Air Quality Management in India

Existing Legal and Institutional Framework, Gaps and Opportunities for Intervention

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EXECUTIVE SUMMARY

Air pollution as an issue of concern, has been the focus of judicial activism, civil society mobilisation, administrative action and technological intervention. These have often worked in tandem with each other: civil society and concerned citizens have been forced to approach the court in view of administrative inaction, the Court's orders and specific intervention lead to specific directions and action to curtail air pollution, which in turn are based on the introduction of new technology or replacement of the existing. A classic case is the significant judicial activism that focussed on the issue of air pollution beginning from the famous Taj Trapezium case[1] to the decade long engagement in the *Vehicular Pollution* case. Through, what is termed as 'continuing mandamus', the Courts in India, specifically, the Supreme Court became, as some observers have termed, a 'super executive' in ensuring that the capital city of India changed to a less polluting mode of fuel and transportation. This Court-led cleaning up of the air is today credited for reducing the level of certain pollutants by a significant margin. Studies show that levels of SO_2 and NO_2 have shown significant decline in selected areas where the Courts have been proactive. In fact, judicial activism on air pollution has been regarded as largely successful in combating air pollution in comparison to efforts to control water pollution.

Notwithstanding the above facts, while studies which have shown a decline in air pollutants in certain urban locations and rural areas, the overall quality of air in the country is also on the decline. The reasons are varied. However, it is evident that any effort to deal with air pollution must be based on the realities of today and must be based on first understanding the source and the origin of the problem. The efforts to control air pollution must begin at the source itself.

The aim of the present study is to recommend interventions and policy level actions for improving the existing legal framework for air quality management in India, including complementary measures that may fall outside the legal and institutional domains needed to support an enhanced air quality management framework. As part of the study, the following aspects were studied/ reviewed:

- Review of laws and regulations on air quality management in India.
- Review of existing institutional mechanism for control of air pollution.
- Documentation of past litigation at the national and international levels and the precedents set and the implication for the same on future litigation.

[1] M. C. Mehta vs Union of India Writ Petition No. 13029 of 1985 (Judgment dated 14.03.1991).

- Assessment of norms such as CEPI and ETS as means to control air pollution.
- Suggestion of areas for intervention for improving air quality in India

The assessment of the above revealed the following major issues of concern:

(i) **The existing statutory measures and legal regime is largely out of tune with the needs of today**. The law for regulation of air pollution is essentially a criminal law and aims at penalizing the violators. While in theory, criminal prosecution may seem to act as a deterrent, in reality it is serves just the opposite purpose. The existing burden of criminal courts, the lack of legal and human resources of Pollution Control Boards, the heavy evidentiary burden on the regulator, all serve to ensure that violators are rarely ever punished and a business-as-usual continues.

(ii) The Litigation mode has been effective but Public Interest Litigation cannot be a panacea for all wrongs: The assessment of past litigation clearly reveals the over emphasis on Public Interest Litigation before the High Court and Supreme Court as a means to deal with air pollution. However, PILs have limited shelf life and depend a lot on the personal interest and inclination of the Judge and the efforts of the litigants. Given the increasing instances of air pollution, there is a need to look beyond conventional PILs.

(iii) A significant gap between what is preached and practiced by the Court: The courts in India have repeatedly emphasized on the significance of 'precautionary principle', the 'polluter pays principle' and principle of sustainable development. However, there is a huge gap between what is actually preached and what is practiced. Precautionary measures are rarely applied and despite emphasizing on many occasions about the need for carrying capacity studies and cumulative impact assessment, no specific directions are actually given. There is an over emphasis on *obiter dicta* (i.e mere observation) as opposed to enforceable orders. As a result, polluters rarely ever pay for the pollution they have caused and even though the 'burden of proof' is theoretically on the polluter or regulatory violator, practice dictates that it is generally on those who want to preserve the status quo, i.e. prevent excessive emissions.

(iv) There is a significant urban bias when it comes to the issue of air pollution: Existing litigation as well as policy action has focused more on urban air quality with

a further emphasis on major cities specifically metros. The issues of air pollution in rural and small towns have seen very limited intervention. While the level of SO_2 is showing a decline in major urban areas due to cleaner fuel, it is becoming an issue of concern in rural areas specially where coal fired thermal power plants are located.

