparse road network.

Along the 720 km coastline of Maharashtra, there are 2 major ports - Mumbai and Nhawa-Sheva, and 48 notified minor ports. These ports handle cargo traffic and are among the crucial factors responsible for the economic growth and prosperity of Maharashtra. In order to provide multi-user port facilities, the State Government has decided to develop 7 minor ports. Different jetties handle the cargo movement of petroleum and chemical products in the Mumbai harbour, namely Jawahar Dweep and Pir Pau[3].

[3]The State Government is keen to tackle problems in the power sector through power-saving measures at the consumer level as well as attracting investors t initiate new power projects, both conventional and renewable.

Table 2.1 Capacity at Power Generating Sources in Maharashtra

Power Generation Company	Capacity (MW)
MAHAGENCO	9,722
National Thermal Power Corporation and Nuclear Power Corporation	2,193
Tata Electric Company	1,815
Brihanmumbai Suburban Electric Supply	519
Dabhol Power Corporation	778
Tarapur Atomic Power Plant	130

2.4.2 Conventional and on-Conventional Energ

The State accounts for 11-12% of India's total installed capacity in the power sector. About 80% of the State's population has access to electricity. Maharashtra's per capita utilization of energy was 520 KWh in 1 -2000. In 2000-2001, the total estimated electrical energy demand in Maharashtra was 12,283 MW.

The Maharashtra State Power Generation Company, Ltd. (MAHAGENCO) handles the responsibility of generation and distribution of power in the State, supported by Central Government power projects as indicated in Table 2.1.

Maharashtra now has access to 15,157 MW of electric energy from "conventional" sources.

In addition to the above, the Maharashtra Energy Development Agency (MEDA) facilitated generation of 401 MW through wind farms. Bagasse-based energy cogeneration and power projects, using agricultural, industrial and urban waste have been introduced in the State. In total, Maharashtra generates about 638.7 MW from renewable sources, accounting to 4.43% of installed capacity in the State.

Despite having "relatively fair" power infrastructure, the State faces acute power shortages due to transmission and distribution losses as high as 32%. Thus, although the State has ample power for the base load, it faces shortages of both energy and peaking capacity. Other reasons for poor quality of supply are voltage drops, frequency fluctuations and load shedding. In 2003-04, energy and peak deficits in Maharashtra increased to 10.2% and 18.2% respectively. Consequently, the State Government is keen to tackle problems in the power sector through power-saving measures at the consumer level as well as attracting investors to initiate new power projects, both conventional and renewable.

Even though activities such as infrastructure development are important in keeping up with the growth of a highly industrialized and urban State like Maharashtra, the environmental consequences are several. These are detailed in the next section 2.5.

2.5 State and Impacts

Meeting the growing needs of a progressive State leads to a variety of adverse environmental issues, straining its natural resources and polluting all media such as air, water and land. Rivers in the State suffer from deteriorating water quality, the air is contaminated and industries add hazardous and e-waste to an already large waste stream of municipal solid waste, biomedical waste and plastic waste. This section provides a detailed discussion of such impacts on the State's environment.

2.5.1 Water Qualit Status

One of the most crucial natural resources is water. Water resources are classified into two basic types - surface water and groundwater. In comparison to the established water quality standards in India, the water quality in both surface and groundwater sources in Maharashtra is of concern due to the pressures induced by driving forces such as industrialization and urbanization. Increasing pollution loads of industrial effluents, municipal

sewage discharges and minimal water flows maintained in surface water sources are the causes of severe contamination of surface water resources in the State. The overexploitation of groundwater, application of chemical pesticides and fertilizers, and unscientific practices in groundwater extraction result in contaminating, depleting and degrading the State's groundwater resources.

2.5.1.1 iver Water Pollution

Rivers and their tributaries, and lakes are the two main surface water sources in the State. Maharashtra is endowed with a number of rivers namely, the Godavari, Krishna, Bhima, Tapi-Purna, Wardha and Waiganga. The rivers Godavari and Krishna, along with their tributaries flow eastwards, irrigating most of central and eastern Maharashtra emptying into the Bay of Bengal. To the north of the State, the rivers Tapi and Narmada flow westwards, irrigating most of northern Maharashtra. The river basins in Maharashtra are shown in Figure 2.2.

Water quality monitoring at some of the major rivers in the State indicated that at 70% locations, water quality has deteriorated due to high levels of BOD. Along with the organic pollution, DO levels were also lower than the standard limit at some locations. The pollution levels in some of the major rivers during the reporting year are shown in Table 2.2.

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MA

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State Boundry
District Boundry
District ead uarter

iver Basins

Kundalika i er Basin
ira i er Basin
Patal an a i er Basin
lhas i er Basin
pper oda ari i er Basin
Coastal rea (Satpati)
a i er Basin
e orth Mumbai rea
pper Bhima i er Basin
Krishna i er Basin
Sukhna i er Basin
Mumbai sland
o er Bhima i er Basin
o er oda ari i er Basin
Coastal rea (Sindhudur , atna iri, ai ad Part of hane District)
api i er Basin
hatprabha i er Basin
rani i er Basin
Pen an a, Wardha Wain an a i er Basin
armada i er Basin

Source : Map of Maharashtra, Sho in Water Pollution Pre ention rea (M.P.C.B. Mumbai)

ef.: . . o.: M / / / B dtd. uly .

E A E A -

A A
Maharashtra Pollution Control Board
a i Mumbai

Figure 2.2 River Basins in Maharashtra

Table 2.2 Pollution Levels in Major Rivers of the State

.	pH 2 5- 2	BOD (mg l) 2 4- 2 5	BOD (mg l) 2 5- 2	COD (mg l) 2 4- 2 5	COD (mg l) 2 5- 2	DO (mg l) 2 4- 2 5	DO (mg l) 2 5- 2	Total Coliform (MPL 1 ml) 2 4- 2 5	Total Coliform (MPL 1 ml) 2 5- 2	No. of Samples 2 5- 2
Bhima	7 -8. 3	5.1 - 23	5.4 - 46	25 - 33	-	3.2 - 6.8	0. 8 – 7. 2	170 - 356	15 – 1, 800	44
Godavari	7. 2 – 8. 7	2.1 - 56	1. 5 – 15. 5	8 - 154	4 - 320	4 - 7. 3	3. 3 – 8. 7	199 - 18, 823	6 – 1, 800	154
Krishna	6. 5 – 8. 4	5 - 46	1. 2 – 12. 8	28 - 36	20 - 40	5 - 7	2.8 – 8	180 - 365	15 – 1, 800	66
Kundalika	7. 3 – 8. 1	5. 1 - 7. 7	2.8 - 5	23 - 118	12- 112	5.3 - 6.2	6 – 7	196 - 203	170 - 275	33
Patalganga	7 – 8	5.5 - 50	2 – 6. 5	26 - 130	16 - 240	5.5 - 6.3	5. 1 – 7. 4	214 - 349	120 - 550	66
Purna	7. 78 – 8. 3	2. 5 - 6. 6	3 - 10	17 - 61	14 - 62	3.5 - 6.2	4.9 - 6	700	160 – 1,600	-
Tapi	7. 5 – 9. 4	4.7 - 16.9	2 - 25	24 - 40	-	6.0 - 6.7	4 – 7.7	169 – 45, 269	2 – 1, 800	-
Ulhas	7 - 7. 7	5. 3 - 6. 9	3 - 6	19 - 28	16 - 64	6.4 - 6.8	5. 3 – 7. 4	197 - 206	95 - 350	46
Wainganga	7. 33 – 9.08	2. 9 - 8.6	3. 4 – 11. 5	2. 9 - 62	6 - 82	5.4 - 6.7	5.7 - 6	280 - 460	300 – 1,600	31
Wardha	7. 6 -8.7	3. 1 - 9. 9	3 - 14	21	61	5.5 - 6.1	5. 2 – 6. 5	220 - 254	110 – 1,600	4

The number of samples taken for each of the water bodies at various locations indicates the strength of the monitoring network set up by MPCB. The general observation based on the parameter data for each of the river basins sampled was that the targeted classes of the rivers are not met. This can be attributed to the elevated levels of BOD in the water bodies as well as increasing coliform counts, even though the pH and the DO levels remained fairly stable. Hence, it can be stated that controlling levels of BOD and fecal coliforms in the State's water bodies can dramatically improve the quality of water.

Observations based on comparing last year's parameter data with numbers from the reporting year, suggest that the DO levels are lower than the standard in half the rivers listed above, suggesting no specific trend between the 2 years. However, the coliform levels which are a good indicator of deteriorating water quality, are rising, thereby indicating a decline in quality. CPCB has defined the standards for water quality by assigning 5 classes of fresh water as shown in Table 2.3. MPCB developed its own river classification scheme as per the water usage as shown in Table 2.4.

Table 2.3 MPCB's River classification as per the Water Usage

S. No.	Characteristics	A	B	C	D	E
1.	DO, mg/ l, Min	6	5	4	4	-
2.	BOD, mg/ l, Max	2	3	3	-	-
3.	Total Coliforms organism MPN/ 100 ml, Max.	50	500	5,000	-	-
4.	pH Value	6.5- 8.5	6.5- 8.5	6- 9	6.5- 8. 5	6. 5- 8. 5
5.	Free ammonia (as N), mg/ l Max	-	-	-	1.2	-
6.	Electrical Conductivity Micromhos. cm, Max	-	-	-	-	2,250
7.	Sodium adsorption Ratio, Max.	-	-	-	-	26
8.	Boron, mg/ l, Max.	-	-	-	-	2

Table 2.4 Primary Water Quality Criteria for Various Uses of Fresh Water as Laid Down by CPCB

Category	Best Usage
A - I	Unfiltered public water supply after approved disinfection
A-II	Public water supply with approved treatment equal to coagulation, sedimentation disinfection.
A-III	Not fit for human consumption, Fish Wildlife Propagation.
A-IV	Fit for Agriculture, Industrial cooling process water.

use class (A) drinking water source without conventional treatment after disinfections, (B) out door bathing organized, (C) drinking water source with conventional treatment followed by disinfections, (D) propagation of wildlife, fisheries, (E) irrigation, industrial cooling, controlled waste disposal if the coliforms are found to be more than the prescribed tolerance limits, the criteria for coliforms shall be satisfied if not more than 20 percent of samples show more than the tolerance limits specified, and not more than 5 percent of samples shows values more than 4 times the tolerance limits. There should be no visible discharge of domestic and industrial wastes into Class. A water. In case of Class B and C the discharge shall be so regulated/treated as to ensure maintenance of the stream standards. Source ADSPRBS/3/1 78-7 .

2.5.1.2 Pollution due to Municipal Se age

The deteriorating quality of the waters in the State is often a direct result of domestic and industrial water pollution, as well as agricultural return waters. These activities pollute not only the surface water but also groundwater and the coastal environment in the State. A discussion of how domestic wastewater, released partially or completely untreated into the water bodies can lead to pollution of our State s water bodies follows.

Given the larger than normal share of urban population in the State (42.4%), compared to all of India (27.8%), satisfying the basic needs of water and sanitation continue to pose a challenge for authorities. Water supply in urban areas is inadequate, as only 15.3% of ULBs satisfy the norms for per capita of water consumption. Due to the uneven distribution of water supply (for various economic as well as non-economic reasons), the poorer sections of society are worst hit. Non-judicious use of water, subsidies and unaccounted for water all contribute to disparity in demand and supply and uniform distribution across masses. Bacterial contamination of water supplies is common, old supply systems add to the possibility of contamination because of physical damage to equipment. Additional problems such as irrational funding policies, budgeting without thought for proper operation and maintenance, deficient institutional arrangements, lack of accounting norms and illegal connections and thefts serve to compound the issue of water supply further.

In the context of addressing domestic pollution by establishing ST s, M CB goes beyond its mandate and acts as a facilitator in assisting corporations and councils and other local bodies develop such infrastructure. This is because the Board understands the relationship between poorly functioning ST s and deteriorating health of people as evidenced from the bacterial contamination of water supplies.

Sanitation facilities in both urban and rural areas are inadequate. About 46% of the State s population has access to sanitation facilities. About 84% of the urban population has access to these facilities, in contrast to the 20% people living in rural areas. Very few towns have properly planned sewage systems. For example in the Konkan and Western regions of the State, about 45% of local bodies have Underground Drainage System (UDS), while in Marathwada and Vidharba, this number falls to 23.5%. Sometimes entire areas in a region may not be covered by UDS.

Consequently, about % of the sewage generated by municipal councils and over 50% sewage discharged by municipal corporations goes untreated. For the year 2005-2006, the rate of effluent generation in corporation areas is only 76% whereas the rate of effluent generation in council areas is 73%. Overall, the volume of effluent generated from municipal corporations is 5027 MLD. Table 2.5 provides additional details on this the break-up between water consumed and effluent generated in local water bodies In many cases, STPs constructed many years ago are currently overloaded. Thus, the possibility of untreated sewage discharged to rivers is very high. This in turn pollutes the drinking water downstream. In other cases, STPs operate without valid consents. Hence, no checks are performed on their performance. In fact, as of March 2006, only 25% of the local bodies had valid consents. More information on the status of STPs in some of the corporations has been presented in Annexure 2-1.

Table 2.5 Status of STPs in Municipal Corporations as of March 2006

Sr. No	Region	No. of Corporations	Population	Qty. of Water Consumption MLD	Qty. of Effluent Generated MLD	No. of Corporations having Partial Treatment and Disposal arrangement for Sewage
1	Amravati	2	1,050,000	107	77	-
2	Aurangabad	2	1,430,558	241.8	193	2
3	Kalyan	3	2,264,169	422	334	3
4	Kolhapur	2	920,740	180	125	2
5	Mumbai	1	11,900,000	3,050	2,440	1
6	Nagpur	1	2,600,000	500	400	1
7	Nashik	5	2,730,834	373.2	310	2
8	Navi Mumbai	1	703,947	237	190	1
9	Pune	3	5,173,000	1,081	689	3
10	Thane	2	2,020,301	337	269	1
	Total	**22**	**3 3 54**	**52**	**5 2**	**1**

From the above table, it is observed that for example in the Nashik region, only 2 of the 5 corporations have been able to provide partial treatment and disposal for sewage. This means that wastewater generated in the remaining 3 corporations is being disposed without any treatment, thus adversely affecting the river and groundwater quality in the region. Similarly, in the Amravati region neither one of its 2 corporations have any facilities for treating and disposing off sewage and hence water quality degradation in this region is also very high (in fact, increasing over time) as is evident from the high levels of Chemical Oxygen Demand (COD) and coliform count seen in the Wardha river of the Amravati region in Table 2.2.

2.5.1.3 Ground Water Pollution

Another form of water pollution, especially because of land disposal of untreated and partially treated wastewater, and agricultural return waters is groundwater pollution.

Groundwater resources in Maharashtra are tapped substantially for domestic and agricultural uses. In time, over-extraction and insufficient recharge have resulted in falling annual ground water levels, which form a serious threat not only to its future availability but also to its quality.

In the context of groundwater quality, analysis of groundwater monitoring results reveals that even though pH and DO values are within the prescribed limits, the total hardness, chlorides, sulphates and nitrates exceeded the limits at 64% of the locations. A distribution of the monitoring locations and exceedances observed are shown in Table 2.6.

ccording to an assessment conducted by the roundwater Survey and Development gency , more than 5% of the total number of districts in Maharashtra show depletion of groundwater levels

Table 2.6 Parameter Exceedances in Maharashtra's Groundwater

Region	No. of Locations Monitored	No. of Locations where parameters exceeded the limit	Maximum Concentrations (where available) of Parameters that exceeded the limit		
			Total Hardness (mg l)	Chlorides (mg l)	Sulphates (mg l)
Amravati	03	03	882	790	851
Aurangabad	08	05	1,660	936	480.5
Kolhapur	12	01	1,490	-	-
Nagpur	03	03	-	-	-
Nashik	66	56	6,750	3,175	1,000
Pune	20	14	3,100	-	-
Raigad	20	05	-	-	-
Thane	04	02	352	-	-
Total	**13**				

Again, it can be concluded based on the above table, that there is a link between poor groundwater quality in a region and the corresponding inefficient performance or lack of STP and deteriorating water quality in the rivers of the region. For example, in the Nashik region, parameters exceeded the standards at 56 out of 66 monitored locations, thus indicating that groundwater in Nashik is severely polluted. This can be combined with the fact that only 2 of the 5 available STPs in the Nashik region are providing partial treatment of wastewater, which means the remaining water must be disposed off untreated onto land and into water bodies. This latter fact is evidenced by the water quality observed in rivers Godavari, Tapi, Dharna and Girna all of which have deteriorated because of high levels of BOD and coliforms. This is a good example of how water quality, regardless of the type is deteriorating in the Nashik region and the reasons of such contamination are all inter-related.

In the Aurangabad region, 5 of the 8 locations where groundwater quality was monitored show a violation of the standards. This also ties in with the increasing levels of BOD and COD and declining values of DO observed in the Godavari river of the Aurangabad region suggesting that the overall water quality of this area river water and groundwater is adversely impacted.

In addition to the surface and groundwater in the State, even the marine coastline has been affected by these sources of pollution as described below.

2.5.1.4 Coastal Water Pollution

The Maharashtra coast that stretches between Dahanu in the North and Terekhol in the South is about 720 km long and 30-50 km wide. There are about 18 prominent estuaries along the coast harbouring many mangrove floral and faunal species in varying densities. Of these, Ulhas in the North is the biggest estuary.

In this region, the coastal districts Thane and Mumbai are heavily industrialized. Most industries located here are housed in large industrial clusters namely, Thane-Belapur belt, Kalyan-Ulhasnagar-Ambarnath belt, and along the western bank of Thane Creek, around Patalganga and Amba Rivers and Tarapur. Thus, Thane and Tarapur creeks and Ulhas, Patalganga and Amba estuaries are the recipients of a variety of wastes.

Industries in other coastal districts are mainly located in the MIDC areas and discharge their effluents through a common collection centre to inshore waters (bays). Thus, Kundalika, Savitri, Shastri, Vashisti estuaries etc., have been receiving such effluents. Only a few industries release effluents directly to the (depth of water 10 m) Arabian Sea.

Despite initial belief that dilution with sea water will lower the risk posed by the wastewater directly discharged to the coastal water, stakeholders have now realized some of the problems associated with this direct discharge, specifically in the case of the health of fishery. This arises from the fact that majority of commercially exploited fishes, crustaceans and mollusks spend part of their life cycle inshore and in coastal seas, and if these zones of vital importance to fishery are degraded it will have an irreversible adverse impact on the fishery resources. A pragmatic approach is therefore required to manage these vital marine zones while acknowledging the necessity to have coastal development for economic progress of the Konkan region. Regular monitoring of the area to assess the situation is a start.

During the year 2005-2006, the Board monitored seawater quality at 3 locations, including all coastal regions. The DO and BOD values so obtained for this year as well as for the year 2004-2005 are shown in Table 2.7.

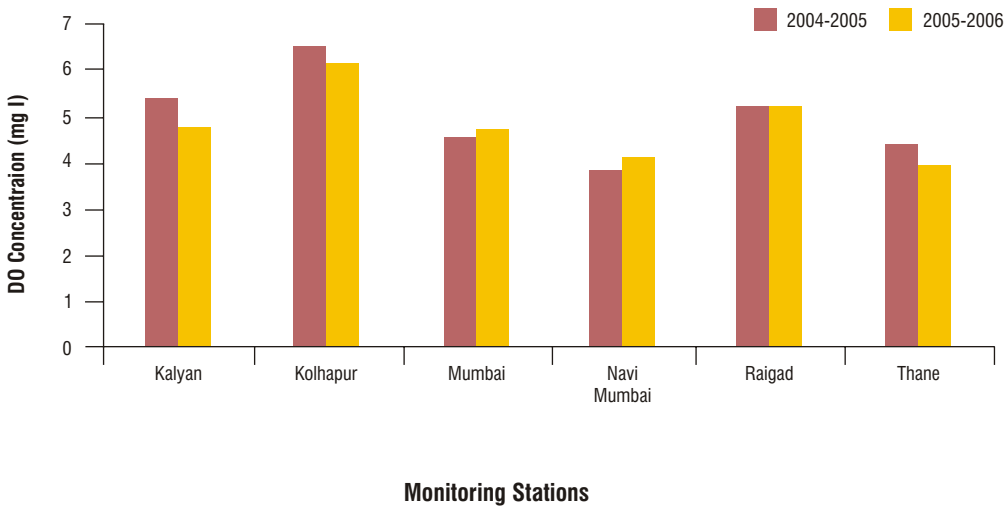
From the histograms plotted for the results (see Figure 2.3), it can be seen that the DO levels remained fairly level in the two years. Similarly, the BOD levels were also comparable for most regions except Thane that saw a dramatic increase. The highest concentration of BOD (640 mg/l) was observed in Thane Creek at Kolshet.

On the other hand, improvements in the BOD concentration levels can be seen in Kalyan, Kolhapur and Mumbai regions.

Table 2.7 Monitoring of Coastal Waters

Region	No. of Locations Monitored	DO Values (mg l)		BOD Values (mg l)		No. of Locations where BOD exceeded the limit	No. of Locations where DO was lower than the standard
		2 4- 5	2 5-	2 4- 5	2 5-	2 5-2	2 5-2
Kalyan	02	5.4	4.8	24.3	7.83	02	-
Kolhapur	03	6.5	6.2	4.1	2.43	01	-
Mumbai	12	4.5	4.7	22.7	14.2	12	02
Navi-Mumbai	03	3.8	4.1	17	22.5	03	01
Raigad	07	5.2	5.2	13	15.2	07	01
Thane	12	4.4	4	18.2	90.4	12	05
Total	**3**					**3**	

The inshore waters of Maharashtra particularly around cities and towns receive domestic wastewater often untreated, that has severely deteriorated the ecological quality of these water bodies. In fact, in some instances such as ersova, Mahim, Thane and atnagiri Creeks and the coastal sea of Mumbai domestic wastewater is the major source of degradation of the marine one.



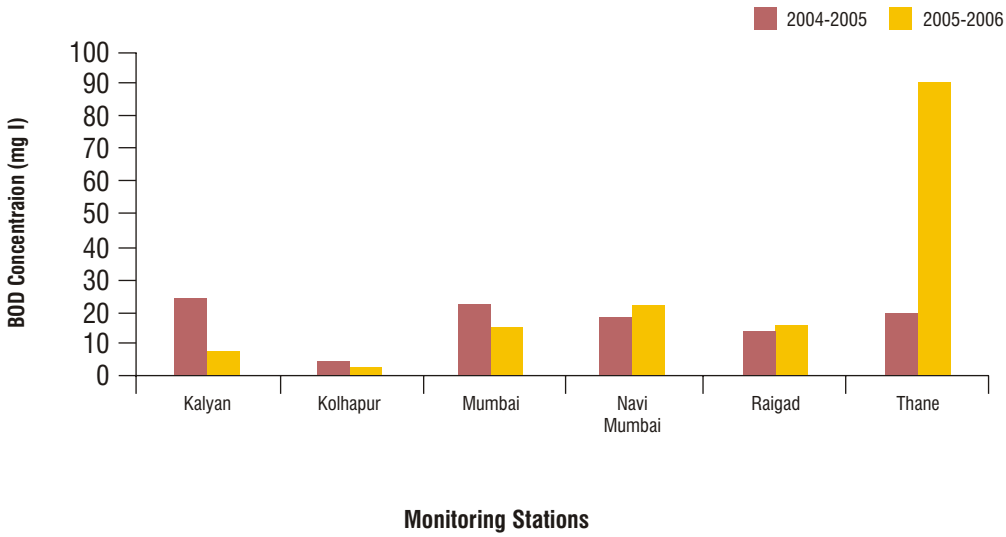


Figure 2.3 DO and BOD Levels Monitored in Coastal Waters for 2004-2006

2.5.2 Air Qualit Status

Along with water pollution, another important environmental medium that is facing extreme deterioration in quality leading to poor health is air. This section discusses how air pollution from a myriad of sources contributes to contaminant exceedances, emphasizing the need for better air pollution control and management in the State.

Both ambient and indoor air pollution have reached alarming levels in the State. Industries and power plants are the major contributors to gaseous emissions polluting ambient air. The expanding urban transportation network and the increasing vehicular load contribute significantly to pollutant concentrations in ambient air. Additionally, open burning of garbage and agricultural waste add to ambient air pollution. Indoor air pollution is caused mainly due to burning of low quality fuels such as wood, coal and kerosene, used mainly in rural and poorer urban areas.

Accordingly, the Board is following its mandate to monitor air quality in the State in line with the Air (Prevention and Control of Pollution) Act of 1 81. The Board has developed a massive monitoring framework which is constantly being revisited for expansion. Observations noted through monitoring efforts have been used to take targeted enforcement actions resulting in the conversion of several violators into compliant citizens/establishments.

Air quality in the State is assessed through routine and specific monitoring. From the analysis of monitoring results for the year 2005-2006, it was noted that at more than 50% locations, levels of RSPM and SPM exceeded the standard. At some locations SO_2 and NO_x levels also exceeded the limit. These latter parameter exceedances can be attributed to source emissions and vehicular pollution. The air quality in the State is shown in Table 2.8. Data were also recorded for parameter exceedances in different parts of the State. It was observed that for the parameters SO_2, NO_x, SPM and RSPM, only 20% of the monitored locations were within limits. Standards were exceeded at 48% residential, 17% commercial and 15% of the industrial locations that were monitored as shown in Figure 2.4.

hat is air pollution

ir pollution is the presence of unwanted substances in the atmosphere, which can be detrimental to human health and the environment. It is said that an individual can only go without air for four or five minutes. However, even if we are assured a constant supply of air, but it is contaminated by gaseous pollutants such as oxides of nitrogen and sulphur, o one, carbon monoxide and particulate matter, breathing such air, which is an essential life source can result in poor health. or example, even short term exposure to polluted air can result in ailments such as respiratory diseases, asthma, and in more severe cases of prolonged exposure serious afflictions like lung cancer. Hence, it is important to have good quality air in one's living environment

Table 2.8 Air Quality in Maharashtra

Sr.No	Monitoring Stations	SO_2 (g m^3)	NO_x (g m^3)	RSPM (g m^3)
1	Kolshet (I) Thane	5.47	10.47	50.8
2	Balkum (I) Thane	5.05	10.88	50.48
3	Navpada (I) Thane	4.9	10.59	50.3
4	Bhosari (I) Pune	29.13	48.38	155.4
5	VIP (I) Nashik	30.39	27.43	93.37
6	CETP Dombivali (I) Kalyan	38.31	49.88	107.6
7	MIDC Office(I) Nagpur	9.76	34.94	39.94
8	MIDC (I) Chandrapur	26.4	37.31	134.8
9	Dabholkar Corner (C), Kolhapur	11.41	42.69	106.2
10	Nashik Municipal Corporation(C)	35.86	30.59	108.5
11	Ambernath Municipal Corporation(C)	34	52.19	79.97
12	Kalyan Kopri (R) Thane	4.89	3.87	50.4
13	RTO (R)Nashik	30.6	27.38	90.42
14	Chitale Clinic (R) Solapur	17.72	39.05	118.9
15	WIT Campus (R) Solapur	16.84	37.5	37.71
16	Nagar Parishad (R) Chandrapur	20	30.1	129.2
17	Sub Regional office MPCB(R) Chandrapur	20.83	31.06	129.7
18	Institute of Engineers (R) Nagpur	9.51	33.65	41.89
19	Government Polytechnical Colleage,	10.62	33.07	52.47
20	Nagpur University Campus (R) Kolhapur	4.57	9.48	38.19
21	Mahadwar Road (R) Kolhapur	7.27	26.4	63.7

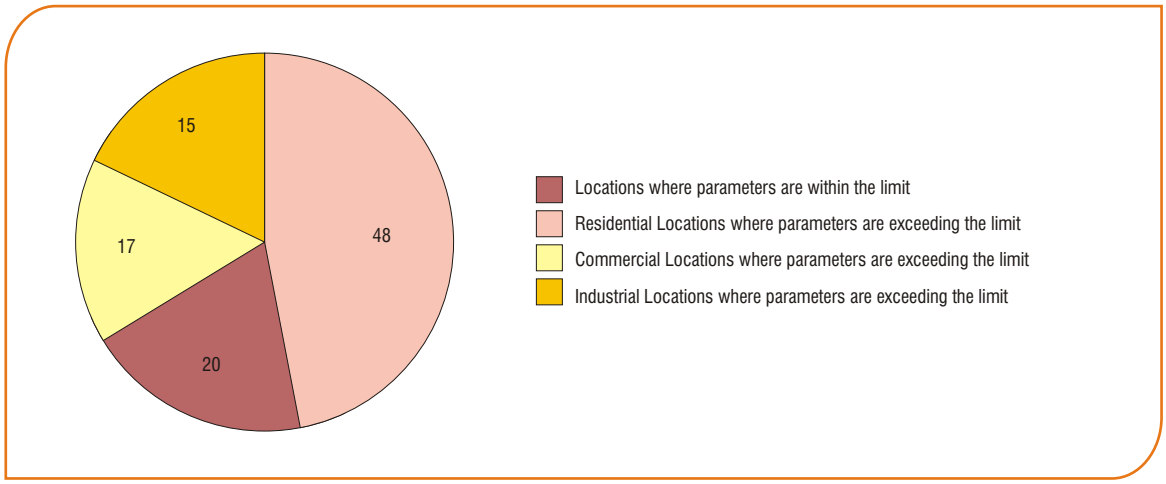


Figure 2.4 Parameter Exceedances in Ambient Air Quality Monitoring (2005-2006)

NAMP data generated for the Sion and Mulund traffic junctions and available on the MPCB website were plotted for the last six years to observe any trends in the monitored parameters. As seen in Figure 2.5 for Sion and Figure 2.6 for Mulund, there does not seem to be any trend observed for SO_2. However, there is a definite trend observed in the fluctuating levels of NO_x and particulate matter. As expected, for both these contaminants, winter peaks and monsoon dips are observed. Also, a surprising finding in the case of NO_x was the decline in its concentrations over the last couple of years in comparison to the years of 2003 and 2004. Since vehicular traffic which is a major source of NO_x has not increased in this area, it has to be surmised that the source control measures that the Board made industries in the Sion and Mulund areas adopt a couple of years ago have been effective in bringing the NO_x concentration levels in the area under control.

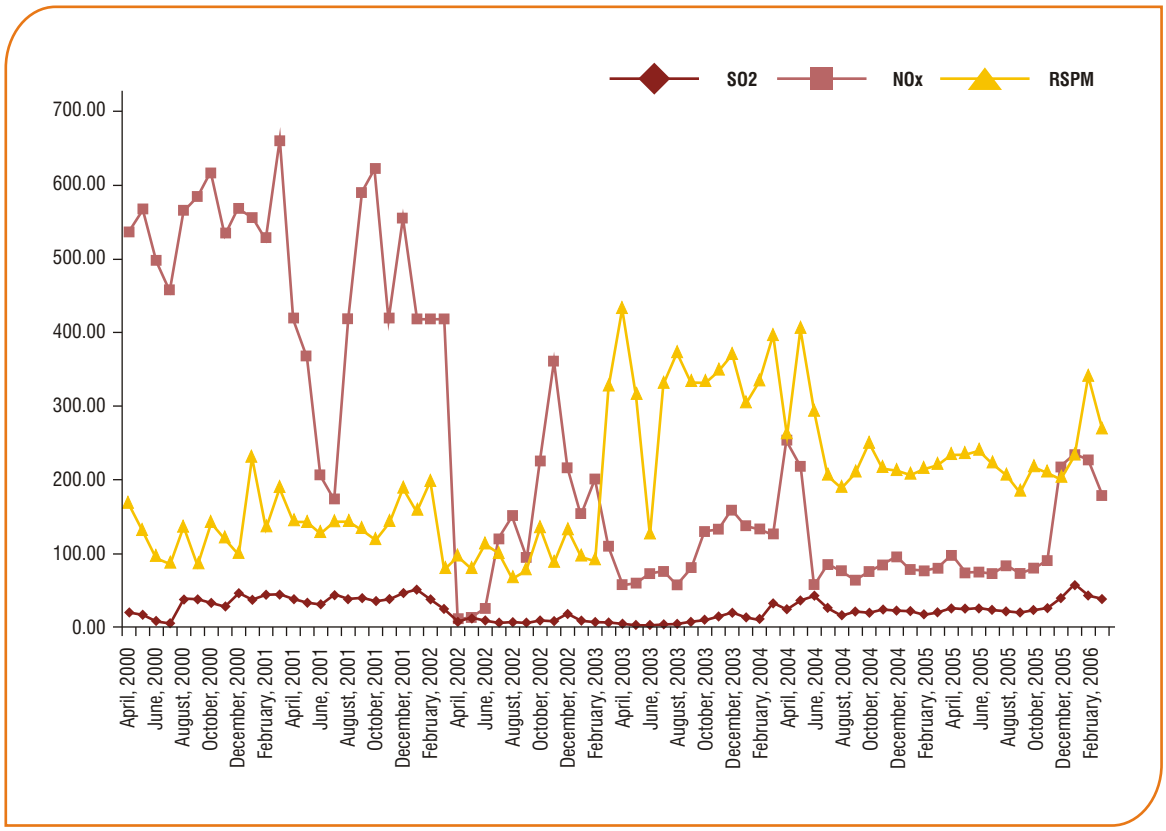


Figure 2.5 NAMP Parameter Data for Sion from 2000 - 2006

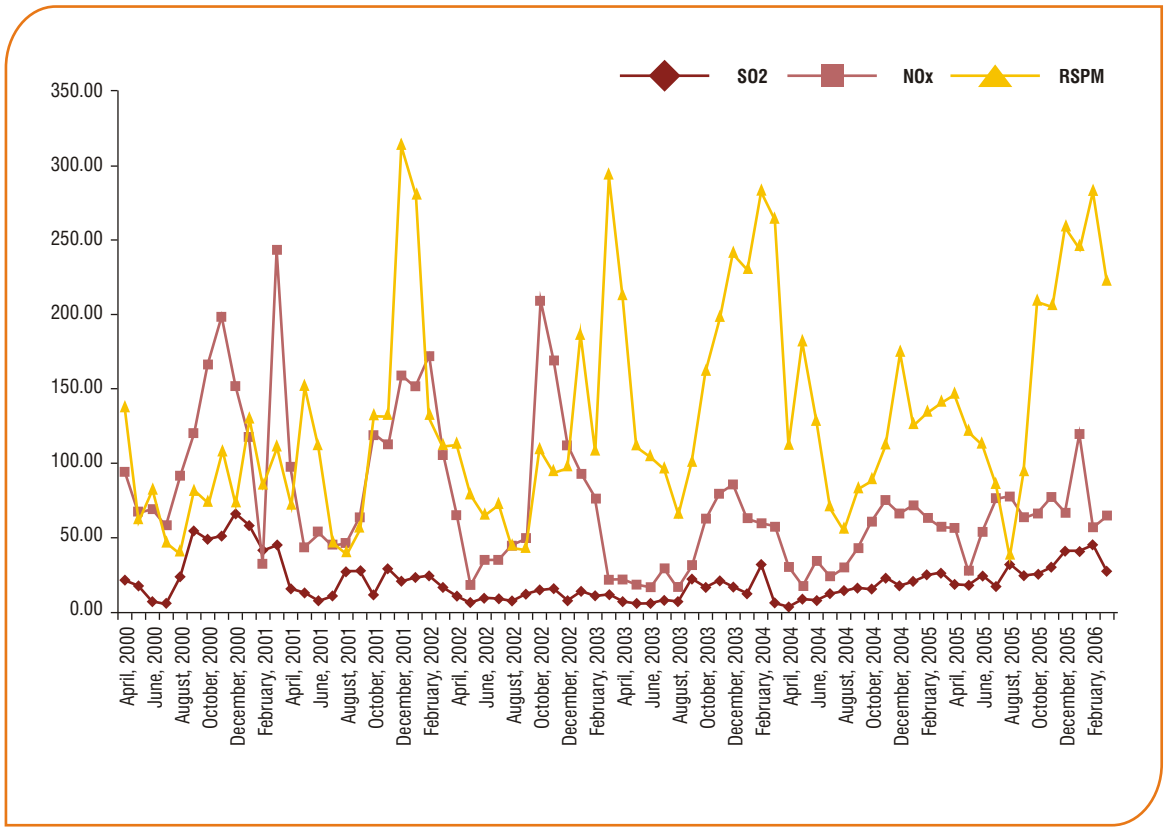


Figure 2.6 NAMP Parameter Data for Mulund from 2000 - 2006

Initiatives of the Board

With the magnitude of air pollution seen from the above monitoring results, regardless of whether an area is residential, commercial or industrial, control measures are a must. In fact, with the concentration of air pollutants observed in residential areas, the Board has emphasized public awareness campaigns to ensure that one of the first measures in pollution control is pollution prevention that can only be accomplished with the help of the general public. Several other initiatives have also been taken by the Board to strengthen monitoring networks to better assess the air quality in the State and make such data available to the public through its website.

2.5.2.1 oise

During the reporting year, noise was monitored at 254 locations by the Board, including 4 residential, 145 commercial, 11 industrial and 4 sensitive zone areas.

Table 2. indicates the range of noise levels recorded at specific classes of locations and number of locations where the noise level exceeded the limit.

Table 2.9 Range of Noise Levels Monitored

Class	No. of Locations Monitored	Range of Noise Level (dB_A)	No. of locations where noise level exceeded the limit
Industrial	11	53-98	02
Commercial	145	42-135	125
Residential	94	35-128	88
Sensitive	04	50-100	04
Total	**254**		**21**

Some observations in the regions where noise was monitored for, regardless of whether the area was residential, commercial or industrial are presented in Table 2.10.

Table 2.10 Regional Noise Level Observations

Region	Noise level (dB_A)	Region	Noise level (dB_A)
Amravati	60-120	Nagpur	55-99.3
Aurangabad	64-126	Nashik	60-97
Kalyan	84-101	Pune	50-114
Kolhapur	52-125	Raigad	90-115
Mumbai	53.2 - 112.6	Thane	53-120
Navi Mumbai	60-110		

The overall observation reveals that noise levels exceeded the limit at 86% of the locations. Noise levels crossed the limit at all sensitive locations and at 18% industrial, 86% commercial and 3% residential locations. Higher noise pollution levels were recorded in Kalyan, Raigad and Aurangabad. The highest noise level (126 dB_A) was recorded in Aurangabad and minimum noise level (50 dB_A) was recorded in Pune.

Despite all these efforts noise pollution continues to pose a challenge to the Board and as with any environmental problem, a true and complete solution will materialize only when all stakeholders are involved in discussion, decision-making and implementation.

hat is noise pollution

oise is the presence of unwanted sounds that adversely affect the environment. These may come from a variety of sources, most of them man made. Industrial and vehicular sources are the primary ones in addition to music, air conditioners and other noisy equipment.

oise can affect human health, not only by damaging a person's hearing on extended exposure to loud decibels, but also increase blood pressure, adversely affecting the cardiovascular well being of an individual.

nnoyance is yet another common effect of noise pollution and is the source of the number of public complaints received by the Board, especially during festival times, when loudspeakers blast music. nimals can also be affected by noise and feeding patterns, breeding rituals and migratory paths may vary on account of noise pollution.

2.5.3 Municipal Solid Waste

Waste is another category of environmental pollution that is straining precious natural resources as we create new dumping grounds for our growing waste management needs. Open dumping onto land that is not lined, waste piles that are not covered or secured, all lead to pollution of not only the land, but also of the groundwater and surface water bodies through leachate and of air through burning. Thus cross contamination between media becomes an issue.

Solid waste management in Maharashtra, mainly in major towns, is highly inefficient at all stages of the management cycle collection, transportation, treatment and disposal. Local bodies are responsible for such management and despite their numbers, there is a big need to add major enhancements in infrastructure to address the inadequacy.

There are a total of 253 ULBs including corporations, councils cantonment boards and *agar anchayats*. However of these 253 sites, a district level committee has so far finalized 223 locations for MSW landfill / waste processing sites. Remaining 27 sites are under review, awaiting further necessary action. The major difficulties in identification of these sites are coastal regulation zones and their nearness to water bodies.

For the year 2005-2006, the solid waste generation in the State has been presented in Table 2.11.

From the above, it can be stated, that while the State as a whole generates about 18,000 MTPD of MSW, 50% of this total is generated in the Mumbai and Pune regions alone. The per capita MSW generation in urban areas of the State is between 0.4 to 0.5 kg per day. Compared to other States, MSW generation is highest in Mumbai city.

Table 2.11 Municipal Solid Waste Generation (MTPD) in the State

Region	Corporation	A Class	B Class	C Class	Total
Amrawati	331	25.0	169.5	376.5	902
Aurangabad	492.0	188.0	118.0	216.2	1,014.2
Kalyan	1,959.0	75.0	-	52.0	2034
Kolhapur	170.0	252.0	62.0	118.8	602.8
Mumbai	7,000.0	-	-	-	7,000
Nagpur	770.0	203.0	127.0	186.5	1,286.5
Nashik	625.0	65.0	203.24	146.04	1,039.28
Navi Mumbai	450.0	-	-	8.0	458
Pune	1,575.0	90.5	388.5	68.5	2,122.5
Raigad	-	18.0	15.0	35.5	68.5
Thane	680.0	155.0	25.0	20.0	880
Total	**14 52.**	**1 1.5**	**1 1 .24**	**1 22 . 4**	**1 4 .**

Initiatives of the Board

The Board is aware of such issues and is working with ULBs as a facilitator and partner to bring in solutions that can meet the needs of a growing population. Enforcement actions and public awareness activities also help in bettering the situation as reported in more detail in Chapter 3.

2.5.3.1 BMW Management

Another waste stream that has gained importance over the last few years, because of the adverse impacts resulting from its mis-management is BMW. With HCEs expanding their network to address the health needs of a booming population, the corresponding medical waste that is generated has also exponentially increased. This waste is of particularly sensitive nature, considering its potential to spread illness and contamination and has to be given a high level of priority.

Accordingly, in India, the Bio-Medical Waste (Management and Handling) Rules were first established in 1 8 with subsequent amendments in 2003. The Notifications on BMW clearly define BMW as any waste, which is generated during the diagnosis, treatment or immunization of human beings or animals or in research activities pertaining thereto or in the production or testing of biologicals.

The Notification also defines a "BMW treatment facility" as any facility wherein treatment and disposal of bio-medical waste or processes incidental to such treatment or disposal is carried out.

The State of Maharashtra generates the largest share of BMW, about 31 MTPD, which is approximately 60% of the total BMW generated in the country. In fact, looking at the quantity of BMW received and treated by the common BMW treatment facilities in the State, as shown in Table 2.12 it can be seen that there is a steady increase in such amounts over the past three years, which is in keeping with the corresponding increase in coverage.

Despite the BMW Rules coming into effect, many health care centres in the State are yet to implement them. Various agencies including MPCB and municipal corporations have taken steps for special handling of medical waste in different parts of the State. MPCB has asked hospitals and clinics to take care of their BMW either themselves or through the CBMWTDFs.

Through efforts of MPCB and partnering institutions, there are now 31 common BMW treatment facilities in the State, up from 17 facilities just two years ago. The treatment and disposal sites for BMW in the State of Maharashtra are present in the cities of Ahmednagar, Amravati, Aurangabad, Chandrapur, Kalyan, Kolhapur, Miraj, Mumbai, Nagpur, Nashik, Palghar, Pune, Sangli, Solapur, Taloja, Thane and Pimpri-Chinchwad.

Table 2.12 Information on Common Biomedical Waste Treatment Facilities

EAR	No. of CBMWTDF	Total No. of HCEs covered	HCEs covered	Total No. of Beds	Qty. of BMW received and Treated (MT)
March'03 to March'04	17	4,541	43.74	59,849	2,975.4
March'04 to March'05	23	7,832	75.42	79,857	4,490.28
March'05 to March'06	31	9645	90.37	90272	5,257.33

hat is Bio-Medical aste

Bio Medical waste is a form of waste generated by HCEs such as hospitals, nursing homes, blood banks, etc. The waste produced in such organi ations can be of a chemical and biological nature and may even posses some radiological properties. Hence, proper management of these wastes is emerging as a new branch of routine solid and ha ardous waste management.

Despite this increase in the infrastructure for managing BMW, the rising quantities of such waste render any increasing facilities inadequate and emphasize the need for more.

A committee appointed by MPCB in 2004-2005 to assess the BMW treatment facilities in the State concluded that BMW was not segregated properly at the source, because of lack of training and control. Hospitals do not generally send the non-incinerable waste to the CBMWTDF. This waste is directly sold (to be recycled), without any treatment, thus, flouting the BMW rules. Most of the hospitals do not have one fixed point of collection from where the waste can be transported. The hospitals also complained that BMW is not collected on a regular basis due to inadequate number of vehicles used to collect and transport the waste.

Given the findings of the committee and feedback received from the HCEs the Board is moving towards addressing many concerns through a concerted set of actions.

hat is industrial pollution

s part of the manufacturing and production processes, industries generate a huge quantum of pollution of every possible environmental medium. The smoke stacks spew gases like sulphur dioxide, and particulate matter into the air, the untreated wastewater generated from the various processes add to the chemical and organic load of water bodies. The noise levels in industrial areas are extremely high and in addition, they also generate a large volume of HW, battery waste and electronic waste, depending on their kind of operation.

2.5.3.2 Plastic Waste Management

Plastic Bags aggravating the floods of uly 26th 2005

During the torrential rain on 26th July 2005, it was observed that non-biodegradable waste, especially plastic bags, cups, strips and packing material were grossly responsible for blocking gutters, sewers and drains, resulting in serious environmental problems in Mumbai and other parts of the State. With a view to prevent the occurrence of such problems, the GoM has decided to declare the entire State of Maharashtra as a "Plastic Bag Free Area" and has published a draft Order, dated 13th September 2005, inviting suggestions and objections from the general public.

A large number of suggestions were received, especially for establishing a proper and scientific waste collection and disposal system for such non-biodegradable waste. To prevent the

recurrence of the situation caused by the deluge of July 2005, the GoM appointed an Expert Committee to study the objections received and related problems and to submit its findings and recommendations.

Notifications have previously been issued by the GoI (notification on Recycled Plastic Manufacture and Usage Rules, dated 2nd Sept. 1 and Amendment (2003) under E(P) Act, 1 86) and GoM (dated 8 March 1 under E(P) Act, 1 86). However, during the year 2005-2006, the GoM issued notification "Maharashtra Plastic Carry bag (Manufacture and Usage) Rules, 2006" on 3rd March 2006 under Maharashtra Non Bio-degradable Garbage (control) Ordinance, dated 27th Feb 2006.

2.5.4 Status of Industrial Pollution

The air and water pollution and waste streams described above are all of a non-industrial nature. When industries dominate the landscape of a high profile State like Maharashtra, pollution from such establishments follows. This intensifies the already prevalent air and water pollution and contributes new waste streams to the mix, such as hazardous waste, lead acid battery waste, and electronic waste. This section discusses such industrial pollution.