(v) The policy measures such as CEPI Index and moratorium have been a cosmetic exercise. The CEPI index was introduced with much hope that it would lead to measurable change in the air quality levels specifically with respect to areas which are critically polluted. Unfortunately, the moratoriums have been lifted without sufficiently waiting for the changes to happen, thereby defeating the purpose of imposing the moratorium. As of date, the moratoriums have been lifted without a significant change in the pollution levels from most of the 43 areas initially identified in the CEPI index.

(vi) The linkages between air pollution and its impact on health have not been shared with the people. Similarly, the economic benefits of control over air pollution are still not known. Control of air pollution is essentially viewed as an exercise of state power to fulfill statutory duties and is rarely viewed as an exercise which could go on to contribute to people's well being. Besides, existing discussions on air pollution have focused more in terms of the loss of livelihoods and reduction of the growth rates in view of closure of industrial units. The economic benefits of reduced pollution have not been highlighted

(vii) The EIA process has largely ignored the air pollution related issues. The EIA process could have been a potent tool to control air pollution at the project planning stage itself. However, as is clear from analysis of various EIA reports, as well as analysis of the decision-making processes air pollution or the potential to contribute to the existing pollution load is rarely taken into consideration while granting approval to the project.

(viii) **Institutional Gaps in Air Quality Monitoring**: The National Ambient Air Quality Monitoring Programme (NAMP), while being a good start towards monitoring India's air quality, has several issues which may affect the quality of data.

INTRODUCTION

Air pollution in India has been a growing concern. Rapid urbanization with increase in vehicles[2], growth of industrial parks and estates as well as the lack of access to cleaner fuels in rural areas[3] have all contributed to air pollution levels that far exceed safety norms. Recently, a study conducted by environmental research centres at Yale and Columbia Universities concluded that India has the world's poorest air quality.[4]

The burgeoning problem of air pollution was first brought to the fore in the landmark litigations filed by M C Mehta in the Supreme Court of India, specifically, the case involving the yellowing of the Taj Mahal due to air pollutants[5], the near unbreathable air in Delhi due to widespread usage of leaded fuels and lack of catalytic convertors in cars.[6] The Supreme Court took an activist approach and gave directions on several fronts including the use of Compressed Natural Gas ("CNG") around the Taj Mahal site, the phasing out of leaded petrol and the conversion of New Delhi's public transport vehicles to CNG. Despite these hefty directions, it is clear that their effects have only been temporary. Recent statistics show that the incremental improvements in Delhi's ambient air due to the switching over to CNG is slowly being lost due to the rapid increase in diesel-powered cars.[7] Currently, the only statutes that deal with air pollution are the Air (Prevention and Control of Pollution) Act, 1981 and the Environment (Protection) Rules, 1986. While the Motor Vehicles Act, 1988 does deal with emission norms for vehicles, the same is very restricted in scope.

One of the biggest problems of air pollution in the country remains the paucity of data from

[2] http://moef.nic.in/soer/2001/ind_air.pdf

[3] http://icmr.nic.in/bumay01.pdf

[4] http://india.blogs.nytimes.com/2012/02/01/indias-air-the-worlds-unhealthiest-study-says/

[5] M C Mehta v. Union of India, Judgment dated 30-12-1996

[6] M C Mehta v. Union of India, Writ Petition (Civil) No. 13029 of 1985; Judgments dated 14-3-1991 and 14-2-1996.

[7] *Mobility Crisis: Agenda for Action 2010* (2010), Centre for Science and Environment, New Delhi.

across the country on source apportionment as well as carrying capacity studies in industrial areas and cities. Unchecked growth with no regard to the carrying capacity of any area has already resulted in several industrial areas being declared as critically polluted areas by application of the Comprehensive Environmental Pollution Index ("CEPI").[8] Additionally, there are few studies being carried out on health impacts of air pollution. The quality of data and studies conducted during the Environment Impact Assessment process are poor and lacking in several parameters.[9]