Table 2.13 Region-wise Categorization of Industries in the "Red", 'Orange" and "Green" Categories

Sr. No	Region	Red			Orange			Green			Grand Total
		LSI	MSI	SSI	LSI	MSI	SSI	LSI	MSI	SSI	
1	Amravati	50	38	261	5	9	1,937	1	0	2,809	5,110
2	Aurangabad	113	94	308	15	22	1,178	5	6	4,388	6,129
3	Kalyan	27	45	857	4	4	371	6	5	1,199	2,518
4	Kolhapur	69	94	636	20	10	1,356	1	5	6,978	9,169
5	Mumbai	56	36	505	28	43	307	2	36	3,905	4,918
6	Navi Mumbai	91	50	826	1	20	385	3	3	1,192	2,571
7	Nagpur	121	119	912	9	39	2,093	3	7	3,330	6,633
8	Nashik	176	73	567	20	28	642	20	20	7,336	8,882
9	Pune	218	134	1,249	32	101	1,533	43	91	4,327	7,728
10	Raigad	79	55	92	4	13	195	1	3	373	815
11	Thane	55	75	780	5	15	317	6	12	3,664	4,929
	Total	**1 55**	**13**	**3**	**143**	**3 4**	**1 314**	**1**	**1**	**3 5 1**	**5 4 2**

The industries in Maharashtra are growing at a tremendous rate and the levels of industrial pollution keep getting elevated alongside. There are approximately 60, 000 industries in the State today, classified as into "Red", "Orange" and "Green" categories of large-scale, medium-scale and small-scale industries. This distribution in shown in Table 2.13. From this table, it can be seen that a considerable proportion of industries belonging to the medium and large-scale categories (MSI and LSI)have a sizeable pollution potential.

Initiatives of the Board

MPCB is consistent in its efforts to monitor and control industrial pollution. Through an already existing network of monitors the Board collects data on contaminant levels in industrial areas. The Board monitors air and water pollution in industries through its monitoring programmes. The HW inventorization programme addresses the HW generated by industries and e-waste is being extensively studied under the MoU signed with UNEP. Consents/authorizations are issued to industries and standards are set to limit pollution from all sources.

One specific example of the Board's effort to curtail industrial pollution is the Central Action Plan. This plan listed 714 industries as major contributors to pollution. Of these, the Board has taken action against 80 violating units this year. The compliance status of these facilities by region, for the year 2005-2006 is shown in Table 2.14.

The Board has recogni ed industrial waste streams as one of the largest sources of pollution in the State overall and has strict policies in place to manage and control such contaminating activities. Consents and authori ations are awarded only after careful review of the application. outine monitoring at industrial sites is performed and in addition, inspections are carried out to ensure compliance with the rules. t times, the Board has collaborated with industries by encouraging the use of clean technology, and appreciating industries' efforts to embrace policies on areas such as recycling and resource recovery and implement the same

Table 2.14 Regulatory Status of CAP Industries for 2005-2006

Sr. No.	Region	Total No. of Units	Total No.of Unit Closed	Total No. of units Complying with the Standard	Total No. of Units not Complying with the Standard	Action ta en against Defaulter
1	Amravati	23	9	12	2	2
2	Aurangabad	92	31	51	10	10
3	Kalyan	19	4	15	-	-
4	Kolhapur	138	53	51	34	34
5	Mumbai	5	-	5	-	-
6	Nagpur	44	7	25	12	12
7	Nashik	111	27	74	10	10
8	Navi Mumbai	64	8	56	-	-
9	Pune	83	7	66	10	10
10	Raigad	48	4	43	1	1
11	Thane	87	12	74	1	1
	Total	**14**	**1 2**	**4 2**		

Figure 2.7 shows the break-up of red, orange and green category industries implementing pollution control measures.

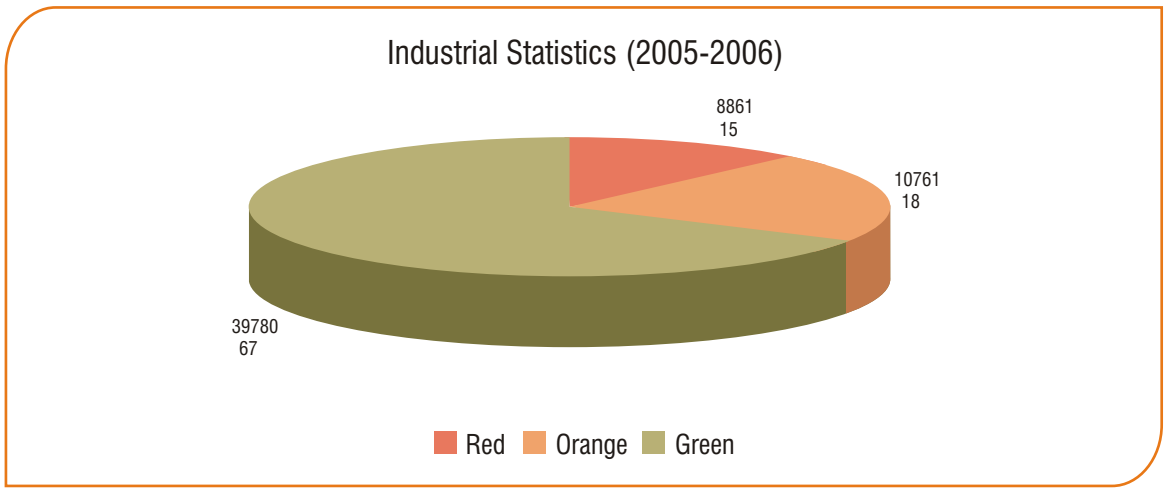


Figure 2.7 Red, Orange and Green Industries Implementing Pollution Control Measures

Industrial pollution occurs in all environmental media. The details of polluting and non-polluting industries by media-type are captured in Figure 2.8, while Figure 2. shows the status of treatment and disposal facilities provided by industries as of March 2006.The media-specific distribution of pollution by industries is depicted in Table 2.15.

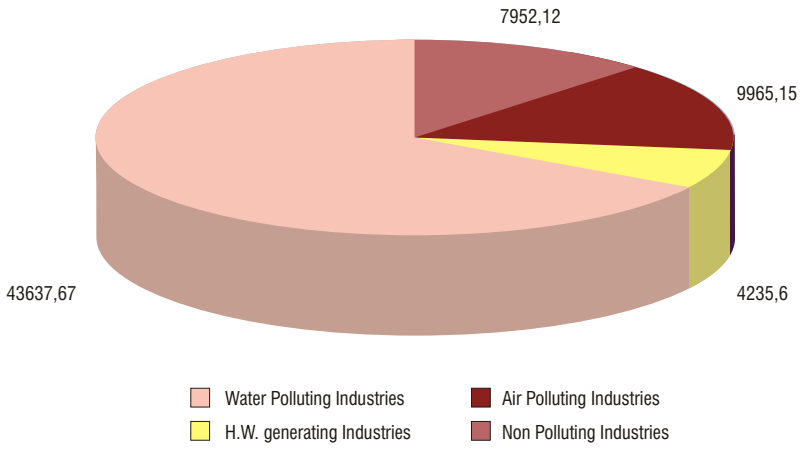


Figure 2.8 Break-up Between Polluting and Non-Polluting Industries by Media

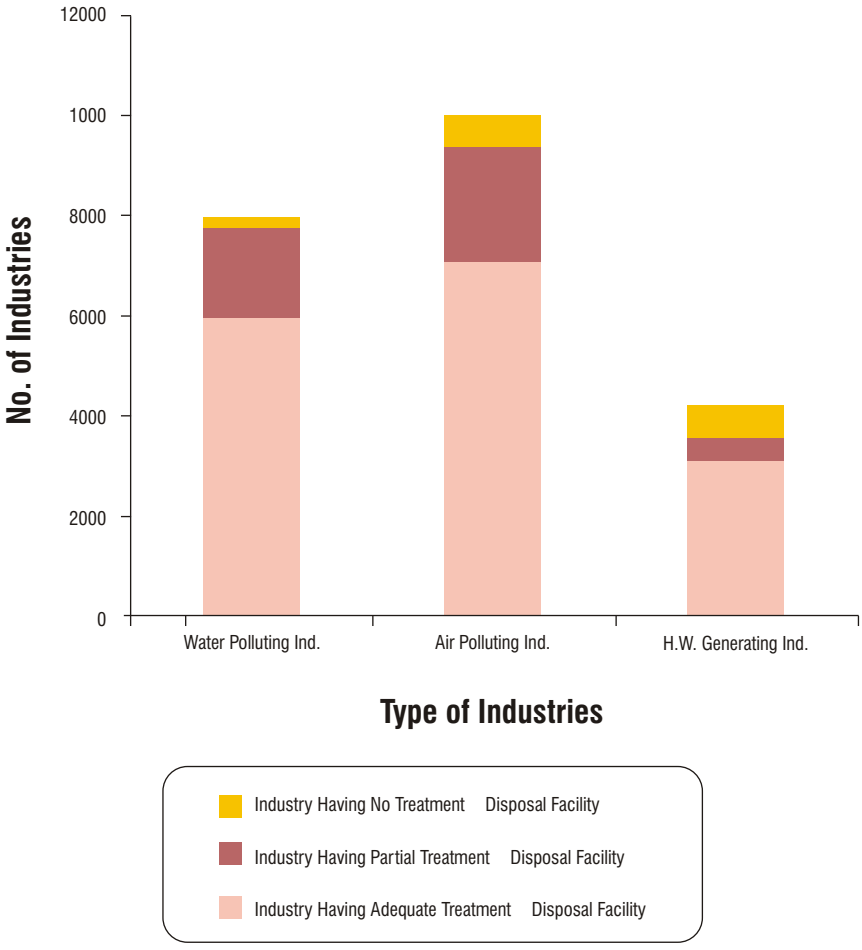


Figure 2.9 Status of Treatment and Disposal Facility Provided by Industries as on March 31, 2006

Table 2.15 Media Specific Pollution in Industries

Sr. No.	Region	No. of Polluting Industries			Total No. of Non-Polluting Industries	Total Effluent Quantity (MLD)	
		Wate	Air	Ha .Wt.		Generated	Treated
1	Amravati	168	329	85	4,080	1,003.72	1,000.64
2	Aurangabad	474	1,079	222	4,366	40.573	40.522
3	Kalyan	850	911	697	1,210	104.7	104.7
4	Kolhapur	809	1,125	304	7,520	286.826	286.826
5	Mumbai	675	608	222	3,943	4,723.191	4,723.191
6	Nagpur	991	1,623	203	5,060	955.417	955.417
7	Nashik	754	1,309	388	6,910	125	125
8	Navi Mumbai	885	742	495	1,321	59.8	59.8
9	Pune	1,345	1,317	821	5,157	110.142	110.142
10	Raigad	195	330	199	388	84.3	84.3
11	Thane	806	592	599	3,682	18.50	18.50
	Total	**1**	**342**	**4 32**	**43 3**	**512.1**	**5 . 3**

The detailed status of some of the industries in the different regions of the State is presented below.

Mumbai

In the Chembur area of Mumbai region, four huge industries had a great pollution potential. However, several pollution control measures have been adopted by these industries resulting in a cleaner and greener area. This is described in detail in Annexure 2-2.

Navi-Mumbai

This region has two major MIDC industrial estates namely, Trans Thane Creek (TTC) and Taloja and a few industries scattered in Uran taluka. These industrial estates mainly comprise of chemical, bulk drugs and intermediates, dye and dye intermediates, pharmaceutical, pesticide, petrochemical, engineering goods and textile manufacturing industries. There are also three breweries in this area. Almost all industries have adequate treatment and disposal facilities for wastewater and hazardous wastes.

Nagpur

In this region, the Chandrapur area is richly endowed with coal and various mineral mines like iron ore, tungsten, lime etc. There are also 4 major cement plants with another one coming up. With cargo hub in the vicinity, MIDC Butibori is also shaping well for industrial development. Existing industries are undergoing expansion as well. Special Economic Zone (SEZ) has been created in the cargo hub to attract direct foreign investment. Similarly expansion of the power plant at Khaperkheda is taking place.

Aurangabad

The Aurangabad region consists of eight districts (entire Marathwada region) and 1 MIDC areas. MIDC estates like Waluj, Chikalthana, and Paithan are the well developed industrial areas near Aurangabad. Also the work of developing the Five Star MIDC" at Shendre near Aurangabad is under progress. In this jurisdiction, there is practically every type of industry, including chemical, pharmaceutical, engineering, steel, sugar, distillery, thermal power stations, and agro-based industries, a number of them concentrated in the Marathwada region.

In recent years there has been perceptible change in the implementation and enforcement of environmental Acts, Rules and regulations. Due to this major industries located in the Marathwada region have installed pollution control systems. A brief status of all major industries in this region is shown in Annexure 2-2.

Nashik

The Nashik region has MIDC areas and 22 Co-operative Industrial Estates. New industrial units are being developed in the MIDC areas of Vinchur, Jalgaon, Ahmednagar and Dhule. In addition to this, industries are also establishing rapidly on the private land near the Nasik and Nagar cities. In all there are around 8 34 industries in existence in this region. The Nashik region is dominated by SSIs and a majority of these are non polluting in nature. Currently, no CETP exists in this region. However, the industrial association is planning to set up a CETP in the MIDC area of Satpur and Ambad at Nashik.

In addressing industrial pollution, typically, industries such as steel plants and thermal power plants have adopted treatment and disposal forms of technologies, whereas industries such as pharmaceuticals, pulp and paper and electroplating outfits are working towards zero discharge and adopting clean treatment technologies. A more precise view of how some industries are embracing clean technology mechanisms for pollution control is shown in Table 2.16. The adoption of such green technologies benefits not just the environment, but also makes good economic and civic sense for the industry involved.

Table 2.16 Industries that are Adopting Clean Technology Mechanisms

Industry	Clean Technology Adopted
M s. Shaw Wallace Ltd.	- Trying to achieve the zero discharge as per the Corporate Responsibility for Environmental Protection (CREP) guidelines - Has installed a Reverse Osmosis (RO) Composting System for treatment of spent wash generated from their processes - 23 of fly ash generated is being utilized by brick manufacturers
M s. Pioneer Distilleries Ltd. Balapur T . Dharmabad Dist Nanded	Has installed a Bio-digester as a primary treatment device followed by secondary treatment consisting of anaerobic filter, spray basins, aeration tank and secondary clarifier for treatment of spent wash.
Thermal Power Plant located at Parli Dist Beed	Most of the treated industrial effluent is being recycled in the process.
Electroplating plants are located in MIDC Walu Area There are small scale electroplating units which have been operating in the area without consent of the board. During this year around 26 such units have been identified and issued necessary direction including the closure of 11 units.	- Have installed chrome and nickel recovery systems as well as primary, secondary and tertiary treatment system for treatment of industrial effluent generated from their processes - Have installed metal recovery systems followed by scrubbing systems for the control of process emissions - Have obtained membership of CHWDF and send their hazardous waste to the said facility for treatment and disposal
M s. Nath Pulp and Paper Mills Ltd. Paithan Dist Aurngabad	- Has set up a caustic recovery plant for the effluent generated from bagasse pulping activity. - Has installed an air pollution control system at the coal fired boiler. - Has installed effluent treatment plants and are recycling effluents to the maximum extent.
M s. ai Corp Ltd. MIDC Nanded	Has adopted acid regeneration plant for recovery of hydrochloric acid. The unit has planned to achieve zero discharge by taking all the generated effluent to the acid recovery plant thereby saving treatment cost towards effluent treatment and HW disposal.
M s. Bala i Amines Ltd. Tamalwadi	Has adopted forced evaporation, multiple effect evaporation and RO.

Table 2.16 Industries that are Adopting Clean Technology Mechanisms

Industry	Clean Technology Adopted
M s Seagram Industries pvt. Ltd located at Kadwa Mhalungi, Tq-Dindori, Distt-Nasik is a grain based distillery	Has developed a dry house by adopting evaporation and secondary and tertiary effluent treatment arrangements. By backset recycling effluent discharge has been reduced by 60 KL/Day. Similarly 90 reduction in pollution load by recovering solid from effluent (10 MT/D) to produce Distillery Dry Grain Solids (DDGS). This has resulted in conservation of natural resources (fresh water) and consequently fewer expenses on effluent treatment.
M s Sagar distillery Nashi Region	Has adopted RO and bio-composting for the concentrated effluent generated from the RO process, thereby achieving zero discharge.
M s Somaiya Organo chemicals Sakarwadi, Kopergaon	Adopted multistage treatment facility consisting of bio-digester as the primary treatment, activated sludge process (extended aeration) as the secondary system followed by reverse osmosis as the tertiary treatment system and is also planning to achieve zero discharge by composting.
M s Advance En yme Technologies Ltd. MIDC Sinner	Has adopted RO and multi-effect evaporation systems to achieve zero discharge of industrial effluent.

2.5.4.1 Common Effluent reatment Plants

Despite the provision of common infrastructure for treatment of industrial wastewater in the form of CETPs, history shows that most of these plants do not comply with the prescribed standards in terms of effluent quality. Efficient functionality and operation are big issues in this context. The status at some of the CETPs in the State is shown in Table 2.17.

Table 2.17 Status of Some CETPs in Maharashtra

Sr. No.	CETP	Period of Commission	Status	Total number of member industries	Capacity in MLD	COD (mg l) at the outlet of the CETP
1	ACMA CETP, Ambernath	June, 1999	In operation	33	0.25	175
2	CETP Ambernath (Additional)	--	Not in operation	--	7.5	--
3	Chikhloli Morivali CETP	--	Under commission	120	0.8	--
4	Ambernath CETP Badlapur	2000	In operation	235	8.0	350
5	CETP Dombivali (Chemical)	March, 1999	In operation	170	1.5	380
6	CETP Dombivali (Textile)	Oct, 2003	In operation	117	14.0	550
7	CETP Taloja (Phase-I)	1999	In operation	745	10.0	430
8	CETP Taloja (Phase-II)	--	Under construction	820 including Phase-I	10.0	--

Table 2.17 Status of Some CETPs in Maharashtra

9	PRIA CETP Rasayani	June- 2004	In operation	25	15.0	270
10	CETP RIA, ROHA	March - 2004	In operation	52	10.0	700
11	CETP Mahad	Nov - 2002	In operation	157	7.5	480
12	CETP Sangli-Miraj	--	Yet to be commissioned	17	15.0	--
13	CETP Jaysingpur	1993	In operation	20	8.0	--
14	CETP Lote Parshuram	June, 2003	In operation	141	6.0	4180
15	CETP Tarapur	1994	In operation	976	1.0	--
16	CETP Solapur	Oct, 2005	In operation	08	1.5	--
17	CETP Kurkumbh-MIDC	Aug, 2001	In operation	39	1.0	500
18	CETP Ranjanon	July, 2001	In operation	67	11.5	52
19	CETP Butibori, Nagpur	-	Yet to be commissioned	-	5.0	--
20	CETP Khairane (Navi Mumbai)	Nov, 1998	In operation	2580	27.0	178
21	CETP Additional Khairane	March, 2006	In operation	477	15.0	200
22	CETP Tarapur (Additional)	--	Primary in operation. Secondary under construction	915	25.0	--
	Total			**14**	**224.55**	

Permissible limit of COD for outlet of CETP is 250 mg/l

As seen from the above table, two CETPs have started operating this year, one is under construction and three CETPs are awaiting commission. Some CETPs that have been constructed were not in operation. Hence, the Board has initiated some actions and the status at some of the CETPs is changing in response. Such changes are described in Chapter 3.

2.5.4.2 azardous Waste Management

Hazardous wastes generated by industries are highly toxic and have serious repercussions on health. The State generates 14 lakh MTPA of HW, with Thane, Ratnagiri and Raigad generating the maximum amounts. The total amount of HW from Maharashtra amounts to about 50% of the total HW generated in the country, a large percentage by any account.

In spite of corresponding regulation, very few industries have bothered to dispose off their waste safely. It is dumped without proper treatment into nearby *nallahs* or land causing severe pollution and health concerns. Despite the commissioning of a sanitary landfill and incineration facility at Taloja, industries are unwilling to pay for the cost of treatment and disposal.

The status of CHWTSDFs in Maharashtra is shown in Table 2.18.

Initiatives of the Board

The issue of HW is taken seriously by the Board. It has developed an inventory for these wastes and makes it available to the public. In the year 2005-2006, the Board also started compiling a reference manual for application of Schedule II of the 1 8 Rules.

Table 2.18 Present Status of the CHWTSDFs in Maharashtra

Sr. No	Location	Capacity	Status
1	Taloja, Raigad	SLF 120000 MTPA Incinerator 2.0MTPH	SLF is in operation since 2002. Incinerator is in operation since November 2004. The first cell is capped with 100, 000 MT of HW. The second cell, which was closed during monsoon, was made operational after the season.
2	TTC, New Mumbai	SLF 10000 MTPA	SLF is in operation since 2004. The cell was closed during the monsoon period and made operational after the monsoon.
3	Buti Bori (Nagpur)	SLF 50000 MTPA Incinerator 2.0 MTPH	MIDC reported that plot for this facility is awarded on Build Own Operate Transfer (BOOT) basis to M/s S.M.S. Ltd. The environmental clearance for this site is under process and the site shall be notified soon.
4	Ranjangaon (Pune)	SLF 50000 MTPA Incinerator 2.0 MTPH	MIDC reported that plot for this facility is awarded on BOT basis to M/s S.M.S. Ltd. The environmental clearance for this site is under process and the site shall be notified soon.
5	Shendre (Aurangabad)	SLF 50000 MTPA Incinerator 3.0 MTPH	MIDC has reported that the proposal to develop a satellite transfer station at Shendre (Aurangabad) has been approved. The plot allotment of 10 acres for the same is under process.
6	Mahad	Incinerator 3.0 MTPH	MIDC has reported that the proposal to develop a satellite transfer station at Mahad has been approved. The plot allotment of 6 acres for the same is under process.

2.5.4.3 ead Acid Batteries Management

Acknowledging the steady increase in the use of rechargeable batteries, as well as potential environmental impacts resulting from their improper disposal, GoI made rules to increase collection and recycling of nickel-cadmium and Lead acid batteries.

The Lead Acid Battery (Management and Handling) Rules, 2001 are applicable to battery manufacturers, assemblers, re-conditioners, dealers, bulk consumers, auctioneers, importers and recyclers. These rules represent a major step forward in the effort to facilitate recycling of nickel-cadmium and lead-acid rechargeable batteries. A discussion on the proper disposal or recycling for lead acid batteries is done in Box 2-1.

MPCB is the enforcing agency for this rule and submits an annual compliance status report to CPCB. Accordingly, MPCB has issued public notices in the leading news papers in Maharashtra on 8th December 2005 for implementation of the Batteries (Management and Handling) Rules, 2001 effectively in the State. MPCB also issued letters to identified manufacturers, re-conditioners, assemblers, dealers, bulk consumers, recyclers and importers to comply by the rules and submit annual returns in forms I, II,IV,VI,VII. ROs were also issued directions regarding stricter compliance of the Battery Rules in Maharashtra. MPCB is taking effective steps to achieve compliance in this regard and plans to make appropriate inventory.

Effective implementation of these rules in all its stages of collection, storage and transportation requires consultations with

Box 2-1 Proper Disposal or Recycling of Lead Acid Batteries

The toxic heavy metals, such as cadmium and lead, found in rechargeable lead acid batteries perform critical functions within the battery. Heavy metals are contained within the battery's casing and pose no real risks while the battery is in use. But they can be of concern when discarded with ordinary municipal solid waste, as most batteries are, Lead acid batteries were estimated to contribute approximately 75% to the total cadmium and 65% of the total lead found in MSW in 1 5.

At present, approximately 73% of MSW is either land filled or incinerated. Neither one of these methods is ideally suited for batteries that contain heavy metals. In landfills, especially those without liners and controls, heavy metals have the potential to leach slowly into soil, ground water, and surface water. When incinerated, metals such as cadmium and lead can concentrate in the ash produced by combustion and enter the atmosphere through incinerator smokestack emissions. When disposed of, the metals in the incinerator ash can leach into the environment. In the environment, certain types of heavy metals can also concentrate in the tissues of organisms and make their way up the food chain. Several metals, such as cadmium, are known carcinogens. The possible health effects associated with ingestion or inhalation of water, food, or air that has been contaminated with high levels of heavy metals range from headaches and abdominal discomfort to seizures, cancer, comas, and even death. The severity of the health effects are usually dependent on the total concentration of metals to which one is exposed over time. Recycling programs for Ni-Cd and lead acid batteries can address the potential risks posed by land filling or incinerating these batteries by diverting them from the waste stream. In the case of battery recycling, metals are recovered from the used batteries, and the remainder of the product is recycled or discarded.

manufacturers and retailers as well as public education programmes to increase awareness and encourage participation.

The information collected by MPCB from the battery dealers from different regions of Maharashtra is given in Tables 2.1 and 2.20. With this information, ratios were taken of the batteries purchased and returned from 2002-2005 for the different regions in the State and plots were prepared with information from distributors and consumers (see Figure 2.10).

The indication from the figures is that while many batteries are being bought, not all of them are returned and the Board needs to focus efforts in getting this ratio to unity. The data also reveal that there is a disparity between information provided by the dealers and bulk consumers. This is probably explained by the fact that some batteries are recycled or returned in a different year as compared to the purchase year.

Table 2.19 Regional Distribution of Purchased and Returned Lead Acid Batteries from 2002-2006

Sr. No	Name of the Region	Total No. of lead acid batteries purchased				Total No. of lead acid batteries returned			
		2 2-2 3	2 3-2 4	2 4-2 5	April 5-Sept 5	2 2-2 3	2 3-2 4	2 4-2 5	April 5-Sept 5
1	Mumbai	8,699	8,288	8,105	8,105	941	1,987	1,660	1,660
2	Navi Mumbai	987	929	1,514	2,571	438	850	928	1,059
3	Thane	285	447	929	--	-	90	542	142
4	Kalyan	2,440	2,833	2,668	3,830	155	210	934	722
5	Raigad	2,265	2,286	1,520	440	4,147	4,166	-	84
6	Nashik	21,225	23,721	13,703	7,756	7,919	9,869	9,467	2,095
7	Pune	29,665	44,847	39,026	63,318	4,450	17,716	20,115	1,885
8	Kolhapur	13,328	30,994	26,919	7,834	705	1,075	1,545	637
9	Nagpur	1,220	1174	-	--	1,757	944	-	--
10	Aurangabad	3,455	4,490	4,510	4,656	1,048	1,896	1,808	1,768
11	Amravati	9,864	11,124	11,208	6,734	2,866	3,507	1,308	835
	Total	**3 433**	**131 133**	**11 1 2**	**1 5 244**	**24 42**	**42 31**	**3 3**	**1**

Apart from the major battery manufacturers, there are few new lead acid batteries importers who have obtained registration from MoEF under Rule 4 of the HW Rules for sale of lead acid batteries in India. There are 23 such importers of new lead acid batteries in the State of Maharashtra.

The information collected by MPCB on repurchase of lead acid batteries by the dealers and disposal of batteries by the bulk consumers by auction, reveals that the percentage of batteries returned to the dealers continues to be poor as compared to the percentage of batteries auctioned by the bulk consumers. Although the percentage with respect to collection of batteries by the dealers appears less, the number of batteries returned to the dealers is more. The percent compliance in respect of bulk consumers is more or less steady and they are maintaining the compliance status.

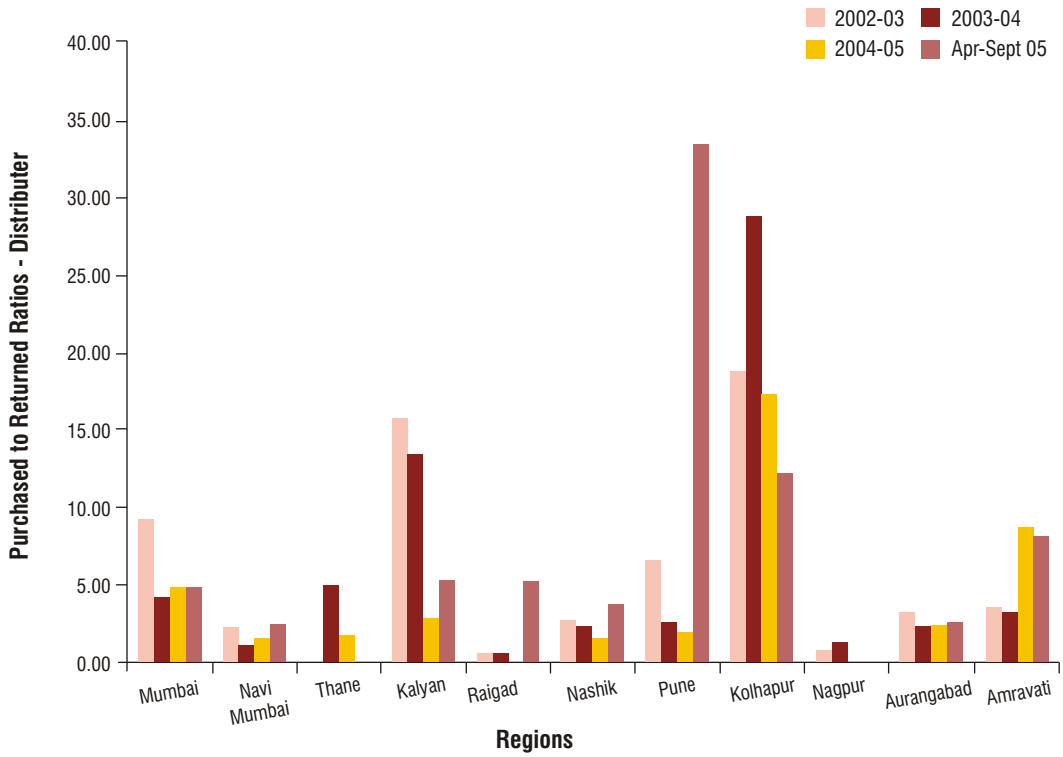
Table 2.20 Information collected by MPCB from the Bulk Battery Consumers from 2002-2005

Sr. No	Name of the Region	Total No. of lead acid batteries purchased				Total No. of lead acid batteries returned			
		2 2- 3	2 3- 4	2 4- 5	April 5- Sept 5	2 2- 3	2 3- 4	2 4- 5	Apr. 5- Sept 5
1	Mumbai	12,648	9,007	12,634	12,634	16,133	10,001	11,846	11,846
2	Navi Mumbai	100	171	123	--	466	120	52	--
3	Thane	1,134	1,222	417	24,433	908	1,327	689	212
4	Kalyan	122	122	192	80	122	122	192	80
5	Raigad	325	478	278	720	567	694	501	720
6	Nashik	2,883	2,909	5,412	1,785	3,297	2,809	4,188	1,299
7	Pune	20,747	20,528	3,312	989	10,005	10,196	12,202	1,626
8	Kolhapur	1,595	1,435	498	1,632	958	2,087	476	1,014
9	Nagpur	600	670	-	--	600	717	-	--
10	Aurangabad	1,133	1,432	712	210	1,190	1000	439	502
11	Amravati	1,034	1,911	2,083	717	911	1,059	1,164	624
	Total	**42 321**	**3 5**	**25 1**	**43 2**	**35 15**	**3 132**	**31 4**	**1 23**

There are 16 Lead acid Battery recycling units having valid registration from CPCB. Out of these, units have submitted half yearly returns on recycling of the batteries. The information from the remaining units is being collected.

Initiatives of the Board

Efforts are being made by MPCB with the help of its Regional offices for creating awareness among various stakeholders to ensure that they comply with the Battery Rules.



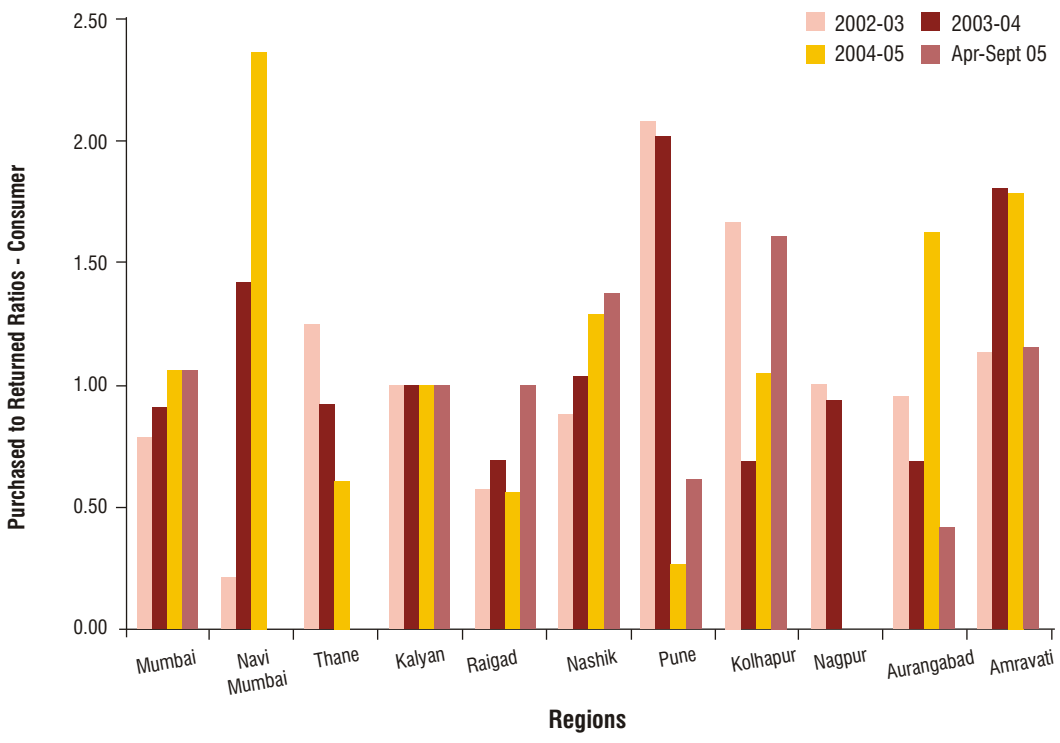


Figure 2.10 Ratios of Batteries Purchased and Returned from 2002-2005

2.5.4.4 Electronic Waste Management

Initially the recycling of electronic and computer waste in India was mainly concentrated in Delhi. However, subsequent studies revealed that the problem has spread its wings to cities like Mumbai, Chennai, Kolkata, Bangalore and Hyderabad too. The illegal Delhi e-waste recycling business has been studied in detail. The stakeholders involved in this trade include scrap dealers, traders and the intermediaries before the computers and electronic goods land in the backyard recycling and smelting units. The most sought after items in computer waste are central processor units, and chips. However, the processes employed in e-waste recycling are not environment friendly and capable of causing long term damage to human health and environment. The adverse health impacts of the backyard open smelting are felt not only by workers engaged in this trade but also the local population (see Box 2-2 for more details). The lack of legislation (see Box 2-3) in this area amplifies the problem.

Box 2-2 Health Impacts Resulting from Improper Handling of E-aste

E-waste is a mixture of almost 1,000 different substances and chemicals many of which are highly toxic and can adversely affect human health and the environment if the waste is not handled properly. It also contains heavy metals like lead and cadmium, in addition to carcinogens such as Poly Vinyl Chloride (PVC) in some of the components. The health effects of these toxic compounds are well documented. Generally after separation of the components, the computer motherboards are smelted in open pits to extract copper and other metals. This process generates dangerous air emissions. The materials used in computers are complex and difficult to recycle in an environmentally sound manner. The recycling of computer waste requires sophisticated technology and processes, which are not only very expensive, but also need specific skills and training for the operation and these are not present even in the developed nations as of today.

hat is electronic waste

Electronic waste or e waste is the term used to describe old, end of life electronic appliances such as computers, laptops, T s, D D players, mobile phones, and M 3 players that have been disposed of by their original users. Of all the electronic wastes, computer waste is most significant due to its generation rate coupled with the difficult recycling process and the presence of ha ardous materials. lthough e waste management is a global concern, the growth rate of discarded electronic waste is high in India since it has emerged as an IT giant. It is estimated that about 40 million components are being discarded every year, which is likely to further grow phenomenally to 100 million by the year 2010. lthough e waste management in India is in its infancy, the problem is getting compounded due to the large scale exports of this waste by the developed and industriali ed nations to India.

Rapid product obsolescence in the electronic industry is mainly responsible for the e-waste crisis which is getting out of control in India and other countries. The way forward to managing the impending disaster is to ban imports of such wastes in India, extend producer responsibility and make them accountable for the entire life-cycle of products that are sold, product take back like the lead acid batteries, re-manufacturing to reduce dependence on the virgin raw materials, redesigning of computers to ensure safe and clean recovery of the raw materials and so on.

Initiatives of the Board

Mumbai, the financial nerve-centre of India, is also India's largest port city. The Mumbai -Pune industrial belt is one of the manufacturing hubs of the country. As a result, Mumbai is not only the port of import for new and used electronics it is also home to a large user and manufacturer base, both generating large

volumes of e-waste. There is hardly any attention paid to the management of the e-waste generated in this industrial belt which incidentally also houses a large number of Info tech parks in New Mumbai and Pune. There is an urgent need therefore to have a well developed and implemented mechanism on the collection, treatment and disposal of the e-waste. MPCB has identified e-waste as a priority area and taken certain initiatives to create awareness among various stake holders.

Under an MoU with UNEP, a study has been commissioned to study e-waste in the State that includes assessment of the current scenario, quantification of e-wastes generated, their characteristics, methods of collection, transport and final disposal, projections for next 10 years regarding consumption and waste generation of the electronic goods, comparison of the regulatory mechanisms in Organization for Economic Cooperation and Development (OECD) and non OECD countries in relation to Indian conditions for regulation of the imports, possibility of setting up a proper collection system and enacting legal instruments. Besides, it is also necessary to understand the environmentally sound technologies for recycling and recovery, the need for the fiscal incentives to promote this industry and technical feasibility of setting up of a model facility. It is a matter of pride for MPCB that UNEP has decided to extend partial financial assistance and technical assistance to this project.

Box 2-3 hat is the Legal Status of E- aste

The absence of stringent legislation to stop imports and deal with the internally generated e-waste is a cause of concern. The Basel Convention defines waste by its disposal destination or the recovery processes which are listed in Annexure IV of the convention. This means that any material recycled for the recovery of metals or organic or inorganic substances for further use, is deemed as a waste. However, electronic components that are used without any processing are not defined as a waste. Basel Convention provides two lists viz. List A (Annexure VII) which is presumed to be hazardous and therefore covered by the Basel Convention and List B (Annexure IX) which is presumed to be non hazardous and hence not covered by the convention. The e-wastes listed in List A pose a threat to human health and environment. The e-waste is not exactly covered in the Hazardous Wastes (Management and Handling), Rules, 1 8 , (as amended in 2003). However, Schedule 3 of those Rules has an entry at Sr. no. A 1180 which defines waste electrical and electronic assemblies for export and imports and entry at Sr. no. B 1110 defines the electrical and electronic assemblies not valid for direct reuse but for recycling.
The e-waste management and handling is dealt with in India under the above legislative framework.

The government, industry, users and Os have woken up to the challenges of the growing ha ards of e waste and there is now a consensus that recycling and resource recovery from e waste need to be carried out in an environmentally friendly manner.
ational WEEE Task orce headed by the C CB Chairman has been constituted in uly 2004 to address issues like identification, planning and implementation of all issues related to e waste management in India. The ational WEEE Task force has five thrust areas namely olicy and egislation, Baseline Study, estructuring ecycling, Extended roducer esponsibility and wareness Building in the community.

2.6 Complaints

MPCB acknowledges that public dialogue is an important mechanism towards bettering the environment in the State. Hence, addressing public complaints is a priority with the Board. In fact, while citizens may

write to or call the Board with their complaints and grievances, the MPCB website also has a form using which complaints can be lodged. During the year 2005-2006, the Board received over 1,500 total complaints as shown in Table 2.21. The high number of these complaints is not surprising given the overall State of the environment discussed in detail in the above sections of this chapter. However, these complaints serve an important purpose and MPCB takes several actions in response to these, in addition to their routine enforcement and enhancement activities.

Table 2.21 Pollution Complaints Received and Addressed by MPCB

Region	Pollution Complaints Received and Attended			
	Air	Water	Solid Waste	Noise Poll.
Mumbai	46	10	0	2
Navi Mumbai	62	36	13	10
Raigad	36	43	2	3
Thane	30	25	12	13
Kalyan	63	68	9	40
Pune	106	72	7	46
Nashik	49	25	0	38
Aurangabad	55	32	5	22
Nagpur	249	72	8	21
Amravati	53	26	6	8
Kolhapur	69	61	3	34
Total	**1**	**4**	**5**	**23**

Annexure

ANNEXURE 1-1

Staff Strength as on 31. 3.2

I

Sr. No.	CADRE	SANCTIONED	FILLED IN	VACANT
1.	Air Pollution Abatement Engineer	1	1	0
2.	Water Pollution Abatement Engineer	1	1	0
3.	Regional Officer	13	13	0
4.	Sub-Regional Officer	53	49	4
5.	Deputy Engineer	1	1	0
6.	Field Officer	96	95	1
7.	Statistical Officer	1	1	0
8.	Statistical Asst.	1	1	0
9.	Draughtsman	1	1	0
10.	Field Inspector	8	8	0
11.	Asst. Draughtsman	2	2	0
12.	Field Asst.	37	37	0
13.	Tracer	7	7	0
14.	Electrician	2	2	0
15.	Instrument Fitter	1	1	0
	Total	**225**	**22**	**5**

II

Sr. No.	CADRE	SANCTIONED	FILLED IN	VACANT
1.	Law Officer	2	2	
2.	Asst. Law Officer	2	2	
3.	Legal Asst.	4	4	
	Total			

III

Sr. No.	CADRE	SANCTIONED	FILLED IN	VACANT
1.	Principal Scientific Officer	1	1	
2.	Senior Scientific Officer	3	3	
3.	Scientific Officer	9	9	
4	Junior Scientific Officer	26	25	1
5	Junior Scientific Asst.	36	36	
6	Laboratory Asst.	7	7	
	Total	**2**	**1**	**1**

IV D – Accounts Administration

Sr. No.	CADRE	SANCTIONED	FILLED IN	VACANT
1.	Chief Accounts Officer	1	1	0
2.	Accounts Officer	2	2	0
3.	Administrative Officer	1	1	0
4.	Asst. Secretary	1	1	0
5.	Asst. Accounts Officer	2	2	0
6.	Head Accountants	20	20	0
7.	Library Asst.	-	-	-
8.	Senior Steno	5	5	0
9.	Junior Steno	26	25	1
10.	First Clerk	17	16	1
11.	Senior Clerks	50	50	0
12.	Junior Clerks	63	63	0
13.	Daftari	2	2	0
14.	Drivers	54	54	0
15.	Roneo Operator	1	1	0
16.	Naik	2	2	0
17.	Chowkidar	20	20	0
18.	Peons	116	99	17
19.	Sweeper	3	3	0
	Total	**3**	**3**	**1**

Posts created by the Board

Sr. No.	CADRE	CREATED	OPERATIONAL (on adhoc basis)	VACANT
1.	Sr. L.O.	2	2	
2.	Sr. AS (T)	1	1	
3.	Sr. AO	1	1	
4.	Ex. Engr.	1	1	
5.	PS to Ch/MS	2	2	
6.	Material Officer	1		1
7.	PRO	1	1	
	Total	**1**		**1**

ABSTRACTS

Sr. No.	CADRE	SANCTIONED	FILLED IN	VACANT
A	Technical	226	221	5
B	Legal	10	10	0
C	Scientific	82	81	1
D	Accounts Administration	392	372	20
	Total	**1**		**2**

ANNEXURE 2-1

The Status of STPs in some Municipal Corporations

Mumbai Municipal Corporation:

1 Malad STP:

The MCGM has installed an STP at Marve Road, Malwani, Malad (W), which was commissioned in 1 8. The capacity of this STP is 240 MLD. The area covered is Goregaon to Dahisar. Part of the domestic effluent is being treated at the STP and the rest is being discharged into the creek through various nallas without any treatment.

The STP comprises of a screen chamber, grit chamber and 4 settling tanks - 60 MLD each. The inlet flow to STP is about 120 MLD and about 100 MLD in the dry and rainy seasons respectively. The treated effluent is being discharged to Malwani creek. This office regularly collects Joint Vigilance Samples(JVS) at the STP.

2 ersova STP:

The Versosva STP comprises of primary and secondary treatment facilities with a capacity of 180 MLD. There are 30 aerators in the aerobic lagoon and 22 aerators in the facultative lagoon at the facility. The detention time is 1.5 days in the aerobic section and 1.8 and 1.1 days in facultative l and facultative II sections respectively.
About 30 m^3/m of grit is generated in the treatment facilities. The treated wastewater is further discharged into Marve creek.

3 Bandra Marine Out-fall:

The Bandra influent pumping station/marine out fall has been working since 27th May, 2003 with a capacity of 7 6. MLD. The plant has been provided with a primary treatment facility which comprises of 8 fine screens and 4 aerated grit chambers. The grit removed is approximately 160 to 180/m^3 and is sent to Deonar dumping ground. After primary treatment, the effluent is discharged into the sea at a point approximately 3.7 kms. from the coast.

4 Bhandup STP:

The Bhandup STP commissioned in July 2002, has a design capacity of 180 MLD. The STP comprises of primary treatment units such as screen, grit chambers, air agitators and aerated lagoons. The grit generation from the STP is about 6000 to 7000 kg/m and is disposed on Mulund dumping ground and the treated effluent is disposed in Thane creek.

5 Ghatkopar STP.

The Ghatkopar STP was commissioned in May 2003 and has a design capacity of 138 MLD. The STP comprises of primary treatment units such as screen, grit chambers, air agitators and aerated lagoon. The grit generation from the STP is about 7000 to 8000 kg/m and it is disposed on Deonar dumping ground and the treated sewage effluent is disposed in Thane creek.

6 orli Marine Outfall:

The Worli marine out fall was commissioned in 1 1 and has a design capacity of 756. MLD. The STP comprises of primary treatment units such as screen, grit chambers, and air agitators. The marine out fall passes at about 65 meters below ground level and about 53 meters below sea bed. The sewage flows through a tunnel of 3.4 km length and disperses into sea water through risers at end of the tunnel.

Colaba Marine outfall. :

The Colaba marine out fall commissioned in 1 88 has a design capacity of 41.1 MLD. The STP comprises of primary treatment units such as screen, grit chambers and air agitators. The length of the marine out fall is 1.15 kms.

Navi Mumbai Municipal Corporation :

The total sewage effluent generated in the NMMC area is to the tune of 1 0 MLD and is collected through closed underground sewerage system provided in most of the areas. There are 8 STPs in this area and details are provided in the table below.

Though NMMC has provided STPs at various locations, the operation and maintenance of these STPs is very poor. This office has issued directions to NMMC and asked to prepare an action plan in this regard. The NMMC has made budgetary provision in their budget for 2006-2007 for renovation and upgrade of all STPs. Slum areas of Turbhe and Ghansoli node are yet to be covered under planned sewage collection and treatment systems.

In Vashi node there are a few spots where domestic sewage gets stagnated causing smell nuisance in the surrounding areas. MPCB has asked the Corporation to prepare a time bound action plan for proper treatment and disposal of sewage. Because of discharge of sewage into fish ponds at Ghansoli, directions were issued to NMMC to stop this discharge and provide proper drainage system. Follow up in this respect is being done.

Details on the NMMC STPs

Sr. No.	Node	Capacity in MLD	Treatment type	Final disposal
1	Belapur, Sector 12	21.00	Aerated lagoon	Creek
2	Belapur, Sector 26	0.15	Primary treatment	Gardening
3	Nerul, Sector 2	17.00	Aerated lagoon	Creek
4	Nerul, Sector 50	23.00	Aerated lagoon	Creek
5	Vashi, Sector 18	34.00	Pri. Sec treatment.	Creek
6	Sanpada, Sector 20	31.00	Aerated lagoon	Creek
7	Airoli, Sector 18	18.00	Aerated lagoon	Creek
8	Koparkhairne, Sector 14	36.00	Aerated lagoon	Creek

Nagpur Municipal Corporation

Nagpur Municipal Corporation has installed a 100 MLD STP at Bhandewadi which treats 1/3 of the sewage generated by Nagpur city.

ANNEXURE 2-2

Controlling Pollution at some Industries in Maharashtra

Pollution Control at Four Industries in Chembur

Industry	Control Measures Adopted
M s Tata Power Co. Ltd. Trombay, Mumbai Thermal plant	- ESP and flue gas desulpherisor at unit No.5 to control air pollution. - SPM control at coal fired unit No.5. - Reduction of noise level up to 65 dB_A. - Waste oil is disposed off by sale to authorized recyclers. - Fly ash is given to dealers to use in construction.
M s BPCL Mahul, Chembur, Mumbai Refinery	- ETP (primary, secondary and tertiary) including RO Plant. - Sulphur Recovery units - Use of low sulphur short residue liquid fuel in furnaces and boilers. - Co-boilers in Fluid Catalytic Cracking unit (FCCU). - Oxygen and Carbon Monoxide Analyzer for furnace stack. - High efficiency boilers. - Conversion of fixed roof tanks to floating roof tanks in Naphtha and motor spirit. - Benzene vapor recovery unit at tank lorry loading. - Mechanical oil recovery from oily sludge, followed by bioremediation. - Spent catalyst disposed to suppliers/vendors.
M s. Hindustan Petroleum Corpn. Ltd. Mahul, Chembur, Mumbai Refinery	- Two ETPs to treat floor wash effluent and industrial effluent – primary and secondary treatment. - Sulphur recovery units. - Diesel Hydro De-Sulfurisation for sulphur recovery from diesel. - Flue Gas Desulfurization (FGD) to remove sulphur from flue gas. - CO Boiler for converting CO to CO_2. - Mechanical oil recovery from oily sludge, followed by bioremediation. - Spent catalyst disposed at common CHWTSDF at Taloja.
M s Rashtriya Chemicals and Fertili ers Ltd. Trombay, Mumbai Chemicals and fertilizers manufacturer	- ETP with primary and secondary treatment - STP with primary, secondary and tertiary plants. The treated effluent of is used in process. - Condensate stripper in ammonia plant - MP and LP scrubbers in urea plant - Multiple water scrubbers in complex fertilizer plant. - Cryogenic purge gas recovery plant to recover ammonia and hydrogen from purge gas. - Back filter cyclone separators and multiple scrubbers for control of particulate emissions. - For SO_2 reduction, high efficiency brink mist eliminator for control of acid mist emissions. - Caustic scrubber for control of SO_2 emissions. - Selective catalytic for reduction for controlling NO emissions through HNO_3 plant. - Wet water scrubbing of fluorine contained gases in phosphoric acid plant to control fluorine emissions. - ETP sludge is disposed of by sale to end users and waste oil is disposed to authorized recyclers or reprocessors.

Pollution Control Technologies Adopted by Industries in Aurangabad Region

Industry	Control Measures Adopted
M s. Shaw Wallace Ltd.	Installed RO and Composting System for treatment of spent wash generated from their processes.
M s. Pioneer Distilleries Ltd.	Installed a Bio-digester as a primary treatment device followed by secondary treatment consisting of anaerobic filter, spray basins, aeration tank and secondary clarifier for treatment of spent wash.
Cluster of steel plants in alna MIDC	All these steel plants have installed air pollution control systems. Agreed to install improved systems as per the suggestions and guidelines of NML, Jamshedpur within one year.
Thermal Power Plant located at Parli Dist Beed The electricity generation capacity of said Thermal Power Plant is 690 MW. The daily coal consumption is 12000 MT	- Effluent treatment plant for industrial and domestic effluent. - Electrostatic precipitators have been provided for all boilers for controlling air pollution. - Flue gas conditioning with ammonia gas is being practiced to improve the performance of ESP.
M s. Orchid Chemicals and Pharmaceuticals Ltd.	- Installed primary, secondary and tertiary treatment system followed by RO system and mechanical multi-stage evaporators for treatment of effluent. - Installed scrubbing system for extraction of process emission. - Obtained the membership of CHWTSDF and send their hazardous waste to such a facility.
Electroplating plants are located in MIDC Walu Area There are small scale electroplating units which have been operating in the area without consent of the board. During this year around 26 such units have been identified and issued necessary direction including closer to 11 units.	- Installed chrome and nickel recovery systems as well as primary, secondary and tertiary treatment systems for treatment of industrial effluent generated from their processes. - Installed metal recovery systems followed by scrubbing systems for the control of process emissions. - Obtained membership of CHWTSDF and send their hazardous waste to the said facility for treatment and disposal. - CETP in progress
M s. Nath Pulp and Paper Mills Ltd.	- Installed caustic recovery plant for the effluent generated from bagasse pulping activity. - Installed air pollution control system to the coal fired boiler. - Installed effluent treatment plants and are recycling effluents to the maximum extent.

ANNEXURE 3-1
Surveys and Studies

ater Surveys and Studies

1. Mithi River Survey

Need for the Study: In response to a Public Interest Litigation, on the lapses and omissions on the part of various authorities while dealing with the problems of Mithi river pollution including the rise in illegal encroachments and unauthorized units, which have reduced the Mithi River to a gutter, the Hon'ble High Court directed MPCB to investigate the situation and address it.

Ob ectives: To perform a detailed survey to identify additional unauthorized units and prepare a fresh / updated list of polluters, to clean the river, stop polluting, provide adequate and suitable STPs and a time bound action plan for necessary implementation involving various concerned authorities like MCGM, Collector, Mumbai and Suburb as well as MPCB.

Study Conducted by: M/s. Klean Environment Services Pvt. Ltd., Mumbai (contracted by the Board)

Methodology:

To monitor 20 points along the stretch of Mithi river, collect and analyze samples and submit a report by June, 2004 on the Mithi river water quality, sludge quality and quantity as well as short term and long term measures to control pollution of Mithi river.

To identify illegal industries and unlicensed activities, discharging industrial waste into Mithi river, to collect samples and prepare a comprehensive report

Outcome Recommendations:

1. Immediate closure of all the unauthorized activities discharging wastes, provide proper garbage collection system to prevent dumping into the river as short term measures
2. Plan for sewers on both the banks of the Mithi river with STPs at various locations,
3. Remove debris along the entire length of Mithi river bed to improve its carrying capacity
4. Provide proper garbage collection stations for the benefit of hutment dwellers.
5. Seek further discussion and assistance from MCGM, MMRDA, Collector, Mumbai and Suburb, Maharashtra Costal Zone Management Authority (MCZMA) and Urban Development Dept., GoM.

2. Review of Permissible Limit of BOD and TDS for Land Disposal of Treated Effluent at Aurangabad

Need for the Study: In Aurangabad MIDC, increase in population and the subsequent unplanned disposal of liquid, solid and gaseous wastes manifested in a set of environmental problems, since there is no adequate facility for treatment and disposal of sewage. The ground water in the area is threatened due to the disposal of sewage and trade effluent on land without complete or partial treatment. Hence, a feasibility study was commissioned by the Board.

Ob ectives: Review the permissible limits of BOD and TDS for land disposal of treated effluent.

Study Conducted by: NEERI

Outcome Recommendations:

This study is currently underway. Hence, the final outcome or recommendations are not available. However, a progress report on work that has been completed and is currently underway is presented in table below.

Progress of the Feasibility Study for Land Disposal at Aurangabad

Wor Completed	Wor Underway
Evaluating suitability of various types of soils for treatment and disposal of wastewaters	Undertake geophysical investigations near the discharge points of treated effluent
Measuring the ground water pollution potential by leachates/ percolates from land disposal system	Develop mathematical models which predict the transport and removal of the contaminant in partially saturated soil
Evaluating physico-chemical and microbiological changes in different soils irrigated with wastewater	Calibrate and validate the models from column lysimeter study
	Carry out sensitivity analysis of various model parameters to study system behavior under various operating conditions
	Develop guidelines for the disposal of wastewater through a design protocol

3. Survey of Central and estern Railways orkshops for Monitoring Discharge of astewater Containing Boron and its Compounds

Need for the Study: Indian Railways have various diesel locomotive sheds in Maharashtra, namely Pune, Kalyan, Parel, Bandra, etc. These workshops use chemicals for their cooling water system. The water from the system is discharged into the local drainage system by the Railway. An environmentalist noted that this discharged water contains levels of boron greater than 2 mg/l, which is a toxic level. The two Photographs below give an idea of the situation.

Ob ectives: Monitor the Railway activities and consent compliance, collect samples and take legal action if necessary.

Study Conducted by: MPCB

Methodology: Take samples and analyze.

Outcome Recommendations: The results of the study are based on the observations noted in the table below, which is a chemical analysis of the collected samples.

In response to the Board's investigations and issuance of SCNs to violating units, all the workshops now use INDION 1344 as a corrosion inhibitor in coolant water for their locomotives, which contains boron nitrite (2%). In addition, since the wastewater showed high levels of oil and grease, the Board recommended that these pollutants be removed from the water before discharge. Moreover, the Board also stated that the Railway authority should seek consent from the Board and submit a wastewater analysis.

Chemical Analysis of Wastewater Samples Discharged from Central and Western Railway Workshops

Parameter	MPCB Standards	Sample of used coolant at Parel Wor shop	Sample of outlet to BMC at Parel Wor shop	Sample of outlet to BMC at Kurla Wor shop
pH	Between 5.5 to 9.0	7.9	8.7	7.5
Suspended solids	Not to exceed 100 mg/l.	1,538.0	342	32
BOD, at 3 days 27 deg. C	Not to exceed 100 mg/l.	---	3,400	14
COD	Not to exceed 250 mg/l.	---	1,4640	128
Oil and grease	Not to exceed 10 mg/l.	3,511.4	1,928	1.6
Total dissolved solids	Not to exceed 2100 mg/l.	---	9,872	---
Boron	Not to exceed 2 mg/l.	2.0445	0.1340	Below detection limit (BDL)
Chromium (hexavalent)	Not to exceed 0.1mg/l.	BDL	BDL	---
Total chromium	Not to exceed 2 mg/l.	0.043	0.240	---

4. Investigation of Dead Fishes near Gateway of India and Other Locations Along the Coast of Mumbai during October 2005

Need for the Study: The month of October 2005 saw many fish deaths at various places in the city. Dead fishes were found floating in large quantities near the Gateway of India and different species washed ashore along other areas of the Mumbai coast such as Juhu and Khar.

Ob ectives: Understand issues connected with all instances of fish death and communicate possible causes and suggest remedial measures if possible.

Study Conducted by: NEERI and CMFRI with assistance from CIFE

Methodology:

1. Carry out site visit and observe site conditions.
2. Classify and photograph dead fish.

3. Take samples of environmental parameters and analyze.
4. Study upwelling using satellite based RS of wind vectors along the Mumbai coast.

Outcome Recommendations:

1. Majority of dead fish at Gateway of India belonged to the genus *rius* of catfishes. Collaborating investigations suggested the possibility of the catch being thrown away from some commercial purse-seine boats due to lack of proper storage in the fish hold and from adjacent fish landing centre at Sassoon docks. Low prices combined with bumper landings of catfish had forced the fish traders to discard rotten catch after removal of airbladders.
2. In Juhu, while most fish swim away from intense upwelling conditions, eels being slow swimmers were probably getting trapped in the rising water with unfavorable environs and getting washed ashore in dead conditions.
3. Dadar and Khar and Danda beaches are very close to sewage discharge points of the diffusers that are in operation after implementation of marine outfall project of the municipal corporation. Thus fish mortalities can be attributed to synergistic or combined effect of all the complex processes going on in the ecosystem as also pollution.

Industrial surveys and Studies

1. Survey Report of MIDC Lote Parshuram Carried out During April 4 2005

Need for the Study: A primary CETP was installed in 2001 in MIDC, Lote Parshuram and modernized in 2003. However, while the establishment of CETP minimized the problems of water pollution, it did not eliminate them completely. Intermittently fish kill incidences were observed. During the visit of Shri Ganeshji Nashik, Hon'ble Minister of Environment and Dr. D. B. Boralkar, Member Secretary of the Board along with Board officials on 2nd and 3rd March, 2005, it was observed that the CETP was not able to follow the terms of its consent due to irregularity in discharge of partially treated effluent by a majority of industries. Necessary legal action was initiated against the defaulting industries not conforming to the inlet characteristics of CETP, but the irregularity persists to date and industries still remain in violation of the terms of their consents.

Ob ectives: To carry out an Action Plan to identify the defaulting industries that are responsible for pollution problems in the Lote Parshuram area.

Methodology: Three teams were assigned to carry out JVS. Team A comprised of three groups that collected 4 samples in 8 hours and one composite sample for 8 hours. Their survey covered 42 water polluting industries, out of which 5 industries were closed and no effluent or discharge was observed throughout 24 hrs from industries. Team-B (Mobile Monitoring Van group) continuously surveyed the selected air polluting industries for 24 hours. 4 industries were covered by this team. Similarly, Team-C carried out the stack monitoring survey of 14 air polluting industries.
The JVS collected were delivered to the laboratory immediately by the respective groups. The JVS result for parameters pH and COD were made available within 12 hrs.

Outcome Recommendations: On analysis, it was observed that the industries with major water polluting potential are LSI and MSI. In fact the treated effluent from LSI and MSI is intended to dilute effluent in the main wastewater stream/pipeline. Hence, individual industries were recommended for legal action according to their effluent quantum and pollution potential. Similarly, air polluting industries that did not meet with the norms were recommended for legal action. A scorecard was provided with results for individual industries. Out of 42 industries inspected during survey, 28 industries were recommended for legal action.

2. Assessment of Status of Soil Plant and Ground ater Following Land Disposal of Industrial aste ater at MIDC Butibori Nagpur

Need for the Study: Land disposal of wastewater is one of the alternative methods, to achieve zero discharge. However, this needs to be carried out scientifically. Indiscriminate usage of wastewater on land, may lead to several environmental issues such as soil sickness and ground water pollution often leading to irreversible ecological damage. At the Nagpur MIDC area, around 45 industries are practicing zero discharge as directed by MPCB. The treated wastewater generated by these industries is currently discharged on land. Status of the land with respect to soil, plant and ground water quality is not known and requires to be addressed in order to evaluate the currently ongoing land disposal practices.

Ob ectives: To determine the status of land with respect to soil, plant and ground water quality in the MIDC area.

Study Conducted by: NEERI

Methodology:

- Characterization of effluents disposed on land for irrigation
- Evaluation of the physico-chemical and microbiological changes in different soils irrigated with the effluent
- Evaluation of ground water pollution in the Butibori, MIDC area by installing piezometers at the land application sites receiving treated waste water
- Evaluation of the effect of effluent disposal on land and its effects on soil. Studying the morphological changes in plants.
- Development of guidelines for the land disposal of waste water through a design protocol.
- Recommending a strategy for sustainable land practices

Outcome Recommendations:

Build up of salinity and solidity was found on land due to continuous application of the treated wastewaters in an unplanned manner at Indo-Rama Synthetics India Ltd., Morarji Brembana Ltd., and Unitech Power Transmission Ltd. This can be overcome by a proper and well designed land treatment system for application of wastewater and plantation of trees having high cation uptake transpiration rates such as *cacia mangium* (Acacia), *cacia auriculiformis* (Australian babool), *Dendrocalamus strictus* (Bamboo), *Eucalyptus hybrid* (Eucalyptus) and grasses such as *etiveria i anioides* (Khus), *Cymbpogon flexuosus* (Lemon) etc.

The GIS studies indicated that the overall slope of the ground is towards the Krishna River meaning thereby that the surface run-off following the prevailing practice of land application of wastewater will pollute the river. The ground water samples collected from the hand pump and wells at Takalghat village demonstrated high TDS, BOD and chloride contents and require remediation. Hence, the current land disposal practices should be stopped immediately and, to avoid further contamination, CETP at Butibori should be made operational at the earliest. The draft report is completed.

3. Performance Evaluation of CETP in Maharashtra

Need for the Study: Individual treatment of effluent in small quantities in SSI units is often constrained by techno-economic feasibility and often poses a serious threat to the financial viability of small scale industries. Hence, MPCB and MIDC jointly promoted the concept of CETP through local Industries Associations. Also, some financial assistance was provided by MPCB, MIDC and MoEF, GoI, New Delhi.

Ob ectives: Review of the CETPs' performance was necessary, to ensure that the CETPs are made functional as per the original design and are operated properly. It is also necessary to review/ assess the modifications/augmentations required, if any.

Study Conducted by: M/s. Aditya Environmental Services Pvt. Ltd, Mumbai

Outcome Recommendations: This study is underway and the outome/recommendations are not currently available.

4. E- aste Assessment

Need for the Study: Considering the large potential of e-waste generation in the MMR and within the Municipal Corporation areas of Pune and Pimpri-Chinchawad, which support a very large number of corporate offices, IT industries and government establishments, MPCB has taken the initiative at the State level of establishing an "Expert Group" under part funding from UNEP, this group has taken the initiative to establish the e-waste inventory by commissioning e-waste city assessment studies for Mumbai and Pune.

Ob ectives:

Assessment of existing and future quantity of WEEE in MMR and Pune and Pimpri-Chinchwad Municipal Corporation areas

Assessment of existing recycling methods being followed for WEEE

Assessment of whether the WEEE recycling is currently posing any major environmental problems/risks or likely to pose environmental problems in the future

Assessment of capacities/capabilities of existing stakeholders and infrastructure required for WEEE management

Assessment of environmental and social sustainability of present systems

Assessment of the e-trade economics

Feasibility of setting up of e-waste recycling facility as common infrastructure for environmental protection

Study Conducted by: M/s IRG Systems South Asia Private Ltd, New Delhi

Outcome Recommendations: This is an ongoing study and the outcome/recommendations are not currently available.

Some other studies that were carried out during the reporting year include:

- Extensive survey of Hingna and Kalmeshwar industrial area was carried out and 201 directions were issued for control of air and water pollution.
- Chandrapur Action Plan has been prepared for control of pollution at Chandrapur. At present extensive sampling work is in progress.
- Survey of units carrying out distillation of spent solvents was carried out for Navi Mumbai Region.
- Survey of stone crushing units is being carried out for entire all stone crushers in the Navi Mumbai Region.
- Performance evaluation of efficiency of effluent treatment plant of M/s. United Breweries Pvt. Ltd., MIDC Taloja, M/s. BASF Ltd., MIDC TTC. and M/s. Rallis India Ltd., was carried out.
- Recently, a survey of Matheran was carried out in connection with the fact that this area has been declared as an ESZ. Work on the pollution load status in Matheran is under progress.
- Survey of major water polluting units in MIDC Dhatav is carried out. High COD bearing streams generating industries have been identified and persuade to provide segregated treatment for the same.

ANNEXURE 3-2
Enforcement In Industrial Sectors

1. Pharmaceutical Medicine arehouse affected by Flood in Bhiwandi Area:

The heavy rains on 26/07/2005 and 27/07/2005 in the Mumbai, Thane region of Maharashtra affected the normal life in the Region. Due to the deluge, the pharmaceutical medicine warehouse situated in the Kalher, Purna Village of Bhiwandi Taluka also got affected. A huge quantum of pharmaceutical medicine stored in the warehouse was damaged due to flood water. MPCB learnt about this issue and has started surveying such warehouses in the Bhiwandi Taluka. Twenty such warehouses were inspected on 08/08/2005, 0 /08/2005, 13/08/2005, 1 /08/2005 and 22/08/2005 in which approximately 2240 tons of pharmaceutical medicine were reported as damaged and spoiled.

Drugs and drug formulations, as well as medicines with expired dates that need to be discarded fall under category 28.3 of Schedule I of the HW rules. Therefore such HW needs to be sent to an appropriate CHWTSDF for scientific treatment and disposal. During their visit, MPCB officials suggested that the responsible parties dispose all damaged medicines to a CHWTSDF authorized by the Board. Accordingly a notice was sent out to 13 warehouses and has been complied by the owners of the warehouses. A total of approximately 303 tons of HW has been disposed off and the warehouses are now being stocked with new medicines.

2. Environmental Pollution Due to Stone uarrying at Hiranandani Garden Powai Mumbai

The Powai hills have been exploited for construction stones and related activities since a very long time. The area near Powai has experienced rapid residential growth in last few years. The quarrying operations and associated activities like blasting, charge drilling, chiseling and stone crushing have caused noise pollution in the area. In addition, problems such as soil erosion, siltation and landslides are being seen during the rainy season. Air pollution is also common.

The Board received complaints from residents regarding environmental pollution in the Hiranandani Gardens. The residents also complained about the violation of MoEF notification dated 7.7.04, regarding clearance for the new construction projects. They brought specific cases of construction projects which attract the provisions of this notification to the attention of the Board.

Considering the gravity of the problems the Member Secretary of the Board formed a committee consisting of Dr. S. B. Katoley, Advisor and Dr. Ajay A. Deshpande, Regional Officer of the Board to investigate the matter thoroughly and suggest actions to control pollution. The committee on review of the complaints and discussions with some of the office bearers of the housing societies noted that the problems are mainly related to

a. Concerns due to quarrying activities i.e. blasts, noise, vibrations, dust, increase in siltation, stone missiles, environmental degradation, landslides, run off etc.

b. Air Pollution problems due to hot mix plant, stone crusher and ready mix plant in the vicinity of housing societies and an upcoming Technology Park.

c. Violation of MoEF notification dated 7.7.04 due to new construction projects of building. The committee visited the area along with representatives of the Housing Societies on 13. .05.

MPCB enforces the Water (P P) Act, 1 74, Air (P P) Act, 1 81 and various Rules notified under Environmental (Protection) Act, 1 86. However, specific industries such as stone crushers, hot mix plants and ready mix concrete plants, which have defined sources of pollution, are covered under the consent mechanism under the above Acts. The stone quarrying activities are regulated by the State Revenue Department under Minor Minerals Act and the District Collector and Mining Officers are responsible for giving the required permissions to operate the quarry. They are also responsible for permitting the use of the explosives used in the quarries. MPCB has no authority under the above Act to grant permissions for the stone quarrying activities.

Large scale stone quarrying activities, can have several environmental impacts such as effects of blasts, vibrations, stone missiles, loosening of earth thereby increasing the chances of landslides and siltation rates, aesthetics etc.

Based on the observations and non compliance of stone crushers under Air (P P) Act, 1 81, it was decided to bring the matter to the notice of Collector, Mumbai Suburban District who has authority to regulate these activities. Accordingly, the following recommendations were made

Recommendations

Directions under 31 (A) of Air (P P) Act, 1 81 shall be issued to collector, Mumbai Suburban District to stop stone quarrying activities in this area since these are causing vibrations and noise pollution.

It shall be immediately ensured that Supreme Stone Crusher stop its activities as per closure directions issued by MPCB. In case of further non-compliance of the directions a criminal case shall be filed with police and in a court of law. Action should also be taken against the power supply company if they fail to comply with MPCB directives to disconnect power supply to this unit.

Directions under section 31 (A) of Air (P CP) Act, 1 81, shall be issued to M/s. Hiranandani Builders for immediate closure of the Hot Mix plant operated by them.

Directions under section 31 (A) of Air (P CP), 1 81 shall be issued to the Ready Mix Plant restricting its operation time from 10 am to 6 pm and also restricting their production only to the consented capacity.

M/s. Hiranandani Constructions have been issued a stop work notice for reported violations of MoEF Notification dated 07/07/2004. In view of the directions of Hon'ble High Court at Mumbai in the WP on development of mills lands, MPCB shall take up the matter with MCGM to ensure that violations do not continue in future. If the violations of the provisions of Notification dated 07/07/2004 are confirmed, action under Environment (Protection) Act, 1 86 shall be initiated against Hiranandani Constructions accordingly.

3. Ground water pollution problem in MIDC alu at Aurangabad

The MIDC Area, Waluj is established on Aurangabad-Pune State Highway at a distance of about 20 km. from Aurangabad city. The total area of MIDC is about 1520 hectares. There are about 1230 industries which covers all small, medium and large scale units. There are about 250 units generating industrial effluent. Of these 42 are medium and large scale units and remaining are small scale units. Most of the large and medium scale units are polluting in nature and are also major water consumers. These 42 units also generate the most wastewater. In MIDC, mainly engineering (electroplating and surface treatment), chemical and bulk drugs, breweries, pharmaceuticals, etc. types of industries are established. The total quantity of effluent generation from units located in MIDC Waluj Area is about .5 MLD which includes 6.5 MLD industrial and 3 MLD domestic effluents.

Most LSI and MSI with self treatment facilities consist of primary, secondary and tertiary treatment and most of these industries own sufficient land for the disposal of their treated effluent, but the disposal of treated effluent is not performed in a scientific manner. Most of the SSI are involved in electroplating, surface treatment, phosphating, painting, etc. activities and they have not provided full-fledged effluent treatment and disposal facilities due to which the substandard effluent generated from such industries is being disposed outside the factory premises. The MIDC authorities have not provided any conveyance and collection system for such effluent. There are a number of complaints of surface water and ground water pollution in and around MIDC Waluj Area. Specifically, the complaint of MLA, Gangapur was received by this office in January, 2005. The Board carried out a survey of MIDC Area, Waluj in January February, 2005. In the survey, samples of wells and bore wells of Ranjangaon (Shenpunji) were collected and analyzed. The analysis reports show ground water contamination of the said area. The Board has issued directions under Section 33A of the Water (Prevention Control of Pollution) Act, 1 74 to the Executive Engineer, MIDC, Aurangabad on 23/01/2005 and directed to prepare a concrete proposal for the collection of total effluent from all the industries in the area and also prepare a proposal for scientific disposal of said effluent beyond the catchments area of percolation tank located at Ranjangaon (Shenpunji).

The Board has taken action against 41 industries of MIDC Waluj Area for not providing full-fledged treatment and disposal facilities by issuing various directions under the provisions of the Water (Prevention Control of Pollution) Act, 1 74 from January, 2005. The Board has also issued SCNs to 62 industries in the area. There was a LA regarding water pollution in and around Waluj MIDC Area in Assembly Session in the month of March, 2005.

MIDC has decided to install a CETP in MIDC Waluj Area. The detailed project report for installation of a 10 MLD CETP was submitted by the Waluj Industries Association to MIDC The process towards the installation of CETP has been started.

4. Rivers flowing through coastal belt

Along the Coastal belt of the State, due to rapid industrial development, the rivers flowing through the belt are facing pollution problems. These rivers receive pollutants through discharge of effluents by industrial establishments located nearby the rivers.

Patalganga River:-

In the A-II zone of Patalganga river, industries have been prohibited to discharge treated effluent into Patalganga River. However, Municipal Council Khopoli, located in A-II Zone of Patalganga River is a major source of river water pollution since it discharges domestic effluent to the tune of 11 MLD (maximum) into river without any treatment. Similarly fish development ponds at Khopoli also discharge untreated effluent into the river.

In the saline water zone, treated industrial effluent from industries located in MIDC Patalganga Rasayani is discharged at one point near Kharpada Bridge. Since the pollutant does not get dispersed properly at this point the pollution of river water occurs to some extent.

Tata Power Co. releases tail race water into Patalganga River depending upon production capacity, which varies day to day. Whenever lowest discharge occurs it causes enrichment of pollutant in the river and may cause pollution of river. The gravity channels through which water from various dams at Lonavala is passed are not cleaned which results in the turbid nature of water. Frequent accidents of tankers carrying chemicals / oil etc. at Borghat, upstream of Khopoli may cause river water pollution.

Kundalika River:-

Monitoring of Kundalika river water is done in A-I, A-II and SW stretches of the river. uality of river in the A-I and A-II classes is satisfactory, however quality in saline water zone at Areykhurd where treated industrial effluent from CETP Roha is discharged is found to be deteriorated.

Water quality of Amba River is also monitored. There is no industrial estate in the catchment of this river. However some big industries like IPCL, Supreme Petrochem Ltd., Schenectady Herdillia Ltd., and Sunshield Chemicals Ltd. are established in the catchment. uality of river water in the A-II class appears to be within environmental standards at MIDC Jackwell, Nagothane and Wakan.

Ma or sources of Kundalika River water pollution.

1) Discharge of untreated sewage at Ashatami Bridge in Roha town causes water pollution problems. Bacterial analysis has shown high coliform at Ashtami Bridge in Kundalika River.

2) Treated industrial effluent from RIA CETP is discharged at AreyKhurd in the saline zone of river Kundalika. At this point dispersion of pollutants is not adequate. This is not the recommended point of effluent disposal. It is therefore necessary to dispose the treated effluent at Mahadev Khar, which is the recommended point of disposal.

Vehicle washing is carried out by the citizen of Roha town at Ashtami Bridge in A-II class of Kundalika River.

Sand dredging is also carried out regularly in saline zone of river of Kundalika at Gofan and Sanegaon. This may result in adversely affecting river eco systems and the food chain of aquatic organisms.

Savitri River:-

The Savitri River water quality in A- II class is generally satisfactory. However at Ovale and Ambet the saline zones of the river, the water quality deteriorates at times. This is due to improper dispersion of pollutants due to non-operation of diffuser systems.

As part of an action plan the Board is keeping vigil on optimum performance of CETP and proper disposal of industrial effluent at Ambet by MIDC. Segregation of high COD streams from various industries and its treatment in common multiple effect evaporator at MIDC Mahad is also covered under action plan.

Board has instructed MMA Association to explore possibilities of providing common multiple effect evaporator at MIDC Mahad with a group of industries such as Shree Hari Chemicals, P. I. Drugs etc. The Board has directed this group of industries to put up a multiple effect evaporator.

ANNEXURE 3.3

Important orders

EN IRONMENTAL CLEARANCE FOR CONSTR CTION PRO ECTS
Order passed by Hon'ble Maharashtra State Human Rights Commission in the Case No. 15 16 2005 21 filed by Citi ens Awareness Forum through Smt.Kunika S. Lal

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The Deputy Commissioner of Police Ors. Including Member Secretary MPCB

Citizens Awareness Forum through Smt. Kunika S. Lal had filed an application before Hon'ble Maharashtra State Human Rights Commission on 31/10/2005, stating that the Maharashtra Housing and Area Development Authority (MHADA) has started construction of a housing project at Oshiwara, Andheri (West), Mumbai, wherein 1000 flats are being built. It was stated that the said construction started somewhere in the latter half of the year, 2004. It also stated that the Oshiwara area of Mumbai is one of the most congested localities, where the load of traffic on the clogged roads is immense. Since, there is a lack of open spaces, it was alleged that this project would have immense environmental consequences.

The applicant also stated that MHADA has started construction work without getting environmental clearance, as required under the Environment Impact Assessment Notification dt.27/1/1 4 as amended on 7/7/2004. The complainant (applicant) had issued one notice to MHADA in this regard, however, the MHADA had failed to follow the provisions of the EIA Notification and therefore, the applicant had lodged one complaint to lodge a First Information Report (FIR) with Versova Police Station on 12/ /2005. However, in spite of the complainant's request, the Police did not proceed to file a FIR and aggrieved by the gross omissions of the Police and other Authorities, the complainant approached the Maharashtra State Human Rights Commission.

The applicant listed several government authorities as Respondent in the said application / complaint, including MPCB. The Board filed its reply on /12/2005. It was specifically stated that the Board is entrusted with the implementation of the Environment (Protection) Act,1 86 Rules made thereunder. The Board has also made it clear that the project which costs less than Rs.50 crores, having discharge of domestic effluent less than 50,000 ltrs. per day and the proposed occupancy less than 1000 persons does not require an environmental clearance under EIA Notification, 1 4 as amended on 7/7/2004.

MPCB also stated that each proposal is examined on its merit and then a decision is made as to whether the EIA Notification, 1 4, as amended on 7/7/2004 applies to the project in question. In fact, MPCB had issued MHADA with a notice to stop work for their construction project on plot bearing No.120, CTS No.1374 at Versova, Andheri, as MPCB did not have any documentary evidence about the said construction activity. Therefore, MHADA applied for exemption from the above Notification on the grounds that the cost of the project is less than Rs.50 crores, the occupancy is 6 0 and effluent generation will be 4 .6 CMD. Since, at that particular time, the said work did not need an environmental clearance, per EIA Notification, 1 4, dt.7/7/2004, MPCB issued a letter to MHADA indicating the non-applicability of the provisions of the EIA Notification to the said project.

Thereafter, MHADA approached MPCB for exemption from the above Notification on the grounds that more than 75% of the work of the project has been completed before 7/7/2004 and the balance project work of construction work on the disputed land does not attract the provisions of the EIA Notification dt.7/7/2004.

MPCB after due consideration of the facts circumstances, of the said proposal withdrew the stop work notice and recommended the proposal to MoEF and made it clear in the said withdrawal of notice letter that IAA reserves the right to review the case of MHADA in the public interest, if material facts justifying the need for such review come to the light as per EIA Notification and in such circumstance, the proposal of MHADA will be subject to the terms conditions of directions issued by IAA.

MPCB in its reply before Hon'ble Human Right Commission has made it clear that it has not granted any final clearance/exemption to MHADA, but has come to the conclusion that said project does not attract the provisions of the EIA Notification. It also pointed out that the appropriate remedy for the complainant is to

approach the Environment Tribunal and therefore, requested that the complaint may be dismissed.

All the parties to the said application, including MPCB were heard at length by the Hon'ble Maharashtra State Human Rights Commission. The Commission observed while passing the order dt.28/3/2006 that MPCB has not stated anywhere that it has granted any exemption and that it is absolute. It was also noted, that construction work was stopped in in September, 2005 when MPCB sent its initial notice and after getting the representations as well as reply from MHADA, and withdrawal of the SCN by MPCB, construction re-started. Other letters sent in by MPCB were also reviewed.

The Hon'ble Commission therefore, specifically observed that the position taken by MPCB remains valid unless it is set aside or modified by the Govt. of India. It is also made it clear in the final order passed by the Hon'ble Commission dt.28/3/2006 that if the complainant wants to challenge the stand of the Govt. or of the MPCB, in this connection, they are free to approach the Govt. of India or the concerned Tribunal as the case may be, to challenge the exemption given by the MPCB.

This was an appropriate decision by the Hon'ble Maharashtra State Human Rights Commission, which upheld the stand taken by the MPCB and decided the issue in a broader sense for construction projects, in favour of MPCB. The matter was pleaded by D.T. Devale, Sr.Law Officer with the assistance of Shri S.S. Doke, Regional Officer(P P) and Shri G.N. Mohite, the I/C Regional Officer-Mumbai, Miss. Preetam Tendulkar, Panel Advocate of the Board also appeared in the matter.

AIR POLL TION IN M MBAI

Air Pollution caused due to improper coal handling by M s.Mercator Lines Pvt. Ltd. Mumbai.

The complaints of air pollution due to improper coal handling at Haji Bunder were received by the Board. Therefore, initially the Board identified the source of air pollution i.e. M/s.Mercator Lines Ltd., who was handling coal in the port area. The Board had earlier issued directions u/s 31A of the Air (Prevention Control of Pollution) Act,1 81 against M/s.Mercator Lines Pvt. Ltd., Mumbai vide letter dt.18/10/2005, directing it to stop the activity of coal handling at Haji Bunder, Mumbai Port Trust. Aggrieved by the said order M/s.Mercator Lines Pvt.Ltd. has filed an appeal against the order dt.18/10/2005 before the Appellate Authority constituted under the provisions of the Air (Prevention Control of Pollution) Act,1 81. The Appellate Authority stayed the execution of the order till further orders.

The Appellate Authority appointed M/s.WAPCOS as per request of the Appellant to monitor the compliance and suggest remedial measures. The Rapid Environment Assessment Report submitted by M/s.WAPCOS to the Appellate Authority in the month of 5/12/2005 was not in conformity with the prevailing environmental regulations and did not cover the required technical aspects. Therefore, the Appellate Authority directed M/S.WAPCOS to consult Laboratories approved by the MoEF and submit an updated report, which was submitted on 2/1/2006, but the Board contested such updating of the report and insisted upon a fresh report by a technical institute like NEERI. The Board has also made it clear that it has already appointed M/s.NEERI to carry out an environmental assessment monitoring of the said area. The Board has also carried out further monitoring and the results of monitoring show that RSPM values are exceeding the specified limit of 150 ug/mg^3 laid down in Schedule-I of the Air (P CP) Act,1 81. Since, the non-compliance further continues, further complaints have been received on 5/1/2006 from the Regional Plant uarantine Station, Ministry of Agriculture, Govt. of India regarding a serious problem of air pollution to the human health and also adversely affecting the working efficiency of the electronic instruments in the Laboratory due to coal handling activities at Haji Bunder. The reports in respect of AA M at Haji Bunder coal handling area done by M/s.WAPCOS also reveal that the parameters of SPM and RSPM are exceeding the limits and therefore, the Board had to issue proposed directions on 22/2/2006. The Regional Officer, I/C PCI-II, MPCB by his letter dt.12/1/2006 informed the Traffic Manager, Mumbai Port Trust, Mumbai-400 001 to take immediate steps in respect of the complaint of air pollution due to coal handling at Haji Bunder and advised to shift the site of the dumping coal and divert the route of the movement of loaded coal to avoid coal dust pollution in the public interest.

The Board has thereafter extended personal hearing to M/s.Mercator Lines Pvt. Ltd. on 28/2/2006. During the course of personal hearing, M/s.Mercator Lines Pvt. Ltd. has agreed to submit a detailed concrete proposal for carrying out environmental improvement by providing mechanical and modern arrangements for handling of coal at Haji Bunder within 30 days time.

However, till date nothing has been submitted by it and therefore, the Board has no alternative than to issue further final directions to stop coal handling by the said company at Haji Bunder area.

The problem of improper handling of coal at Haji Bunder has not only become sensitive, giving rise to a number of complaints of air pollution by the public at large but it was also discussed at the Floor of Assembly and the Assembly has taken a serious note thereof. The Board therefore constantly monitoring the said area and has initiated further actions to secure the compliance. The appeal is still pending before the Appellate Authority.

This office is therefore of the opinion that based on the final report, final directions can be issued.

ATER POLL TION AT K RK MBH

Order passed by Hon'ble Maharashtra State Human Rights Commission in the matter of complaint of water pollution in the Kurkumbh MIDC Area bearingCase No.635 2001 145 filed by illagers from Kurkumbh Pandhrewadi

s

Secretary Environment Deptt. Maharashtra State 2 Ors. Including Maharashtra Pollution Control Board

Villagers from Kurkumbh, Pandhrewadi had lodged one complaint about violation of human rights due to pollution being caused from the discharge of waste water from Kurkumbh MIDC. It was alleged that due to discharge of polluted water from the industries in the MIDC Kurkumbh Area, underground drinking water in the said area has become un-potable and therefore, MIDC Kurkumbh has to supply drinking water. However, the MIDC is charging the water bills to the villagers, which should not be charged upon them. It is also contended that damage caused to the crops and land as well as water course, because of pollution has caused irreparable losses.

Hon'ble Maharashtra State Human Rights Commission directed the Secretary, Environment Deptt., Govt. of Maharashtra, Member Secretary, Maharashtra Pollution Control Board and Chief Executive Officer, MIDC to file their report before the Commission. Accordingly, the non-applicants filed their replies and report before the Commission. The reports can be summarized as under

a Environment Deptt. Report -

The report started that there are 105 industries in the Kurkumbh MIDC area. Out of that, 66 factories are closed, 3 units are under construction and out of remaining, 36 units, 12 units are temporarily closed and only 24 units are in operation. It was also stated that out of 24 units in operation, 6 units do not generate any pollution. 3 units discharge highly polluted effluent and therefore, the Regional Officer of the MPCB had sent a proposal to Head uarters to take appropriate action. It was also stated that MPCB had initiated appropriate legal actions as per the provisions of the Water (Prevention Control of Pollution) Act, 1 74 and that the Board had been directed to file appropriate cases against the defaulting units. It was made clear that since, majority of them are small scale units, there is a necessity to provide a CETP with assistance from the Central Govt. since an independent effluent treatment plant can not be provided due to financial constrains.

b MPCB report -

MPCB filed a detailed report giving information on actions initiated by it against the polluting units. These are listed below

a. The Sub-Regional Officer, MPCB, Pune-I collected samples u/s 21 of the Water (P CP) Act, 1 74 and based on the report, filed prosecutions against 5 major polluting industries in the said area before the Hon'ble Chief Judicial Magistrate-Pune Court.

b. The proposed directions as to why the defaulting units causing severe pollution discharge shall not be closed down issued to 5 units in the said area.

c. SCNs issued to 5 units not operating their ETPs properly.

d. Regional Officer, MPCB, Pune also monitored well water in the said area from 8 wells and reported prima facie that the water is not suitable for drinking purposes.

e. Regional Officer also instructed MIDC to upgrade its CETP and maintain operate it properly. However, since there was some problem in disposal of effluent from CETP, MIDC had stopped collection of effluent from various industries and thereby it was being spread in the nearby area, which gave rise to the complaint from the villagers of Kurkumbh Pandhrewadi.

a Industry Deptt. Govt. of Maharashtra Report -

In its report dated 20/11/2002 the Industry Deptt., stated that MIDC had prepared an integrated scheme for pollution prevention by making a provision for Rs.10,616 Lakhs, of which Rs.577.77

Lakhs were for Kurkumbh MIDC for laying down collection pipelines and collection tank, Rs.127.76 Lakhs for CETP and Rs.108 Lakhs for tree-plantation. It is also stated that the industries should also operate maintain their ETPs properly so as to transport it through pipelines for CETP.

b MIDC Report :-

Hon'ble Commission called Chief Executive Officer, MIDC as a witness on 22/11/2002. During discussions, it was revealed that MIDC should upgrade its CETP so as to achieve the standards laid down by the Board MIDC should also make proper disposal arrangement for treated effluent and should supply drinking water to the villagers at concessional rates.

MIDC in turn reported that some of the units are discharging polluted effluent which creates pressure on the CETP. It is also stated that MIDC has decided to upgrade its CETP for which, a one year time frame may be required and more than Rs.50 Lakhs expenditure will have to be incurred. MIDC also undertook a scheme for utilization of treated water and the work of common effluent treatment pipeline and informed that due to objections from the Forests Deptt., Govt. of Maharashtra, the work was delayed. MIDC also informed that on account of the complaints about well water pollution, MIDC has been supplying drinking water at concessional rates since June, 2000. As per report of Maharashtra Directorate of Health Services, Mumbai, the well water contained higher total solid, chlorides, nitrate hardness and therefore, was not fit for drinking purposes.

The Commission specifically observed that in the Environment Deptt. and the Industry Deptt. are jointly responsible to take steps to solve problem of pollution. MPCB should initiate stringent action against the defaulting polluting units including closure. However, MIDC being a nodal agency that provides infrastructure facilities for various industries, the primary responsibility lies with it to provide necessary pipelines for collection of effluent, full-fledged common effluent treatment plant and a proper disposal system for the same. It is specifically observed that MIDC cannot disown its responsibility and shift it on MPCB. It is also stated that being a nodal department, MIDC should work out special scheme for pollution prevention and execution thereof. In case, small scale industries are unable to provide a full fledged treatment plant, MIDC should provide a CETP for them and solve their problem.

The order passed by Hon'ble Maharashtra State Human Rights Commission spells out the role of the MIDC in respect of pollution prevention more particularly with reference to the small scale units and should be followed in proper perspective by the all concerned.

ATER POLL TION BY

AN ORGANIC CHEMICALS LTD.

Order passed by High Court of udicature at Bombay
PIL No.44 2001 filed by
anardan Kundlikrao Pharande Anr.
s
Maharashtra Pollution Control Board Ors.
Ref: Order dt. 2 2006 passed by Hon'ble High Court.

Mr. Janardan K. Pharande Mr. Balasaheb G. Kakde had filed one Public Interest Litigation against MPCB and 4 others including M/s.Vam Organic Chemicals Ltd., Nimbut, Tal Baramati, on the ground that the said unit is carrying on their manufacturing activities in village Nimbut and has been responsible for causing pollution of river Nira due to discharge of effluent from its activities. It is contended that contact with the water of the river Nira has resulted in skin irritation. The animals, who drink the water become sick weak and may die. The water is said to be extremely harmful to the cultivation of land and adversely affects the standing crops. The unit has created lagoons and accumulated highly concentrated effluent, which is percolating into the water of Nira river as well as nearby wells. The other cause was the composting activity started on 28 acres without permission, which is near to public road and human habitation.

MPCB had filed a number of affidavits in the said matter stating that Nira river at Nimbut falls under "A-IV" Class of Water. It was also stated in clear-cut terms that some underground percolation from the old lagoons noticed in the nalla and the quality of water in the nalla has deteriorated with respect to parameters such as BOD, COD, which was brought to the notice of the said industry. It was also pointed out that the unit was directed not to discharge any effluent to the river Nira and utilize total spent wash in the process namely Sprannihalator and composting as well as Bio-methanisation plant. The unit is also being asked to empty 18 lagoons in a time bound manner.

Thereafter, Hon'ble High Court has passed order dt.24/10/2001 directing the Board to test the water of river Nira to find out the nature of contamination / pollution and observed that if possible, the cause for pollution may be identified, including its source. If the river is polluted up-stream on account of the activities of any other units, it should take action against those units. If it is found that the pollution of the river water is only on account of percolation from the spent wash lagoons, obviously, we have to wait for some time till lagoons are dry. The petitioners are directed to assist the Board in carrying out the compliance of directions issued by the Hon'ble Court. Hon'ble Cout also made it clear that the Respondent-Board will submit a report to the Court as to the action taken pursuant to the directions issued by the Court.

Thereafter, the Board had filed joint Affidavit of the Regional Officer and Sub-Regional Officer of the Board at Pune in compliance of the order passed by the Hon'ble Court on 24/11/2001, stating that the distillery of the above unit is overall consuming the effluent generated in Sprannihalator and composting as well as Bio-methanisation plant and made it clear that till lagoons are emptied, some percolations from the old lagoons can not be ruled out, but the Board is taking follow up action in empting those lagoons in a time bound manner as per the time schedule submitted to the Board by the unit i.e. on or before May, 2003.

The petitioners had filed an Additional Affidavit on 4/2/2002, objecting to the collection of samples by the Respondent-Board and not analyzing the parameters of temperature, colour, odour test as well as arsenic, gross alpha activities gross beta activities etc. in respect of river water. Thereafter, the Regional Officer and Sub-Regional Officer, MPCB, Pune had filed reply on 16/2/2002 to the said Affidavit stating that the Respondent-Industry has provided incineration, bio-methanisation followed by secondary treatment and also provided scientific composting with provision for leachate collection and leak-proof guard pond of sufficient capacity by suitable lining concreting arrangements for covering the compost during rainy season. It was also pointed out that out of 28 parameters mentioned by the petitioners, only, parameters are applicable to A-IV Class of water, which are tested by the Respondent-Board. It is also made clear that the parameters of Arsenic, Gross Alpha activities Gross Beta activities are not analysed on account of not having any facility for analyzing the same with the Board and on account of these parameters are not source oriented from the Respondent-Industry. It is also made clear that the present effluent generated from the distillery activities totally consumed in the composting and other process and therefore, there is no direct discharge into the nalla / river. Since, the nalla river water have been classified as A-IV Class of water and the results of monitoring show that the quality of water is suitable for best designated usages, there was no necessity to take further action against the Respondent-Industry. The Board has also pointed out that the petitioners have not approached to the Board nor informed to the Board any violations on the part of the Respondent-Industry and the Board has not observed any abnormality in their monitoring. It is also made clear that the grievance of the petitioner is in respect of the old storages of spent wash, for which, the Respondent-Board already directed the distillery to reclaim the said lagoons or make it anaerobic, for which, time is also granted and therefore, Hon'ble High Court specifically observed in its order dt.24/10/2001 that if it is found that the pollution of river water is only on account of percolations from the spent wash stored in the lagoons, we have to wait for some time till lagoons are dried up. However, it was also made clear that if the petitioners find that the Respondent-Industry is discharging effluent into the river or elsewhere, they may bring it to the notice of the Respondent-Board for taking further necessary action.