Possibly the biggest roadblock to a comprehensive policy on air pollution is the fragmented executive set-up. There are several branches of Government whose policies have a direct and indirect effect on air quality. While the Ministry of Environment and Forests and the Central Pollution Control Board (at the national level) and the Pollution Control Boards (at the state level) specifically have air pollution mitigation as a part of their mandate, the Ministry of Road Transport and Highways, the Ministry of Petroleum and Natural Gas, the Ministry of Coal and the Ministry of Industries all play an important role in policy-making. On the one hand, one branch of Government promises a hassle-free process for the setting-up and running of an industry within the State, while the other branch is required to strictly monitor the industry's emissions and other norms and possibly shut down the industry in case of violations. Since there is a lack of a comprehesive air pollution policy governing all the branches of government, the efforts at mitigation of pollution are fragmented and therefore ineffective.

Scope of the Study:

1. Complete a detailed review of relevant laws and regulations that impact air quality management in India, to define the current legal framework and how it is enforced at the national and state level. The analysis will be based on a study of national laws and rules, and those of the six states of Gujarat, Tamil Nadu, Maharashtra, Delhi, Haryana, and Orissa. The review will include, among other things, an assessment of the responsibilities and powers that have been assigned to different government agencies, inter-linkages in responsibilities among agencies, on the ground performance of agencies in meeting their mandate, and implications arising out of India's federal governance structure.

[8] http://www.cpcb.nic.in/upload/NewItems/NewItem_152_Final-Book_2.pdf

[9] http://www.sciencedirect.com/science/article/pii/S0195925512000078

2. Assess the standing and relevance of norms like NAAQS, and initiatives like placing moratoriums based on the Comprehensive Environmental Pollution Index (CEPI) and the proposed pilot emission trading schemes in three Indian states. Additionally, determine, based on provisions in existing laws, the type of interventions and instruments government agencies can use for controlling air pollution.

3. Identify existing gaps, inconsistencies and shortcomings in the current legal and institutional framework for air quality management in India. The analysis will also identify critical non-legal hurdles, for example lack of adequate and good quality monitoring data, which contribute to the current under-delivery of the existing framework in providing good air quality and, unless addressed, are likely to hold up strengthening of this framework in the future.

4. Document past litigation on air quality issues and their results, focusing on the most important cases, to determine the legal standing required for seeking corrective action, the precedents that have been set/interpretations established for future lawsuits, the entities that won cases and on what terms, and the remedies that were provided.

5. Determine, based on precedent, the type of future air quality lawsuits that have the highest probability of succeeding. Additionally, assess other legal theories that could be tested in Indian courts to advance air pollution controls and their likely probability of success.

6. Review important decisions of foreign courts on the issue of air pollution, especially where Indian courts have not been particularly innovative in dealing with air pollution related matters and/or existing domestic laws lack specificity. The analysis will review how international principles like 'polluter pays', 'precautionary principle', and 'burden of proof' have been applied in the past, as well as asses the role such principles, international case law, and international treaties and conventions can play in helping build a stronger air quality management framework in India.

7. Recommend interventions for improving the existing legal framework for air quality management in India, including complementary measures that may fail outside the legal and institutional domains needed to support an enhanced air quality management framework. The recommendations will also include suggestions on possible legal recourses. Specific opportunities suited for receiving the support of philanthropic and/or donor organizations, particularly in the design and implementation of laws, rules, and policies, will be highlighted.

In keeping with the scope outlined above, this Study concentrates on the efficacy of air quality monitoring systems in the country, the performance of the Pollution Control Boards and the lacunae in statutes as well as processes adopted by the Boards. This Study also chalks general trends among the Pollution Control Boards, the relevance of the CEPI, the National Ambient Air Quality Standards and in this regard, chalks trends in litigation especially in light of the recent constitution of the National Green Tribunal.

The Study has been conducted over a four month period and apart from secondary data, it relies on information received from the Pollution Control Boards through Right to Information ("RTI") applications, publications of the Boards and discussions held with officers of the various Boards and other concerned persons.