Thereafter, Hon'ble High Court directed the Board to file affidavit giving present status of the Respondent-Industry in respect of the empting the 18 lagoons as directed by the Board in a time bound manner. Accordingly, the Regional Officer of the Board at H filed a detailed affidavit on 25/7/2003, pointing out that Dr.Munshilal Gautam, the then Member Secretary alongwith Regional Officer Sub-Regional Officer, MPCB, Pune caused visit inspection of the Respondent-Industry and observed that 12 lagoons were dewatered by February, 2003 by removing the sludge. However, in 6 lagoons the sludge remaining underneath due to slimy nature of the sludge, which makes it impossible to take out the sludge out of the lagoons manually and mechanically. The same can be removed after dried up. It is also pointed out that the Board is keeping constant vigil on the activities of the industry and since, most of lagoons are emptied, and the petition can be disposed off by directing the distillery to remove sludge from the remaining lagoons by 31/3/2004.

Thereafter, the Regional Officer of the Board at

Pune had filed one more Affidavit on 1 /4/2004 giving further progress in respect of reclamation of lagoons, stating that 13 lagoons are already reclaimed successfully and in respect of 3 lagoons, it is pointed out that an almost impervious crust has been formed over contents of these lagoons underneath which the mass remained in slime form. It is also reported that because of its slimy nature, the slurry can not be easily handled due to its viscous and sticky properties. Therefore, the time may be extended for reclamation of the lagoons upto 31/5/2005.

Last affidavit filed by Dr.D. B. Boralkar, Member Secretary of the Board in compliance of the order passed by Hon'ble High Court on 12/1/2006, giving the details of present status of the compliance on the basis of the visit inspection carried out by the Regional Officer Sub-Regional officer, MPCB Pune alongwith the statement showing the results of water quality of Nira river at Nimbut in comparison with A-IV class of standards laid down in the River Policy Notification dt.15/7/2000. It was specifically pointed out that the Respondent-Industry has utilized total spent wash stored / accumulated into the old lagoons for composting purposes as per verification report submitted by the Board officials.

The details of effluent treatment plant were also submitted, stating that nothing is being discharged outside the activities of the industry into the environment and total effluent after primary treatment being utilized in the ferti-irrigation after secondary treatment in part and remaining for composting activity. 16 lagoons have been reclaimed by scrapping totally and two lagoons as well as one pond have been made impervious for further utilization and temporary storage until it is being utilized for composting ferti-irrigation. The Bio-methanisation plant has been made operational, out of total available land, as high as 82. 4 % is under cultivation and 73.6 % is cultivated. Therefore, it was prayed that the petition may kindly be disposed off.

Hon'ble High Court after hearing, Dr.D.B. Boralkar, Member Secretary in person on 12/1/2006 has passed a detailed order and observed that the Respondent No.2 industry has complied with the interim directions issued on 17/3/2001 and all the lagoons have been reclaimed by the industry. Therefore, the petition is disposed off without any cost. This is a landmark case law, wherein, Hon'ble High Court has taken into consideration the practical difficulties of the new management, which has undertaken the legacy of the earlier old management in respect of storage of old spent wash in 18 lagoons on account of the available technology adopted at that time, which got deteriorated. Subsequently, the old company, namely, M/s.Polychem Ltd., which had been closed down was taken over by M/s.Vam Organic Chemicals Ltd. some time in the year, 1 and it has provided above fullfledged treatment disposal arrangements. The said company has not only complied with the consent conditions but also a number of directions issued by the Maharashtra Pollution Control Board including reclamation of 18 lagoons provided by earlier company M/s.Polychem Ltd. Therefore, Hon'ble High Court after monitoring the above case for more than 5 years and on the basis of the report of Dr.D.B. Boralkar, Member Secretary of the Board has come to the conclusion that nothing further remains to be done in the writ petition and therefore, the petition is disposed off without cost.

Shri D. T. Devale, Sr.Law Officer assisted by Mrs.Neelam Kubal, Asstt. Law Officer and Shri V.N. Mundhe, Regional Officer, MPCB, Pune, Shri P.P. Dhaygude Shri P.B. Barbole, Sub-Regional Officers at Pune have taken active part in securing the compliance of the orders passed by the Hon'ble Court from time to time under the guidance given by Dr.D.B. Boralkar, Member Secretary of the Board.

HA ARDO S ASTE MANAGEMENT

Maharashtra Pollution Control Board's successful pursuation to secure compliance of the show cause notice issued to M s. Dabhol Power Co. An anwel Tal:Guhagar Dist:Ratnagiri for deposit of Rs.2 6 000 - or its e uivalent amount in Indian Rupees towards cost of remediation MPCB's recovery of S Rs.2 6 000 - or its e uivalent in Indian Rupees from M s. Dabhol Power co. .

Maharashtra Pollution Control Board had granted Consent to Establish to M/s.Dabhol Power Co.(DPC), Anjanwel, Tal Guhagar, Dist Ratnagiri on 16/3/1 6 for a period upto commissioning of the unit subject to certain terms conditions. One of the important conditions was that necessary equipments to meet the requirement of pollution control legislations shall be installed before commercial generation of power by M/s.DPC into MSEB Grid. However, M/s.DPC had started both the phases i.e. Phase-I Phase-II without obtaining necessary written permission from the Maharashtra Pollution Control Board in the month of January, 1 January, 2001 respectively. Therefore, M/s.DPC was directed to close down their

commercial production at that time and subsequently, allowed to restart it only after ensuring the compliance of the conditions of Consent to Establish. During the construction of the plant, there were known leakages from the day tanks of an unknown volume of Hydrocarbons during November, 1 8 to June, 1 . One complaint was received in the month of December, 1 from Mrs.Vaidya that her well got polluted and well water smells like diesel / kerosene. The complaint was primarily investigated by the Sub-Regional Officer of the Board at Ratnagiri and on the basis of his investigation he had called necessary explanation from M/S.DPC about the well water pollution. M/s.DPC had appointed M/s.GSDA for investigating the matter, but the GSDA was unable to find out proper source of well water pollution. Subsequently, M/s.DPC had appointed an Australian Expert Co. namely M/s.Golder Associates Co. to investigate the matter and the source of oil coming in the wells. M/s.Golder Associates Co. had submitted a draft report on Hydrocarbon contamination at spring water located at West side of M/s.DPC. It had reported that the Hydrocarbons appeared to be diesel or kerosene and were evident as a film or globules of oil on the surface of the well water. A second spring also shown traces of contamination. It was also reported that the spring water is being used for drinking water and irrigation by the village of Brahmanwadi. Therefore, M/s.DPC arranged an alternate water supply scheme for the said village and also installed an oil water separator to remove the free-phase Hydrocarbons from the spring water. It was specifically observed that the DPC is the only industry using liquid fuel in the area. Finger print analysis of the Hydrocarbons had been performed at an offsite Laboratory using Gas Chromatography (GC). The results indicate that the free-phase product observed in the spring water could be a mixture of diesel and a lighter fraction fuel such as Naptha. Diesel Naptha had both been stored in the day tanks. The Sub-Regional Officer of the Board at Ratnagiri also investigated the matter and reported that the construction of the Dabhol Power Project was being jointly developed by the M/s.Enron Corporation, the Maharashtra State Electricity Board and M/s.Bechtel Corporation in the State of Maharashtra. Phase-I of the project was completed in May, 1 8 and involved construction of 6 5 MW combined cycle power station fuelled by Distillate Naptha. Phase-II of the project with the capacity of 2400 MW fuelled by LNG.

Thereafter, Dr.Munshilal Gautam, the then Member Secretary of the Board extended personal hearing to M/s.DPC and its shareholders and on the basis of the above reports, encashed the bank guarantee of Rs.10,00,000/- and had issued show cause notice as to why they should not be prosecuted on account of above non-compliances and not taking any steps for restoring the quality of well water M/s.DPC its shareholders had filed replies stating that Mr.Donald Stermmer was a Non-Executive Director appointed by M/s.Energy Enterprises, Mauritius a 10% shareholder of M/s.DPC during all relevant period and was a permanent resident of USA. Mr.Kevin Walsh Mr.Peter Freeman for GE Capital Services Structured Finance Group, INC. replied that they were not involved either with management or administration of M/s.DPC. It is also stated that the present Directors do not have any access to the plant. They expressed their commitment to implement remedial measures, if require, to restore the alleged quality of well water. After going through the correspondence, it has been observed that M/s.DPC having 50% of the shares of Enron is the main violator. Various persons were incharge of the plant including Mr.Donald C. Stermmer.

Besides that, Maharashtra Power Development Corpn., a subsidiary of Maharashtra State Electricity Board having 30% of shares is also one of the violator and responsible for remedial measures. Similarly, after going through the report of M/s.Golder Associates, it has been revealed that M/s.Bechtel Corporation is one of the Developer and also involved in construction of Phase-I Phase-II, which is also responsible for the above leakages and was taking remedial measures at that time. M/s.Capital India Power Mauritius-I M/s.Energy Enterprises (Mauritius) Co. have been appointed on 4th June, 2002 and stated that they have been kept in dark about the leakage incidents and remedial measures. Therefore, the Board has decided to fix up responsibility upon the following shareholders 1) M/s.Dabhol Power Co. through its permanent Director 2) Maharashtra Power Development Corpn. through its parent company 3) M/s.Bechtel Corpn 4) M/s.Capital India Power Mauritius Co c/o M/s.GE Capital Services. Accordingly, show cause notices issued on 11/7/2005 to cause deposit US Rs.2,86,000/- or its equivalent in Indian Rupees with the Board towards the cost of remediation on the basis of report on water pollution at Brahmanwadi, Anjanwel, prepared by M/s.Thermo Retec Consulting Corpn. Submitted to the Board on

After issuance of show cause notice, the shareholders of M/s.Dabhol Power Co.Ltd. have deposited the following amount with the Board

1)	M/s.Maharashtra Power Development Corpn Ltd., Hong Kong Bldg., M.G.Road, Fort, Mumbai.	US 40469 INR 17,60,402
2)	M/s.Energy Enterprise Mauritius Company Street, 22nd Floor, San-Franscico, California CA 94111.	US 122755.50 INR 53,35,262/-
3)	Capital India Power Mauritius Company C/o M/s.G.E. Capital Services Structured, Finance Group Inc., 120, Long Bldg. Road, 30/22, Stamform, CT 06927.	US 122755.50 INR 53,32,807/-

27/3/2002, otherwise, to face prosecution.
After issuance of show cause notice, the shareholders of M/s. Dabhol Power Co.Ltd. have deposited the following amount with the Board

Since, a new company, M/s.Ratnagiri Gas Power Corporation was set up for revival of the major power project (formerly known as M/s.Dabhol Power Co.), one of the pre-condition was that before revival, all pending litigations must be closed. Dr.D.B. Boralkar, Member Secretary of the Board after a prolonged thought and a series of meetings at top level has decided to invoke the provisions of the amended Environment (Protection) Act, 1 86 under the Hazardous Wastes (Management Handling) Rules, 1 8 (as amended in May, 2003), which provides for levy of charges towards cost of remediation.

After receipt of the cost of remediation, the Board has appointed Mr.A.B. Ranpise, Jr.Research Fellow under the project of remediation w.e.f. 3rd October, 2005 for necessary monitoring to prepare preliminary report about the remedial measures. The work is in progress. Because of longstanding persuasion by Shri D.T. Devale, Sr.Law Officer of the Board at H , Shri G.S. Fulari, Sub-Regional Officer under the guidance of Dr.Munshilal Gautam, the then Member Secretary, Dr.D.B. Boralkar, the present Member Secretary and the then Principal Secretary, Environment Deptt., Govt. of Maharashtra, the Board could have able to decide finally the issue of pollution of wells and remediation successfully.

MILL LANDS IN M MBAI

1.Order passed by Hon'ble High Court of udicature at Bombay Ordinary Original Civil urisdiction in the PIL No.4 2 2005 filed by Bombay Environmental Action Group Anr.

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State of Maharashtra 31 Ors.

2.Order passed by Hon'ble Supreme Court of India in the Petition s for Special Leave to Appeal Civil No s .23040 2005 from the udgment Order dated 1 10 2005 in the rit Petition No.4 2 2005 of the High Court of Mumbai.

1 M s.Bombay Environmental Action Group Anr. had filed one Public Interest Litigation bearing rit Petition No.4 2 2005 at Mumbai on behalf of the residents of Mumbai to protect their interests and to improve the quality of life in Mumbai, which has stated to be drastically deteriorated during last 15 years. It is also said that the petition is filed to prevent further serious damage to the town planning and ecology so as to avoid an irretrievable break down of the city. The main ground for filing of the petition was that the amendment to the Development Control Regulations for Greater Mumbai ("The DC Regulations") carried out in 2001. The grounds of objections raised by the petitioner and the prayers can be summarized as under -

a. Under Regulation-58 of the Development Control Regulations, 1 1, as originally framed, the redevelopment of the mill lands area was permitted with the intention of using this otherwise unutilized land for public purposes, so that about 33% would be turned over to BMC for use as open space another 33% to MHADA Public Housing Public Sector Undertakings for their own housing and the remaining 33% would be retained by the Mill for development for commercial residential purposes.

b. It is DCR-58 that has been amended in 2001 and subject matter of challenge in the above petition. The amendment was brought into effect ostensibly to implement the recommendations made in a report of an Expert Committee appointed in 1 6, which recommended holistic planning integrated development in respect of the Mill land area. It is alleged that in drastically reducing the area available

for such development, the amendment to DCR-58 is the antithesis of such recommendations.

c. It is also stated that the amendment to DCR-58 is without jurisdiction and / or in excess of jurisdiction, a colourable exercise of power, a fraud on statute / power, illegal, unlawful, arbitrary, unreasonable is ultra-virus the provisions of MRTP Act Constitution of India.

d. It is contended that the effect of amendment to DCR-58 is that the city of Mumbai will be deprived of the opportunity of utilizing the available Mill lands for the urgent acute needs of the city, including inter-alia open space, mass-housing infrastructure.

e. It is also mentioned that DCR-58 allows for large tracts of erstwhile Mills land to be made available for private entirely commercial development in a piecemeal fashion, without any centralized planning for supervision and this was being done by reducing the total land available for redevelopment while ostensibly retaining the inter-se proportions of land utilization.

f. The petitioners therefore challenged the order dt.28/3/2001 and consequent amendment to DC Regulation 58, in particular, clauses A-6 and C-1(5) of the Schedule-1 of the said order dt.28/3/2001 as ultra-vires the MRTP Act, illegal, unconstitutional, void, ab-initio and non-east. The petitioner therefore pray for appropriate writ, order or directions striking down the said order dated 28/3/2001.

g. The petitioner also pray for order, directions or injunction restraining the Respondent No.1 2 (State of Maharashtra through Urban Development Deptt. Municipal Corporation of Grater Mumbai) from permitting any development / redevelopment of Mill lands and / or any construction thereon without environmental clearance under the EA Notification dt.27/1/1 4 as amended on 7/7/2004 and/or in violations of the terms conditions of such clearance as well as from granting any permission under DCR 58 on the basis of the purported clarification dated 28/3/2003.

Maharashtra Pollution Control Board had been added as the Respondent No.20 in the said petition. The Board had filed its preliminary affidavit on 18/8/2005 through the Sub-Regional Officer and I/C of Regional Office-Mumbai, giving the details of the legal requirement and the procedure being followed by the Board in conducting public hearing as per EIA Notification, 1 4 as well as the legal requirements of the Notification dt.7/7/2004. The Board has also furnished the details about the applications received from the project proponents seeking environmental clearance and the steps taken by the Board on the said applications for conducting public hearing. The statement indicating the status of compliance of the Notification in respect of 17 construction projects was also submitted alongwith Affidavit dtd.18/8/2005.

Thereafter, during the hearing of the matter on 24/8/2005, the Hon'ble Court considered the status of compliance of Notification in respect of 17 construction projects and directed the Maharashtra Pollution Control Board to visit all 56 construction sites in Mumbai and submit full report in respect of compliance of the environmental regulations, issuance of Intimation of Disapproval (IOD) and Commencement Certificate (CC) issued by the Municipal Corporation of Greater Mumbai (MCGM) and present status of development work on site. The Board had carried out the inspections of all 56 Mills in Mumbai through its officers (Shri S.S. Doke, Regional Officer(P P), Shri G.N. Mohite, the then I/C Regional Officer-Mumbai, Shri B.D. Wadde, the then Sub-Regional Officer-Mumbai, Shri I. H. Thakre Shri D.P. Waghmare Field Officers at Mumbai Shri S.B. Patil, Field Inspector). The Board has prepared the report on construction projects on Mill lands in Mumbai (August 30, 20005) under the guidance of Shri A.B. Jain, Sr.Law Officer and Shri R.V. Govilkar, Sr.Counsel of the Board. The report was submitted to Hon'ble High Court of Judicature at Mumbai in the above petition alongwith copies of Affidavits filed by the Board on 18/8/2005 and Additional Affidavit dt.1 /8/2005.

After hearing all the Respondents for a considerable time, Hon'ble High Court of Judicature at Bombay, Bench at Mumbai (Coram Dr.S.Radhakrishnan S.C. Dharmadhikari, JJ.) delivered a comprehensive Judgment Order dt.15/ /2005, which was pronounced on 17/10/2005. While passing Judgment Order, the Hon'ble High Court had observed as under

a. MCGM has not ensured at the time of sanctioning the building plans the provisions of public amenities as per DCR 27, which is also made clear in DCR 58. MCGM very candidly admits that non of the developers are providing any "public amenities" as per its Affidavit dated 15/ /2005.

b. MCGM took no steps whatsoever with regard to the compliance of EIA Notification until the Court directed during the final hearing of the above petition. In spite of our categorical directions,

MCGM filed an Affidavit only on 15/ /2005, giving vague particulars of "Green Areas" without clearly indicating "Public Greens" "Private Greens"

c. MCGM has not ensured that all the Mill owners should provide free housing of 225 sq.ft.to the occupants, and in reality non of the sanctioned plans provide for any housing for Mill workers / Occupants, though mandatory it ought to have been provided under DCR 58 (7).

d. MCGM has not ensured surrendering of lands for "Open Spaces" and "Public Housing" as per amended DCR 58, at the time of issuance of Commencement Certificate. MCGM ought to have ensured such a physical surrender, while issuing such a commencement to the Developers, making it clear that only after such a physical surrender of such lands earmarked as "Open Spaces" and "public housing", any construction can commenced.

e. Neither the Bombay Municipal Corpn. nor the State of Maharashtra took any steps to ensure strict compliance of the EIA Notification. Even the Maharashtra Pollution Control Board was lackadaisical in its approach for strict implementation of the said Notification. Virtually, all the three Respondents had abdicated their legal obligations and duties in implementing the aforesaid EIA Notification.

f. Even, the so called public hearing conducted by the Maharashtra Pollution Control Board as per EIA Notification was not at all satisfactory. Such a hearing must be held after a sufficient notice prominently published in Newspapers with wide circulation. MPCB should also utilize the Television Media, to give proper publicity regarding such public hearing. The main objective of the public hearing is to know all kinds of objections, so as to take a fair decision.

g. In view of the facts disclosed in the case and in view of the totally casual lackadaisical approach by MPCB, BMC State of Maharashtra, it would be just proper if public hearings are conducted by the MoEF, GOI itself and not to delegate to the State Pollution Control Board, in view of the enormity of ecological balance and environmental degradation, having regard to the "Precautionary Principle" "Sustainable Development".

The Hon'ble High Court therefore directed the Respondent No.1 i.e. State of Maharashtra to take immediate remedial measures with regard to all the aspects, as MCGM has completely abdicated all its basic functions. The Hon'ble Court has come to the conclusion that DCR 58 (1) (b), "Open lands" would include lands after demolition of structures. Clarification dated 28/3/2003 is clearly violative of Section 37 of MRTP Act Article 21 of the Constitution of India. However, the issue as to whether amended DCR 58 is contrary to Section 37 of the MRTP Act or Article 21 of the Constitution of India has kept open by the Hon'ble High Court. But, Hon'ble High Court clearly observed that all constructions carried out by various developers are clearly in violation of EIA Notification, 1 4 as amended on 7/7/2004, as admittedly none of them have obtained clearance from Ministry of Environment Forests, Govt. of India (MoEF, GOI). It is also held that all sales of Mill lands carried out by NTC are clearly contrary to the Hon'ble Supreme Court's order dt. 27/ /2002 11/5/2005 and contrary to the sanctioned BIFR schemes.

2 The Bombay Dyeing Manufacturing Co.Ltd. had filed petition for Special Leave to Appeal before Hon'ble Supreme Court of India, challenging the validity legality of the Judgment Order dt.17/10/2005 passed by the Hon'ble High Court of Judicature at Bombay, Bench at Mumbai on the ground that the Public Interest Litigation not maintainable on account of Waiver and/or Acquiescence on the part of the Respondent Nos.1 2 (original petitioners) and contended that

a. Hon'ble High Court erred in non-dealing with the petitioners' submission relating to the Waiver and/or Acquiescence on the part of the Respondent Nos.1 2 (original petitioners).

b. The Respondent Nos.1 2 filed the petition before Hon'ble High Court as a Public Interest Litigation and not as a person or body directly affected, did not raise any suggestions or objections when the State Govt. called for the same in relation to the proposed amendment of DCR 58 of 1 1 by issuing separate 3 public notices as required under the provisions of the Maharashtra Regional Town Planning Act, 1 66. Even prior to the issuance of the said public notice, the entire issue relating to the said amendment was in public domain and articles relating to the same had appeared in various newspapers from the beginning of 2000. The State Govt. received 24 objections and suggestions in pursuance of their public notice, which are considered before issuing amendment but the Respondent Nos.1 2 have not filed any objections.

c. Delay / latches of the Respondent Nos.1 2 at

least for four years unexplained and therefore, the Hon'ble High Court erred in holding that writ petition can not be dismissed solely on the ground of delay latches.

d. Hon'ble High Court failed to appreciate that Respondent Nos.1 2 have categorically stated that the meaning purport of amended DCR 58 of 2001 was crystal clear to them when the same was brought into force in March, 2001.

e. Hon'ble High Court failed to appreciate the chronology of events.

MPCB had filed Affidavit in Reply on behalf of Respondent No.27, stating that the projects fulfilling the criteria laid down in the Notification are required to follow the procedure as laid down under EIA Notification of 1 4 as amended. The projects, which are undertaken prior to the issuance of Notification and where the work has come upto plinth level as on 7th July, 2004 are not required to obtain environment clearance from MoEF, GOI. Besides the criterias laid down in the Notification, no further guidelines have been issued by the MoEF, GOI. As far as the city of Mumbai is concerned, the Municipal Corporation of Greater Mumbai(MCGM), Mumbai Metropolitan Regional Development Authority (MMRDA), Slum Rehabilitation Authority (SRA) are the Planning Authorities under the Laws pertaining to the Town Planning. All the projects of construction whether residential or otherwise are required to be submitted to the concerned Authority and the plans are sanctioned by such Authorities as per the DC Regulations.

As far as the MPCB is concerned, it is not a Planning Authority having powers to sanction or approve plans for construction of any residential, non-residential, commercial or other projects. Therefore, the magnitude, the scope, the nature the status of any construction project was not brought to the notice of the MPCB by the Town Planners or the Project Proponents, unless until any specific project is announced, which needs assessment of environment impact under the relevant Notification dt.7/7/2004 and application is made to the MPCB, otherwise, there is no occasion for MPCB to deal with it. As far as the MPCB is concerned, it is entrusted with the task of holding public hearings, to gather facts information for and against the proposed construction projects and as per the directions / instructions / guidelines issued by the MoEF, GOI, the role of the MPCB is restricted to gathering information through the public hearing and submitting report to MoEF, GOI for further assessment, verification subsequent grant of environment clearance. The Authority to grant environment clearance is with MoEF, GOI.

It was also brought to the notice of the Court that though there were allegations about new construction projects having concerned on the land belonging to the Textile Mills, without getting the clearance/permission from the MoEF, GOI, since non of these new construction projects were brought to the notice of the MPCB, the knowledge about the new construction projects at some sites was not available with the Board. Since, most of the project proponents not approached to the Board and applied to the Board for public hearing, there were no further steps or procedure of public hearing. However, subsequently the Board had appointed a team of Technical Officers and accordingly, carried out an extensive survey of 56 Mills and submitted a detailed report to Hon'ble High Court. The Board had also given wide publicity in the Newspapers about the EIA Notification and public hearing.

Regarding the observations of Hon'ble High Court in the Judgment Order dt.17/10/2005 about MPCB, the Board has submitted that

a. MPCB not being a Planning Authority did not receive any information or intimation with regard to any new project, which would be covered under EIA Notification dt.7/7/2004, it would have been facilitating of the Planning Authorities not to proceed any further sanctioning of the plans for new constructions unless until the requisite clearance was obtained from the MoEF, GOI.

b. It is primary responsibility of the project proponents to comply with the regulations as may be applicable to them. Had all the project proponents acted in pursuance of the Notification, the MPCB would have been seized of the matter and the procedure for conducting public hearing would have been adopted. Initially, only one project proponent amongst the Mill Land Owners applied for public hearing and consent to establish. However, subsequently after MPCB survey, all of them have applied for public hearing.

c. MPCB had given wide publicity in the newspapers by issuing public notices informing about the project, date, venue time of public hearing and also put on the official website of the MPCB. Further copies of relevant information kept in public offices like Environment Deptt., Govt. of Maharashtra, concerned Dist.Collector Regional Office of the Board. Total 43 public hearing have

been conducted and reports are submitted to the MoEF, GOI. MPCB has followed procedure in EIA Notification.

d. As far as new construction projects for residential purposes were not within the sphere of the activities of the MPCB for assessing the environment impact as compared to the industrial project. In case of industrial projects, before any project would take any steps for establishment, it required to obtain consent to establish and then consent to operate. Therefore, MPCB know the magnitude and status of industrial projects as compared to the residential construction project. The stages of consent to establish and consent to operate the industrial projects are not applicable in case of residential project, unless covered under EIA Notification dt.7/7/2004

e. It is further humbly submitted that there was no abdication in any manner whatsoever by the MPCB in discharging its legal obligations and duties in implementing the EIA Notification dt.7/7/2004. Therefore, it was prayed that the observations in paragraph 266, 267 268 in the High Court Judgment dt.17/10/2005 are not justified on the facts available and may be reviewed and reconsidered appropriately.

Hon'ble Supreme Court of India granted permission to file SLP and issued notices to all the Respondents. As agreed to by the Learned Counsel appealing for all the parties, it was decided that the matter should be disposed off finally as expeditiously as possible. Initially, no interim order for stay was granted. However, after hearing the Learned Counsel for the Parties on the grant of interim relief, Hon'ble Supreme Court directed stay of the operation of para 28 (e) of the High Court's Judgment Order dt.17/10/2005 on 14/12/2005. The interim order passed subject to the condition that

1. The interim order shall be at the risk and costs of the applicants'.

2. The petitioners may file applications for grant of sanction of building plans and / or pursue the matter further, if such applications have been filed with the MCGM or any other statutory Authorities, as the case may be.

3. They may in the event building plans are sanctioned, file appropriate applications for environmental clearance and the same may be processed by the appropriate Authorities.

4. Any further construction and / or creation of any third party rights by the Mill owners will be at their own risk wherefore they would not claim any equity whatsoever and further more the same shall be subject to the orders of the Court.

5. However, any new application for grant of approval of any layouts, issue of IODs or Commencement Certificates may be processed but no constructions shall be carried on pursuant thereto or in furtherance thereof. While passing orders on the applications for sanction in cases of the applicants, who are affected by clause (e) of the Judgment, the Planning Authority shall proceed on the basis of DCR 58 as amended in the year, 2001 and as clarified by the State of Maharashtra, is in force and not in terms of the Judgment Order dt.17/10/2005.

6. The applicants may carry on with the demolition works on the property and may for protection of their lands raise boundary walls.

Recently, Hon'ble Supreme Court of India allowed Special Leave Petition and upheld the amendments made by the State Govt. in DCR 58 in the year, 2001. The Judgment Order is yet to be received.

MITHI RI ER CASE

Order passed in the PIL rit Petition No.2116 2005 filed by

Shri Kirit Somaiya

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State of Maharashtra Ors.

Mr.Kirit Somaiya, EX-MP has filed the above Public Interest Litigation with a view to bring to the notice of Hon'ble High Court the abject apathy and utter negligence on the part of the Respondents to deal with the problem of Mithi river pollution and the lapses omissions on the part of various Authorities while dealing with the illegal encroachment and unauthorized units, which have reduced the Mithi River to a gutter nullah. The following facts are brought to the notice of the court in the petition.

a) It is stated that he has taken up the issue of large scale pollution of Mithi river, which caused constant floods on many parts of the constituency with Govt. Authorities. He had lodged a complaint with the Central Pollution Control Board informing that the Mithi river adjoining the Mumbai Airport flowing from East to West has become gutter nullah.

c) All the nearby industries throwing their garbage in the Mithi river. MCGM has also failed to treat the sewage water, which flows in the Mithi river was itself over-polluted. He had several personal

meetings with the other Authorities to discuss pursue the matter, but, no concrete steps are taken till date. Unprecedented rain falls on 26/7/2005 received by the city of Mumbai, submerged several portion of the city of Mumbai. The worst affected areas were in around Mith river.

d) The total inaction on the part of the Respondents not responding to the reports, recommendations, directions correspondence to remedy the pollution of Mithi river, even after a period of almost 2 years is unjust and unpardonable, inter-alia, because such delay is causing tremendous loss of life, livelihood, property, health hygiene to thousands of citizens of Mumbai, living in around the areas through which the Mithi river flows.

e) It is, therefore, contended that the lapses omissions on the part of the Respondents in not dealing with several unauthorized units encroachments have reduced the Mithi river to a "Gutter Nullah", shows abject, apathy towards the plight of the people living in around the areas through which the Mithi river flows and presents the constant danger of repetition tragic events ensuing heavy rain falls on 26/7/2005.

f) The petitioner therefore prayed for issue of a Writ of Mandamus or any other appropriate writ or direction, directing the Respondents to take concrete steps to implement their recommendations and directions made by the Govt. of India through MoEF and to remedy the large scale pollution of Mithi river in order to avert the future repletion the tragic events ensuing heavy rain fall of 26/7/2005 in Mumbai. Further to direct the Respondents to take appropriate steps for dealing with several unauthorized units and encroachments and stop them from discharging their sewage water in the Mithi river and properly treat this sewage, if any discharge in the Mithi river at all and to take all other appropriate steps for the purposes of the protection of the Mithi river. The petitioner also prayed for an appointment of a Court Commissioner to oversee, supervise superintend the work of Committee to be appointed consisting of senior officials of the Respondents to prepare a Plan of Action to clean the Mithi river and to deal with illegal encroachments expeditiously.

The Respondent-Board had filed an Affidavit in Reply to the petition through Shri G.N. Mohite, Sub-Regional Officer, Mumbai-1 and holding charge of Regional Office, MPCB, Mumbai on 30/8/2005, sharing the concern of the petitioner about pollution of Mithi river and the steps required to be taken for cleaning up of the river. It was brought on record that there are large number of unauthorized industrial units / traders, who are involved in reprocessing of waste oil/ used oil, manufacturing of grease from waste oil, storage, handling washing of drums and barrels containing toxic material in the vicinity of Mithi river, these unauthorized units are mainly located in the part of Dharavi, Mahim Kurla area and on the banks of Mithi river. It was also reported that besides the discharge of untreated industrial / trade effluent, large quantity of untreated sewage is also disposed off by the residents residing on both the banks of Mithi river and nearby areas, mainly, unauthorized hutment dwellers. It was further informed in the Affidavit that the Municipal Corporation of Greater Mumbai has not provided requisite sewerage system followed by sewage treatment plants for proper collection, conveyance treatment of sewage and there are many missing links, where sewage system is not placed or not functional including most part of Mithi river area. The Board had conducted survey of unauthorized / illegal units / traders, handling hazardous wastes oil / ferrous / non-ferrous scrap etc. in Kurla-Kalina Area in March, 2001 and identified 146 unauthorised industrial units / wastes oil/scrap traders carrying out their business on the banks of Mithi river. They were without proper license/s or NOC/s from the statutory Authorities. Some of them having the Shops Establishment License. The MPCB consent has not been obtained by these unauthorized illegal units. Since, these units are not in organized sector in the Mumbai Municipal Corpn. area, the MCGM to initiate legal action against these units as they directly or indirectly pollute Mithi river by way of washing drums throwing the oil sludge etc. MPCB also brought on record the observations regarding the water quality on the basis of the monitoring carried out in the year, 2001 2002, stating that the water quality was totally contaminated. The joint inspection was carried out by the MPCB with the CPCB in March, 2003, wherein it was observed that the nearby unauthorized industries are throwing garbage in the Mithi river, MCGM had diverted nullah carrying Municipal sewage in the Mithi river resulting in contamination of the river water. The pollution was being caused by illegal activities such as oil processing, drum washing on the river's stretch from Kurla-Mahim, having tidal influence. The joint team recommended that a detailed survey has to be repeated to identify additional unauthorized units and to prepare a fresh / updated list of polluters, to clean the river, stop pollutional discharge, to provide adequate suitable STP and a time bound

action plan for necessary implementation involving various concerned authorities like MCGM, Collector, Mumbai Suburb as well as MPCB.

Thereafter, MPCB engaged the expert services of M/s.Klean Environment Services Pvt. Ltd., Mumbai to monitor 20 points along the stretch of Mithi river, to collect analysis samples and submit report by June, 2004 on the Mithi river water quality, sludge quality quantity as well as short term long term measures to control pollution of Mithi river. M/s.Klean Environment Consultants Pvt.Ltd. recommended short term long term measures, i.e. immediate closure of all the unauthorized activities discharging wastes, provide proper garbage collection system to prevent dumping thereof into the river as short term measures and to plan for sewers on both the banks of the Mithi river with STPs at various locations, debris the entire length of Mithi river bed to improve its carrying capacity and to provide proper garbage collection stations for the benefit of hutment dwellers. It was proposed that further pollution of Mithi river was to be prevented and river was to be resorted to its original status with the help of MCGM , MMRDA, Collector, Mumbai Suburb. Similarly, from the CRZ point of view, it was suggested to discuss the issue with MCZMA and Urban Development Deptt., Govt. of Maharashtra. M/s.Klean Environment Consultants Pvt.Ltd. was further assigned the study with reference to identify illegal industries and unlicensed activities, discharging industrial waste into Mithi river, collection of samples and to prepare comprehensive report. The Board has come to the conclusion that there is an urgent need to take remedial measures for cleaning up of the river and to increase the carrying capacity of Mithi river for free flow of water.

Hon'ble High Court of Judicature at Mumbai had issued directions to the petitioner on 17th Aug.2005. Accordingly, the petitioner had placed on record a comprehensive action plan and also highlighted the original status of Mithi river along with the present status of the river as well as revival plan of the river. It was specifically suggested by the petitioner that the river can be revived provided the following steps are taken immediately.

(I) Prevention of dumping of solid waste.

(II) De-silting of the River

(III) Stoppage of encroachment of hutment

(IV) Control of domestic sewage

(V) Prevention of illegal oil processors and industrial manufacturing and processing units,

(VI) Widening of River, control of pollution and prevention of illegal diversions of the River by Air port authority and MMRDA.

The petitioner has suggested the actions to be initiated by the Air port authority, State Govt., MMRDA, Collector, Bombay Municipal Corporation and Maharashtra Pollution Control Board. The petitioner also recommended some directions in order to redress the problem of pollution and degeneration of the Mithi river caused by a variety of reasons such as the discharge of industrial effluents, oil, domestic waste, dumping, diversions etc. After hearing all the respondents, Hon'ble High Court directed the respondents to identify all illegal, unlicensed commercial units on the banks of Mithi river and issued following directions to the Maharshtra Pollution Control Board.

1) The Maharashtra Pollution Control Board to identify all illegal, unlicensed commercial units on the banks of Mithi River. The concerned authorities are directed to give them notices within ten days from the date of order passed by the Hon'ble High Court.

2) To take all necessary steps to ensure a check on the daily discharge of waste, effluents, dumping activities and prosecute the offenders under the provisions of the Environment (Protection) Act 1 86 and the Water Act 1 74.

3) To file reply affidavit within three weeks form the date issuance of the aforesaid order.

4) MCGM is also directed to ensure that no new encroachments or industrial activities on the river bank are permitted. No new licenses for industrial activities on the bank of river shall be issued without the permission of the Court. MCGM to ensure that adequate numbers of temporary latrines are constructed to avoid people using the river/its banks as a public toilet.

5) Advocate General was directed to inform the Court on next date of hearing what steps have been taken by the high powered committee. The petitioner's efforts on preparation of comprehensive action report appreciated by the Court.

The Board had filed the 2nd affidavit in compliance of the order passed by the Hon'ble Court dated 31/08/2005 about the steps and the actions taken by the Board, on 22/0 /2005, which are reproduced as under

a) It is brought on record that 8 teams consisting of 28 Technical Officers, 4 Senior level Officers (Scientific, Legal Technical) were constituted.

b) The teams started survey along the banks of the Mithi river from its origin i.e. Vihar Lake upto confluence i.e. the place where the river meets the sea at Mahim. About 160 units were identified which were carrying out their activities without consent or authorization from the Maharashtra Pollution Control Board.

c) The notices were issued with proposed directions to such units. After receipt of replies, the replied units were issued notices to attend the hearing. The units which have not replied to the show cause notices/proposed directions had been directed to closed down their activities M/s. Reliance Energy Ltd., and MCGM directed to disconnect electricity/water supply.

d) The Board has also issued directions to the Municipal Corporation of Greater Mumbai to take steps, actions to prevent, abate and control pollution.

It was further submitted to the Court that the area of survey along the banks of Mithi river is a vast stretch of land and longer time will be require to complete the survey.

Thereafter, Hon'ble High Court of Judicature at Mumbai directed on 03/10/2005 the BMC, the Collector and other concerned public authorities to ensure that unauthorized encroachments be removed in accordance with Law and also to ensure meticulous compliance of its previous orders.

The Board had filed third affidavit incompliance of the order passed on 31/08/2005 and 03/10/2005, giving details of further actions initiated by it against illegal, unlicensed commercial units on the bank of river. The Board had issued directions of closure to the unauthorized units after giving an opportunity of hearing. M/s. Reliance Energy Ltd. and MCGM were directed to disconnect electricity/water supply. It was specifically reported that since M/s. Reliance Energy Ltd. had not disconnected electric supply as per earlier directions, prosecution notice was issued to it. It was also reported that the survey work is being continued.

Hon'ble High Court directed Mithi River Development and Protection Authority (MRDPA) to file an affidavit by its order dated 22/02/2006. Accordingly, the Member Secretary and Project Director Dr. Vikas Sadanand Tondwalkar filed affidavit. Thereafter, Hon'ble High Court has passed order on 1/03/2006 and directed the Collector, Mumbai suburban districts to ensure the removal of 3600 encroachers having their structures within 30 meters width on either side of the river by 31/05/2006 and also to rehabilate them by that date. As regards the unauthorized industrial units identified by the Maharashtra Pollution Control Board, Hon'ble High Court directed the Board to take appropriate action including the closure of these industrial units as early as possible by observing the due process of law in that regard. Regarding the proposal of MRDPA to implement the Mithi river development works in two faces, Hon'ble High Court directed that the entire work which comprise of resettlement and rehabilitation of project affected persons, to be completed by 31/05/2006 and the work of deepening , widening and desilting of Mithi river shall be undertaken after the monsoon of 2006. Hon'ble High Court also directed the impediment of the Reliance Energy Ltd., as party respondent.

MPCB had filed its 4th Affidavit on 28/02/2006 through Shri. P. P. Nandusekar, the Principal Scientific Officer of the Board. In compliance of the orders passed by the Hon'ble Court on 31/8/2005, 3/10/2005 22/2/2006, giving the details of further actions initiated by the Respondent No.8 against the illegal, unlicensed commercial units on the banks of the Mithi river. The details can be summarized as under

a) The Respondent-Board has continued its survey and collected information about a list of unlicensed units identified by the MCGM and decided to follow the principles of natural justice by issuing the proposed directions first, then after receipt of the replies, to extend personal hearing to them and then to issue final directions including directions of closure disconnection to the unauthorized units.

b) Accordingly, proposed directions/show cause notices issued to the 200 unauthorized units. The 41 units which have not replied to the proposed directions, directed to close down their units with further directions of disconnection of electricity in case of failure. 66 notices unserved and therefore, it was decided to close down it till necessary documentary evidence about the compliance of notices produced.

c) The Respondent-Board also issued directions to the Executive Vice Chairman of M/s.Reliance Energy Ltd., Mumbai -55, directing him to disconnect electricity supply to all such units, which are operating without consent of the Board

in Khairane Road, Sakinaka, Mumbai, by giving them 15 days notice for producing consent documents of the Board and by following the principles of natural justice. M/s.Reliance Energy Ltd. communicated to the Board that the Board shall identify the industrial units located at Khairane Road, Sakinaka, Mumbai, which fall in the catchment area of Mithi river, a non-conforming zone and operating without mandatory consent / authorization from the Board.

d) Therefore, the Board has decided to conduct the survey of 855 consumers of M/s.Reliance Energy Ltd. and to identify unlicensed units and accordingly, identified 530 units operating without consent.

e) The Board has also issued directions to the MCGM to disconnect water supply to the unauthorized industrial units in the catchment of Mithi river, which are operating without consent of the Board on the Khairane Road, Sakinaka, Mumbai by giving 15 days time.

f) Besides that, the Board had issued show cause notices to 157 industrial estates about the compliance of the provisions of the Water (P CP) Act,1 74, Air (P CP) Act,1 81 and Hazardous Wastes (M H) Rules, 1 8 as amended from time to time. Out of that, only 25 industrial estates have submitted their replies to the Board and remaining 132 industrial estates given final directions to submit the names of the defaulting units in their industrial estates within 30 days time.

g) The Board has also engaged the services of M/s.Klean Environment Consultants Pvt.Ltd. for total survey and identification of the industries located in the catchments of Mithi river. The Draft Report submitted by M/s.Klean Environment Consultants Pvt.Ltd. identified 5700 units operating in Mithi river basin including the units identified by the MPCB MCGM. The finalized report of the said agency being submitted to the Mithi River Development Protection Authority for further necessary action. Since, the identified activities by M/s.Kale Environment Consultants Pvt. Ltd. is very large and the work is voluminous, it was submitted by the Board that one full-fledged technical personal for Mithi river alongwith supporting technical staff will have to be engaged.

h) The Board has also pointed out the necessity to make provision for common effluent treatment plant for all regular units being operated in the said area and situated in the industrial estates. However, the decision can be taken after finalization of the report by the Mithi River Development Protection Authority about providing CETP.

i) The Board has also pointed out that the Board has started receiving a number of representations / replies / objections with request to grant further time to comply with the directions as well as for shifting of their activities within 30 mtrs. on the banks of Mithi river and beyond 30 mtrs., the activities requested for granting them necessary permission / consent, since, Mithi River Development Protection Authority taken conscious decision to demolish the activities within 30 mtrs. from the banks of Mithi river. The Board has decided to refer the said proposal to the Mithi River Development Protection Authority for further necessary orders.

Thereafter, the Board has filed 5th Affidavit in compliance of the order passed by the Hon'ble High Court on 1/3/2006 after scrutiny of the 5700 identified units by M/s.Klean Environment Consultants Pvt.Ltd. The observations of the Board reported as under

a) The report has included not only industries, operations or processes generating effluents but also included private markets, motor garages, the residential complexes, convention centers, commercial complexes, hotels/eating houses, hospitals dispensaries as well as offices also.

b) The report also included industrial estates and other activities therein, such as, canteens tea stalls etc. in the said industrial estates.

c) The report covered not only the operations on the banks of river but also the operations, processes other activities in the catchment area of Mithi river, which covers from the origin of Vihar lake upto Mahim creek. It includes the activities identified at a distance less than 50 mtrs, 50 mtrs to 100 mtrs, 100 mtrs. to 200 mtrs, 200 mtrs. to 500 mtrs. and more than 500 mtrs.

d) It was specifically pointed out in the Affidavit filed by the Board that Mithi River Development Protection Authority has decided to remove the encroachment on the banks of Mithi river upto 30 mtrs. only and therefore, beyond 30 mtrs. from the banks of Mithi river, the activities will have to be regulated by grant of consent / authorization under the provisions of the Water (P CP) Act,1 74, the Air (P CP) Act,1 81 and the Hazardous Wastes (M H) Rules, 1 8 as amended form time to time.

e) Therefore, the Board has issued one public notice in the daily newspapers such as 'DNA', 'Maharashtra Times' in the month of March, 2006 directing all the industrial activities within the catchment area of Mithi river, which generates

liquid effluent, hazardous waste and gaseous emissions to file with the Board, the documents giving details about their activities including treatment disposal of their wastes, grant / refusal of consent/authorization from the Board within a week's time from the date of publication of the notice, failing which, their activities will be treated as unauthorized illegal and the Board will issue appropriate final directions.

It is also suggested that the encroachment upto 30 mtrs. on the banks of Mithi river will have to be first of all concentrated for taking action for shifting and then beyond 30 mtrs. for securing environment compliance.

The Board has thus filed five Affidavits giving the details about actions initiated by it and finally has reported that since, Mithi River Development Protection Authority has decided to remove encroachment upto 30 mtrs. from the banks of the Mithi river and MCGM is taking action for removal of such encroachment, it will be more appropriate to intensify actions upto 30 mtrs only for removal of encroachment and beyond 30 mtrs. to secure environment compliance. The Board has therefore given stay orders to the directions of disconnection of electricity / water supply beyond 30 mtrs. vide letter dt.12/4/2006 addressed to the Asstt.Commissioners, MCGM, Kurla Bandra, Mumbai and Dy.General Manager, M/s.Reliance Energy Ltd., Electric House, Santacruz (E), Mumbai-400 055. Since, the unprecedented heavy rains of 26th July, 2005, have created havoc in the catchment area of Mithi river, the issues raised in the above Public Interest Litigation are very much important and therefore, Hon'ble High Court is monitoring the implementation of action points decided by the various authorities including MPCB.

Shri R.V. Govilkar, Sr.Counsel is being assisted by Shri D. T. Devale, Sr.Law Officer and Shri S.K. Purkar, Law Officer as well as Shri P.P.Nandusekar, Principal Scientific Officer, Shri B.D. Kude, Regional Officer-Mumbai, Shri G.N. Mohite Shri B.D. Wadde, Sub-Regional Officers and other teams constituted by the Board to complete the survey and to take action in compliance of the various orders passed by the Hon'ble High Court.

ATER POLL TION BY

M s SOMAIYA ORGANIC CHEMICALS

Order passed in PIL rit Petition No.665 2004

Ramesh Namdeo Gorde

s

nion of India Ors.