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REGULATORY BODIES

There are several regulatory bodies that play an important role in mitigation and control of air pollution. Of these, the nodal organisation is the Central Pollution Control Board which has put in place several air monitoring schemes, significantly, the National Air Quality Monitoring Programme. While there are several other ministries and state departments that play a role in air pollution control, this Study will concentrate on the authorities with the greatest power to effect changes in air pollution policy in the country. Thus, while the Ministry of Road Transport and Highways or the Ministry for Chemicals and Fertilizers play an important role in implementing the Motor Vehicles Act and chemical-related policies respectively, their role is limited to enforcement of their respective Acts. On the other hand, the Ministry of Environment and Forests along with the Pollution Control Boards have a much wider mandate in creation and implementation of air pollution control policies and will therefore be one of the focus areas of the Study.

The following are some of the important authorities for air pollution control:

Ministry of Environment and Forests ("MoEF")[10]: The MoEF is the main agency in the Central Government for the planning, promotion, co-ordination and overseeing the implementation of India's environmental and forestry policies and programmes. Under the Environment (Protection) Act, 1986 the Ministry is empowered with wide regulatory powers for mitigation of environmental pollution and for laying down standards for pollutants. Apart from overseeing the policies, the MoEF is the nodal ministry for obtaining environmental clearances under the EIA Notification, 2006.

Central Pollution Control Board ("CPCB")[11]: The CPCB along with its counterpart State Pollution Control Boards are responsible for implementation of legislations relating to the prevention and control of environmental pollution. It is a statutory organisation constituted under the Water (Prevention and Control of Pollution) Act, 1974 and later vested with the powers and functions under the Air (Prevention and Control of Pollution) Act, 1981. This CPCB provides

[10] http://moef.nic.in/

[11] http://www.cpcb.nic.in/

technical services to the Ministry of Environment and Forests and its main statutory duties under the Air Act are to improve the quality of air and to prevent, control or abate air pollution in the country. The CPCB also advises the Central Government on any matter concerning prevention and control of water and air pollution and improvement of the quality of air and can plan and cause to be executed a nation-wide programme for the prevention, control or abatement of water and air pollution and also coordinate the activities of the State Boards.

State Pollution Control Board ("SPCB")*:* The SPCBs are statutory organisations constituted under the Water (Prevention and Control of Pollution) Act, 1974 and later vested with the powers and functions under the Air (Prevention and Control of Pollution) Act, 1981. Their role is limited to their concerned state, and their functions are to advise the State Governments on environmental matters and also to set up programmes in the State (in consultation with the CPCB) for mitigation of air and water pollution.

Ministry of Road Transport and Highways (MoRTH)[12]: The MoRTH is the nodal ministry for formulating and administering policies for road transport and national highways with a view to increasing the mobility and efficiency of the Road Transport system in the country. While the MoRTH is not directly enjoined with the task of control and abatement of air pollution, its role is significant as vehicular pollution is a major contributor to the ambient air of the country.

State Transport Department ("STD"): At the State level, the STD is entrusted with the responsibility of providing an efficient public transportation system, control of vehicular pollution, registration of vehicles, issuance of Driving licences, issuance of various permits, collection of road taxes and other related tasks. The department is also entrusted with policy-making, co-ordination, implementation, monitoring and regulatory functions of all the Transport related aspects in the region. Again, while the RTO's role in controlling vehicular pollution is limited to the provisions of the Motor Vehicles Act, it is a very significant role as proper implementation of the Act in terms of fuel adulteration, regular emission testing and other factors could go a long way in curbing vehicular pollution.

[12] http://morth.nic.in/

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STATUTES GOVERNING AIR POLLUTION

The oft-quoted axiom in India is that while the body of statutes are robust, the implementation and enforcement suffer. However, in the case of air pollution control, it can be observed that even the statutes have many lacunae that affect the functioning of the SPCBs. This section of the Study will focus on the most important statutes, their main provisions and the issues in implementation of the same.

The Air (Prevention and Control of Pollution) Act, 1981 ("the Air Act") and Air (Prevention and Control of Pollution) Rules, 1982 ("the Air Rules"):

The Air Act was enacted in 1981 to control and abate pollution in the country, following India's commitment to protect natural resources at the United Nations Conference on the Human Environment held in Stockholm in June, 1972. The Act utilized existing state machinery, i.e. the Central and State Pollution Control Boards that had been created under the Water (Prevention and Control of Pollution) Act, 1974 and empowered the bodies under this Act as well. The Act delineates the powers and duties of the CPCB and the SPCBs. To a large extent, the CPCB is charged with laying down standards and operating procedures while the SPCBs are charged with the actual enforcement of the Act, including setting State standards, giving Consents to Establish and Operate and prosecution of violators.

Structure of the Act:

It is important to note that while the Act is applicable across the country, the actual prohibition and regulation of actions is limited to "air pollution control areas". The respective State Government, in consultation with the SPCB, may declare certain areas as "air pollution control areas" (Section 19). Therefore, any or all control and restrictive measures imposed by the SPCBs for air pollution in a State, can only be imposed in such areas.

What kind of restriction can be imposed in air pollution control areas?

- All industries and units/ plants in such areas would be governed by the provisions of the Act and will have to obtain Consents from the SPCB before even setting up the plant

(Section 21). The consents to establish and operate the industrial plants may be subject to several conditions, the violation of which are grounds for prosecution and closure of the industrial plant.

- The SPCB can lay down a standard for emissions of any air pollutant in the control area and the same cannot be exceeded by industries in the area (Section 22).
- Additional conditions such as fuel and appliance restrictions can be laid down by the SPCB for units in such areas (Section 19).
- To enforce the above restrictions and conditions, the SPCB is authorised to monitor compliance by inspection, collection of samples, seeking compliance reports, etc (Sections 24-26) and based on such information obtained, prosecute defaulting industries.
- The SPCBs can give directions for the closure, prohibition or regulation of any industry or operation and can even issue directions for stoppage of electricity, water supply and other services (Section 31A).
- Additionally, even without the process of issuing a show-cause notice, the SPCB can make an application to a Court to restrain an industry, if it is apprehended that the operation of such industry is likely to cause excessive emission (Section 22A).

Prosecution and Punishment under the Act:

Any violation of any direction or standard laid down by the SPCB or any other mandatory requirement under the Act and Rules is punishable under the Act with imprisonment and fine (Sections 38-41). In this regard, it is important to note that the Act specifies a ceiling on the amount of penalty that can be levied and any fine levied on the industry by a competent court cannot exceed this.

When there is ground to believe that an offence under the Act has been committed, the SPCB may prosecute the industry after satisfying itself. However, it is important to note that the SPCB is only a prosecuting agency and cannot levy any fines or penalties however small or large the amount may be. Cognizance of the offence can only be taken by a Court of competent jurisdiction.[13] Once cognizance is taken, the accused is prosecuted and if found guilty, the penalty is imposed by the Court.

[13] Section 43 of the Air Act states:

Cognizance of offences.-- (1) No court shall take cognizance of any offence under this Act except on a complaint made by-

(a) a Board or any officer authorised in this behalf by it; or

Major Powers and Functions of CPCB (Section 16):

- Plan and execute a nation-wide programme for the prevention, control or abatement of air pollution;
- Co-ordinate the activities between the States and resolve disputes among them;
- Provide technical assistance and guidance to the State Boards;
- Organise through mass media a comprehensive programme regarding the prevention, control or abatement of air pollution;
- Collect, compile and publish technical and statistical data relating to air pollution and the measures devised for its effective prevention, control or abatement and prepare manuals, codes or guides relating to prevention, control or abatement of air pollution;
- Lay down standards for the quality of air.
- Give directions to the SPCBs, which are bound by such directions.

Major powers and functions of the SPCBs:

- To plan and execute a comprehensive programme for the prevention, control or abatement of air pollution in the State;
- To collect and disseminate information relating to air pollution;
- To collaborate with the Central Board in organising the training of persons engaged or to be engaged in programmes relating to prevention, control or abatement of air pollution and to organise mass-education programme relating thereto;

(b) any person who has given notice of not less than sixty days, in the manner prescribed, of the alleged offence and of his intention to make a complaint to the Board or officer authorised as aforesaid, and no court inferior to that of a Metropolitan Magistrate or a Judicial Magistrate of the first class shall try any offence punishable under this Act.

Section 19 of the EP Act states:

Cognizance of offences.-- No court shall take cognizance of any offence under this Act except on a complaint made by--

(a) the Central Government or any authority or officer authorised in this behalf by that Government,

or (b) any person who has given notice of not less than sixty days, in the manner prescribed, of the alleged offence and of his intention to make a complaint, to the Central Government or the authority or officer authorised as aforesaid.