Against M s.Somaiya Organic Chemicals

The petitioners, who are resident of different villages namely Wari, Shingave Sade, Tal Kopargaon, Dist Ahmednagar have filed Public Interest Litigation bearing Writ Petition No.665 /2004 contending that an inaction on the part of the Respondents Nos.3 to 5 (MPCB, RO-Aurangabad, MPCB SRO-Aurangabad, MPCB) in not closing down the Respondent No.6 (M/s.Somaiya Organic Chemicals Ltd., Sakharwadi (Wari), Tal Kopargaon, Dist Ahmednagar), which has been causing serious water pollution and has resulted into danger to the life of the citizens as well as crops is illegal, arbitrary violative of the Articles 14, 1 (1)(g) 21 of the Constitution of India. The petition is mainly filed on the following grounds

a) Most of the petitioners are small land holders and they grow different crops such as

Maize, Jawar, Bajra, Onion etc and they have been cultivating their lands and income from the said agriculture lands is the main source of their livelihoods. The lands are being cultivated by the petitioners either through well irrigation or water available from the river Godavari and/or otherwise.

b) The Respondent No.6 i.e. M/s.Somaiya Organic Chemicals ltd. has been established since long, however, slowly slowly had started manufacturing activities in the different fields including manufacturing of organic substances like acids, croton etc. It is also stated that the very process of manufacturing of the alcohol by the Respondent No. 6 has been causing serious pollution due to discharge of highly polluted effluent in the thickly populated area and thereby causing water, soil as well as air pollution. The Respondent No.6 is manufacturing Alcohol, Acetic Acid, Acetaldehyde, Sorbic Acid, New Croton Aldehyde and Ethanol.

c) The petitioners state that these chemicals are hazardous dangerous to the life of the citizens. The petitioners also stated in the petition that the villagers alongwith petitioners made application to the Sarpanch of the Respondent No.7 Village Panchayat on 30/8/2003 about pollution being caused by the Respondent-Industry, which has given rise to the problem of health hygiene of all the citizens and therefore, the Village-Panchayat should not give no objection for manufacturing of Croton Aldehyde, newly started product.

d) The Village-Panchayat had not given any No Objection Certificate to the Crotonic Acid plant.

e) The petitioners also informed the Manager of the Respondent No.6 industry that since 1 8- , the colour of the water has been changed to yellow and it is causing serious damage to the crops. There is a grave problem of drinking water. Therefore immediate action should be taken for prevention of the pollution of the water. But the Respondent No.6-Indutry has not taken any action for pollution prevention.

f) The petitioners also made an application to the soil survey and Soil Analysis Deptt., Ahmednagar for necessary reports of the soil as well as water and paid necessary fees. The said Deptt. has tested the water and soil and given report, stating that the water available in the well is not fit for the crops.

g) Since, the Respondent-Industry had not complied, the petitioner had to approach the Respondent No.3 to 5 i.e. the Maharashtra Pollution Control Board, its Regional Officer Sub-Regional Officer respectively. The petitioner pointed out that since long the polluted effluent is being discharged from the Respondent-Factory, causing pollution of water due to percolation, the well water is also polluted, the molasses is stored on the open ground and due to percolation causing serious damage to the well water and resulted into serious problem of drinking water as well as irrigation water, thereby causing damage to the crops.

h) It is also stated that the Respondent No.5 had not taken any action and therefore, the petitioner had no alternate remedy but to approach the Respondent No.8 i.e.the Dist. Collector on 5/5/2004 and also given applications to the Tahasildar and the Block Development Officer in respect of damage to the crops and danger to the life of agriculturist, because the main source of livelihood of the petitioners is the said crops and except agriculture occupation, they have no other source of income. Since, no actions are initiated by any Respondents the petitioner has to file the present petition.

The inaction on the part of the Respondents is illegal, arbitrary violative of the Articles 14, 1 (1) (g) 21 of the Constitution of India. The Respondent No.6 is manufacturing poisonous substances, which are dangerous to the life of the citizens. The petitioner therefore filed petition to call for record proceedings of the case, for issue of writ of mandamus or any other appropriate writ or directions in the nature of said writs, directing the Respondents to take immediate steps to close down the manufacturing activities and pending disposal of the petition, grant an injunction, restraining the Respondent No.6 from manufacturing the dangerous chemicals includes Croton Aldehyde etc. and discharging effluent.

Shri B.J. Nakate, the Sub-Regional Officer of the Board at Ahmednagar filed parawise reply to the petition on 26/10/2004, opposing the admission of the petition or interim relief sought by the petitioner, stating that

a. The Respondent No.6 has started manufacturing of industrial alcohol since 1 57. The Union of India through Environment Deptt., Govt. Maharashtra granted license to the Respondent No.6 and recently, Respondent No.6 applied for consent to manufacture Croton Aldehyde in 2003. No Objection Certificate from Village Panchayat Wari to set up new Croton Aldehyde Plant produced by the Respondent No.6.

b. The survey of soil by the Soil Survey Soil Analysis Deptt., Ahmednagar not connected with the Respondent Nos.3 to 5 but comes under State Agriculture Ministry and therefore, no comments about the same.

c. The Sub-Regional Officer visited the industry on 20/4/2004 and given instructions to the Respondent No.6 to take appropriate corrective measures. Thereafter, again visited on 1 /8/2004 and since, no steps taken by the Respondent No.6, it was directed to take immediate steps.

Thereafter, the Regional Officer, MPCB, Nashik reported non-compliance to the Respondent-Board for issuing appropriate directions and based on the said report, the Member Secretary of the Board issued directions u/s 33A of the Water (P CP) Act,1 74 and u/s 31A of the Air (P CP) Act,1 81 to closed down the manufacturing activities forthwith on 18/10/2004. Thus, the Respondent Nos. 3 to 5 had taken appropriate actions against the Respondent No.6-Industry. Hence, it was prayed to dispose off the petition on the face of record.

Thereafter, Shri B.J. Nakate, Sub-Regional Officer, MPCB, Ahmednagar filed an additional affidavit bringing on record the directions issued by the Respondent No.3 after extending personal hearing to the petitioner the Respondent No.6 on 8/11/2004. The directions issued on 1 /11/2004, directing not to restart the distillery plant till Reverse Osmosis Plant is completed in all respect and commission, to scrap all Solar Evaporation Pits by reclamation of the said area within 12 months time and to deposit 10% of the total cost of the proposed water supply scheme prepared by the Maharashtra Jeevan Pradhikaran for the said village on the basis of 'Polluter pay principle" laid down by

the Hon'ble Supreme Court of India in Vellor Citizens Welfare Forum V/s Union of India Ors.(1 6) as well as supply of drinking water to 4 villages and to co-operate with the committee appointed by the Board to monitor compliance of directions.

Thereafter, the petitioner had filed Civil Application stating that the Pollution Control Board, which had been inactive for long time, suddenly indicated that it had passed order of closure on 18/10/2004. Thereafter, the Hon'ble High Court heard the petition on 28/10/004 and directed that the petitioner should be heard and then the Pollution Control Board should pass the order. There was a serious mishap in the Respondent No.6-Industry on 28/10/2004, by leakage of poisonous gas and affecting a number of peoples. The petitioners were heard on 8/11/2004 and thereafter received a copy of the order not to restart the Respondent Industry issued by the Respondent Board on 1 /11/2004. It is contended that except issuing the notices since 1/6/1 5, B3/5/1 1/4/2000, no actions are initiated by the Respondent-Board. The Board is acting hand in gloves with the Respondent No.6 instead of discharging its function. Therefore, the petitioner proposed amendment in the prayer clause for declaring the order dated 1 /11/2004 passed by the Board as illegal, arbitrary violative of the Articles 14, 1 21 of the Constitution of India.

Shri P.K. Mirashe, Regional Officer of the Board at Nashik had filed an Additional Affidavit in March, 2005 on behalf of the Respondent Nos.3,4 5 respectively, giving details about the directions issued by the Respondent No.3 after extending personal hearing on 8/11/2004, as under

a. Since, the petitioner could not reach at the time of personal hearing extended on 2 /10/2004, the Board had extended personal hearing on 8/11/2004 to the Respondent No.6 industry and the petitioner. The Board had issued directions dt.1 /11/2004, which include not to restart the distillery till the River Osmosis Plant is completed commissioned, to scrap old lagoons within 12 months time but allowed to convert one Solar Evaporation Pit in an anaerobic lagoon for temporary storage, depositing of 10% cost of water supply scheme for the villages and supply of drinking water to those four villages.

b. Regional Officer carried out joint inspection with the representative of the Respondent-Industry and Sub-Regional Officer and found that Croton Aldehyde was not in operation and other chemical plants like Acetaldehyde, Acetic Acid were not in operation. The DT-RO-Plant for water recycle from spent wash has been completed in all respect by 28/12/2004 and the trials for these plants were carried out on 30/12/2004. The effluent stored in the lagoons was found to be feeded as input to the RO-Plant. The work of removing of Solar Evaporation pits near Godavari River was in progress. About 20% of the total 54 hectors of land under Solar Evaporation pits has been de-sludged and leveling was under progress. The industry started supplying drinking water to the villagers.

Thereafter, after hearing all the respondents, Hon'ble High Court admitted the petition by issuing the rule and observed that the Regional Officer, MPCB, Nashik had filed an Affidavit in compliance of order dt.28/4/2005 stating that the Respondent-Industry is completely closed its operation with regard to 6 plants commissioned therein. In the meantime, the Respondent No.6 stated that it does not have any other plant other than 6 plants mentioned therein at that place. However, the facts disclosed in the petition depict a very sorry state of affairs and therefore, the Director, NEERI, Nagpur to depute one of its senior Environmental Scientist to visit inspect from all the angles the polluting aspects and to report what precautionary measures have to be taken by the Respondent No.6 industry to avoid pollution. The Respondent No.6 to deposit a sum of Rs.1 Lakh on or before th May, 2005 towards the cost of inspection etc. The liberty is granted to move the Vacation Judge after receipt of report from NEERI's Scientist.

Thereafter, Hon'ble High Court (Coram S.P Brahme A.P. Deshpande, JJ) passed order dt.20/6/2005 and observed that it is not in dispute that in compliance of the statement made by the Learned Counsel, the manufacturing activities in all 6 plants has been stopped. Thereafter, NEERI was deputed to visit inspect the polluting aspects from all the angles. The report reveals that the distillery is the main source of pollution and the same constitute 0% of the pollution, whereas, the other 5 units at Sr.Nos. 2 to 6 constitute, together 10 % of the pollution. In view of this, it is proposed not to permit the

Respondent No.6 to carry on its production activity at Unit No.1 for the present. After adequate provisions are made to control pollution, it shall be opened for the Respondent No.6 to move an appropriate application in this regard for unit No.1. Though, prima-facie the Respondent No.6 could be permitted to commission manufacturing activities in the 5 units at Sr.No.2 to 6, it is not safe to pass an

order in that regard and therefore, MPCB to take appropriate decision in the matter. However, petitioners are permitted to make submissions before the Board. The Board has to expeditiously reach a decision in this regard. Then NEERI submitted its report dt.6/5/2005 before the Hon'ble Court. On the basis of NEERI report, the petitioner filed one Affidavit on 12/6/2005 stating that the report of NEEERI clearly indicated how the Respondent No.6 industry has been running the said unit without taking any precaution for pollution prevention and causing pollution. The Respondent No.6 to take appropriate steps as directed in paragraph 5 at page 30 onwards in the report. It is necessary to immediately reduce the production of alcohol as mentioned in paragraph No.5 of the report. The Respondent No.6 thereafter filed preliminary written submissions stating that the distillery plant has been closed since 8th August, 2004 and not operated since then. As per report, the treatment disposal arrangement provided by the Respondent No.6 industry for effluents generated from 5 other plants appears to be adequate. There are more than 550 families, which are dependent on the operation of the factory, which contributes a sum of Rs.3.50 Lakhs per day to the National Exchequer (Excise Duty, Sales Tax, Turn Over tax etc.). Therefore, requested to permit its operation.

Shri P.K. Mirashe, Regional Officer, MPCB, Nashik had filed an Additional Affidavit in October, 2005 on the basis of the visit inspection carried out by him on 8th th August, 2005 to verify overall compliance. He stated that the ambient air quality monitoring source monitoring at Boiler Stack, Acetaldehyde Plant Vent Acetic Acid Plant Vent was carried out at various places to know overall impact on ambient air quality. The five plants were in operation and DTRO plant was also found to be in operation though distillery section was found to be closed. About 50% of the Solar Evaporation pits were removed and one of the Solar Evaporation pits has been converted into pucca impervious storage tank for holding treated effluent. The results of samples collected from various wells including complainant found to be exceeding in spite of closure of distillery.

The petitioner thereafter filed Civil Application No.11102/2005 and made wild allegations against all the Respondents including Maharashtra Pollution Control Board stating that NEERI has submitted totally devastating report from which, it can be concluded that for more than 10 years period, the Board has been issuing notices but their officers not doing anything. Though the distillery is closed, the Reverse Osmosis Plant is not as per the requirement but has been set up just to show the requirement. The discharge capacity of RO Plant is 40 M3, whereas, the requirement is 1000 M3. Considering the inadequacy of the present installed capacity of RO, it is recommended that SOC should reduce its present capacity of alcohol production from1800 MT/ month to 00 MT/month. Similarly to reduce generation of spent wash from 00 M3/day to 400 M3/day till RO is completed for 00 M3/day. The permission for distillery should not be granted unless it comply with all the requirements.

Thereafter, Shri P.K. Mirashe, Regional Officer, MPCB, Nashik had filed a detailed Affidavit in November, 2005 denying all allegations against the Board and stated that the allegations made by the petitioner are personalized made with a view to prejudice the opinion about the Board. The Respondent Nos.3 to 5 strongly refutes the allegations. Since, the Respondent No.6 industry has already provided full-fledged primary secondary treatment facilities as per G.R. dt.2/4/1 6 and also provided zero discharge of waste system as per CREP and therefore, the request of the Respondent-Industry to restart can be considered subject to the conditions as may be necessary.

Thereafter, Hon'ble Court allowed the Respondent No.6 industry to continue its operation by its order dtd.24/11/2005 and observed that Mr.Devale, the Learned Counsel appearing on behalf of the Board referred to various Affidavits filed by the Board, giving details of various remedial measures, which have been adopted by the Respondent No.6 industry and the Board is satisfied that in future there would be no pollution. Thus, the Board has given its approval for starting of Unit No.1. Off-course, the efficacy and the effectiveness of the various remedial measures can only be assessed and judged after the unit starts functioning. Accordingly to Respondent No.6, it has taken all the steps to see that the distillery other units do not pollute the area, giving the details of all installations. Hon'ble Court observed that NEERI's Scientist also suggest that they could not assess the effectiveness of pollution control measures as the unit was closed on account of Court's order. The petitioner's Advocate Mr.Dhorde, stated that the Respondent No.6 has been guilty of causing massive pollution. A number of agriculturists have been affected on account of rendering their land unfit for cultivation. He also stated that in order to test efficacy and effectiveness of the remedial measures, the distillery should comply with the conditions mentioned in NEERI report. He again insisted to depute NEERI's Scientist to submit their preliminary

report. Hon'ble Court (Coram- P.V. Hardas and J. H. Bhatia, JJ) allowed the Respondent No.6 to continue their production activity of distillery subject to the conditions imposed by the NEERI. The matter is listed for further orders after 3 weeks.

The above matter is a unique example of wild allegations made by the petitioners in the Public Interest Litigations against not only the Pollution Control Board but also all the Respondents in spite of sufficient steps are taken by the Respondent-Industry to comply with all the norms. The reason can be old storages of lagoons in respect of spent wash, which have caused pollution in the surrounding areas, which was the prevailing practice at the inception in almost all the distilleries, not having acquainted with the most modern technology. It is after passing of the Environment (Protection) Act, 1 86 stringent uniform standards laid down for distilleries and now as per CREP (Corporate Responsibility for Environment Protection) Guidelines, zero discharge has to be achieved. Both the norms are fulfilled by the Respondent Industry. The Law Officer of the Board specifically pointed out judgment order passed by the Hon'be High Court dt.24/10/2001 (Shri B.P.Singh, CJ Dr.D.Y. Chandrachud, J) in the writ petition No.44/2001 filed by Janardan Pharande Ors V.s MPCB Ors., wherein , it was observed that it is not possible for the Board nor there is any technology to provide an overnight solution to their reclamation problem of lagoons, which is accumulated for years together. Shri D.T. Devale, Sr.Law Officer of the Board appeared in the matter and Shri P.K. Mirashe Shri B.J. Nakate as well as Dr.Mundhe, Sub-Regional Officer assisted him under the auspicious guidance of Dr.D.B. Boralkar, Member Secretary of the Board.

ANNEXURE 3-4

Public Hearing

Procedure of conducting Public Hearing

MoEF, GoI, has issued amendments to the EIA notification dated 27/01/1 4 as amended on 4-5-1 4. The Notification No.318 (E) introduces the procedure for conducting Public hearings for projects requiring environmental clearance from the GoI. The notification No. 31 (E) delegates powers of granting an environmental clearance to certain categories of power plants to the State Government.

As no administrative, financial and procedural outline has been given in the said Notifications for conducting the Public Hearing, the Board has therefore, laid down the following procedure for conducting the Public Hearings as decided in the 118th meeting of the Board held on 20-11-1 7.

1. Convener/RO/SRO should accept only completed applications for Public Hearings on Consent to Establish, with relevant documents such as reports on EIA, EMP, Executive summary (English and Marathi 20 sets of each) and C.D. thereof. In case of building construction projects additional information in questionnaires should also be enclosed.

2. Obtain the nominations of senior citizens from District Collector covering various facilities as a panel of senior citizens with a validity of 3 years. Also obtain willingness of each senior citizen in writing. A panel of about 20 such nominations shall be prepared and got approved from the Collector, so that the Board may invite three senior citizens out of this list.

3. Regional Officer/Sub-Regional Officer should prepare a comprehensive panel for Public Hearings as prescribed in the rules consisting of all relevant Government Dept. Local bodies, Sr. citizens (as obtained from Collector) for their jurisdiction and get it approved from the Board. This will save the time in obtaining the names. In case of elections, selection of public/elected representative the local bodies is not possible. In such case officers of the local body may be considered as panel members. Appointment order of the Public Hearing Panel will be issued by the Board.

4. Regional Officer/Sub-Regional Officer should decide the date, time and venue, and select the Public Hearing panel from the approved comprehensive panel as indicated in point 3 above.

5a. Convener should issue Public Hearing notice after receipt of order of Public Hearing panel and keep one set of application, EIA, Executive summary, EMP, etc. at various places as notified and also handover one set to panel members.

5b. Notice of Public Hearing and executive summary of the project should also be made available on the website of the Board.

5c. Notice of the Public Hearing of minimum size of 16 cm. 8 cm. should be published in the 2 newspapers (English and Marathi) having large circulation in the project area. This information may be obtained from the District publicity office.

5d. The Member Secretary of MPCB or his representative will be the Chairman of the Public Hearing panel.

6. Minutes of Public Hearing should be prepared by the convener and got signed by Chairman of Public Hearing and submitted, in duplicate, to Board office, along with application for Consent to Establish. The minutes will be placed on the website after submission to MoEF.

7. Convener is permitted to incur the expenditure for Public Hearing proceedings from Public Hearing fees upto 50%. For additional expenditure, approval from Member Secretary shall be required.

Above procedure for Public Hearing will be applicable to forthcoming projects with immediate effect.

ANNEXURE 3-5

CETPS in Maharashtra

1. CETP at Dombivali Phase I

To improve the creek water quality in the Kalyan area, the Board issued directions to CETP Textile, Dombivali, MIDC Ph I to upgrade and enhance the existing capacity of CETP from 14 MLD to 16 MLD. A task force committee was set up to do the needful. Accordingly, all 4 modules have replaced the 8 submerged aerators by surface aerators in the existing bioreactor. The aeration system has been augmented. About 264 air diffusers have been installed and commissioned. A civil contractor has been finalized and a letter of intent has been issued to construct two additional bioreactor and sludge drying pits. Tender documents for mechanical and electrical work have already been completed.

Accordingly the performance of the CETP and the quality of treated effluent has improved.

2. CETP at Dombivali Phase II

The CETP at Dobivali Phase II has a capacity of 1.5 MLD and is operating satisfactorily. This CETP serves the largely chemical dominated industrial sector in this region. The area comprises of 4 MSIs and remaining SSIs. It is proposed that this CETP will be clubbed with the Phase I CETP.

3. CETP Ambernath

- Chikholi Morivali CETP of 0.8 MLD is constructed and ready for commissioning involving 120 industrial units. It is a cluster of small scale chemical industries.

- CMA A small CETP of 0.25 MLD capacity is in operation. There are 33 industries and most of these are small scale industries who discharge to this CETP. The CETP is working satisfactorily.

4. CETP Badlapur

This CETP has a capacity of 8 MLD with 235 units discharging to it. It is an industrial cluster of chemical and textile units. 42 textile units are operating in this area. The CETP is working satisfactorily.

5. CETP at Butibori

The CETP at Butibori was commissioned recently. It is currently under stabilization (see Figure 3.7). In phase-I, 5 MLD effluent will be treated. MIDC Hingna will utilize the facility to treat the effluent of its members to the tune of 1 MLD. This will solve the problem of effluent discharge from polluting units into the nalla, which meets Wena River.

6. CETP Tarapur

In view of the rapid growth of the small-scale chemical units at the MIDC area of Tarapur, the proposal of CETP was worked out by Tarapur Environment Protection Society. This CETP with a capacity to treat 2 MLD of industrial effluent was constructed and commissioned in the year 1 4.

About 238 industries are members of this CETP. Primary treatment of effluent is done in factory premises it is collected and transported by tankers for further treatment to CETP. The CETP comprises of primary and secondary treatment facilities. Treated effluent is disposed into the sea through closed pipelines. However, the need for a larger capacity facility was felt. Hence, a proposal was put forward for a new CETP at Tarapur. The work of a new CETP with a capacity of 25 MLD is in progress. Primary treatment facilities have been completed and commissioned from 10th January, 2006. The work of clarifiers in the secondary treatment plant is completed and work of the aeration tank is in progress. Secondary and tertiary treatment units have been received at the site.

. CETP at MIDC Patalganga

15 MLD of industrial effluent can be treated in this CETP. The project cost is around Rs. 7 Crores.

. CETP at MIDC Roha

With a 10 MLD capacity, this CETP comprises of collection with free aeration, equalization, pH correction, PAC dosing, flash mixer, clariflocculator, aeration tanks, secondary clarifier, ozonation. Cost of the CETP is about Rs. 12 Crores. Actual effluent generation at present is about 8 to MLD. 52 industries have become members of this CETP. The CETP is complying with all parameters generally except COD and to some extent BOD. Inlet quality of effluent in CETP is within designed criteria.

. CETP at MIDC Mahad

The Mahad MIDC has developed industrial areas adjacent to River Savitri and River Kalu in the year 1 80. They have provided effluent collection and disposal facilities upto the saline zone of River Savitri at Ambet.

10. CETP at TTC MIDC Pawane

CETP at TTC was established in November 1 7 and was designed for 12 MLD capacity of effluent. This CETP was upgraded to enhance the total capacity upto 27 MLD. There are 425 small-scale user members, 55 medium / large-scale user members and 1 05 non-user associate members to the CETP. Treated and partially treated effluent is collected through closed underground pipeline network and brought to CETP. After secondary treatment, effluent is discharged through a closed pipeline of length 3.5 km. by means of gravity into the Thane Creek through submerged outfall. The sludge generation from the CETP is about 5 MT/Day and is disposed at CHWDF at TTC.

11. CETP at Talo a MIDC

CETP at Taloja is designed for 10 MLD capacity of effluent and is collected by means of a network of closed pipelines. The effluent quantity reaching the CETP is within the installed capacity in the dry season but in rainy season it is higher resulting in some quantity of untreated effluent being discharged, but due to the dilution factor of rain water the impact is not significant. CETP is in the process of increasing its handling capacity. Upgradation cost of the existing aeration tank by installing. Diffused Aeration System was Rs.1.25 crores. This was done in May 2005, which has resulted in maintaining the quality of treated effluent well within prescribed standards. HW generated from this unit is regularly sent to CHWDF at Taloja for scientific disposal. Treated effluent from CETP is disposed into the creek through gravity by a closed 7 km. pipeline. The blockage / breaking of treated and untreated effluent carrying pipelines is a cause of effluent entering into the adjacent rivers. Vigilance is maintained by MPCB, and any such incidence is brought to the notice of CETP officials and CETP staff is directed by MPCB to carry out repairs at the earliest.

12. Kurkumbh CETP

This CETP has a 1 MLD capacity. Kurkumbh MIDC area is declared as a chemical zone. 3 units are currently in operation in the area. CETP is not meeting the standards due to inadequate capacity. MPCB directed MIDC and concerned industries to upgrade CETP. Accordingly, Kurkumbh Environmental Protection Co-operative Society Ltd., is formed for further actions.

13. CETP at Solapur

This CETP, commissioned in 2003 is located in the Chincoli MIDC area of Solapur. Its design capacity is 1.5 MLD. 15 industries are members of this CETP. The treated effluent disposal system at this CETP is not yet ready.

14. CETP at Lote Ratnagiri

This CETP commissioned in 2003 serves the MIDC Lote area in Ratnagiri. It is currently in operation with a design capacity of 4.5 MLD. The treated effluent is collected through closed pipelines and disposed in Karambavane Creek, abut 7 km. from the CETP.

The concept of CET s was evolved to provide necessary assistance to this sector, wherein the wastes generated by a number of industries are brought together to a central place and treated. This scheme is implemented for the clusters of industries in Maharashtra Industrial Development Corporation areas as a part of the common environmental infrastructure for environment protection.

ANNEXURE 3-

Environmental Improvement Plans

ALANDI

Existing Environmental Scenario

I. Sewerage and Sanitation

The existing sewerage system in the town is inadequate and the sewage disposal is based on a septic tank system. A sullage scheme was developed and executed in the year 1 85 consisting of collecting sewer, sump well, dry well and sump house, pumping machinery, etc. The collecting sewer was laid along the left bank of the river and it received sewage sullage from the Bhagirath Nala and other parts of the town. However, the intercepting sewer is broken near the new bridge and the scheme is not functional now. The scheme had been planned to utilise the sullage water for agricultural purposes after primary treatment. A new intercepting sewer has been laid from behind the Samadhi Mandir near Dyaneshwar Ghat. The sewage and wastewater is let off in the Indrayani River near the old bridge.

The present resident population and floating population of Alandi generate about 2.5 MLD of sewage and 1.7 MLD of sullage. This is either disposed on ground or most of it finds its way to the Indrayani River. This has lead to pollution of the river and poses health risks to the residents of Alandi as well as downstream villages. The unhygienic condition of the river can cause epidemics during fairs and festivals when lakhs of pilgrims visit the town.

II. MS Management

Alandi Municipality carries out the collection and disposal of the solid waste. Total MSW generation at Alandi is 5 MTPD. During the Ashadhi and Kartiki fairs, about 5 lakh pilgrims stay in Alandi for 2 days. The waste generated during the fair season is estimated to be 30 tons during the two days. The collection of the waste is done twice a day and it is disposed at a designated dumping yard at Vishrant Vad on Vadgaon Road located at one kms from the town boundary. The site has an approximate area of 1500 sq. m. Alandi Municipal Council (AMC) does not have any primary collection system. The individual households dispose their waste into dustbins along the streets by their own means. The waste collected from the town is then transported to the dumping ground with a mini lorry (Tata 407) and a tractor having a capacity of 4 ton and 1 ton respectively. Each vehicle makes two trips daily. However, considering the bulk density of the solid waste as 0.35, the actual collection of the waste is only 3.5 tons per day.

The present management shows inadequate equipment and manpower for collection of daily solid waste. The existing solid waste dumping technique is unscientific. The waste is seen lying along the riverbanks and on the roadsides, which is not, only degrading aesthetically, but also is hazardous for public health. House to house collection of garbage is not done in Alandi. There is need to create awareness among the people for better solid waste management.

III.Traffic and Transportation

Alandi is connected to the District Head uarter Pune and nearby main urban centres through the Pune-Nashik NH-50 and a Major District Road (MDR). It is also connected to the Moshi village on the NH-50 by a road leading to Dehu, another religious town. Chakan, a village also situated on the NH-50, is connected to Alandi by a MDR passing through the town. Internally, the entire Alandi town is connected by various small roads and lanes. The internal roads are mostly 7 m wide. However, the effective width is significantly reduced due to roadside parking and shops. Also, the roads are irregular and have awkward shape. Roads in the Gaothan area are very narrow in width and are awkward in shape. Poor road surfaces quality, kuchha roads, resulting in wear and tear of vehicle tyres, slow traffic movement and dust pollution. Road encroachments effectively reducing the road width causing traffic jams and vehicular noise and air pollution. No planned parking areas in the town. Haphazard parking causes a reduction in effective road width and creating traffic hazards. Kuchha parking area results in dust pollution.

SHIRDI

Existing Environmental Scenario

I. Sewerage and Sanitation

Presently the sewerage scheme in Shirdi is in a limited area. The total length of the sewers is about 10 km. Sewage in some places is discharged to open gutters. The Sewage collected from the network also leads to the Laxmi Nagar Nala. Existing network covers less than 16% of the area of the town.

Sansthan has its own under drainage scheme for all its buildings and roads. The Sewage generated from the bhakata nivas, sulabh shouchalaya, sullage from septic tank are sent to through internal sewerage network.

Shirdi does not have any sewerage system or underground drainage facility. Due to absence of sewerage system there is a high risk of pollution of groundwater. The storm water drains are clogged and present a very unhygienic picture of the town.

II. MS Management

The Sansthan and the Municipal Council are both involved in the collection and management of the solid waste. Since Shirdi is a major tourist center the waste generated in the town would contain large quantities of organic waste. From the field survey it was observed that the solid waste from the town largely contains organic waste from religious offering and functions, flowers, food items, households and markets, commercial waste like paper, plastic, bags, etc. and inert material like sand, stones and silt from street sweeping and drain cleaning activities. An important source of plastic in the waste is from the offerings given in plastic bags and tea served by the Sai Sansthan Canteen in plastic cups. A conservative estimate from the officials shows that average 20 000 teacups are sold daily. These cups when disposed find their way into the solid waste.

As per the preliminary estimates and discussions with the officials, the solid waste generated in the town is about 7.5 MTPD, including that generated by the temple area. Out of this, only 4 ton of the waste is collected and transported. Thus, substantial quantity of the waste remains unattended. At present the municipal council dumps solid waste at a site on the Pimpalwadi Road near Rui Shivar. The site has an approximate area of 1.03 hectares. The Shirdi Municipal Corporation (SMC) has contracted a private agency M/s Clean Eco and Environment Developers Pvt. Ltd for converting the bio degradable waste to manure.

The company pays an annual royalty of Rs. 45,000 to the SMC for using the waste. No scientific disposal methods are being practiced at the site and the waste is just dumped in the open land. The site is also devoid of basic infrastructure facilities such as weigh-bridge, compound wall, etc. and watchman for monitoring vehicle arrivals. The Sai Sansthan dumps all the non-biodegradable waste on the SMC landfill site. The organic waste generated by the Sansthan is carried to the vermi compost plant at the New Bhakta Niwas.

The collection of solid waste needs to be improved considering that there is a substantial floating population visiting the town. The manpower allocated for collection, number of dustbins and other equipments are inadequate. House to house, collection of garbage is inadequate in Shirdi. There is need to create awareness among the people for better SWM.

III. Traffic and Transportation

Shirdi is connected to the District Head uarter Ahmednagar and nearby main urban centres through the Ahmednagar Manamad SH - 10. It is also connected to the villages of Pimpalwadi, Nandurkhi and Kankuri by Bitumen Topped (BT) roads. Internally, the entire Shirdi town is connected by roads and lanes. The internal roads in the gaothan are mostly 7 m wide, but the important amongst them such as the Palkhi Marg are being widened to m. Within the municipal limits, the width of the roads range between 3-30 m (10 to 60 ft). However, roads within the Gaothan area of the town are narrow by lanes and have a width ranging from 3 to 8 m (10 to 25 ft). The road surface is either concrete or bituminous in nature.

Traffic management in Shirdi is mainly governed by the flow and movement of pilgrims in the town. The SMC and the Sai Sansthan have taken up the improvement of important road and the work is under progress. This has considerably solved the immediate problems of traffic management in the town. The congestion on Ahmednagar-Manmad road due to through traffic, although the road has been widened to 30m wide 4 lane divided carriageway is a smaller issue. Most other important roads branch out from this road hence there are minor traffic problems at these junctions. The junctions are not evenly spaced due to which the situation becomes complicated with respect to traffic management.

SHANI SHINGNAP R

Existing Environmental Scenario

I. Sewerage and Sanitation

There is no existing sewerage system in the village and the sewage is disposed through septic tanks. Most of the wastewater is let into the Panas Nala near the temple. Underground drainages are provided within the Bhakta Nivas and Sulabh Shouchalaya buildings and other office building coming under temple administration. The total network of drainage work is approximately 360 metres. The capacity of the septic tank is about

10 lakh litres for each bhakata nivas. The supernatant overflows from the septic tanks are connected to the Panas nala. The sludge will be removed once in a year from the tanks and utilized for agricultural purposes as manure. The temple premises have got an underground drainage network for draining sullage and sewages. The sullage reaches the Panas nala and sewage to septic tanks. The network covered is only 0.2 sq. km out of Panchayat limit of 6.10 Sq. km, where the rest lands are mostly agricultural.

Shani Shingnapur does not have any underground sewerage system and sewage treatment facility. Individual septic tanks and dry latrines provide the disposal system for household night soil, while the domestic wastewater flows through the roadside drains into the nallahs and pollutes the watercourses. The Panas Nala in which the statue of Lord Shani was found is now being used for dumping sewage and solid waste. It is quite ironic that a place that should have been revered has met with such a fate. Recently 325m length of nala is covered by hum pipe. The number of public toilets considering the daily pilgrim flow of about 6,000 to 8,000 is inadequate.

II. MS Management

The main sources of solid waste in the village are the temple complex, household waste, and waste from shops. There are no industrial units within the limits of the Shani Shingnapur Grampanchayat. The Mula sugar factory is about 2 km from Shani Shingnapur, the organic from the factory is composted within the factory and bagasse is used for the boiler. Being a rural area a significant component of the waste is the agricultural waste but most of it is reused in the fields. The waste from the temple mainly consists of flowers, rui leaves, cloth pieces, food waste from the dining hall, and coconut waste. Oil offered to the lord is also an important component of the waste. At present 1.5-ton waste is collected in a tractor trolley and transported to a disposal site 2 km from the gram panchyat towards Amhednagar Aurangabad highway bypass. The area of disposal is 4.25 hectare. The waste is disposed by using the open dumping method. Some times waste is burnt in open air. The Grampanchayat does not have any staff for SWM. The temple trust has a total staff of 16 persons, of these 10 are on contract and 5 are permanent. There is one supervisor looking after this staff.

Presently, the solid waste is dumped on open land towards the Ahmednagar-Aurangabad highway bypass. This site is located outside the Grampanchayat limits towards east. It is about 2 km from the temple. The site is owned by the temple trust. At present 1.5 acres are being used for dumping. The site is surrounded by agricultural land on three sides and the Ahmednagar - Aurangabad highway approach road on one side.

Equipment and manpower for collection of daily solid waste is inadequate. Presently Shani Shingnapur Gram Panchyat is not collecting waste from house to house. The existing solid waste-dumping technique is unscientific. The waste is seen lying along the Panas nala and on the roadsides, which is not, only degrading aesthetically, but also, is hazardous for public health. House to house, collection of garbage is not done in Shani Shingnapur. Though a substantial amount of organic waste is generated, there is no composting plant in Shani Shingnapur.

III. Traffic and Transportation

Shani Shingnapur is connected to nearby main urban centres through the Ahemadnagar-Aurangabad SH-60 and MDR. Being a small village, Shani Shignapur shows a meandering pattern of road network. Most of the village roads are kutcha earthen roads with average width of 3 m. The village has grown organically over the years and hence many of its internal roads lack vehicle accessibility.

The Sonai and Ghodegaon road are the major traffic roads. The Shani Shingnapur- Sonai road connects to Nagar- Manmad Highway and Shani Shingnapur- Ghodegaon road connects to Ahmednagar- Aurangabad Highway. Mula sugar factory is 2 km away from Shani Shinganapur. During factory season (i.e. approx. from November to April) sugarcane loaded vehicles (like bullock carts, tractors and trucks etc.) pass through the main road. This is the same time when major festivals like Deepavali, Shani Amavasya fetch more pilgrims to the village. This causes hurdles in smooth traffic flow. The road network in Shani Shingnapur is about 8. 0 Km, of which 6.2 Km are BT roads, 0.5 km roads are water bound macadam roads and another 2.2 Km are kutcha earthen roads. The internal roads in the villages are kutcha. The surface condition of Ganeshwadi and Kangoni roads was reported as very poor.

Roads in the Gaothan area are very narrow in width and are awkward in shape. Poor road surfaces quality and kutcha roads, results in wear and tear of vehicle tyres. The kutcha parking area is the major cause of dust pollution in the area.

ANNEXURE 4-1

Training for MPCB Staff

Workshop Training and Seminar Attended by Officers/Staff of the Board (2005-2006)

Sr. No	Training Programme	Organi ed By	No. of Participant	Dates Venues
	Category Air			
1	Latest Air Pollution Control Technologies and its Performance Evaluation.	CPCB	02	Aug 29-Sep 2 , 2005 Dr. Ambedkar Institute of Productivity ,Chennai, Tel 26251808, 26254904, Fax 044-26254904, Email aipnpc vsnl.com
2	Selection, Design, Operation Maintenance of Air Pollution Control Equipment (A technical Update)	Engineering Staff College of India, Hyderabad	01	Nov 15-18, 2005 Engineering Staff College of India , Hyderabad,
3	Air Pollution Health Impact.	Indian Institute of Technology, Roorkee	03	23-24th ,2006 Indian Institute of Technology,
4	Ambient air quality monitoring	Envirotech Centre for Research Development	04	6-10 March, 2006 Envirotech Centre for Research Development
	Category Chemicals and Waste			
5	Two days workshop on Chemical Waste Incineration		01	April, 28 to 29,2005 CPCB, at Delhi.
6	Identification of Hazards and Assessment and Control of Risk and Hazardous waste Management respectively	National Safety Council., Tel 27579924, Fax 91-22-27577351.	02	June 28- 30,2005 and 10 -12 August,2005 Hotel West End, Mumbai
7	Environmental Statement including Waste minimization, Environmental Auditing and management system for pesticide industries.	Central Pollution Control Board, CPCB, Tel 22305792 22303717, Email cpcb alpha.nioc.in	02	Sep. 6-8, 2005 Jasmyan Hall, Vadodra
8	Hospital Clinical Waste, Hazard Management and Infection Control (Bio Medical Waste Management)	Indian Society of Health Administrators (ISHA), Dr. Sahani.	04	Sep. 19-22, 2005 Baba's Gyan Sarovar,Banglore,
9	Clean Technologies and Waste Minimization for prevention and Industrial Pollution.	CPCB	01	Punjab State for Council for Science Technology, Chandigarh., Tel 2795001/2792787 Fax 0172-2793143, Email info pscst.com
10	Municipal Solid Waste Management, Planning, Collection, Handling Disposal Options	Engineering Staff College of India Hyderabad	01	Dec 12-16, 2005 Engineering Staff College of India, Hyderabad
11	Management of Hazardous Chemical, Hazn, Hazop Risk Analysis	CPCB	03	Jan 19-20, 2006 Hotel Center point, Nagpur.
12	Hospital, Clinical Waste ,Hazards Infection Control	Indian Society of Health Administrators (ISHA), Bangalore.	03	20-23 Feb, 2006 Bangalore.

Sr. No	Training Programme	Organi ed By	No. of Participant	Dates Venues
	Category Water			
13	Water shed organization		03	Sagamner, Ahmednagar
14	Rain Water Harvesting and Ground Water Recharging including recycling and Reuse age of waste water. An overview of Water recources development Management with respect to importance of rain water harvesting ground water recharging.	National Water Academy, Pune., Tel 24380678/2380224, Fax 24380392, Email nwa man.nic.in	02	June 13 - 22 ,2005 National Water Academy, Pune.
15	Aquatic ecosystems- function and performance reaction on pollution and concepts for protection and improvement.	CPCB	01	Aug 6-10, 2005 Centre for Environment Nature Conservation (Nodal Training Institute), Patna, Telfax 0612-2687010, Email rcsinha1 indiatimes.com
16	Analytical Procedure for Water and Waste Water.	CPCB	02	Nov 28 -2 nd Dec., 2005 Indian Institute of Technology , Madras. Tel 2257 4157, Fax 2257 4152
17	Physical, Chemical, Biological Phenomena for Waste Water Treatment System.	CPCB	02	Indian Institute of Technology, Roorkee. Tel (0)-01332-285227, 279503, Fax 285545.
18	Alternatives in water pollution and urban sewage management, alternative paradigms	Centre for Science and Environment	01	16-18 Jan, 2006 Centre for Science and Environment, New Delhi
19	Maharashtra Water Resources Regulatory Authority (MWRRA) recently approved MWRRA Act. 2005	Yashwantarao Chavan Academy of Development Administration. (YASHDA)	05	30-Jan-2006 Yashwantarao Chavan Pratishthan Mumbai.
	Category GIS			
20	Use of Geographical Information System (GIS), Remote sensing (RS) Global Positioning System (GTS) Technology for effective professional skills.	Watershed Organisation Trust, Fax 0241-2451134, Email info wotr.org	03	Watershed Organisation Trust, Fax 0241-2451134, Email info wotr.org
21	GIS Application for Environmental Planning and Management..	Center for environmental science Engineering (CESE),IIT, Powai, Mumbai, Tel 022- 2576 7862, Fax 022-2576 4650, Email dikshit cese.iitb.ac.in	02	Aug. 29- to Sep. 2 2005, Indian Institute of Technology, Powai, Mumbai
22	Geo -Informatics , Remote sending , GIS Digital Image processing	IIEE ,New Delhi	02	20-24 th Feb, 2006 IIEE, New Delhi.

Sr. No	Training Programme	Organi ed By	No. of Participant	Dates Venues
	Category Technology			
23	Membrane Technologies for recycle and reuse of domestic and industrial effluents.	Indian Environmental Association. Tel 9322834965, Fax 22611961, Email iea hq yahoo.co.in	03	July 15- 16 , 2005 Centrum Hall, Mumbai
24	Clean Development Mechanism (CDM) Capacity building workshop for Indian project developers.	Winrock International India (WII) , New Delhi Institute for global Environmental Strategies ,Japan.	03	Sep 28- 29 .2005 Taj Residency, Ahmedabad. Winrock International India (WII) , New Delhi
	Category Analytical and Laboratory			
25	Analytical and Research application of gas chromatography	Vishwa Bharti Educational Charitable Trust. Tel (040) 27202831, Fax (040)27203613, Email vbtrust yahoo.com	01	Sep 30- Oct 1, 2005 Hotel Sai Prakash, Hyderabad
26	Laboratory Quality System Management and Internal Audit as per ISO/IEC-17025	CPCB	02	Nov. 14 -18 ,2005 National Institute of Training for Standardisation of Bureau of Indian Standards, Noida, U.P. Tel 0210-2402202-07, Fax 0210-2402202/203
	Category Others			
27	Transportation green house gas Project Development, Funding and Implementation. Utilization of alternative fuels in Indian transportation center.	United State Agency for International Development. (USAID) National Energy Technology Laboratory(NETL) , Tel 91-11- 24198000, Fax 91-11-24198612	02	June 15-16, 2005 Taj lands end, Bandstand, Bandra(W)
28	Development of strategic action plan for MPCB.	Maharashtra Pollution Control Board.	20	Sept. 24 -25 , 2005. YASHADA, Pune.
29	Determination of Toxicity Factor of Effluent from Pesticide Industries.	CPCB	02	Sep 26-27, 2005 Club House Conference Room ,Syngenta Ltd., Goa. Tel 9822128664(M), Fax 0832-2285873
30	40th Akhil Bhartiya Marathi Vidnyan Adhiveshan	Marathyi Vidnayan Parishad, Tel 2522 4714, 2522 6268, Fax 2522 6268, Email mavipa vsnl.com	02	Dec17-19, 2005 B.P.M School, Khar, Mumbai
31	Environmental Planning for Industrial Disaster Management	CPCB	01	Dec. 19 -23, 2005 Disaster Management of Institute, Bhopal. Tel 91- 755-2466715, Fax 91-755-2466653, Email dmibpl sancharnet.in

Sr. No	Training Programme	Organi ed By	No. of Participant	Dates Venues
32	Environmental Data Interpretation and Compilation Analysis, Presentation and Reporting.	CPCB	03	Jan 30- Feb 3 ,2005 Indian Statistical Institute ,Delhi Tel 51493966, Fax 51493968, Email skn isid.ac.in
33	Natural Recourses Accounting Concepts Problems	Regional Training Institute, Mumbai	02	Feb. 2-3, 2006 Regional Training Institute, Mumbai
34	Planning and Designing of Ecocities	CPCB	02	14-18 Feb ,2006 Centre for Environment Protection Training Research Institute, Hyderabad. Tel 9140 2300 1241, Fax 91 40 2300 0361
35	Environmental Impact Assessment - Methods and Procedures.	CPCB	01	Feb 27-March 3, 2006 Indian Institute of Technology, Roorkee. Tel (0)-01332- 285227, 279503, Fax 285545.
36	Lead Auditor Course on ISO 14001	Yashwantarao Chavan Academy of Development Administration . (YASHDA)	03	20-24 Feb, 2006 YASHDA
37	Planning Designing of Ecocides	CPCB	01	14-18 ,Feb, 2006 CPCB
38	Training Programme on Web Designing to M/s. Aptech		01	4 Months
39	Library Information Management Documentation	Environmental Recourses Unit (ERU) of Centre for Science Environment	01	20-24 th Feb, 2006 Centre for science Environment
40	State of Environmental Report (SOER) -Maharashtra	Yashwantarao Chavan Academy of Development Administration. (YASHDA)	27	24 Feb, 2006. YASHDA
41	Financial Management Accounting for Urban Infrastructure Projects	Engineering Staff College of India Campus, Gauchibowli, Hyderabad.	02	8-10 March, 2006 Engineering Staff College, Hyderabad.
	Total		**142**	

ANNEXURE 5-1

Institutions Funded by MPCB

List of Institutions / Organizations to which Financial Assistance was given for mass awareness programmes.

Sr No.	Name Address of Institute	Sub ect	Venue Date	Amount of Financial Assistance	Remar
01	Shri Swanad Lomate , Abhinav Natyadharma Pratishthan, Venkatesh Plaza, Opp. Vadekar Building , Landage Ali, Saswad, Tal Purandar, Dist Pune - 412 301	Documentary on "Water-Our Life" " Rain Water Harvesting"	16 -07-05	2,00,000/-	The pratisthan has produced a documentary film on rain water harvesting which is to be shown to students of various schools in rural urban areas of the Pune district.
02	Dr. D.K.Abyankar M/s. Maratta Chember of Comerse, Industries, Agriculture, P.O.No. 525, Tilak Rd. Pune 411 002	Workshop on Air Effluent Management solution for SMES	25-08-05 at Pune.	10,000/-	The workshop was conducted to understand the problems of "Small and Medium Scale Industries (SMI's) about air pollution generated by the industries around Pune and Pimpri - Chinchwad area.
03	Mr. Rajendra Tiwari Enviro Friend Institute, C-404, Silver Tower, Thakur Complex, Kandivili (E), Mumbai 400 101	Journal on Environment Awareness Activities	25-07-05	10,000/-	Focusing on special issues on Strategies for control of air pollution in Mumbai organized by MPCB NEERI.
04	Dr. P.S. Ramnathan Flat No. 6, Plot No. 24, Shri Narayana Soc. Raifal Range, Ghatkoper , Mumbai - 86.	Management of Bio Medical wastes"	August 2005	5,000/	Indian Society of Environmental Science and Technology organizing a seminar on BMW
05	Dr. V S. Sirwaiya Chairmen of Willson College, Chowpati, Mumbai 7.	National Conference of Management of Urban Vegetation	Sept. 23-24 th, 2005 at Mumbai.	25,000/-	This education Institute has organized conference focused on Urban Ecosystems.
06	Dr. Amaiya Kumar Sahu, NSWAI-ENVIS, Center, 25, Unique Industrial Estate, Veer Savarkar Marg., Prabhadevi, Mumbai 25.	Effect on Human Health due to Handling of Municipal Solid Waste Stream.	17 th Oct, 2005 at SNDT, Juhu, Mumbai.	10,000/-	The organization is studying on the impact on human health in the stream of MSW.
07	Dr. Vishwas Yewale President 3 , White House Society, Air Port Rd., Yerwada, Pune .411006	Jal-Dindi Abhiyan from Alandi to Pandharpur	14 TH Oct-25 th Oct, 2005, Pune.	40,000/-	It is a clean river committee Pune doing studies on river system and environmental cycles on river Indrayani and Bhima

Sr No.	Name Address of Institute	Sub ect	Venue Date	Amount of Financial Assistance	Remar
08	Shri V . Ramtirthkar M/s. Rotary Club of Pune, C/o. Muktangan English School, 44 Vidyanagari, Parvati, Pune 9	Conference on Urban Waste Management	Sept, 2005, at C/o. Muktanga n English School, Pune.	7,500/- 25,000/	It is a rotary club of Pune creating necessary awareness About recent amendments in the relevant legislations and the dissemination of information about latest technological development in disposal of urban waste.
09	Dr. Sukumar Devotta Director National Environmental Engineering Research Institute, NEERI.	Water and Waste Water Management	Jan 20-21, 2006, NEERI, Nagpur.	1,00,000/	NEERI Organizing International workshop on management of water waste water
10	Dr. K.C. Ghanta Co - Ordinator, Dr. Babasaheb Ambedkar Technological University.	Recent Advances in Environmental Management.	Jan 27-28, 2006.	10,000/	This course intends to update the participants on the recent techniques / technologies possible to harness industrial waste even to produce wealth from the waste.
11	Shri. Mangesh Dandekar President of Murud Janjira Nagar Parishad.	Exhibition based on Environment awareness programme.	23-25Dec. 2005.	1,00,000/	This cultural Festival is related with awareness programme on Environmental conservation Pollution control.
12	Kumar Kadam Mumbai Patrkar Marathi Sangh, Patrakar Bhavan, Azad Maidan, Mumbai -400001.	Workshop on “Environment “for the journalists in Mumbai Region.		1,00,000/	Environmental awareness for media persons
13	Dr. Sanjay Joshi, M/s. Enviro –Vigil, Chhatrapati Shivaji Mahraj Hospital Campus, Kalwa - Thane-400605.	National Seminar on Health Care Management.	17 th to 19 th April.	10,000/	M/s. Enviro – Vigil. is a working in the field of Bio medical waste as a part of campaign they want to develop mass awareness among the people about management of waste in collaboration with Thane Municipal Corporation.
14	Mr. Chandrasen Borhade President of M/s. Ranjai, 19, Sunder Sadan, Panmala, Parvati, Pune – 411 030.	Workshop on Pune and Solapur Action Plan.	27 th April, 2006.	10,000/-	This workshop on Pune and Solapur action plans and specially the safety aspects of handling LNG, CNG, or LPG powered autorickshaws and 2 wheelers.

GLOSSAR OF ENVIRONMENTAL TERMS

Abatement	Reducing the degree or intensity of, or eliminating, pollution.
Aerated Lagoon	A holding and/or treatment pond that speeds up the natural process of biological decomposition of organic waste by stimulating the growth and activity of bacteria that degrade organic waste.
Aeration	A process which promotes biological degradation of organic matter in water. The process may be passive (as when waste is exposed to air), or active (as when a mixing or bubbling device introduces the air).
Aerobic	Life or processes that require, or are not destroyed by, the presence of oxygen.
Ambient	Any unconfined portion of the atmosphere open air, surrounding air.
Anaerobic	A life or process that occurs in, or is not destroyed by, the absence of oxygen.
Biochemical Oxygen Demand	A measure of the amount of oxygen consumed in the biological processes that break down organic matter in water. The greater the BOD, the greater the degree of pollution.
Biodegradable	Capable of decomposing under natural conditions.
By-Product	A secondary or incidental product of a manufacturing process that may or may not be considered as a waste.
Cleaner Technology	"New or modified production processes generating significantly less pollution and/or waste and/or consuming less energy than conventional processes. May involve process-integrated abatement techniques to avoid end-of-pipe emission reduction" (EU definition other definitions of the term run along similar lines). Cleaner Production is often misunderstood as being equivalent to Clean(er) or Environmentally Sound Technology (EST). However, technology is just one element of Cleaner Production. Cleaner production additionally addresses human factors such as attitudinal change, methods, monitoring and management that ensure that technology is actually used in a manner that is environmentally sound. Note that the definition of cleaner technology includes the use of end-of-pipe technology, which does not play a part in the meaning of Cleaner Production.
Digester	In wastewater treatment, a closed tank in solid-waste conversion, a unit in which bacterial action is induced and accelerated in order to break down organic matter and establish the proper carbon to nitrogen ratio.
Disposal	Final placement or destruction of toxic, radioactive, or other wastes surplus or banned pesticides or other chemicals polluted soils and drums containing hazardous materials from removal actions or accidental releases. Disposal may be accomplished through use of approved secure landfills, surface impoundments, land farming, deep-well injection, ocean dumping, or incineration.
Disposal Facility	Repositories for solid waste, including landfills and combustors intended for permanent containment or destruction of waste materials. Excludes transfer stations and composting facilities.
Dissolved Oxygen	The oxygen freely available in water, vital to fish and other aquatic life and for the prevention of odours. DO levels are considered a most important indicator of a water body's ability to support desirable aquatic life. Secondary and advanced waste treatments are generally designed to ensure adequate DO in waste-receiving waters.
Effluent	Wastewater--treated or untreated--that flows out of a treatment plant, sewer, or industrial outfall. Generally refers to wastes discharged into surface waters.
Emission	Usually refers to fugitive or waste discharges from a process. Emissions are traditionally associated with atmospheric discharges. All such discharges are termed waste within the context of this manual.
Environment	The totality of circumstances surrounding an organism or a group of organisms, especially the combination of external physical conditions that affect and influence the growth, development, and survival of organisms.
Environmentally Sound Technology (EST)	See "Cleaner Technology"
Geographical Information System (GIS)	A computer system designed for storing, manipulating, analyzing, and displaying data in a geographic context.

GLOSSAR OF ENVIRONMENTAL TERMS

Groundwater	The supply of fresh water found beneath the Earth's surface, usually in aquifers, which supply wells and springs.
In situ	In its original place unmoved unexcavated remaining at the site or in the subsurface.
Industrial Waste	Unwanted materials from an industrial operation may be liquid, sludge, solid, or hazardous waste.
Influent	Water, wastewater, or other liquid flowing into a reservoir, basin, or treatment plant.
Open burning	Uncontrolled fires in an open dump.
Organic matter	Carbonaceous waste contained in plant or animal matter and originating from domestic or industrial sources.
Parameter	A variable, measurable property whose value is a determinant of the characteristics of a system e.g. temperature, pressure, and density are parameters of the atmosphere.
Pollution	Describes the presence of harmful, hazardous or detrimental constituents in an environment. A polluted environment describes a state that occurs when the assimilative capacity of the environment is exceeded, resulting in undesirable ecological changes.
Pollution Control	Pollution control, as opposed to pollution prevention, refers to the measures taken to control pollution within acceptable levels after it has been generated.
Pollution Prevention	Often used interchangeably with the term Cleaner Production. The distinction between the two tends to be geographic - pollution prevention tends to be used in North America, while Cleaner Production is used in other parts of the world. Both approaches focus on a strategy of continuously reducing pollution and environmental impact through source reduction - i.e. eliminating waste within the process rather than at the end-of- pipe. However, Cleaner Production includes the aspect of reduction of impacts and risks across the life cycle of a product, and in this sense is a more comprehensive approach than pollution prevention. Process Control The manner in which a production system's reliability and performance are ensured. Process control is crucial to operating efficiency, productivity and product quality.
Recovery	Defined as the extraction from a waste of some components which have a value in other uses.
Recycling	The use by one producer of a waste generated by another. Alternately, the producer generating and reusing the waste may be one and the same.
Regulation	Issued by a government agency, a regulation gives more detailed direction for implementation of a law.
Regulatory Costs	Also known as compliance costs, these are costs incurred to comply with national/federal/state/local environmental laws
Resources	An available supply that can be drawn on when needed. In the context of the environment, resources is a term used to cover water, energy through fossil fuels, metal ores, other raw materials which can be provided through nature alone.
Reuse	The repeated use of a "waste" material in a process.
Source Reduction	A term that is rather synonymous with Cleaner Production. Prevents the generation of wastes and environmental releases, as well as conserving natural resources. Includes both process and product changes. The six primary source reduction techniques are process efficiency improvements, material substitution, inventory control, preventive maintenance, improved housekeeping and in-process recycling.
Sustainable Development	Defined by the Brundtland Report (also known as "Our Common Future") as "meeting the needs of the present without compromising the ability of future generations to meet their own needs." The strategy of Cleaner Production is driven by the vision of sustainable development.
Unit Process	A discrete activity (production, processing or servicing action) that has distinct energy, labour and material inputs and outputs and can be considered separately for the purposes of inventory and analysis.

GLOSSAR OF ENVIRONMENTAL TERMS

Waste	Taken as a broad term to cover any non-product discharge from a process. Thus, it describes discharges in the gaseous, liquid and solid phases.
Waste Minimi ation	An approach introduced by the U.S. Environmental Protection Agency (USEPA). In this approach, waste and pollution reduction occurs on-site, at the source through changes of input raw materials, and/or technology changes, good operating practices and product changes. Compared to Cleaner Production, waste minimization is in one sense broader, in that it also includes off-site recycling of waste, but in another sense, it is narrower, since it does not cover product (re)design to minimize all life cycle impacts.
Wastewater	The aqueous effluents from a process that pass to drain or to storage.

Chapter - III

Protecting the State's Environment

As noted in Chapter 2, Maharashtra faces many environmental challenges that need to be addressed in order to protect the environmental and public health in the State. This chapter discusses the Board's responses to such impacts and adverse effects through a systematic approach that is iterative in format, so that the entire life cycle of pollution can be addressed. The Board monitors pollution levels in the different environmental media, and if needed, carries out special surveys and studies to better understand hot spots and problem areas. Inventorization activities are carried out to get a better picture of the quantum of pollution. The results of these activities lead to enforcement actions, which comprise of persuasion in most cases and legal action as a last recourse. Enforcement efforts often lead to actions by the violators to control and prevent pollution. Hence, efforts to develop common environmental infrastructure, conduct special projects, develop programmes, engage in partnerships and revamp policy based on the outcome of all previous steps follow. Overall this entire process from monitoring to policy development becomes a reiterative cyclic process.

3.1 Monitoring and Surve s

Monitoring serves several purposes. On one hand, it helps in assessing the quality of an environmental resource so that projects, programmes and plans can be developed around the existing situation to improve it. On the other hand, when such systems are in place monitoring can help in ascertaining the performance of the system and verifying the effectiveness of implemented control measures. Compliance with standards can also be determined. Sustained monitoring performed over a period of time helps in trend analysis, which can lead to development of short and long-term policies.

The Board therefore, monitors the ambient atmospheric environment as well as water quality in rivers, creeks and seas. In addition, industrial emissions and effluent are also monitored as is noise, especially during festivals. This section describes some of the Board's efforts at monitoring the State's environmental resources.

3.1.1 he Air Qualit Monitoring Program

A well-distributed monitoring network is essential in getting an overall view of the air quality in the State. The background information on concentration levels of specific pollutants such as oxides of sulphur and nitrogen, particulate matter and carbon monoxide, monitored through the network, can help MPCB make informed decisions on air pollution prevention and control.

High volume samplers (HVS) and mobile units are used in this effort in a network of fixed and mobile monitoring stations. The distribution of these is explained in Figure 3.1.

hat is monitoring

Monitoring takes many forms. Monitoring for air quality may be through fixed or mobile monitoring stations, while water quality monitoring may be performed in situ or samples may be taken and analy ed in laboratories. There are logistical issues that crop up with designing an effective monitoring programme such as determining the right locations to place monitors, ensuring that samples collected from the field are secured in an appropriate manner and transported securely for analysis with strict quality control on all aspects of the process. Only a well planned monitoring programme can provide the data one needs to make the right decisions.

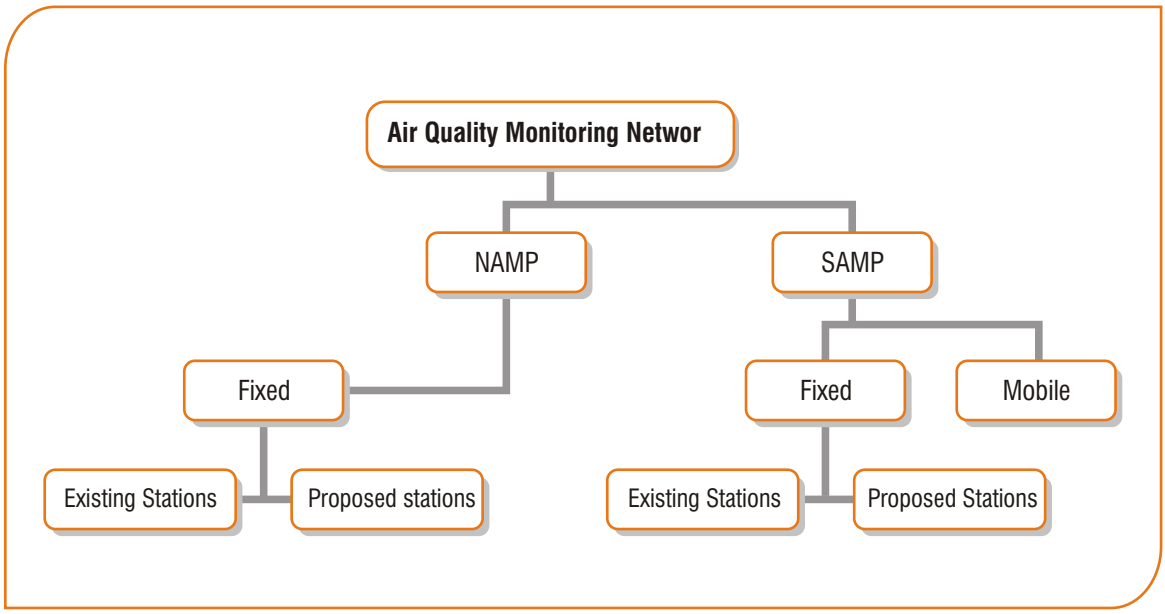

Figure 3.1 The Air Quality Monitoring Network

The mobile network comprises of mobile vans fitted with sophisticated instruments and computerized data recording systems procured by the Board. These vans have been allotted to 7 ROs. The Board's Central and Regional laboratories analyze these air samples.

In the fixed network, there are 28 stations to assess ambient air quality in the State under the National Air quality Monitoring Programme (NAMP) sponsored by CPCB. The cities of Pune, Aurangabad, Nashik, Nagpur, Chandrapur, Solapur, Dombivli and Ambernath have been covered under this project. The distribution of stations in these cities as well as the organization responsible for performing the monitoring has been laid out in Table 3.1. The table also includes stations that have been proposed to strengthen the air monitoring network. A more detailed distribution of how the network is to be strengthened is given in Table 3.2 and described in detail further on in this section. Figure 3.2 shows the locations of the air quality monitoring network in the State.

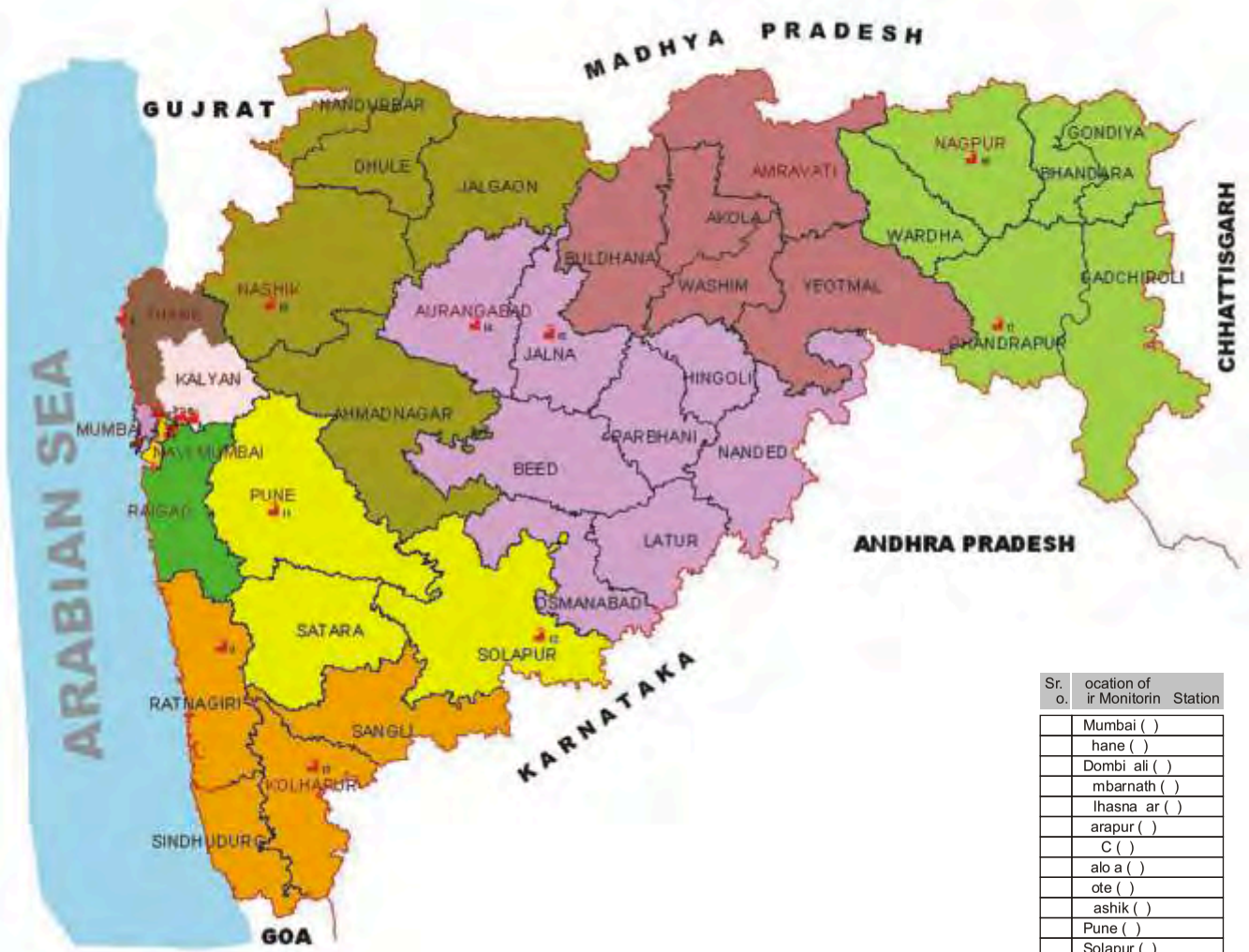

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Figure 3.2 Air Quality Monitoring Stations in Maharashtra

Table 3.1 National Air Quality Monitoring Program's Monitoring Locations

Sr. No.	Name of City	No. Of stations	Operated by	Remar s
1	Mumbai	3	NEERI	
2	Thane	3	Thane Municipal Corporation	
3	Pune	3	Pune University	
4	Nagpur	3	Vishweshrayya National Institute of Technology.	
		3	NEERI	
5	Chandrapur	3	MPCB	
6	Aurangabad	3	MPCB through Saraswati Bhuwan College, Aurangabad	Station were not in operations since more than 4 years. MPCB has recently strated these stations through SB College.
7	Dombivali-Ambernat	2	MPCB	Operational since Oct. 04
8	Nashik	3	KTHM College Nashik	
9	Solapur	2	Walchand Institute of Technology	
Total		**2**		
New stations				
10	Kolhapur	3	Shivaji University, Kolhapur	Operational since Dec. 04
11	Tarapur	3	MPCB	
12	Taloja	3	MPCB	
13	TTC	3	MPCB	
14	Lote (Chiplun)	2	MPCB	
Grand Total		**42**		

3.1.1.1 Proposed Strengthening of ational Air Qualit Monitoring et ork

The proposed strengthening of NAMP in Maharashtra is in line with CPCB's emphasis on the need to strengthen the NAMP network, specifically in mega cities, metro cities and important industrial areas. MPCB has conducted a detailed in-house exercise for identifying new stations for monitoring and prepared a proposal for strengthening the NAMP network in Maharashtra, which is presented in Table 3.2.

The strengthening also includes adding to the existing network of SAMP stations to support the NAMP. The activities under SAMP will be independently handled by MPCB.

orking Arrangements

The proposed strengthening of the 28 existing NAMP stations will be supported by CPCB by providing 50% matching contribution to MPCB for the operation and maintenance, of such stations in addition to the initial capital contribution.

The proposed SAMP for 31 stations will be managed by MPCB.

All these monitoring stations will be operated by MPCB through reputed educational/research institutions. MPCB will coordinate all activities of NAMP and will provide CPCB consolidated data for the State of Maharashtra. MPCB will also regularly supervise the operation of these stations and ensure quality control. MPCB also intends to provide a short training course to these institutes for effective operation of the stations.

Table 3.2 Existing and Proposed NAMP and SAMP stations for Maharashtra

Sr. No.	City	Existing NAMP	Proposed NAMP	Existing SAMP	Proposed SAMP	Total
1	Mumbai	3	3	1	6	12
2	Pune	3	3	2	0	6
3	Thane	3	0	0	0	3
4	Tarapur	3	0	0	0	3
5	Kalyan-Dombivali	1	1	0	1	3
6	Ambernath	1	0	0	0	1
7	Badlapur	0	1	0	0	1
8	Bhiwandi	0	1	0	1	2
9	TTC	3	0	0	0	3
10	Taloja	3	0	0	0	3
11	Panvel-Kalmboli	0	0	0	3	3
12	Lote	2	0	0	0	2
13	Roha	0	2	0	0	2
14	Kolhapur	3	0	0	0	3
15	Solapur	2	1	0	0	3
16	Chandrapur	3	0	1	0	3
17	Amravati	0	1	0	2	3
18	Akola	0	1	0	2	3
19	Aurangabad	3	3	1	0	6
20	Nashik	3	0	0	0	3
22	Mahad	0	2	0	0	2
23	Nagpur	6	0	1	0	6
24	Jalgaon	0	0	0	2	2
25	Ahmednagar	0	0	0	2	2
26	Sangli	0	0	0	2	2
27	Nanded	0	0	0	2	2
28	Latur	0	0	0	2	2
29	Dhule	0	0	0	2	2
30	Jalna	0	0	2	2	2
31	Ulhasnagar	0	0	3	2	2
Total		**42**	**1**	**11**	**31**	**2**

In addition to the NAMP/SAMP stations, the Board also monitors air quality through a network of 8 stations that are distributed throughout the State, such that 42 stations are placed in industrial, 23 in residential and remaining 33 in mixed commercial locations. Detailed breakup into these categories is cited in Table 3.3.

Table 3.3 Monitoring Stations of the Board

Sr. No.	Region	Monitoring Stations			Total
		Commercial	Residential	Industrial	
1	Mumbai	4	2	5	11
2	Navi Mumbai	-	-	5	5
3	Thane	3	1	2	6
4	Kalyan	1	1	3	5
5	Raigad	-	3	5	8
6	Pune	9	-	6	15
7	Nagpur	3	3	1	7
8	Nashik	6	6	5	17
9	Amravati	2	3	2	7
10	Aurangabad	2	2	1	5
11	Kolhapur	3	2	7	12
	Total	**33**	**23**	**42**	

The MPCB website at http //mpcb.mah.nic.in also displays ambient air quality data for some of the cities in the State. These cities and corresponding number of locations monitored are as shown in Table 3.4.

Table 3.4 Locations with Air Data Online

Region	No. of Locations Monitored daily
Nashik	01
Pune	02
Nagpur	01
Aurangabad	01
Chandrapur	01
Mumbai	02
Total	

From the above discussion, it can be seen that the Board continues making a great effort to provide as much coverage in regions that are highly industrial and contribute more to air pollution as possible. For example, in the Mumbai region, in addition to the 11 stations above in Table 3.3, there are also the 3 existing and 3 proposed NAMP stations and 1 existing and 6 additional SAMP stations that are proposed, all of which add up to a total of 24 stations.

3.1.1.2 CAAQMS

CAA MS are stations where monitoring instruments are advanced enough to show/analyze short duration air quality for 1 minute to 10 minutes. Data generated through these stations are useful in understanding the trends in air quality, fluctuations and impacts of different sources of ambient air quality. These instruments are more sophisticated and expensive.

There are 25 CAA MS in Maharashtra. A detailed survey to understand the functioning and operation of these stations by MPCB revealed that only 57% of the analyzers are in operation at these stations. The remaining were not properly calibrated and validated. Considering this fact, MPCB has formed a task force to ensure smooth operation of these CAA MS and a uniform protocol for operation and maintenance has been devised by MPCB and circulated to the operators. In fact, given that the operation of CAA MS requires a high level of skill and field experience, MPCB has outsourced the operation and maintenance of CAA MS to the supplier itself for a maximum period of 7 years, so regular and accurate data are always available. This type of public private partnership has been carried out for the first time in the country for air quality monitoring.

Presently, MPCB has 2 CAA MS at Chandrapur and 1 at Mulund. It has recently issued procurement orders for 3 CAA MS, one each at Mumbai, Pune and Solapur.

Besides these, continuous monitoring can also be conducted through mobile monitoring vans equipped with CAA M instruments. One van is now positioned permanently at Sion hospital to work as a fixed station. Thus, there are only 2 stations in operation in Mumbai city, one in Mulund and one in Sion. On the other hand, there are 11 CAA MS in operation in public sector companies in Chembur a suburb in Mumbai. Thus MPCB believes that there are excessive CAA M stations in Chembur and there is an urgent need to rationally re-distribute these additional CAA MS in the MMR. Preliminary discussions have been taking place with these public sector undertakings and a project implementation plan is being prepared for the same. There are several studies being carried out particularly for MMR, for example, by World Bank (WB) to develop an integrated air quality network in Mumbai. Suitable locations identified under the study can then be adopted in the proposed rationalization programme.

3.1.2 Water

In response to the state of water quality as described in Chapter 2, the Board keeps a strict vigilance on the discharge of untreated effluent into the waters of the State by issuing directions/notices to local bodies, under appropriate sections of the relevant legislation. However, it is also imperative that the Board have an accurate idea of the levels of pollution of the water bodies of the State at all times, to effectively prevent and control such pollution.

Hence, a water quality monitoring network has been established in the State under the NWMP. This effort is described in more detail in this section. The latter part of this section also discusses some studies that were conducted on the basis of the monitoring results that revealed specific cases of pollution.

3.1.2.1 he Water Qualit Monitoring Programme

The water quality in the State is monitored through a vast network of monitoring stations that assess the quality of river water, groundwater and coastal areas. Monitoring is performed monthly, quarterly or half-yearly as depicted in Table 3.5.

The NWMP, is run under the MINARS and GEMS projects. In fact, there are plans underway to strengthen the NWMP network as explained in the next section.

M CB has also proposed the development of an air quality monitoring facilitation centre at its proposed laboratory in Mahape. This centre will serve as a resource group for these C MS and provide the standard operating procedures for unit calibration and validation. The entire air quality data will be linked up through networking at this station, and then synthesi ed. This plan is based on the lines of a similar facility, in Bangkok, which is operating successfully

Table 3.5 Monitoring Frequency for Water Bodies in the State

Pro ect.	Water Body Type	Monitoring fre uency			Total
		Monthly	Quarterly	Half Yearly	
MINARS	River	22	18	-	40
	Sea/creek Ground	-	3	-	3
	water	-	-	25	25
GEMS	River	5	-	-	5
	Total	**2**	**21**	**25**	**3**

Specifically, the following monitoring was performed for the different water bodies during the reporting year

River water: 48 stations were monitored under Monitoring ofIndian National Aquatic Resource Sampling (MINARS) and Global Environmental Monitoring System (GEMS) covering main rivers like Godavari, Krishna, Bhima, and Tapi. Other rivers with tributaries have also been monitored through 133 locations set up on the rivers during the year. The number of locations monitored for A-I, A-II and A-IV class of waters was , 10 and 15 respectively.

Groundwater Ground water quality has been monitored at 136 locations in different regions of the State such as Pune, Amravati, Thane, Raigad, Nagpur, Aurangabad, Nashik, Kolhapur etc. There is no fixed monitoring network for ground water. Recently 25 ground water locations have been sanctioned under the MINARS project.

Coastal water: The Board monitored sea water quality at 3 locations including all coastal regions.

Strengthening of ater uality Monitoring Network: Strengthening of NWMP in Maharashtra has been proposed to assess the hazards of rapid deterioration of the surface and ground water quality due to uncontrolled urbanization, industrialization and agricultural activities. MPCB has prepared a proposal in this regard and a project implementation plan has been prepared. The work of identifying sampling locations and plotting these locations on a map (Scale 1 1,000,000) provided by the Water uality Review Committee for Maharashtra State is in progress. As of March 2006, plotting of 128 locations was completed.

Strengthening the water quality network in Maharashtra includes the proposal to monitor 200 surface water locations covering all stretches like nallas, rivers, sea water and 50 ground water locations including the existing EMS/MI S locations as per the guidelines issued by MoE under the uniform protocol for water quality monitoring.

While monitoring presents one side of the picture of how much contamination exists and where, results from such sampling efforts can lead to discoveries of areas of concentrated pollution that can cause acute health problems or lead to public complaints. Sometimes, pollution can aggravate natural calamities, such as the elevated levels of flooding during the rains of July 2005 due to the clogging of the Mithi river. Hence, studies and surveys become necessary to get to the root of problems discovered through monitoring. Some studies also focus on new research areas that need to be probed in order to introduce legislation or to determine the effectiveness of established rules and begin enforcement actions. Some such surveys and studies conducted during the year 2005-2006 are as follows

- Mithi River Survey
- Review of Permissible Limit of BOD and TDS for Land Disposal of Treated Effluent at Aurangabad
- Survey of Central and Western Railways Workshops for Monitoring Discharge of Wastewater Containing Boron and its Compounds

These surveys and studies are described in detail in Annexure 3-1.

Surveys and studies conducted by the Board:

Mithi River Survey

Review of Permissible Limit of BOD and TDS for Land Disposal of Treated Effluent at Aurangabad

Survey of Central and Western Railways Workshops for Monitoring Discharge of Wastewater Containing Boron and its Compounds

NEERI/Central Marine Fisheries Research Institute (CMFRI)/ Central Institute of Fisheries Education (CIFE)

Noise level survey

Survey Report of MIDC, Lote Parshuram

Assessment of Status of Soil, Plant and Ground Water Following Land Disposal of Industrial Waste Water at MIDC, Butibori, Nagpur

Performance Evaluation of CETP in Maharashtra

E-Waste Assessment

3.1.3 oise

Noise pollution is a form of environmental pollution where unwanted sounds adversely affect the environment we live in. Noise has several sources of an industrial and non-industrial nature, vehicular noise being a good example of the latter. However music during festivals and bursting of fire crackers specifically during Diwali add to the prevalent noise stream and intensify the pollution levels. Hence, it is imperative to monitor noise on a regular basis. Accordingly, MPCB monitors noise in residential, commercial and industrial locations to determine whether standards specified for these areas are met. Special surveys are also carried out to determine the source of public complaints. This section describes such monitoring and survey efforts.

Table 3.6 Noise Level Monitored in Different Cities

Sr.No.	Region	Commercial Locations	Residential Locations	Industrial Locations	Sensitive Locations	Total
1	Mumbai	3	-	3	-	6
2	Navi Mumbai	-	12	4	-	16
3	Thane	6	4	2	2	14
4	Kalyan	5	3	-	-	8
5	Raigad	3	17	-	-	20
6	Pune	43	11	1	-	55
7	Nashik	35	25	34	-	94
8	Nagpur	28	-	-	-	28
9	Amravati	5	7	-	2	14
10	Aurangabad	7	8	-	-	15
11	Kolhapur	10	7	-	-	17
	Total	142	94	41	4	281

Noise monitoring was done especially during the festivals of Diwali, Ganesh Chaturthi and Navratri. Data were collected from 281 locations covering Mumbai, Navi Mumbai, Thane, Raigad, Kalyan, Pune, Nagpur, Nashik, Amravati, Aurangabad and Kolhapur regions.

3.1.3.1 Stud on oise oise evel Surve

Need for the Study: During Diwali festival, noise pollution increases considerably, due to bursting of fire crackers. This results in a number of public complaints.

Ob ectives: Monitor noise levels in residential locations for three days, during November 1-3, 2005 from 7 pm to 12 pm. Take higher number of samples in areas of high human exposure.

Methodology:

Perform noise level measurements, taking a higher number of samples in locations of high human exposure, for example, near buildings where people actually stay, in the building and at ground floor levels. Fewer samples to be taken at some select places such as adjacent to traffic, congested roads and the place of actual fire crackers bursting for comparison purposes.

Study distance should be 4 m from the source of noise in case of fire crackers.

Data should be collected for 30 minutes at each location, during 7 pm to pm (day time) and from pm to 12 midnights (night time).

Outcome Recommendations:

Noise level observations were made from different locations covering 11 cities, which included Mumbai, Thane, Navi-Mumbai, Kalyan, Dombivali, Ambernath, Ulhasnagar, Nashik, Nagpur, Aurangabad and Kolhapur. These observations led to the following findings

This Diwali has been less noisy than last year but noise levels were still above safe limits in most areas, in terms of the duration of noise and its intensity.

Duration of bursting crackers reduced considerably all over the State. In fact, most of Mumbai stopped bursting fire crackers by 10 pm or so.

Public awareness and support in matters of environmental protection have increased. These factors are major contributors in bringing down noise pollution levels during Diwali.

3.1.4 Industrial

MIDC is responsible for industrial development in the State of Maharashtra. Cooperative industrial estates are also developed by the Corporation. Mumbai, Thane, Navi-Mumbai, Kalyan, Nashik, Pune and Pimpri-Chinchwad, are regions of the State that house high pollution prone industries. In addition to routine monitoring, surveys and studies are also conducted in industrial areas to gauge the prevalent pollution problem or respond to complaints.

3.1.4.1 Industrial Monitoring

There are fixed norms for monitoring industries. Some examples of the industrial monitoring activities include

Checking compliance of consent conditions and environmental standards.
Collection and analyses of untreated / treated samples of effluents, hazardous waste samples
Monitoring stack emissions.
Verifying adequacy of treatment plants and their operations.
Ensuring that the arrangements made for reuse, recycle of treated effluent / waste are followed.
Assessing water consumption at industries covered under cess.

3.1.4.2 Surve s and Studies

Several studies and surveys were performed in industrial areas for various reasons. These are listed as follows

- Survey Report of MIDC, Lote Parshuram
- Assessment of Status of Soil, Plant and Ground Water Following Land Disposal of Industrial Waste Water at MIDC, Butibori, Nagpur
- Performance Evaluation of CETP in Maharashtra
- E-Waste Assessment

These are described in more detail in Annexure 3-1.

3.2 Inventorization in W

Maharashtra produces about 50% of the total quantity of HW generated in the country. Therefore, creating a HW inventory for Maharashtra was a mammoth task. MPCB outsourced the study on compiling the numbers for HW generation in the State and continuously monitored all related activities.

The HW Inventory Report prepared by the Board was submitted to the Supreme Court Monitoring Committee (SCMC) on 25.8.2005 and made available to CPCB for preparing the National Inventory of the HW. Data for the year 2005-2006 are presented in Table 3.7 with a graphical representation of the split between the three fractions of landfillable, recyclable and incinerable in Figure 3.3.

In compliance with the directive of the Supreme Court of India dated 14.10.2003, the HW Inventory Report is available on the MPCB website. Information on each HW generating industrial unit in the State is also available.

hat is ha ardous waste

Ha ardous wastes include wastes that pose a greater threat to the environment and health than municipal solid waste. These wastes are characteri ed by their toxicity, ignitability, reactivity and corrosivity and have tremendous potential for damage.

egulation of ha ardous wastes in India came about with the passage of the Ha ardous Waste Management and Handling ules of 1989, with subsequent amendments in 2003. Maharashtra adopted these rules and now enforces them through its offices.

Ha ardous waste management involves the cradle to grave concept, which means that these wastes need to be tracked from the time they are generated until they are completely disposed of. The disposal is usually in the form of incineration, landfilling or recycling, with added emphasis on the last form in recent year. This is because incineration of some kinds of ha ardous waste can lead to emission of serious contaminants like dioxins that are known human carcinogen. Moreover, we are running out of space to landfill all the generated human waste, making recycling the only viable solution.

A copy of this inventory report has been sent to all the Pollution Control Boards/ Committees in the country and all Industry Associations and CETPs in Maharashtra.

Based on the HW inventory, steps have been initiated by MPCB to use the data for revision of the authorizations of HW generating units in the State. MPCB published a press notice on 11.8.2005 directing industries to file returns in Form Nos. 4, 12 and 13 to the Board in compliance with the HW Rules. The Board has also issued separate directions to 4,571 industries for non-compliance with respect to filing of the annual HW returns.

As a result of the public notice issued in news papers and the directions issued to non-compliant facilities, industries have started filing returns in the suggested forms. 28 units reported closure of their facilities following which MPCB withdrew the directions against them and provided further instructions to them stating that they need to seek permission before restarting any manufacturing activity.

Table 3.7 Regional Hazardous Waste Distribution in Maharashtra for 2005-2006

Sr.No.	Region	Quantity of HW (MTPA)			Total
		SLF	RCL	INC	
1	Navi Mumbai	47,047.2	13,958.0	50,991.0	1,11,996.2
2	Pune	43,944.9	19,178.6	14,802.6	77,926.1
3	Nagpur	74,693.8	45,674.4	11,358.4	1,31,726.6
4	Thane	92,873.3	31,698.5	7,261.5	1,31,833.3
5	Aurangabad	7,753.0	17,513.0	3,370.4	28,636.4
6	Raigad	1,03,450.1	59,027.0	22,078.0	1,84,555.1
7	Kalyan	58,363.0	1,81,092.0	7,019.8	2,46,474.8
8	Nashik	23,899.1	29,179.0	8,107.0	61,185.1
9	Amravati	9,782.8	2,684.0	454.0	12,920.8
10	Kolhapur	19,326.4	16,150.0	12,814.0	48,290.4
11	Mumbai	1,15,857.9	1,54,711.3	14,023.4	2,84,592.5
12	Non-Industrial Sources	28,958.8	56,665.7	1,718.4	87,342.9
	Total	**25 5 .3**	**2 531.5**	**1 53 .4**	**14 4 .2**

SLF Secured Landfill, **RCL** Recyclable, **INC** Incinerable

Non industrial sources include transport related activities such as ports, docks, airports, railways, transmission, and distribution of power automobile garages, service stations and common effluent treatment plants.

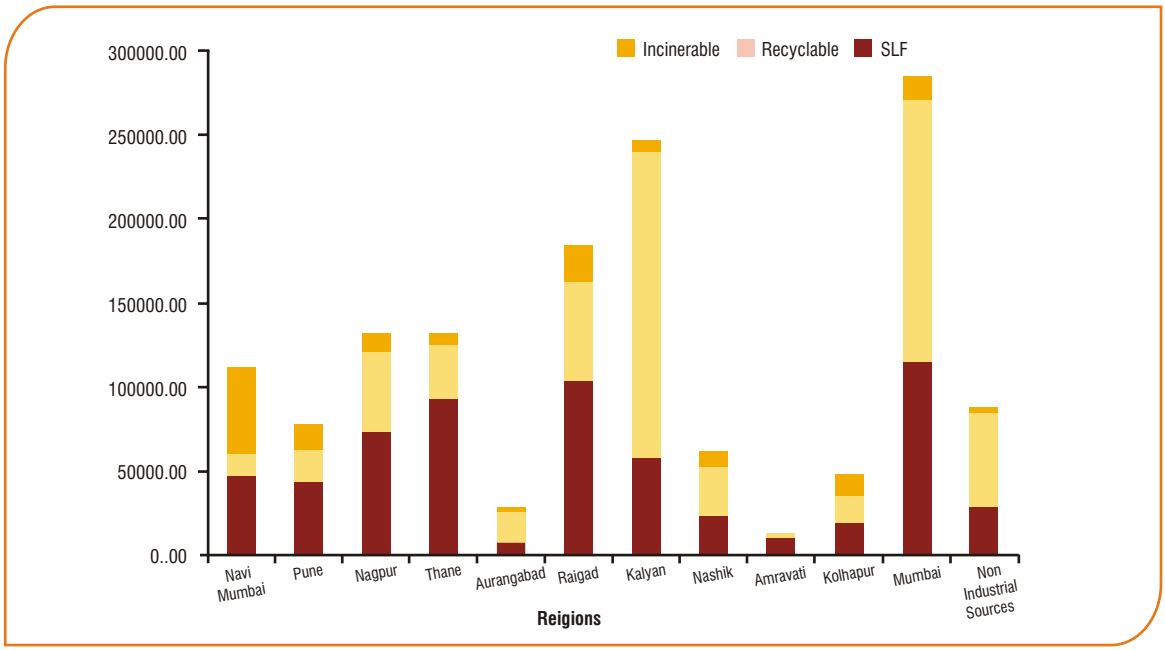


Figure 3.3 Regional Distribution of the Treatable Fractions of Hazardous Waste

3.3 Enforcement

The Board is mandated to enforce legislation to protect its environment. The Board carries out this function in a persuasive manner in most cases, using legal action only as a last recourse. The entire process begins with the receipt of applications from industries to either establish or operate their facilities and renewals in the case of expiry of the awarded consent or authorization. In some instances, public hearings may be necessary and in other cases, decisions made by the Board may be challenged in court or the Board may take violators to court thus resulting in judicial Orders of the Court, which are then implemented by the Board. This section discusses some of these functions of MPCB.

3.3.1 Consents

For the year 2005-2006, the region-wise distribution of the consents/authorizations awarded by the Board from its headquarters in Mumbai and the ROs distributed throughout the State, in the various categories are shown in Tables 3.8 and 3. .

Table 3.8 Consents / Authorization Granted by HQ During (2005-2006)

Sr.No.	Region	Consent Granted by (HQ)			Total
		Establish	Operate	Renewal	
1	Mumbai	68	35	44	147
2	Navi Mumbai	46	60	112	218
3	Thane	121	48	140	309
4	Kalyan	81	92	126	299
5	Raigad	41	27	58	126
6	Pune	125	227	172	524
7	Nagpur	80	96	127	303
8	Nashik	81	88	164	333
9	Amravati	43	70	41	154
10	Aurangabad	38	54	87	179
11	Kolhapur	84	55	103	242
	Total		**52**	**11 4**	**2 34**

Table 3.9 Status of Consent Granted by ROs / SROs (2005-2006)

Sr. No.	Region	Establish	Operate	Consent Granted for 15 years	Simplified Consents Granted	Total
1	Mumbai	28	203	12	0	243
2	Navi Mumbai	204	307	13	0	524
3	Thane	89	279	0	1	369
4	Kalyan	186	164	0	0	350
5	Raigad	20	72	0	0	92
6	Pune	240	728	0	16	984
7	Nagpur	214	593	31	0	838
8	Nashik	451	636	0	100	1,187
9	Amravati	313	277	24	0	614
10	Aurangabad	253	488	0	0	741
11	Kolhapur	1,026	1,188	0	13	2,227
	Total	**3 24**	**4 35**		**13**	**1**

The number of consents issued this year in total from the head quarters alone were compared to the numbers from last year and plotted. This is seen in Figures 3.4 and 3.5. From the plots, it can be observed that a significantly high number of consents to establish were issued in the Mumbai region this year as compared to last year, followed by the Thane region, whereas for most other regions, the levels were fairly comparable with some increases and some drops from last year. On the other hand, consents to operate consistently dropped from last year's numbers across all regions.

In general, however, it can be stated that with around 10, 000 or so industries getting consents for various categories, the industrial boom is going on in full swing in the State and while the Board does consider all environmental implications of the newly establishing or operating facilities and take every step to ensure that standards will be met, industries still remain one of the biggest sources of pollution.

Some of the instances when the Board has got involved in actions leading to mitigation of pollution, including enforcement in an industrial context is discussed in the next section.

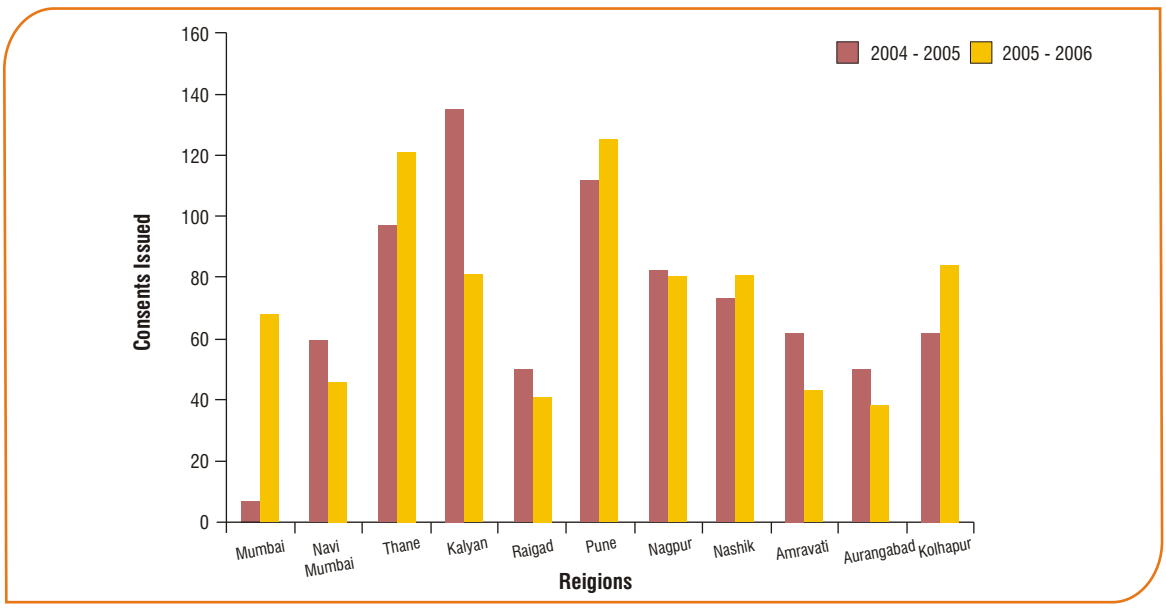


Figure 3.4 Consents to Establish From 2004-2006

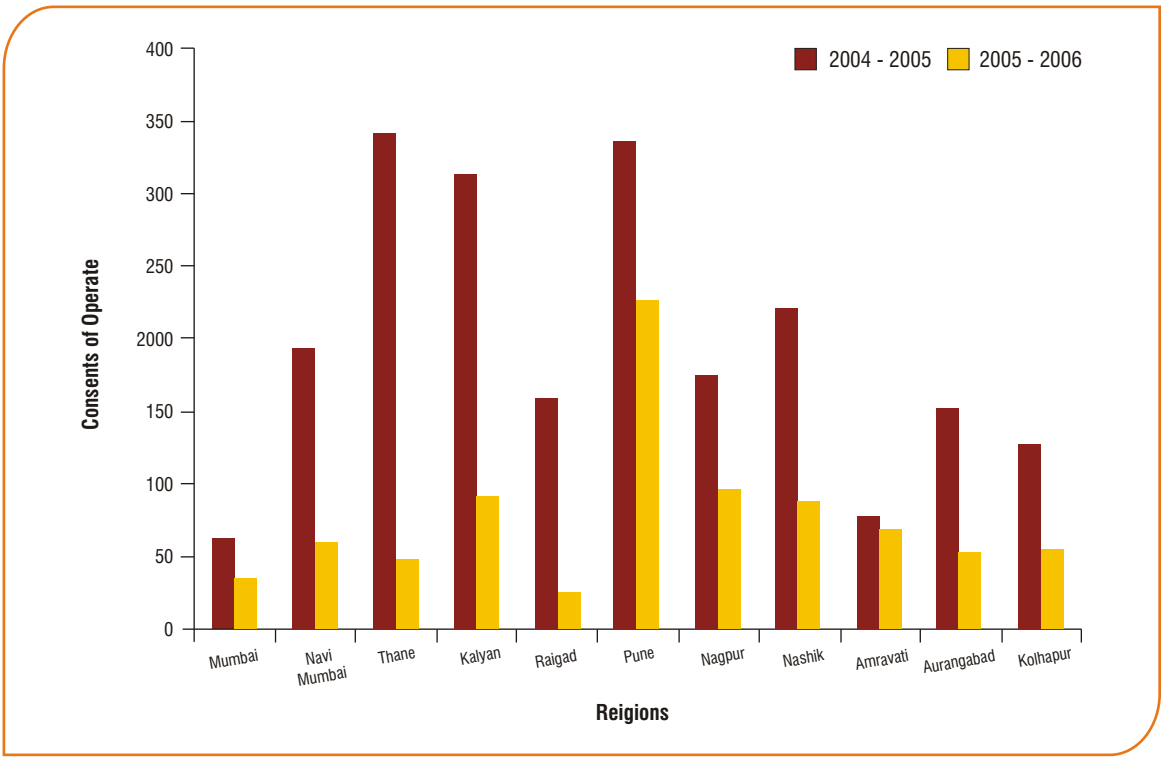


Figure 3.5 Consents to Establish and Operate for 2004-2006

In addition the consents given, authorizations for BMW to HCE's are provided in Table 3.10 below.