- To inspect, at all reasonable times, any control equipment, industrial plant or manufacturing process and to give, by order, such directions to such persons as it may consider necessary to take steps for the prevention, control or abatement of air pollution;
- To inspect air pollution control areas at such intervals as it may think necessary, assess the quality of air therein and take steps for the prevention, control or abatement of air pollution in such areas;
- To lay down (in consultation and in consonance with standards laid down by the Central Board), standards for emission of air pollutants into the atmosphere from industrial plants and automobiles;

Comments:

- The legislation largely targets industrial pollution from industrial clusters and similar areas. The issues of vehicular pollution[14] and indoor air pollution due to fuelwood and biomass[15], which are some of the biggest sources of air pollution in the country are given short shrift. While the Act does envisage the setting up of State-level standards for vehicular emission, the Act does not provide any mechanism for abating and controlling pollution caused by burning of fuelwood and biomass in the country in areas which may not fall under an "air pollution control area". Most states have managed to get around this hurdle by declaring the entire State as an air pollution control area (National Capital Territory of Delhi, Tamil Nadu, Haryana, Maharashtra and Orissa).

- The Act reduces the role of the SPCB to a prosecuting authority. The Delhi High Court in its recent judgment **Splendor Landbase Ltd v. Delhi Pollution Control Committee dated 30 September, 2010** observed that under the Air Act, the SPCBs do not have the power to levy penalty. Penalty can only be levied by the procedure prescribed under the Act and by the empowered authority. It is now settled law that unless there is a specific power in the statute enabling the authority to do so, it cannot levy penalties or damages with reference to the general power under Section 31A of the Air Act or Section 33A of the Water Act. Since the closure of an industry or criminal prosecution are considered drastic steps, the SPCBs do not have any intermediate powers to enforce compliance or to punish minor infarctions. Thus, cogizance can only be taken by a competent court of law. Once cognizance is taken, the accused is prosecuted and if found guilty, the penalty is imposed by the Court. This role of taking cognizance and imposing penalty, whether

[14] *Mobility Crisis: Agenda for Action 2010* (2010), Centre for Science and Environment, New Delhi.

[15] http://www.cifor.org/publications/pdf_files/Books/Fuelwood.pdf

automatic or otherwise, cannot be taken over by the PCB as it is not empowered to do so under the Air Act or the EP Act.

- In this regard, it is also important to consider the penalty provision in the EP Act and Air Act have a ceiling specified and the same cannot be exceeded, thus violating the Polluter Pays Principle.[16]

- As a result, the SPCB only has the power to direct closure of an industry or to prosecute an industry for non-compliance. From the Study, it can be observed that such drastic measures are not preferred by the SPCBs who prefer to ensure compliance through non-official means. Furthermore, since court proceedings can be lengthy and go on for years, the officials of the SPCBs prefer not to prosecute industries as it would require them to attend court often and comply with the minutiae of court procedures.

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[16] Penalty under the EP Act:

15. Penalty for contravention of the provisions of the act and the rules, orders and directions.--

(1) Whoever fails to comply with or contravenes any of the provisions of this Act, or the rules made or orders or directions issued thereunder, shall, in respect of each such failure or contravention, be punishable with imprisonment for a term which may extend to five years with fine which may extend to one lakh rupees, or with both, and in case the failure or contravention continues, with additional fine which may extend to five thousand rupees for every day during which such failure or contravention continues after the conviction for the first such failure or contravention.

(2) If the failure or contravention referred to in sub-section (1) continues beyond a period of one year after the date of conviction, the offender shall be punishable with imprisonment for a term which may extend to seven years.

Penalty under the Air Act:

37. Failure to comply with the provisions of section 21 or section 22 or with the directions issued under section 31A. -- (1) whoever fails to comply with the provisions of section 21 or section 22 or directions issued under section 31 A, shall, in respect of each such failure, be punishable with imprisonment for a terms which shall not be less than one year and six months but which may extend to six years **and with fine**, and in case the failure continues, with an additional fine which may extend to five thousand rupees for every day during which such failure continues after the conviction for the first sucsh failure.