Table 3.10 Authorizations Awarded to HCEs for BMW

Sr. No.	Region	Total no. of HCEs (beded hospitals)	Total no.of HCEs applied	No. of Authori ations granted	Application under process
1	Amaravati	851	589	571	18
2	Aurangabad	1348	891	857	34
3	Kalyan	421	373	354	19
4	Kolhapur	920	691	690	1
5	Mumbai	1354	1155	1142	13
6	Nagpur	1447	1000	968	32
7	Nashik	1344	1279	1276	3
8	Navi Mumbai	134	134	134	Nil
9	Pune	2164	1421	1338	83
10	Raigad	247	234	234	Nil
11	Thane	442	423	423	Nil
	Total	**1 2**	**1**		**2 3**

3.3.2 Enforcement Actions

Some general statistics on enforcement against industrial pollution are

SCNs were issued to 7,2 7 polluting industries.

Proposed and interim directions under section 33A of the Water (Prevention and Control of Pollution) Act, 1 74 were issued to18 0 units and under section 31A of the Air (Prevention and Control of Pollution) Act, 1 81 to 544 polluting industries.

Closure orders were issued to 812 industries for non-compliance.

Personal hearings were conducted for industries that did not respond to directions and bank guarantees were taken from them.

A summary of enforcement actions for the year 2005-2006 is presented in the tables below. These include notices and directions issued to various facilities, for various reasons.

3.3.2.1 otices and irection Issued to the efaulters

During the year 2005-2006, several notices were issued by ROs of the Board to industries in order to enforce compliance. These are shown in Table 3.11.

Table 3.11 Notices Sent to Treatment Facilities from Various ROs

Regional Offices	To Upgrade Treatment Facility	To Install Treatment Facility	To Achieve Standards	Total
Mumbai	12	2	53	67
Navi Mumbai	26	0	612	638
Thane	127	9	568	704
Kalyan	20	18	612	650
Raigad	0	0	331	331
Pune	297	72	1,094	1463
Nashik	35	42	518	595
Nagpur	107	0	725	832
Aurangabad	84	36	103	223
Amravati	379	172	419	970
Kolhapur	74	79	671	824
Total	**1 1 1**	**43**	**5**	**2**

From Figure 3.6, it can be seen that most of the notices and directions were sent to facilities with regard to non-compliance with the standards, i.e. to achieve compliance.

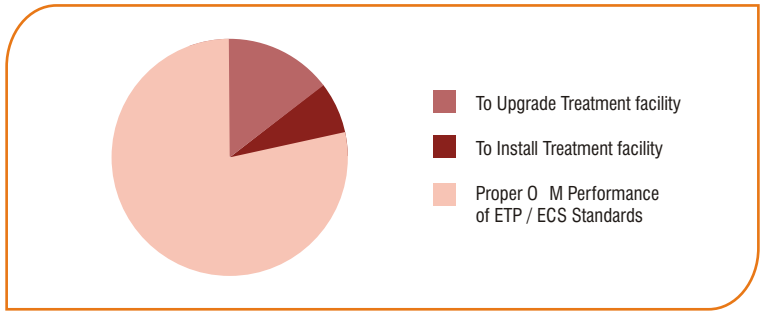


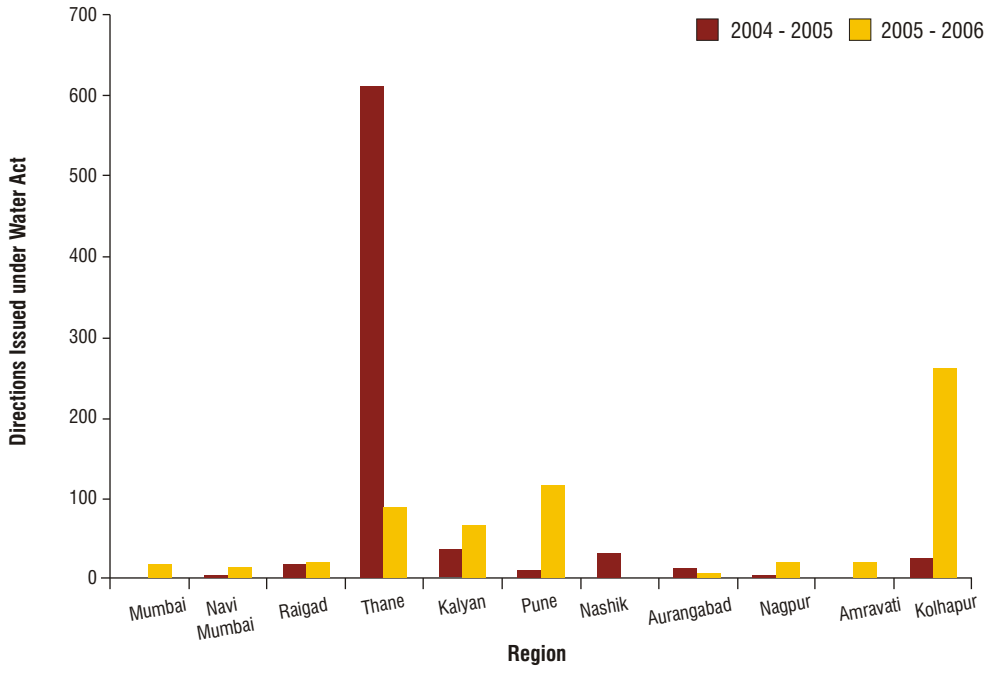
Figure 3.6 Break-up of the Notices and Direction Sent to Industries

Table 3.12 Proposed and Final Directions to Industries under Water and Air Acts

Regional Offices	No. of Industries to which Directions were Issued				Total of F D
	u s 33A of Water Act 1 4		u s 31A of Air Act 1 1		
	Proposed Direction	Final Direction	Proposed Direction	Final Direction	
Mumbai	14	17	0	0	17
Navi Mumbai	36	13	0	0	13
Raigad	145	20	14	1	21
Thane	311	87	0	0	87
Kalyan	64	65	41	68	133
Pune	642	116	15	73	189
Nashik	48	0	26	0	0
Aurangabad	43	6	18	28	34
Nagpur	354	21	298	14	35
Amravati	18	4	86	11	15
Kolhapur	215	262	46	6	268
Total	**1**	**11**	**544**	**2 1**	**3 24**

The directions issued under the Water and Air Acts were separately plotted considering numbers for this year as well as the last for the sake of comparison. It can be seen from Figure 3.7 that under the Water Act, most notices were sent out in the Kolhapur region, followed by the Pune and Thane regions. Further, more notices were sent this year than in the previous year, which indicates that the Board is stepping up its enforcement efforts overall.

As far as directions sent under the Air Act are concerned, regions such as Kalyan, Pune, Nagpur, Amravati and Kolhapur saw increases in directions received as compared to last year and the most directions of the year 2005-2006 were sent out in the Pune region.



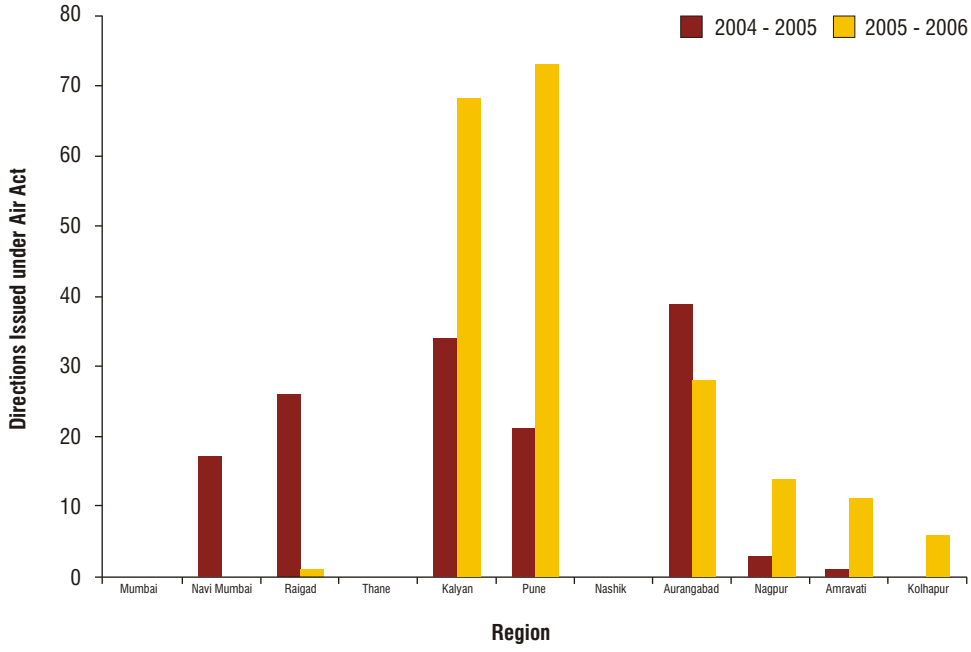


Figure 3.7 Directions Issued Under the Water and Air Acts in 2004-2006

Enforcement against Air Pollution

In general, the Board requires that all air-polluting industries provide adequate measures such as scrubbers on reactors, dust collectors for particulate, stacks of sufficient height, Electrostatic Precipitators (ESPs) and other equipment. Industries are required to perform regular sampling to check emissions from stacks and also monitor fugitive emissions.

In instances of violations of standards, the Board initiates actions against industries found to exceed emission levels. Proposed/Closure directions are issued to industries for the installation /up gradation of existing air pollution control system and proper operation and maintenance of the same as required.

Some actions taken by the Board in the case of specific industries and the subsequent responses are indicated below

1. The Board carried out stack monitoring of coal-fired boilers in the Dombivili MIDC area and issued notices to the defaulting industries. These industries have now started upgrading their air pollution control systems by providing wet scrubbers. Four such industries have almost completed the installation work.
2. M/s. Ispat Ind. Ltd., Dolvi Tal. Pen, has installed an additional gas cleaning plant for control of particulate emission from hot strip mill.
3. A proposal for an air quality monitoring system has been sanctioned and is being implemented for fixed stations at Ulhasnagar town and Badlapur MIDC, which will be operated by CHM College, Ulhasnagar.
4. The Board carried out a survey to identify un-consented units in Nashik District, where some electroplating units that had consent in the green category were involved in other unconsented activities leading to air pollution complaints. The Board is now taking appropriate actions.
5. In the Malegaon region, melting of plastics was being done with improper equipment leading to toxic fumes in the area. Since, this is an unorganized sector, the Board has referred this matter to the *Tehsildar* of Malegaon and also to the Labour Commissioner in the area. The area has been surveyed and the plastic industries were instructed to take suitable steps for minimizing air pollution in the area. About 25 plastic industries in Malegaon have been issued SCNs for non-compliance.
6. About 18 stone crushers at Tuljapur-Sawangi, Aurangabad were operating without valid consent from the Board and also without providing adequate air pollution control systems. In response to the complaints received, the Board issued various notices including closure directions to such industries urging them to provide adequate air pollution control systems. Accordingly, the said stone crushers have provided necessary air pollution control systems and obtained consent from the Board, thus eliminating the problems in the area to some extent.

Enforcement against ater Pollution

Some specific instances of enforcement actions against industries that were polluting the water in the region are as follows

1. In Thane there were complaints about the *tabelas* causing pollution to Kaman River. Hence, a survey was conducted and notices were issued and a report has been submitted to the High Court.
2. Some medium and large scale hotels, hospitals and industries in Aurangabad had not provided STPs. Hence, wastewater was being discharged without any treatment and damaging the surrounding environment. After follow up by the Board, hotels, hospitals and industries have developed the necessary infrastructure in the form of a STP.
3. Nallas such as Waldhuni Nalla of the Ambernath area, and Khamani Nalla in Ulhasnagar, carry industrial effluent into the Ulhas creek. Hence, a project named Waldhuni Mission was undertaken by the Ulhasnagar Municipal Corporation. The project is in final stage of implementation and was inaugurated by Hon. Minister for Environment, GoM. A proposal has been prepared in response to the Board's suggestion to divert water from the Khamani nalla to prevent pollution of the Ulhas river.
4. In response to a case filed against the Kolhapur Municipal Corporation on the Panchaganga River Pollution, a white paper was published by MPCB and the Kolhapur Action Plan was prepared and is currently under implementation.
5. In Chiplun the MIDC has laid down new HDPE pipelines to carry the effluent into the creek.

Enforcement against MS

The Board has taken a number of steps to better the legislative process around MSW, which include the following

1. Delegating powers to Regional Offices for granting authorizations to "B" and "C" class ULBs, resulting in a speedier authorization process.
2. Requesting the Principal Secretary, Urban Development Department, Mumbai to personally look into the matter of compliance.
3. Issuing directions to the Thane Municipal Corporation and NMMC for failure in implementing the MSW project.
4. Issuing SCNs to "A" class municipal councils to effectively implement and comply with the MSW Rules of 2000.
5. Taking a series of actions for implementing the Plastics Rules both before and after issuance of the amendments of 2006. These are described in Table 3.13. The Board also sent out letters to ROs to physically verify units and report non-compliance against the rules. Units that were previously covered received letters to suspend old registration numbers issued under the 1 Rule. Additional information on the "Regulation of Plastic Bags made from Recycled/Virgin Plastic, Maharashtra Non-biodegradable Garbage (Control) Ordinance of 2006" is provided in Box 3.1.

Table 3.13 Actions Taken by the Board towards Implementation of the Plastics Rules

Activity	Before the 2 Rules	After the 2 Rules
Identification of Units	754 units April 2005	1154 units were identified till April 2006
Publication of Public Notice directing all concerned to comply with the amended Rules for the manufacture and use of recycled plastics, carry bags and containers, Applications Received	On 14.4.2005 and 24.11.2005	14.3.2006
SCNs issued	162 manufacturers registered till December 2005 To 607 units	25 manufacturers registered till March 2006 To 959 units, 195 units were closed

Box 3-1 Regulation of Plastic Bags made from Recycled irgin Plastic Maharashtra Non-biodegradable Garbage Control Ordinance 2006

In order to prevent the reoccurrence of blocked drains that aggravated flooding conditions during the torrential rains in the State, in July 2005, the GoM promulgated the above ordinance to prevent throwing or depositing non-biodegradable garbage in public drains, roads and water bodies, and to regulate the use of non-biodegradable material.

Salient features of the Notification dated 3rd March 2006

1. The Board and the industries department are the enforcing authorities with regard to manufacture and recycling of plastic bags and containers. Similarly the Municipal Corporation, District Collector and the Chief Executive Officer of Local Authorities are the authorities responsible for regulating the use, sale, collection, segregation, transportation and disposal of plastic carry bags.

2. Minimum thickness of carry bags made of virgin or recycled plastics has been specified as not less than 50 microns and a size of 8 12 inches.

3. The use of carry bags and containers made of recycled plastics are prohibited for storing, dispensing or packaging foodstuffs.

4. Each bag and package shall contain the following particulars (printed or stamped)
   i) Name and address of Manufacturer
   ii) Registration number of the State Pollution Control Board (SPCB)
   iii) Registration number of industries department of the State
   iv) Thickness of the bag and
   v) Weight of 100 bags on package
   vi) Virgin/Recycled material used

5. The contravention of the provisions of this notification has been made punishable and for the first offence a fine of upto Rs. 5,000/- can be imposed which may extend to Rs. 10,000/- for the second offence. In case of subsequent offences, imprisonment for a term, which may extend to 3 months with a fine of upto Rs. 25,000/- is also provided.

Status of Implementation

1. As a first step the Board issued a public notice in leading newspapers on 14th March, 2006. The manufacturers of plastic bags and containers were called upon to register themselves with the Board.

2. The Board devised a form for registration and also developed a certificate for registration. A nominal processing fee of Rs. 500/- has also been prescribed by the Board.

3. The Board issued individual notices to 656 (In addition 353 are in process) units engaged in manufacturing plastic bags/containers.

4. The Board has received 07 applications for registration and has issued as many certificates as of March 31, 2006.

Future Actions:

1. Conducting public awareness through print and electronic media to minimize the use of plastic bags. Arranging joint programmes with NGOs and local bodies.

2. Interacting with industries' association to enforce the rules effectively.

3. Identifying units engaged in manufacturing plastic bags in both organized and unorganized sectors.

Enforcement against Pollution due to Ha ardous aste

MPCB has so far directed 40 industries to pay fines as per Rule 16 (3) of the HW Rules for illegally storing large quantities of HW in their premises. They were also directed to send the stored HW to CHWDFs. Compliance of such directions issued by MPCB is monitored by Regional Officers of the Board.

On verification it was found that 2 industries have complied with the directions of the Board. Follow up action was taken against the remaining non-compliant industries and fines were recovered to the amount of Rs. 2,350,500/ as of 31.01.2006. Some industries have sought additional time for payment or requested personal hearings to review the fine amounts.

Such enforcement actions by the Board of constant monitoring, serving notices for violations and collecting fines from non-compliant industries has had a positive impact. Illegally stored hazardous waste has been sent to CHWTSDFs and several industries have cleaned up their act.

Enforcement against Pollution due to Bio-Medical aste

The Board has issued 3, 33 SCNs to HCEs in Maharashtra as shown in Table 3.14.

In one specific case of enforcement, MPCB had issued SCN to M/s. Chhatrapati Pramila Raje (CPR) Hospital, Kolhapur for not installing an STP for treating infected sewerage generated in their hospital and instead, directly discharging it in to the Panchaganga River. CPR hospital has since provided a primary treatment facility and requested for financial assistance from the Board.

Considering their request, MPCB agreed to finance 0% of the capital cost of the project. *This will be the first model project in the State for hospital waste.*

Enforcement against Pollution due to Lead Acid Batteries

MPCB has issued SCNs to 2 battery manufacturing and re-conditioning units and 15 battery importers under Battery (Management and Handling) Rules, 2001. All manufacturers and re-conditioners and 14 of the 15 battery importers that were served the notice have complied with the Rules by submitting form numbers I and IV. The current status of the compliance of Batteries (M H) Rules, 2001 is shown below in Tables 3.15-3.1 .

Table 3.14 Enforcement Against HCE's for BMW

Sr. No.	Region	Total no. of HCEs (beded hospitals)	SCNs issued being issued			No. of HCEs Prosecuted	
			Not applied for autho ri ation	Given autho ri ation but not oined to CBMWTDF	Member of CBMWTDF but not sending waste	1 beds above	1 beds above
1	Amaravati	851	560	Nil	6	Nil	Nil
2	Aurangabad	1348	579	Nil	Nil	Nil	Nil
3	Kalyan	421	101	49	154	Nil	Nil
4	Kolhapur	920	463	Nil	Nil	Nil	Nil
5	Mumbai	1354	4	Nil	25	Nil	1
6	Nagpur	1447	692	345	Nil	Nil	Nil
7	Nashik	1344	170	97	Nil	Nil	Nil
8	Navi Mumbai	134	Nil	Nil	Nil	Nil	Nil
9	Pune	2164	665	Nil	Nil	Nil	Nil
10	Raigad	247	13	Nil	Nil	Nil	Nil
11	Thane	442	10	Nil	Nil	Nil	Nil
	Total	**1 2**	**325**	**4 1**	**1 5**	**Nil**	**1**

Table 3.15 Status of Lead Acid Battery Manufacturer, Re-conditioner, Assembler

Sr. No.	Type of category	Total no of manufacturer Re-conditioner Assembler	Production of Lead acid Batteries in unit no.	Total Collection of Lead acid Batteries in unit no.	Annual return submitted to MPCB	Remar
1	Manufacturer	04 nos.	4290194	1153655	04 nos.	----
2	Assembler Re-conditioner	79 nos.			05 nos.	SCN being issued to defaulters

Table 3.16 Status of Lead Acid Battery Dealers

Sr. No.	Total no of Dealers	No. of sale of Lead acid Batteries in unit	Total collection of Lead acid Batteries in unit	Half early return submitted to Mfg. by Dealers	Remar
1	229	110102	38307	70 nos.	SCN issued to defaulters

Table 3.17 Status of Lead Acid Battery Bulk Consumers

Sr. No.	Total no of Bul consumers Auctioneers.	Total No. of used batteries	Total collection of Lead acid Batteries in unit nos.	Annual return submitted to MPCB	Remar
1	68 nos.	25661	31749	48 nos	SCN being issued to defaulters

Table 3.18 Status of Lead Acid Battery Recyclers

Sr. No.	Total no. of Recyclers	Total ty. of Lead acid Batteries recycled in unit nos.	Annual Return submitted to MPCB	Remar
1	22 nos	6476	14 nos.	04 nos. unit closed SCN issued to defaulters

Table 3.19 Status of Lead Acid Battery Importers

Sr. No.	Total No. Of Importers	Total Quantity Of Lead Battery Imported	Annual Return submitted to MPCB	Remar
1	25 nos	36244 Nos 205331.86 Kgs	12 nos	SCN issued to defaulters

3.3.2.2 Case Studies on Enforcement for Industrial Pollution

Some specific cases of the Board's involvement in cases of industrial non-compliance leading to positive actions from the violators include the following
- Pharmaceutical Medicine Warehouse affected by Floods in Bhiwandi Area
- Environmental Pollution Due to Stone uarrying at Hiranandani Garden, Powai, Mumbai
- Ground water pollution problem in MIDC Waluj at Aurangabad
- Rivers flowing through coastal belt

More details on each of these cases are provided in Annexure 3-2.

3.3.2.3 Prosecutions aunched and Convictions Secured

The status of prosecutions launched and convictions secured as of March 2006, split up based on the Rule/Act that was cited while providing appropriate notice, is provided in Table 3.20. The prosecutions launched against HCEs in the context of BMW have already been shown in Table 3.14 above.

Table 3.20 Status of Prosecution Launched and Convictions Secured

Under Section	No. of Cases Filed	Convictions Secured	No. of Cases Dismissed Applications Decided Against the Board
Section 43, 44 of Water (P and CP) Act, 1974	302	73	123
Section 33 of Water (P and CP) Act, 1974	140	87	52
Section 39 r. w, 21 of Air (P and CP) Act, 1981	146	114	32
Section 22A of Air (P and CP) Act, 1981	3	1	N.A.

Table 3.21 lists the numbers of complaints filed by the Board (for specific regulations).

Table 3.21 Number of Complaints Filed by the Board

Under Section	No. of Complaints Filed
Hazardous wastes (Management and Handling) Rules 1989, amended 2000	16
Recycled plastic waste (Management and Handling) Rules, 1989	3
Coastal Regulation Zone Notification, 1991	1
Bio-medical wastes (Management and Handling) Rules, 2000	3

3.3.3 Orders

Some of the major judicial orders discussed under the reporting year are summarized in Table 3.22 below. A more detailed account of each of these orders has been provided in Annexure 3.3.

Table 3.22 Outcomes of Judicial Orders Passed during 2005-2006

No.	Case	Outcome
1	Opposing Maharashtra Housing and Development Authority MHADA's construction/ housing project at Oshiwara, Andheri (West) by Citizens Awareness Forum	Dismissed in favour of the Board
2	Air Pollution caused due to improper coal handling by M/s. Mercator Lines Pvt. Ltd., Mumbai.	Pending
3	Villagers from Kurkumbh Pandherwadi, complaining on the discharge of wastewater from Kurkumbh MIDC area that polluted water making it unsafe for drinking and caused damage to crops and land	The Order spells out the role of MPCB in pollution prevention efforts especially with reference to small-scale units
4	Pollution of river Nira due to discharge of effluent from M/s.Vam Organic Chemicals Ltd., Nimbut, Tal Baramati.	Disposed without cost based on the presentation of the action taken by the Member Secretary in Court
5	MPCB's successful persuasion to secure compliance of the SCN issued to M/s.Dabhol Power Co., Anjanwel, Tal Guhagar.	Remediation completed successfully
6	Bombay Environmental Action Group's opposition to the Development Control (DC) Regulations" of 2001	Court directed the State of Maharashtra to take immediate remedial measures with regard to all the aspects
7	Bombay Dyeing and Manufacturing Co. Ltd. challenging the validity and legality of the Judgment and Order dt.17/10/2005.	Judgment and order to be received
8	Mr. Kirit Somaiya on the problem of Mithi river pollution.	Various orders issued. Initiated action against defaulting industries
9	Water pollution caused by M/s. Somaiya Organic Chemicals Ltd.	Continue operation under certain conditions

3.3.4 Pu lic earings

One of the primary responsibilities of the Board is to conduct public hearings. For the reporting year, the Board performed the following tasks related to the matter of public hearings

1. MoEF issued amendments to the EIA Notification dated 27/01/1 4 as amended on 4/5/1 4. The amended Notification No. 31 (E) delegates powers to grant environmental clearance to certain categories of power plants to the State Government. No administrative, financial and procedural outline has been given in the said Notifications for conducting public hearings. Hence the Board has laid down the procedure for conducting such public hearings as decided in the 118th meeting of the Board held on 20-11-1 7. This procedure has been detailed in Annexure 3-4.

2. MoEF amended EIA Notification of 1 4 on 07/07/2004 in which new constructions projects and industrial estates have been included. New construction projects in the following categories require public hearings and an Environment Clearance

   - Project investment exceeding Rs. 50 Crores
   - Occupancy load exceeding 1000 persons
   - Sewage effluent discharge exceeding 50,000 Liters
   - Completion of the plinth level of construction after the target date of 07/07/2004

The new industrial estate or expansion of the industrial estate also requires public hearings for Environment Clearance, if the total area of the land exceeds 50 hectares and has a high pollution potential. Hazardous waste generating industrial estates, irrespective of the area, require a public hearing and Environment Clearance.

For better implementation of this amendment, MPCB constituted an Expert Committee for considering proposals on Construction Projects and Industrial Estate as discussed in Chapter 1. A detailed study done by the Board in this context is presented in Annexure 3-4.

- Total no. of public hearing conducted during 2005-2006 - 231 (Construction projects 122, Industries Projects -10)
- Proceeding of Public Hearing submitted to MoEF, GOI, -172 (Construction projects - 4 and Industries Projects - 78)
- Environment Clearance received from MoEF - 2 (Construction projects - 26 and Industries Projects - 3)

3.4 Common Environmental Infrastructure

The Board has been consistent in its efforts to better the environment in the State by partnering with other institutions and developing public private partnerships especially in the context of infrastructure building. Common needs of a range of stakeholders can be addressed through joint ventures, some of which are discussed in this section.

3.4.1 S P

One of the responses to dealing with the problem of domestic sewage is establishing a network of STPs. While the state of the existing STPs has been detailed in chapter 2, it should be noted here that the Board is holding discussions with municipal authorities stressing the importance of STPs. Municipal authorities have been asked to make budgetary provisions for building STPs. They have also been asked to explore assistance in terms of financial aid from concerned government agencies. Notices were issued to the non-compliant municipal councils so as to improve the existing situation. Bank guarantees have also been taken from some of the local bodies. Some examples of responses by local bodies to the above efforts undertaken by the Board include

1. The work of STPs for Jalgaon Municipal Corporation is in process.
2. Trimbak Municipal Council has provided an STP and it is in operation.
3. In Ahmednagar and Dhule Municipal Corporations the work on STPs is ongoing.
4. The City and Industrial Development Corporation of Maharashtra (CIDCO) at Aurangabad has provided STP for the treatment of sewage in the Aurangabad Municipal Corporation.

3.4.2 MSW Facilities

The main constraint in effective implementation of MSW Rules and setting up waste processing facilities is non-availability of suitable land. Considering this fact, the State Government has passed an order regarding formation of district level committees in every district under the chairmanship of the District Collector. The main object of district level committees is to identify and select landfill and waste processing sites. The Committee comprises of 10 members of various concerned departments. While identifying suitable locations for landfilling and waste processing, care is to be taken to ensure that the site is away from habitation clusters, forest, water bodies, monuments, wet lands and places of important cultural, historical and religious aspect including CRZ areas.

Ongoing programme from last year

ast year, through efforts made by the Board, local bodies at adhinglaj, andharpur and alna were offered financial assistance for developing municipal solid waste management facilities. The assistance of s. 20 lakhs was to be awarded to local bodies in the form of ero interest loan returnable in 20 years s. 1 lakh per year. Modalities for program implementation are being worked out by the Board.

3.4.3 CE Ps

Small-scale industries, because of their limited resources in terms of finance, space, and technology, cannot afford to treat their wastes. The concept of CETPs was evolved to provide necessary assistance to this sector, wherein the wastes generated by a number of industries are brought together to a central place and treated.

This scheme is implemented for the clusters of industries in MIDC areas as a part of the common environmental infrastructure for environment protection. CETPs have been promoted by the Central Government since 1 0 for the management of industrial effluents, especially from small and medium scale enterprises. For the construction of CETPs, the Central Government gives a 25% subsidy, MIDC 20%, MPCB 5%, the user industries 15% while the rest (35%) is taken as a loan from financial institutions such as Industrial Development Bank of India (IDBI), ICICI and other nationalized banks. The first CETP in Maharashtra came up at Tarapur, followed by others at TTC, Navi Mumbai, Dombivali, Taloja, Mahad, Lote Parshuram and so on.

Currently Maharashtra has 23 CETPs as discussed in Chapter 2. Additional details on some of the State's CETPs are provided in Annexure 3-5.

3.4.4 azardous Waste reatment Storage and isposal Facilities

Maharashtra has 2 CHWTSDFs, one each located at Taloja and TTC. Tables 3.23 and 3.24 depict the amount of HW received at the CHWTSDFs.

Table 3.23 Hazardous Waste Received at Taloja CHWTSDF

Sr. No.	Month	Direct disposal in SLF (MT)	Treatment and disposal in SLF (MT)	Incinerati on (MT)	Total (MT)
1	April. 05	3,028	2,836	639	6,503
2	May. 05	6,086	5,736	591	12,413
3	June. 05	4,907	3,888	638	9,433
4	July 05	817	1,459	620	2,896
5	August. 05	1,419	1,635	1,107	4,161
6	Sept. 05	1,140	1,496	1,457	4,093
7	October 05	1,987	2,682	1,406	6,075
8	Nov. 05	3,895	2,246	1,757	7,898
9	Dec 05	7,107	3,657	3,167	13,931
10	Jan. 06	2,998	3,001	1,387	7,386
11	Feb. 06	5,289	2,905	948	9,142
12	March. 06	4,824	3,858	971	9,653
	Total	**43 4**	**35 3**	**14**	**3 5 4**

Table 3.24 Hazardous Waste Received at TTC CHWTSDF

Sr. No.	Month	Direct disposal in SLF (MT)	Treatment and disposal in SLF (MT)	Incineration (MT)	Total (MT)
1	April. 05	278	265	NA	543
2	May. 05	649	413	NA	1,062
3	June. 05	78	63	NA	141
4	July 05	59	35	NA	94
5	August. 05	44.419	80.218	2.169	126.806
6	Sept. 05	51.565	14.218	8.007	73.790
7	October 05	299.768	21.771	34.235	355.774
8	Nov. 05	342.865	193.020	NA	535.885
9	Dec 05	575.141	434.847	NA	1,009.988
10	Jan. 06	569.463	362.095	NA	931.558
11	Feb. 06	395.322	135.05	NA	530.372
12	March. 06	435.808	107.125	NA	542.933
	Total	**3 .351**	**2 124.344**	**44.411**	**5 4 .1**

Despite these numbers, both these sites were found to be inadequate to meet the growing needs of the State for managing its HW. Hence, the State has proposed two more sites, one each at MIDC Buti Bori, Nagpur and Ranjangaon, Pune, which are planned to be functional this year. To make provisions for future needs, two more sites are planned, one each at Mahad and Shendre. The State is also considering an option of a shared site between Maharashtra and Goa, either at Lote Parshuram or a suitable location in South Konkan.

Aerial views of the CHWTSDF at Taloja can be seen in Photograph 3.1. As of March 2006, 2,074 units have become members of the CHWTSDF at Taloja and 1023 units have become members of the CHWTSDF at TTC.

Photograph 3.1 Aerial view of CHWDF at Taloja

3.4.4.1 Common W Incinerators

Incineration is a high-temperature dry oxidation process that reduces organic and combustible waste to inorganic, incombustible matter and results in a very significant reduction of waste volume and weight. This process is usually selected to treat wastes that cannot be recycled, reused, or disposed of in a landfill site and has high calorific and high COD values. Thus the incinerator is required for incinerating solid, semi solid and liquid industrial hazardous wastes to enable compliance with the environmental regulations on treatment and disposal. The incinerator incinerates HW so as to render it into a non-toxic and non-hazardous residue form. A detailed diagram of the incinerator at Taloja is shown in Photograph 3.2.

regard, the Board issued notices to 6 industries that have an incinerator, to either dispose HW generated from their own unit or collect hazardous waste from other HW generating industries, and use their incinerator as a common HW incinerator.

In response to this SCN, industries have submitted replies and technical details. Based on the replies and reports of concerned Regional Officers, the Board has issued final directions as detailed below

1. Total SCNs issued 6
2. Replies received from industries 4
3. Industries that have already stopped incineration facility 16
4. Permission granted to use incinerator for their own HW incineration 2

Photograph 3.2 Hazardous Waste Incinerator At Taloja

The operational guidelines and design parameters for HW Incinerators are available in a January 2004 publication by CPCB entitled "Guidelines for Hazardous Wastes Incinerator".

The Supreme Court in its order dated 14/10/2003 called for reducing the smaller individual HW treatment and disposal facilities, it labeled as "hot spots'. The order encouraged the development of CHWTSDFs. A common incinerator is an essential part of such facilities.

In order to comply with the Supreme Court order and to protect the environment, MPCB issued directions to industries to shut down their incinerator if they were not complying with the CPCB guidelines of January 2004 for HW incinerators. In this

3.4.5 CBMW Fs

Maharashtra has a total of 25 CBMWTDFs in the State - 5 under construction and 20 operational.

3.5 Special Projects and Programmes

Some specific projects that were conducted by the Board included the following

1. MPCB performed the role of an advisor when the MCGM and the NMMC approached it for technical assistance and help in finalizing a suitable agency for processing and disposal of solid wastes.

2. For preparation of model MoU documents with regards to implementation of MSW projects, MPCB in consultation with the Sr. Adviser, AILSG and Director of Municipal Administration, Maharashtra State contracted M/s.CRISIL to prepare such documents. These documents will be helpful to all ULBs for signing MoUs between different stakeholders for setting up waste treatment and disposal facilities with different configurations in terms of waste generation and processing technologies. The report is being drafted.
3. The Board has arranged a seminar on Plasma technology, which is a waste to energy project.
4. A project on the management of plastics involved the formation of a plastic cell that was formed at the MPCB Head Office in Sion, Mumbai and was tasked with the following functions
   - Identify plastic recycling and manufacturing units in Maharashtra
   - Expedite their registration
   - Issue SCNs to defaulters. Issue closure directions, if required
   - Study biodegradable plastics
   - Prepare a booklet on the procedure to measure the thickness of plastic bags

Accordingly, the cell developed the booklet and included in it a list of manufacturers of thickness gauge micrometers with tentative prices. It also arranged for a presentation on biodegradable plastic carry bags to get necessary information on the biodegradation of plastic carry bags, with additives / enzymes used in the manufacturing process and the time required for biodegradation from two firms in Mumbai.

3.5.1 Projects and Programmes Ongoing from ast ear

There are several projects ongoing from last year or before, that deserve a mention in this *Environment Monitor* on account of the amount of the ongoing work. Some of these are documented below.

3.5.1.1 MSW emonstration Projects

The Board had decided to extend financial assistance to five local bodies for setting up model/demo MSW projects viz.

- Murud-Janjira Municipal Council
- Baramati Municipal Council
- Navapur Municipal Council
- Ambad Municipal Council
- Sonpeth Municipal Council

Accordingly, the Board has released the second installment of Rs.15 Lakhs each to the Sonpeth Municipal Council and Navapur Municipal Council, and Rs. 20 Lakhs to the Ambad Municipal Council for setting up of a model / demonstration MSW Project. Model Projects at Ambad, Sonpeth, Navapur Municipal Councils are under final stage of setting up the processing and treatment plants.

3.5.1.2 eha ilitation of Illegal W ump Sites

The work on identification of illegal dumpsites outside MIDC in Thane district has been outsourced to National Remote Sensing Agency (NRSA). MPCB has received the draft report on the findings of NRSA. This report is currently being scrutinized and shall be presented and submitted to SCMC in due course. Based on the final outcome of this study, a rehabilitation plan for the illegal HW dumpsites shall be prepared by MPCB and submitted to CPCB for integration with the National Plan, which is under preparation.

MIDC has set up a Secure Landfill (SLF) at Tarapur to contain approximately 1.5 lakhs MT of HW. This consists mostly of ETP sludge and ash accumulated over a period of last 10 years or so. MIDC has reported that the work is almost completed and the SLF is expected to be closed by end of May 2006. The compliance is also being monitored by MPCB regularly. As such the illegal HW lying in MIDC Tarapur area will be safely disposed off in accordance with SCMC directions.
The status of the Tarapur landfill before and after setting up the SLP can be seen in Photographs 3.3 and 3.4.

Illegal HW lying in CETP Sumps and in MIDC areas has already been lifted and shifted to Taloja in compliance with SCMC directions. However, part of wet sludge at Mahad CETP could not be completely shifted due to some technical problem.

Photograph 3.3 Present Status of Secured Landfill at Tarapur, February 2006

Photograph 3.4 Encapsulation of Secured Landfill at Tarapur, March 2006

3.5.1.3 Clean echnolog for e- efining ec cling Waste Oil sed Oil

The Supreme Court had issued directions stating that re-refining/ recycling of used oil/waste oil and non ferrous metals shall be done only through application of clean technology known as Environmentally Sound Technology (EST). Accordingly the Board continues ensuring compliance in this regard by issuing public notices, revoking authorizations from defaulting units and issuing consents to compliant units.

3.5.1.4 oning Atlas

This division was established by MPCB under the Spatial Environmental Planning Program' (SEPP), conceptualized for ensuring protection of environment and its resources through planned and sustainable development. The programme commenced in 1 5 with an initial aim of finding environmentally compatible and less sensitive locations for siting of industries. However, its scope was subsequently expanded to cater to the compilation of environmental information, environmental improvement of urban areas / mining / tourism / religious places and so on. Currently the program is supported by MoEF, under the 10th five year plan.

For the reporting year, MPCB is reviewing the Zoning Atlas for Siting Industries (ZASI) that were prepared for the Ratnagiri, Pune and Aurangabad districts as per revised guidelines of CPCB. Preparation of ZASI for district Nashik and Solapur is under process.

For the State Environmental Atlas, data collection and draft report preparation is under process. Also, procurement of themes (digital data) from the Maharashtra Remote Sensing Applications Centre (MRSAC) is in process.

The State environmental atlas will be highly useful to policy makers to identify the thrust areas for formulating programmes and policies for environmental conservation and sustainable industrial development in the State. It will also help prospective entrepreneurs shortlist possible locations for siting of industries.

3.5.2 esearch and evelopment

Implementation of environmental regulations requires a sound base of science and technology backed up by research and development activities. The Board is required to undertake investigative research involving pollution assessment surveys and monitoring. This area was not given adequate attention in the past. During the last year, the Board has taken up several projects of importance for protecting the environment and public health.
They are

- Collaboration with the United States Environmental Protection Agency (USEPA) for urban air quality studies in Pune
- Collaboration with the WB Institute for air quality improvements in Pune
- Collaboration with Asian Development Bank (ADB) for development of a SAP for MPCB
- US EPA Health and Air uality linkages using BENMAP studies
- Collaboration with NEERI, Nagpur for study of environmental impacts of disposal of effluent on land at Aurangabad and Nagpur
- Collaboration with NEERI, Mumbai for collection of data on air quality and health effects in Mumbai
- Monitoring of noise pollution at ten cities in Maharashtra during Diwali, 2005
- Measurements of Benzene, Toluene and Xylene in ambient air at Mumbai.
- Collaborative project of CPCB under Indo -Canadian Cooperation regarding preparation of Indian Register for Potentially Toxic / Hazardous Chemicals
- CPCB-MPCB project on preparation of ZASI based on environmental consideration.
- Bio-monitoring of Godavari river
- Report on Pollution Study of Mithi River Basin.
- Report on Construction on Mill Land in Mumbai
- Investigation of dead fishes near Gateway of India and other locations along the coast of Mumbai during October 2005 by NEERI/CMFRI/CIFE

The outcome of all such research and development projects has led to better understanding and implementation of the policies of the Board.

3.6 Preparation of Plans

Planning is a priority at MPCB since it is an essential task in any situation that the Board responds to. Some of the planning activities undertaken by the Board during the year 2005-2006 are discussed below.

3.6.1 Strategic Action Plan

Strategic Planning is a disciplined effort to produce decisions and actions that guide and shape what the organization is, what it does, and why it does it, with a focus on the future. Strategic Planning is a management tool which helps an organization to achieve its goals. The term strategic is used for the process because it prepares the organization to respond to circumstances related to an organization's dynamic environment. The process is about planning because it involves setting of targets or goals and developing a framework of objectives, tasks and tactics to achieve these goals. The term, disciplined, is used in the definition because the process involves certain patterns and order to keep it focused and productive. The process helps determine where an organization is going to be in future and how it is planning to get there. It ensures that the members of the organization are being guided towards achievement of common goals in the interest of the organization.

Keeping such a definition in mind, and partnering with ADB, MPCB contracted EMC to draft a SAP.

EMC then worked on developing a SAP for MPCB following a comprehensive process that included extensive information gathering through document and data review, conducting workshops to finalize MPCB's Vision Statement, goals and objectives, developing MS Excel spreadsheets that MPCB could use for documentation, developing a GIS monitor and providing training to MPCB on the use of the developed material.

Following such a process, the SAP was developed in the MS Excel framework. 4 databases were included in this system as shown in Figure 3.8.

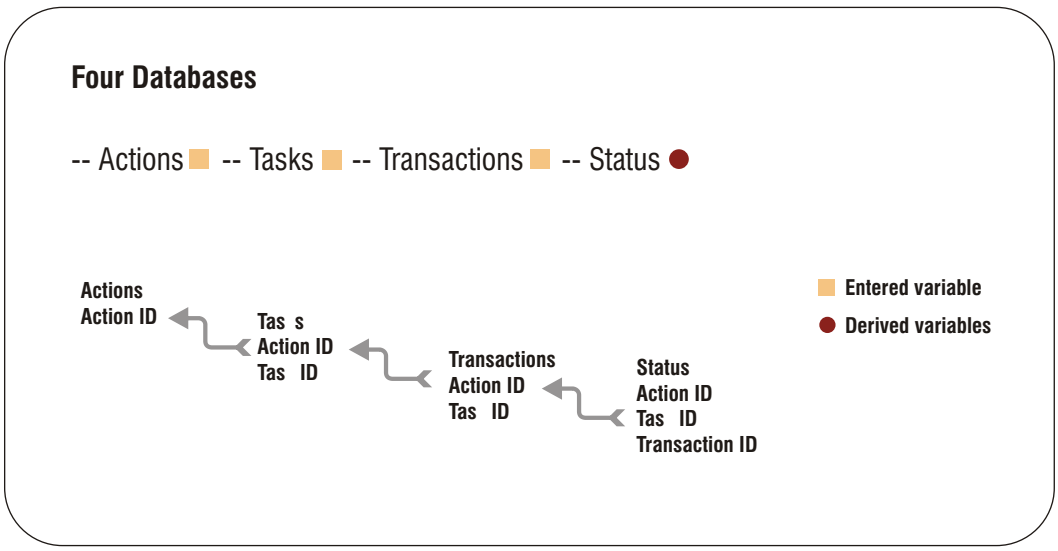


Figure 3.8 Structure of the Final Action Plan (Databases)

EMC then went a step further and provided, in addition the MS Excel framework, a Geographical Information System (GIS) based interface. This GIS based SAP for MPCB consists of 2 sets of tools.

- Situation Analysis Tools and
- Action Plan (Creation and Tracking) Tools

The role of a GIS monitor in MPCB is shown in Figure 3. .

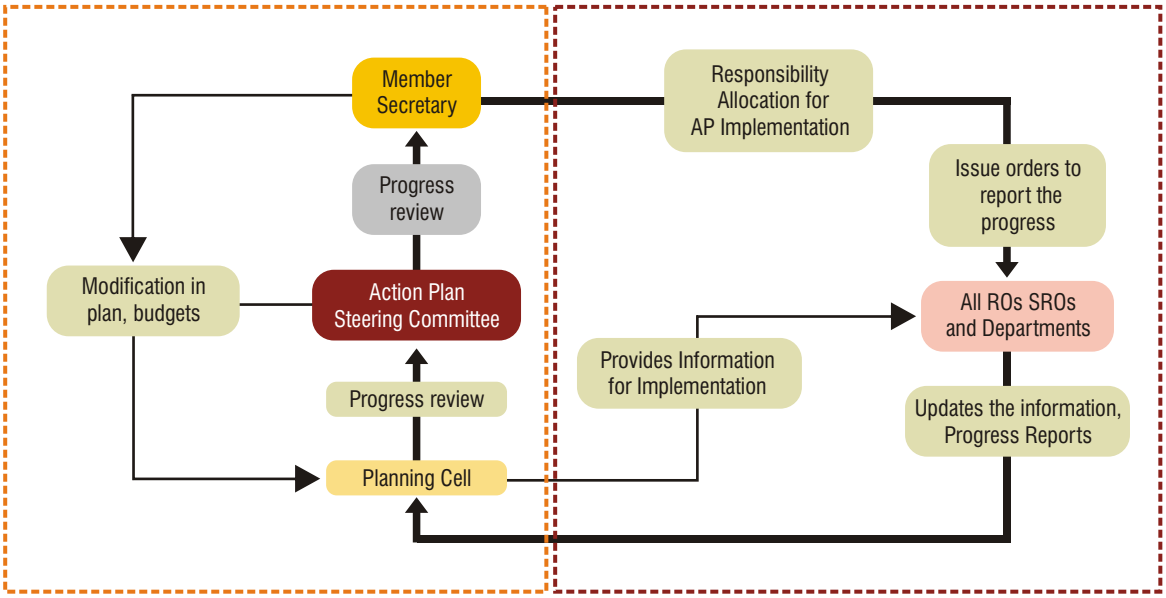


Figure 3.9 Proposed Functioning of GIS monitor in MPCB

Some examples of the statistics generated in this report based on the final action database are presented in figures 3.10 through 3.12.

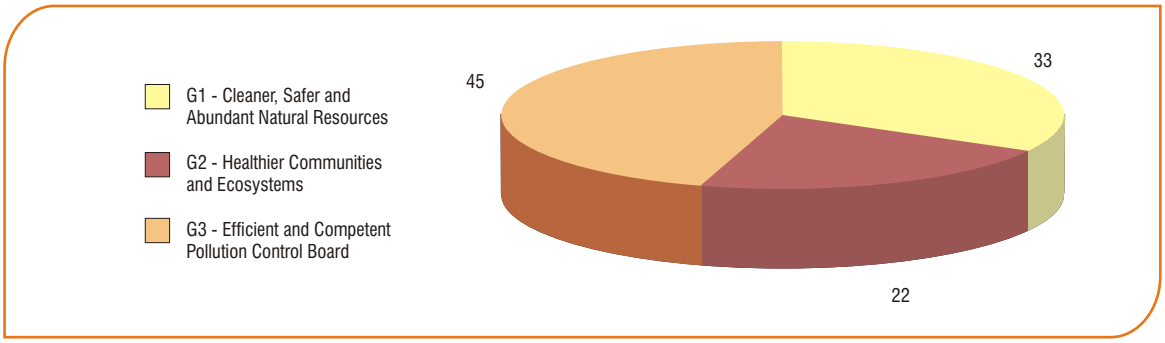


Figure 3.10 Distribution of Actions Based on Goals

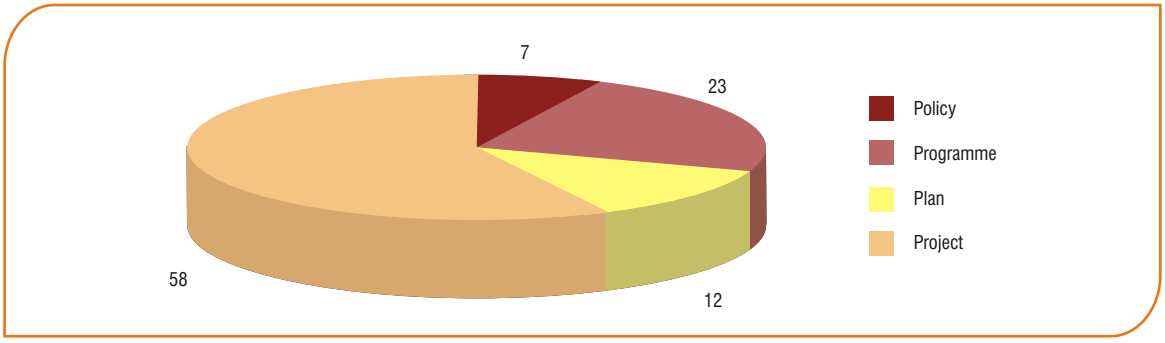


Figure 3.11 Distribution of Actions Based on Type

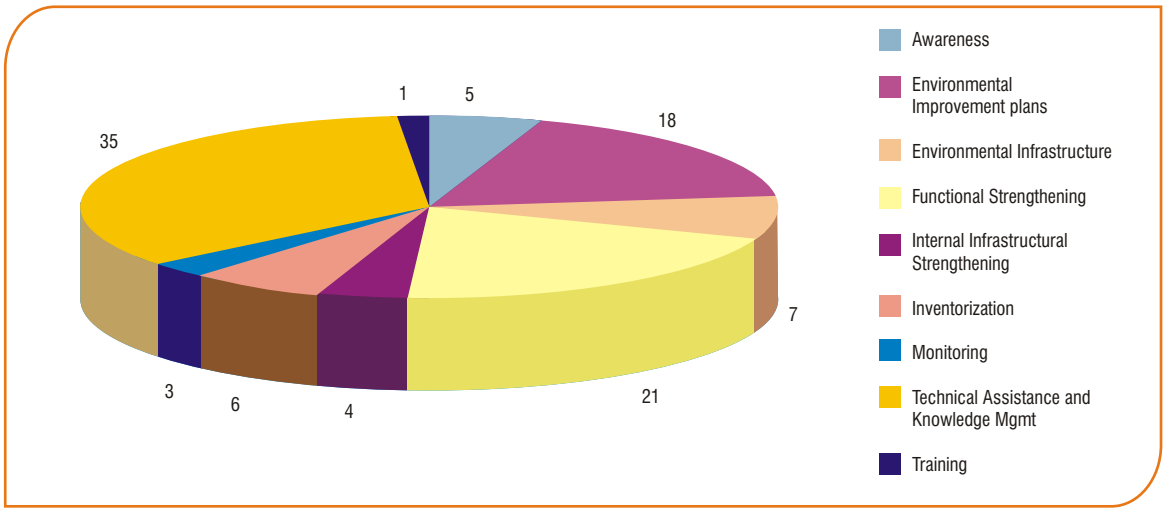


Figure 3.12 Distribution of Actions Based on Nature of Actions

3.6.2 Environmental Action Plans

In addition to the SAP developed for MPCB as described above, action plans were developed for some cities in the State. The Pune and Solapur action plans were completed last year and new plans for Chandrapur and Kolhapur were developed this year.

3.6.2.1 Pune and Solapur Action Plan

The Supreme Court of India, on consideration of the Public Interest Litigation Writ Petition 1302 /1 85, regarding the pollution in some cities in India directed that the cities of Pune and Solapur should have action plans that will include a programme for pollution reduction.

MPCB has prepared Action Plans for these cities and submitted the same to the Environmental Pollution Control and Protection (EPCA) Authority (Bhurelal Authority). Based on these plans directions have been given by the Apex Court and subjected to implementation by various authorities including MPCB. As recommended by MPCB, a Task Force has been formed to oversee the implementation of Action Plans for air pollution control in Pune and Solapur cities and perform follow up actions. Based on the monitoring, inputs, observations and suggestions from committee members and the EPCA, necessary efforts have been taken to minimize air pollution in Pune as well as Solapur. In order to reduce vehicular pollution, various aspects like improvements in pollution control systems in vehicles, introduction of better and cleaner vehicular fuels, retrofitting of three and four wheeler vehicles, checking of vehicular emissions regularly and developments of road have been included in the Pune and Solapur plans. Regular reviews are conducted to ensure compliance with the directives/guidelines received from Apex Court and EPCA.

3.6.2.2 Chandrapur Action Plan

Chandrapur is a mineral rich district with a dense forest spread of over 41.5 %. With availability of abundant land and water, industries have been set up in and around Chandrapur city. Hence, it is also a highly polluted area.

Several actions have been identified to control pollution at Chandrapur based on the earlier experiences of the Board. Some of these are described below.

1. Controlling emissions from the thermal plant which is the single largest contributor to air pollution in Chandrapur, as well from the sponge iron plants, cement plants, coal mines and paper and rice mills are a priority and are being addressed.
2. Training needs have been identified.
3. Increasing the number of NAMP and SAMP monitoring stations is being planned.
4. Dissemination of ambient air quality data to the public, source emission monitoring, preparation of emission inventory will be done.

5. Conservation efforts and prevention of the degradation of natural resources is being considered through steps such as maximum utilization of the fly ash in brick making, construction and cement industries.
6. Increasing the levels of enforcement and compliance of various environmental regulations, by introducing speedier mechanisms.
   Upgrading the present MPCB set up at Chandrapur into an RO, along with capacity building in terms of infrastructure and man-power is also being discussed.

3.6.3 Environmental Improvement Programme At eligious Places

The religious places in Maharashtra are mostly located in small cities or on the bank of rivers. The local authorities do not have adequate infrastructure to manage the floating population during the festival seasons or religious occasions. Due to a huge conglomeration of people at these places during specific times in a year, the environment is adversely affected as is public health on account of the air, water, noise and solid waste pollution. Considering the seriousness of the issues, MPCB considered the implementation of a project on environmental improvement of religious places last year.

After a detailed discussion on the objectives of such a programme, MPCB with the help of M/s. Wilbur Smith Associates Pvt. Ltd., (WSAPL), Bangalore conducted the detailed assessment of the environmental problems, infrastructure needs in Alandi, Shirdi and Shani Shinganapur and prepared a project Concept Plan and Feasibility report in line with the guidelines of the Eco-City Project being implemented by CPCB. The details of the existing environmental scenario and identified projects for Alandi, Shirdi and Shani Shinganapur are provided in Annexure 3.6. A cost summary for each of these places is provided below in Tables 3.25 through 3.27, which also gives an idea of the environmental categories that are targeted for improvement at each site.

Table 3.25 Summary of the Project Cost for Alandi

Pro ect	Total Cost (Rs. in La h)		
	Phase-I (2 5-2 11)	Phase-II (2 11-2 31)	Total
1. Sewerage scheme	343.00	289.00	632.00
2. Solid waste management	50.00	75.00	125.00
3. Indrayani riverfront development	70.00	--	70.00
4. Water supply	221.00	329.00	550.00
5. Roads and traffic improvement	170.00	140.00	310.00
6. Tourism development	38.00	--	38.00
7. Other projects	100.00	450.00	550.00
Total cost	**2.**	**12 3.**	**22 5.**

Table 3.26 Summary of the Project Cost for Shirdi

Pro ect	Total Cost (Rs. in La h)		
	Phase-I (2 5-2 11)	Phase-II (2 11-2 31)	Total
1. Sewerage scheme	1273.50	1079.80	2353.30
2. Solid waste management	40.00	80.00	120.00
3. Water supply	30.00	--	30.00
4. Roads and traffic improvement	1991.48	540.23	2531.71
5. Tourism development	14.00	30.00	44.00
6. Renewable Energy Park	50.00	--	50.00
7. Rain Water Harvesting	0.50	--	0.50
8. Other projects	108.00	546.00	654.00
Total cost	**35 .4**	**22 . 3**	**5 3.51**

Table 3.27 Summary of the Project Cost for Shani Shingnapur

Pro ect	Total Cost (Rs. in La h)		
	Phase-I (2 5-2 11)	Phase-II (2 11-2 31)	Total
1. Sewerage scheme	261.35	80.25	341.60
2. Solid waste management	48.00	--	48.00
3. Water supply	56.00	--	56.00
4. Roads and traffic improvement	249.20	257.0	506.20
5. Tourism development	10.00	--	10.00
6. Renewable Energy Park	48.71	--	48.71
7. Improvement of Panas Nala	8.00	--	8.00
8. Other projects	0.60	--	0.60
Total cost	**1.**	**33 .25**	**1 1 .11**

3. Partnerships

3. .1 Mo ith EE I

The Board has signed an MoU with NEERI Nagpur for waste assessment of status of soil, plant and groundwater following land disposal of industrial wastewater at MIDC Butibori. This work has been completed.

3. .2 Mo ith EP

The Board has signed an MoU with UNEP whereby the Board agreed to conduct the e-Waste Baseline Rapid Assessment for the MMR area, including Mumbai city, its surrounding semi-urban and rural areas and Pune.

3. .3 Mo ith SA

The Board signed an MoU with NRSA to explore the possibilities of using Remote Sensing (RS) techniques for identification of illegal HW dumps in accordance with the SCMC directions. NRSA used satellite imagery for the Thane district for this study and came up with ways to employ

RS techniques for identifying HW dumps in and around the industrial areas at Tarapur, Dombiwali and Ambernath.

3. .4 Mo ith M

The Board signed an MoU with the National Metallurgical Laboratory (NML) to study air pollution caused by steel production units in the Jalna, Aurangabad industrial area. The MoU also required NML to carry out a technical feasibility study of these units from an environmental perspective and suggest suitable measures/improvements to achieve environmental compliance.

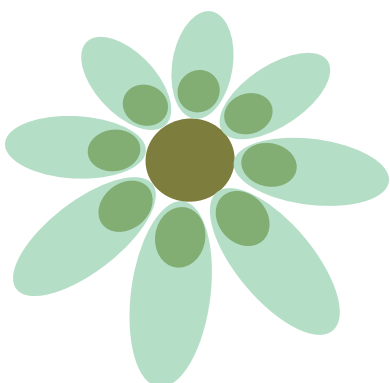
3. Conclusion

A review of all of the above sections reveals a pathway that MPCB follows in responding to environmental challenges. As stated in the very first paragraph of this Chapter, MPCB follows a reiterative response mechanism. Hence, from monitoring and surveys to inventorization to enforcement to developing and expanding on common infrastructure to conducting special research and development projects to planning, partnerships and policy development the Board not only performs its routine duties and functions but also follows a proactive approach.

Responses to environmental challenges can also lead to two major discoveries. Firstly, to face challenges and respond in an appropriate manner, the Board has to improve its own dynamics and internal functional efficiency. It has to build the correct internal infrastructure and have adequate well trained staff. This is discussed in Chapter 4.

Secondly, public participation in the legislative process is one of the biggest ways in which environmental compliance and protection can be accomplished. Hence the Board has to communicate with the masses, get the media and NGOs involved and make its own functioning completely transparent by making information and data available to everyone. This is discussed in Chapter 5.

Chapter - IV



Internal Capacity Building

MPCB is a forward looking and thinking organization and is in the process of metamorphosing itself from an enforcement based to a knowledge-based style of regulatory agency. In this effort, MPCB realizes that long-term change in the environmental affairs of the State starts with transformations in the environment at home. Accordingly, the Board is involved in a myriad of internal capacity building initiatives that are ambitious in thought, reflective in action and exemplary overall. Some examples are provided in the sections below.

4.1 EIC

IT has been the overwhelming impetus to the accelerated and productive growth in recent years. Recognizing that technology and in particular IT is an important driver of productivity and efficiency and to meet the growing needs of the Board, MPCB has spread its wings in computerization activities by trying to convert to an electronic form of government, and take its first steps towards a paperless office. Thus, the EIC was launched to carry out activities related to computerization, software development and management and website management. This effort is explained in Figure 4.1 and described in some detail in Box 4-1

Box 4-1 Environmental Information Centre

EIC was formed on 13 th July 2004, by transferring existing staff of the Statistical Department to EIC and recruiting a few Junior Research Fellows on contract. EIC performs the following functions

1. Website Management MPCB s Website is updated daily and maintained internally by EIC. Overall maintenance of MPCB s Website and development of various web-based software have been delegated to M/s. Cybertech Network Pvt. Ltd for the year 2005-2006. MPCB's Website has been revamped and enhanced into a user-friendly version. A dynamic digital library (library of all sorts of environment related information) has also been included. MPCB's Marathi Website is also introduced to meet the needs of regional browsers.
2. Consent Management A fast-track mechanism is in place for Consent Management. Consents are categorized into red, orange and green categories depending on the capital investment and nature of industry. Processing of these categorized consents is delegated such that the status of all red category consents is determined by the Member Secretary of the Board, while the Regio-nal Officers handle all the Orange category consents. All Green category and simplified consents are handled by the Sub-Regional Officers. A detailed list of Consents granted, pending and refused is displayed daily on MPCB s website.
3. Computerization All sorts of computer infrastructure building, software management and networking, implementation and maintenance are addressed.

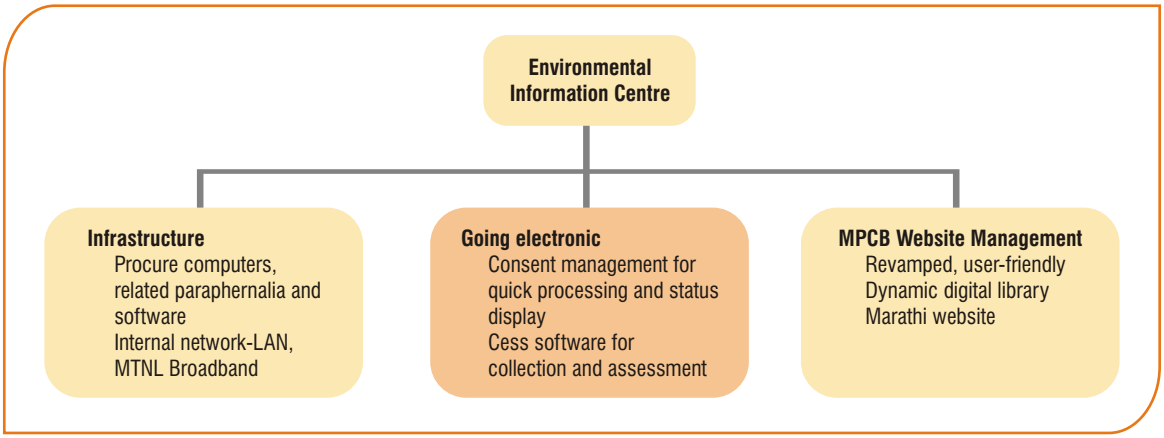


Figure 4.1 Environmental Information Centre

4.1.1 i rar and Pu lications

In the year 2005-2006, MPCB published the following reports

1) Report on Mithi river.
2) Report on the environmental status in all Regions (11 reports)
3) Inventory of HW generating units in Maharashtra
4) uarterly magazines in Marathi namely " *aryavaran Sevak*" and ' *unanubandh*"
5) Noise pollution survey 2005
6) Institutional capacity building
7) E-Waste management
8) Code of conduct for environment friendly immersion of idols
) Guidelines for citizens on management of MSW
10) Investigation of dead fishes near Gateway of India and other locations along the coast of Mumbai during October 2005
11) Survey report on environmental status in goldsmith shops at Bhuleshwar
12) Suggested approach for disposal of excreta and other waste from poultry farms during chicken bird flu wave
13) Guidelines for handling and management of spent mycelium in bulk drug industry
14) Slaughter house survey report
15) Report on construction on mill land in Mumbai
16) Procedure for measurement of thickness of plastic bags

In addition, the library procured a total of 35 books during the year 2005-2006.

4.2 e Infrastructure and a orator

MPCB considered and made provisions for employees' medical allowance, education subsidy, canteen subsidy, study leave, housing loans, sports and cultural activities, advance for computers in addition to some of the basic infrastructure building and expansion activities undertaken as described below.

4.2.1 e Infrastructure

Recognizing that the working environment can make a difference in the productivity of employees, the Board is also focusing on refurbishing its existing infrastructure in terms of the buildings that employees spend a significant portion of their working day in, acquiring new premises and providing adequate transportation for Board-related activities. Accordingly, it is planned to add ROs at Chiplun, Mumbai, Chandrapur and Nanded and add laboratories at Amravati, Nanded, Kolhapur and Chandrapur.

4.2.2 a orator

MPCB's Central Laboratory is located at Navi Mumbai and Regional Laboratories are at Aurangabad, Pune, Nagpur, Nashik, Thane and Chiplun. These laboratories house a number of sophisticated equipment for analyzing air, water, and hazardous waste samples (see Photographs 4.1 on the Total Organic Carbon Analyser and 4.2 on Gas Chromatograph Automated Thermal Desorption). Around 3,000 samples are analyzed per month in these laboratories. Apart from this, 8 mobile monitoring vans have been procured and set up with advanced instruments used in the monitoring of ambient air quality at various places. These vans have the capability to measure key air pollutants such as SO_2, NO_x, SPM, NH_3, CO, and HC as well as meteorological measurements like temperature, humidity, wind direction, and wind speed. These data are computerized and printed on an hourly basis. Two fixed automatic monitoring stations funded under a WB project have also been installed at Thane Belapur (Navi Mumbai) and at Chandrapur.

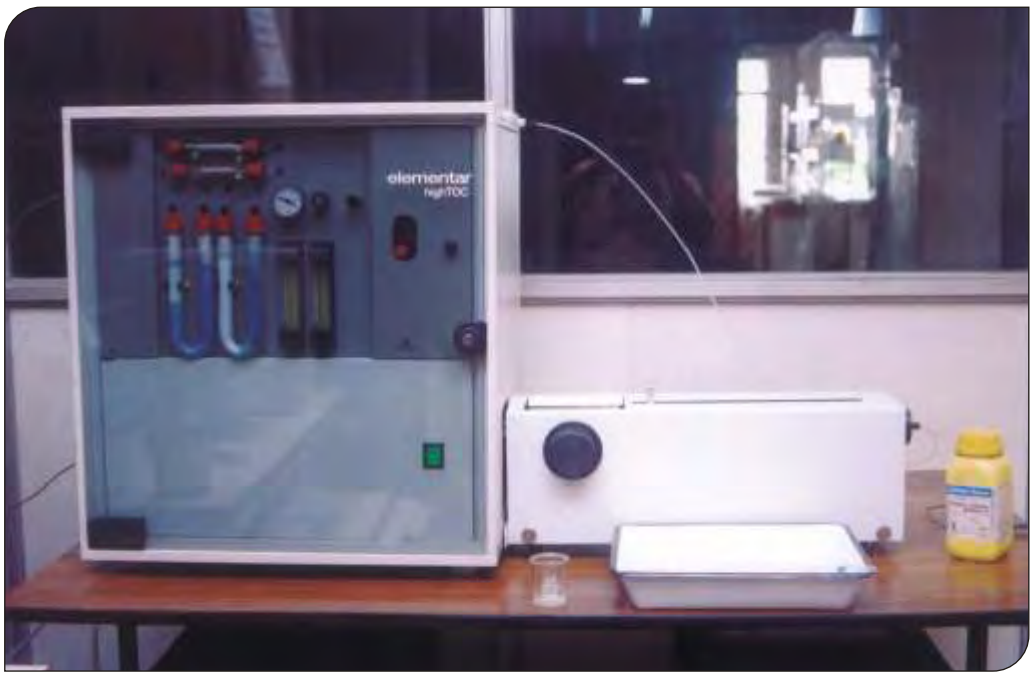
4.3 Environmental raining

Environmental training is an important bullet in the list of functions performed by the Board. Training is recognized as an essential ingredient for the effective implementation of the stipulated pollution control norms.

The Board ensures that its staff has a complete understanding of the environmental rules and regulations it is

delegated to enforce, through internal training efforts as well as by encouraging staff members to participate in training exercises provided by other national and international agencies such as CPCB, Center for Environmental Science and Engineering (CESE), National Energy Technology Laboratory (NETL) and United States Agency for International Development (USAID). The training efforts span across the subject areas of prevention, abatement and control of pollution and emphasize on a proactive rather than a reactive spirit in managing the environment of the State. Some of the training efforts undertaken by MPCB for its employees include a 2-day workshop on chemical incineration, the latest air pollution control technologies and their performance evaluation, GIS application for environmental planning and performance and so on. A complete list is provided in Annexure 4-1.

Photograph 4.1 Total Organic Carbon Analyser



Photograph 4.2 Gas Chromatograph Automated Thermal Desorption

4.4 Institutional estructuring

This study was commissioned on the basis of a Supreme Court Order dated October 14, 2003 in the matter of WP No 657/1 5, in which the Supreme Court has noted " it is necessary to strengthen the SPCBs and CPCB by providing them with requisite infrastructure and manpower so that they can issue the necessary guidelines to monitor the handling of hazardous wastes as necessary..."

Accordingly, MPCB requested CRISIL Infrastructure Advisory (hereafter referred to as "CRISIL") to develop a plan for institutional capacity building of the Board. CRISIL developed a plan after wide consultations with the employees of the pollution control board, discussions with experts in the field of environment, study of other pollution control boards in the country/abroad and comparison with similar regulatory organizations. CRISIL reviewed past efforts at institutional restructuring and then laid out their approach, which included performing strategic and organizational reviews to make recommendations and then develop an implementation plan. The biggest finding of the study was that a role change was in order for MPCB. As shown in Figure 4.2, the idea is for MPCB to be a part of the structure rather than be the outsider and play a new role by embracing the functions shown in Figure 4.3. Specifically some of the areas that MPCB needs to enhance include the following

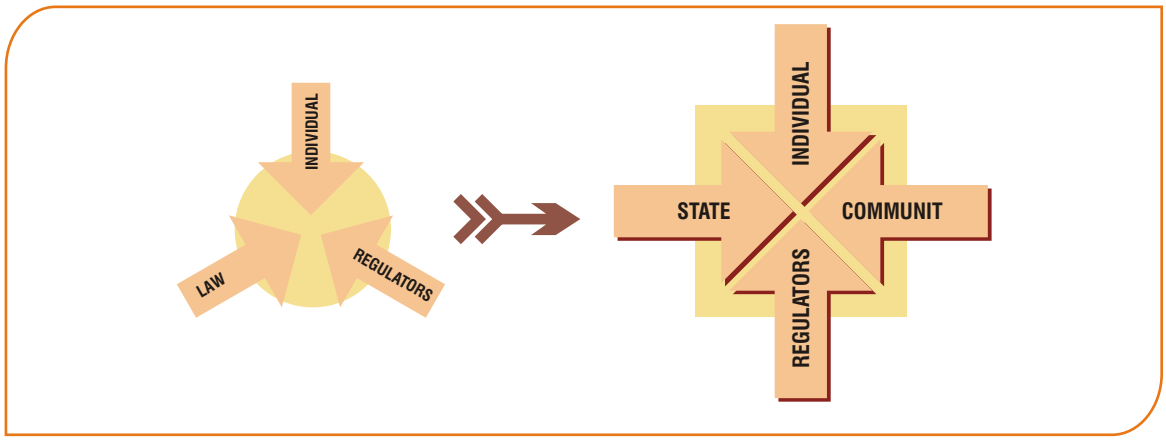


Figure 4.2 Redefining MPCB's Position

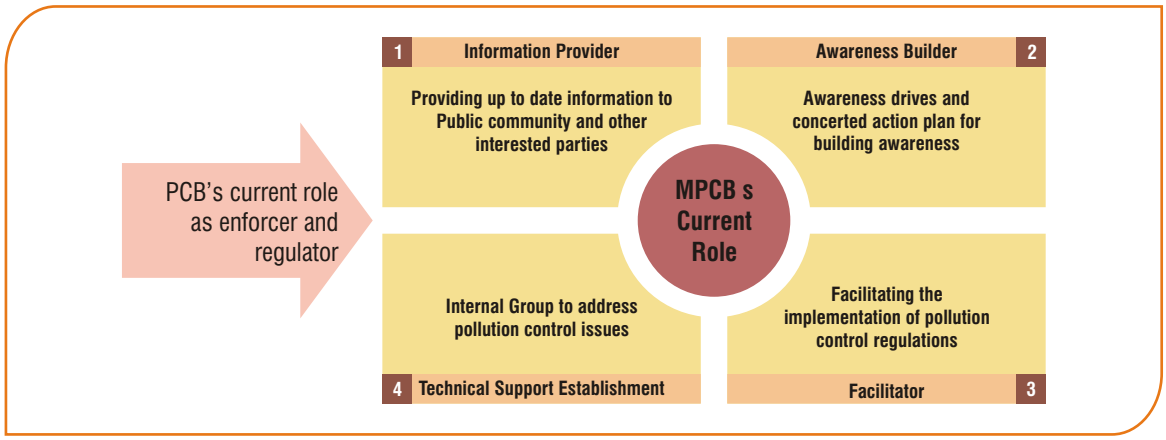


Figure 4.3 Redefining MPCB's Role

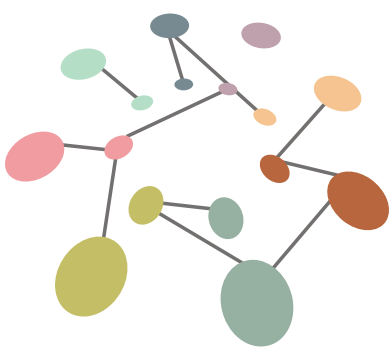
1. Creating a reliable database of information
2. Strengthening the technical set-up and
3. Employing adoptive instruments

MPCB now plans to use the findings of the CRISIL study to better understand their own internal working and develop a better system in alignment with the new role.

4.5 Strategic Action Planning

As stated previously MPCB is interested in expanding on its function as a regulator to a facilitator of knowledge by sharing information, stimulating public-private partnerships and adopting modern practices of doing business. For such a role change appropriate environmental infrastructure needs to be in place to address all environmental challenges from monitoring and assessment to protection. Strategic Planning will serve as a blueprint to get the organization from where it is now to where it wants to be. Such a process requires the development of short term as well as long term action plans. Since this process is as important as its outcomes the Board outsourced EMC to perform such a task. This has already been discussed in detail in Chapter 3.

Chapter - V



External Communication

As discussed previously in this report, the Board is moving towards a role of facilitator of knowledge. Thus, in addition to its own institutional capacity building initiatives described in Chapter 4, the Board also set up a number of activities for public outreach and awareness building to steer public momentum towards environmental stewardship and ownership. Some of these are described in the sections below.

5.1 Environmental raining

For successful implementation of the rules and regulations enforced by the Board, it is imperative that the regulated community understand and follow the law. Thus, training is imparted not only to personnel of the Board, but also to workers in industries and local municipal bodies. For example, with the introduction of the new rules such as the BMW Rules of 1 8 or amendments in existing rules, such as the HW Rule Amendments of 2002-2003, special training was imparted to the operators of waste storage, treatment and disposal facilities to perform their functions effectively.

BO 5-1 Public Awareness

World Environment Day Celebrations, June 5th, 2004

Discussions on working towards a pollution free State, on reducing the use of plastic bags and on bringing in more transparency in the Board's activities by displaying monitoring results and other data online for everyone to see and on overall environmental challenges and protection.

International day for Preservation of Ozone layer, 16th Sept 2005

Poster exhibition and an interactive session with school children emphasizing the importance of ozone layer depletion. A street play depicting the importance of reducing the use of plastic was also held.

5.2 A areness and Pu lic Participation Campaigns

Over the past three decades of enforcing environmental legislation in Maharashtra, the Board has realized that the biggest driver for significant environmental change in the State is the general public. Heightened awareness of people to environment related issues affecting them are imperative. Hence, education, ensuring availability of information and dispensing such information in a manner that is easily understood by laymen in the field is the premier objective of the Board when it comes to public outreach. In fact, the Board has also funded many organizations that have sought to further this goal. Some of these organizations include Enviro Friend Institute, Babasaheb Ambedkar Technological University, Mumbai Patrkar Marathi Sangh and so on. A complete list of such organizations is provided in Annexure 5-1. Such activities as summarized below have emerged not only in response to the public's right to access such information, on court orders and directives, but mostly also through the Board's own initiatives.

Some of the RO efforts towards creating mass awareness and encouraging public participation included holding workshops in environmental education, seminars on the latest in pollution prevention and protection, conducting demonstration projects for rain water harvesting, conducting tree plantation programmes, holding rallies for awareness, displays and exhibitions. Each event was well-attended and targeted diverse stakeholders. Often times, the Board offices made use of public festivals and events to address the collective mass of people.

The Os of the Board also serve an important role in creating mass awareness and encouraging public participation. Through workshops, seminars and other education forums for the public, the Os serve to bring environment to all areas of the State.

Overall, these events served to bring together local industries, educational institutes and the public along with the Board officials to create a collage of partnership. Additional details on activities carried out in the individual ROs are presented as follows.

Nagpur Region

Workshop on Environment Education at Sevadal Mahila Mahavidyalaya was inaugurated by Regional Officer, Nagpur on 28th January 2006. It was widely attended by teachers in the area and well participated by the students.

University Grant Commission (UGC) sponsored National Seminar on New Frontiers in Pollution Prevention and Environmental Protection conducted by LAD Smt. R.P. College of Women, Nagpur.

Shri. A.B. Jain, Senior Law Officer (SLO) Headquarters (H) delivered a lecture on Environmental Protection Regularly Regime. The lecture was illustrative with vivid experiences of the SLO of the Board. It was appreciated by everyone. Earlier the MPCB stall was inaugurated by Dr. Devotta, Director, NEERI. Regional Officer, Nagpur inaugurated photo gallery of the seminar.

The Board in association with Nisarg Vidhyan Mandal organized a mass awareness rally in December, 2004 in which more than 4000 school children participated.

For the first time in Vidarbha a rainwater harvesting system was installed at Udyog Bhawan costing approximately 4 lakh. This project is one of its kind for water conservation implemented by the MPCB office in this region. This project served as an example in water conservation by harvesting 8 lakh liters of water in one monsoon. The said project was inaugurated by Dr. D.B. Boaralkar, Member Secretary, MPCB was much appreciated by the press.

Navi-Mumbai Region

An awareness rally was conducted in Central Business District (CBD) Belapur under 'Sant Gadge Baba Swachata Abhiyan' programme.

Awards were given to the mandals for adopting best eco-friendly measures taken, during celebration of Ganeshotsav.

Thane Region

The Thane RO planted trees in industrial areas and conducted a number of awareness programmes in Government and public schools with an effort to built trust and avoid environmental degradation through the education of teachers and students.

Raigad Region

As a part of public awareness programmes the RO in Raigad installed a stall to exibit photographs, posters, banners etc, during the Murud Janjira festival held on 23, 24 25th Dec 2005. The stall was inaugurated by Shri. Ravi Sheth Patil, Hon. State Minister for Environment, GoM.

Aurangabad Region

On the "World Environment Day 2005" i.e. 5th June, drawing competitions were held. The basic aim behind the drawing competition was to cultivate interest in children about the environment.

The MPCB Officers' Welfare Association organized a workshop for shop floor personnel working in industrial pollution control facilities at Aurangabad on 17th 18th December, 2005 at the conference hall of MPCB, Chikalthana, Aurangabad. There were around 60 participants from various industries/ organizations who attended the workshop.

Nasik Region

World Environmental Day - 5 June 2005 was organized at Udyog Bhavan Nashik. A cycle rally was organized to give a message to the general public to use cycles as a mean of transport so as to conserve natural resources and subsequently to control air pollution due to burning of fuel in the vehicle and for betterment of the public health in general. The cycle rally was inaugurated by Hon. District collector Mr. Mahesh Zagade. This was organized with the help of students from ITI Nashik in which about 100 students participated apart from general public of the city. Hon'ble District collector was the chief guest of the function, Shri Pravin Shinde Regional officer MIDC, Shri Dalavi, Principal ITI Nashik and representatives from industries were present on the occasion.

The tree plantation programme was also organized at M/s. Perfect Circle Pvt. Ltd., MIDC Satpur, and Nashik. The chief guest and others planted trees on this occasion.

Agriculture exhibition was organized with the help of Nisarg sutra and Nashik Thermal Power Station (NTPS) Nashik on 2 /11/2005 to 05/12/2005 at Dongare ground, Gangapur road, Nashik. The Nashik RO also participated in the programme. As a part of the environmental awareness programme specially for fly ash utilization, the information was disseminated through posters, handbills, computer CDs etc. for best use of fly ash as a raw material for brick manufacturing, as compost, as material for building and road construction etc.

The Nashik Industries and Manufacturers Association (NIMA) organised an industrial exhibition on 25th to 30 Jan 2006, at Nashik and MPCB Nashik was one of the participants in the exhibition to disseminate information on environmental awareness among general public and industries by printing and distributing special booklets, handbills, posters, banners and through computer CDs. The important issues with reference to water pollution, air pollution, noise pollution, ozone layer depletion were displayed at the stall. Many visitors appreciated the information display and distribution during all the five days. As a result, the organizing committee of the exhibition awarded 2nd prize to the MPCB stall.

On the occasion of Holi, to celebrate eco-friendly Holi, an environmental awareness program was organized at Navarachna Vidyalay, Gangapur Road, Nashik on 14/03/2006 where MPCB also participated.

An environmental awareness programme was conducted at Mahindra Mahindra Igatapuri, on 26/07/2005 where MPCB participated. A tree plantation programme and cycle rally was organized by Mahindra

Mahindra with local school students, MPCB Nashik, Tahsil office, forest office and Igatapuri Municipal council. A meeting was organized at the Municipal council Trambakeshwar and municipal council Sinnar for all hospital owners and doctors to discuss the issue related to BMW and its scientific disposal.

As a part of an environmental awareness programme, information related to MSW and BMW was given to the participants attending the training course at KTHM College, Nashik.

During the Ganpati festival the RO circulated guidelines about immersion of idols. Wide publicity was also done through local leading news papers for use of non metallic colors for idol painting and immersion of idol in a safe place so as to avoid ground /surface water pollution. Noise monitoring in the major cities of the region during day and night time was also carried out. A report in this regard has been prepared. The noise monitoring report revealed that local people kept noise level minimum especially after 10 p.m. in the night. Also many people adopted the suggestions about idol immersion. This caused minimum impact on the water bodies.

Similarly during Diwali festival, this office circulated the guidelines about minimum use of crackers to limit noise level within 110 dB only. This was widely publicized through local leading news papers. The noise monitoring report revealed that local people succeeded in keeping noise level low especially after 10 pm in night.

Kalyan Region

Dispalyed information on the CETP and pollution control status of Dombivali MIDC area in a programme of senior citizen with the help of nature club Dombivali. Hon'ble minister Shri Ganeshji Naik also visited the stall.

A meeting was called with representatives of nearby villagers, industries representatives, MIDC Authorities, Kalyan Dombivali Municipal Corporation (KDMC) Authorities to create awareness of treatment disposal of MSW.

Organized a workshop for officers of the Municipal council and corporation on air pollution in M/s Gharda chemical Dombivali.

5.3 Interaction ith the Press and GOs on Environment

MPCB aspires to be more transparent in its dealings and realizes that the best way to break the barrier between its activities and their public understanding is to involve the media and place the Board's workings under

Photograph 5.1 Programme of Interaction with the Press NGOs on Environment held on 10th of November 2005 at Textile Committee Hall Prabhadevi Mumbai

the scrutiny of the public eye. In this effort, the Board decided to engage the press and NGOs in an interactive session. Discussions were held on the work done by MPCB so far in implementing the various legislations and rules framed for environment protection in the State. Members of the press and NGOs also voiced their opinions on the Board's activities and their expectations of the Board. The overall theme at such interactions was typically how best to achieve the common goal of public awareness, participation and partnership. Such open forums will help in eliminating misconceptions about the Board's activities, and misguided anger and frustration of the public towards MPCB. Additional details on the interactions with press and NGOs (held on 10th November 2005) and the workshop for the *Mumbai Marathi atrakar Sangh* (conducted on 23rd and 24th February 2005) are presented here.

Shri D. T. Devale SLO welcomed attendees, introduced the chief guest other dignitaries and provided the background on this meet. He requested those in attendance to pay homage to late Ex-President of India, **Hon. Shri K. R. Narayanan** on his demise by observing 2 minutes silence.

Shri P. P. Nandusekar Principal Scientific Officer (PSO) in his speech gave details on his long tenure at the Board and the work done in the field of air and water pollution and public awareness campaigns, Kumbha Mela at Nashik. He expressed his displeasure about the media, stating that many a time the media do not publish good work done by the Board if no political leaders are present at such events. This attitude of the media deprives the public of important and useful information in the field of environment protection. He emphasized the efforts taken by him for organizing exhibitions on local level, State level and abroad with the positive support and able guidance of present Member Secretary.

Dr. D. B. Boralkar Member-Secretary explained the gravity of the subject of environmental protection in the State. He enlightened the audience on the quantum of wastes generated and velocity of urbanization in the State, compared percentage-wise with other States. He emphasized the formation of a private infrastructure company for implementation of various Acts, enactments, court orders effectively in the State and provided details of the process initiated by the State Govt.

Shri Kumar Kadam President of the Mumbai Marathi Patrakar Sangh in his speech insisted on effective public participation for the environmental protection awareness activities at grass roots and rural levels rather than at white collar/high society levels. He emphasized the need to give proper and true information to the media personnel and identifying the bogus NGOs. He also recommended forming a joint venture with **'Patrakar Sangh'** for public awareness work. He explained his experience in the village **'Avashi'** how politically motivated NGOs created a superficial atmosphere and fabricated news of the incident which did not actually take place.

He was of the view that MPCB should prepare a handbook manual for environmental journalists provide regulatory information to the press for wide spread publicity and awareness amongst the public at large.

Shri Chandrasen Borade from Ran ai Pune explained, how effective work can be done by through public participation. He also emphasized that, without encouragement from the concerned departments and government machinery, NGOs cannot function effectively. He informed the audience about the project undertaken by the KDMC in collaboration with foreign based companies for power generation from MSW. 500 MT, MSW which can give 10 MW power. This project can be brought to the notice of Pune Municipal Corporation. for use of MSW for power generation. He pointed out that, only the BMW generated in the big hospitals in Pune is taken care of, but the small health care centers do not dispose their BMW in a scientific manner, hence MPCB should look into small generators. NGOs are trying to monitor and create public awareness in this field. He pointed out the inefficient functioning of Kurkumbh CETP and the lack of facilities like fire stations in that place. He expressed his anxiety about the lead and mercury pollution in the city. He also stressed the need to extend concept "Parisar" to more more areas rather than to one's own house, so that more areas will be cleaned up by each one in the society.

asant Mhatre, NGO from Navi Mumbai expressed his grave concern regarding MSW of NMMC. He felt that MPCB be given a free hand without interference of political powers to implement environmental legislations effectively. He also pointed out that, MSW site of NMMC should be away from residential areas as this chemical belt has become a thickly populated area. He expressed his willingness to support MPCB activities in pollution control and to act as a watch-dog. He also felt the need for a separate body of professional experts in the environmental field for giving pollution free atmosphere to the citizens.

Shri Kishore Dharia President of 'Hirwal' NGO also welcomed MPCB for organizing such a meet for interaction with press, media and NGOs.

Rishi Aggarwal NGO opined to frame a separate department in MPCB to co-ordinate NGOs for regular meet for exchange of thoughts and ideas.

Prof. S. B. Chaphekar Chief Guest of the meeting guided everyone in depth. He talked about his interaction with the Board from the time of Mr. Lentin, Ex-Director of the Board and so on. He emphasized that, enforcement of various Acts alone will not suffice in educating people on environmental protection. The Board must have an action plan for awareness campaigns. On the remarks of Dr. Boralkar, "Board is self-sufficient", he opined that the Board must remove deficiencies they experience in day to day working. Financial self-sufficiency alone will not result in awareness campaigns. Besides doing work through agencies and consultants, many ways are to be adopted to educate people on pollution control programmes. In his speech, he traced the need of participation of rural NGOs, Municipal Councils of B C Class and small cities towns in the protection of the environment. Programmes on school level should be prepared for these activities. He narrated the effectiveness of participation of the students in such activities. He mentioned his displeasure about the unhygienic atmosphere experienced in our pilgrim places. Action plans like Shani- Shinganapur should be undertaken in other pilgrimage places immediately. Instead of meeting with NGOs from and around Mumbai area, Statewide conferences should be arranged for interaction on this issue with the NGOs. He also enlightened the audience on the irreversible pollution of soil. He expressed his deep concern on the unscientific and unhygienic ways of dumping MSW, which affect the fertility of the soil. He suggested that the Board should support NGOs, citizens and schools for effective awareness and environment protection plans to achieve success in environmental protection and pollution control. This meeting was attended by 75 participants consisting of NGOs, representatives of the press, media, experts and consultants in the field of the environment all over Maharashtra despite a short notice. MPCB exhibited various news articles published in the news-papers about the actions of the MPCB in favour of and against the Board. Activities undertaken by MPCB during Ganpati festival, Holi, Navratri and Diwali for creation of awareness were also displayed.

The operative part of the orders passed by the Hon'ble Supreme Court of India Mumbai High Court Benches on management of HW, MSW, Noise Monitoring and effective actions initiated by the Board in the Mahabaleshwar Panchgani sensitive zone were also shown in the exhibition. Information on the participation of MPCB at State, National International level was highlighted in the exhibition.

orkshop for Mumbai Marathi Patrakar Sangh on 23rd 24th Feb 2006

MPCB and Mumbai Marathi Patrakar Sangh jointly organized a two day workshop on environment awareness for all press and media personnel on 23rd and 24th Feb 2006 at Mumbai Marathi Patrakar Sangh.

This Workshop covered all basic environment pollution topics, rules and regulations social responsibilities of individuals to protect the environment. All participants visited CETP TTC- Thane and CHWTSDF- Taloja to see the functioning of those projects.

5.4 MPCB We site

The MPCB website at http //mpcb.mah.nic.in/ is developed, managed and maintained under the EIC wing of the Board. The role of EIC in institutional capacity building has already been discussed. However, an important function of EIC is to disseminate information to members of the public and one of the best ways of doing so is through the Board's website. The MPCB website, now viewable in both English and Marathi, can be classified into three broad programme areas (i) Knowledge Center (ii) Information-based compliance and (iii) Public Awareness Hub.

Knowledge Center

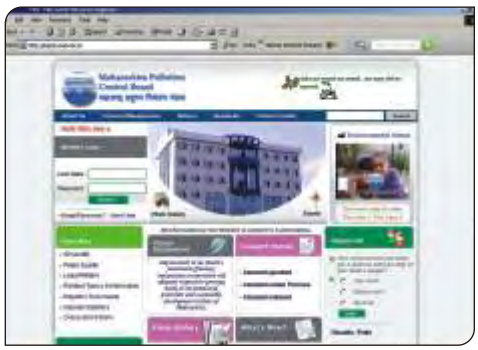
For an increasingly technology savvy public, information needs to be a click away. Hence, the MPCB website serves to provide this service. Information on all environmental media-air, water and waste is located on the website. For some basic information on the environment and issues facing the State, a user can get a quick overview of the different media, the rules that resulted from different acts that were coined to protect these environmental media and access other related information such as the Board's initiatives in various areas, events organized by the Board for outreach and education, and some current research in these media. Detailed guidelines, important High Court/ Supreme Court Orders, latest notifications, important reports and documents are also available on MPCB's website. Various application forms, tender documents are also available for download to the general public. On the lighter side, users can also access the photo gallery, take a poll and send environmentally conscious e-cards.

Information-based Compliance

An end user can access several forms of environmental data from MPCB's website. Some examples of environmental data available on MPCB's website include

1. Daily Ambient Air uality data at Mumbai, Pune, Nagpur, Nashik and Aurangabad.
2. Monthly Ambient Air uality data at various cities in Maharashtra under NAMP.
3. Annual Status of Noise Pollution at various cities in Maharashtra.
4. Monthly Water uality data at various locations (River Stretches and Basin Creeks) in Maharashtra under GEMS/ MINARS project.
5. Monthly report of inlet water supply to Municipal Corporations/ Councils.
6. Annual air and water quality status for the last 5 years.

Almost all the environmental data are dynamically updated with the help of specially designed web-based software. Air quality data are also graphically represented for easy visual interpretation.



isit the Maharashtra Pollution Control Board ebsite at http: mpcb.mah.nic.in

In addition, various software applications-based information sharing occurs on the Board's website. These serve the dual purpose of highlighting the increased transparency of the Board's efficient workings, and related accountability and a timely service to the public. For example, consent-based management as discussed in Chapter 4, has been much appreciated by industry and other stakeholders. Another example is that of a unique software on region-wise inventory of HW, namely *Ha ardous Waste Management and Maintaining System*, that is also available on MPCB's website. It is basically a dynamic search engine to view various types of HW generating units. This software enables users to file Annual Returns and Manifests, and compare the quantities of hazardous waste with the inventory.

Public Awareness Hub

MPCB's environmental awareness campaigns are typically advertised and published in newspapers. These are now available online. Environment awareness posters published on Earth Day, Ozone Layer Day and World Environment Day are also accessible on MPCB's website. Environmental awareness banners are displayed on the main home page of MPCB's website. The website also has various important awareness links namely e-greetings, e-screen savers / wall papers and information such as the relationship between health and the environment.

Various government organizations, NGOs and members of the corporate sector describe MPCB's website as a one-stop knowledge bank in the environmental domain. Various steps taken by MPCB for dynamically updating its website have been appreciated. Easy navigation, resourceful information and daily dynamic updates are the priorities identified by MPCB.