39. Penalty for contravention of provisions of the Act.-- Whoever contravenes any of the provisions of this Act or any order or direction issued thereunder, for which no penalty has been elsewhere provided in this Act, shall be punishable with imprisonment for a term which may extend to three months or with fine which may extend to ten thousand rupees or with both, and in the case of continuing contravention, with an additional fine which may extend to five thousand, rupees for every day during which such contravention continues after conviction for the first such contravention.

- The consequence of the above limitation in the Air Act is that the proposed Emission Trading Scheme which is likely to be launched in three States around the country may not be successfully promulgated due to likely legal hurdles unless changes are made to the existing law. The proposed scheme envisages a system whereby industries in an identified cluster are required to hold "permits" to emit a set mass of identified pollutants, which cannot be exceeded by the permit-holder.[17] The scheme seeks to encourage industries to adopt pollution abatement mechanisms/ technologies and also contemplates the trade of such permits between industries so that the total emission from the cluster does not exceed the emissions subcap as identified by the CPCB in consultation with the SPCB. The scheme seeks to enforce compliance with the limits (as determined by the CPCB) and encourage industries to trade permits by imposing automatic financial penalties as per a pre-defined penalty formula on contravening industries. As the SPCBs have no power to levy a penalty, operationalizing the scheme without a strong penalty provision may make the scheme ineffective.
- While the drafts of the notification and other documentation for the pilot scheme have been prepared and the SPCBs are continuing to hold joint meetings, it is clear that there can be no further progress on the pilot scheme till there is a change in the structure of the Act. There is considerable interest from the MoEF and the SPCBs to have the Scheme notified; however, amendments which permit the SPCBs to levy a fine and increasing the ceiling for penalty may meet strong opposition from industrial/manufacturer lobbies. In any event, the Scheme is effectively stalled till the previously-discussed legislative amendments are made.

Environment (Protection) Act, 1986 ("EP Act") and the Environment (Protection) Rules, 1986 (EP Rules"):

The EP Act was enacted to provide for the protection and improvement of environment and related matters. Unlike the Air Act, the EP Act is wider in scope mostly because of the wide and generalised language used in the statute. Despite being a short piece of legislation, some of the most important environmental measures and policies have been promulgated under this Act. The Environment Impact Assessment Notification 2006, the Coastal Regulation Zone Management Notification 2011 and the various rules governing hazardous wastes, biowastes, municipal wastes etc all come within the umbrella of this Act. The National Ambient Air Quality Standards have also been promulgated under this Act (concurrently with the Air Act).

[17] http://envfor.nic.in/modules/others/?f=mfes

Powers of the Central Government:

The EP Act empowers the Central government with certain powers which are relevant to monitoring and regulating air pollution. These include:

- The power to lay down standards for the quality of environment (Section 3(2)(iii)).
- It also has the power to lay down standards for emission or discharge of environmental pollutants from various sources (Section 3(2)(iv)). Different standards for emission or discharge may be laid down from different sources having regard to quality or composition of the emission or discharge of environmental pollutants from such sources.
- Section 3(2)(v) gives the Central Government the power to restrict areas in which any industries or operations shall not be carried out or shall be carried out subject to certain safeguards. No person is permitted to carry on any industry, operation or process which is in excess to standards laid down by the Government.
- Section 5 grants power to the Central Government to give directions in exercise of its powers and performance of its functions under the EP Act. This includes the power to close, prohibit or regulate any industry, operation or process.

In addition to the Environment (Protection) Act, 1986, the Environment (Protection) Rules are also of relevance. Of particular significance is the Rule 5 which provides for prohibition and restriction on the locations of industries and the carrying of processes and operations in different areas and while doing so it can take into account the net adverse environmental impact likely to be caused by an industry or operation (Rule 5(vii)). The Rules also specify emission norms and parameters for industries under Schedule I of the Rules as well as the National Ambient Air Quality Standards.

Comments:

- The EP Act in Section 24(2) states that "Where any act or omission constitutes an offence punishable under this Act and also under any other Act then the offender found guilty of such offence shall be liable to be punished under the other Act and not under this Act." As a result, it is clear that this Section has been rendered toothless. Since the NAAQ Standards have also been notified under the Air Act, there can be no question of prosecution under the EP Act for any violation.

- The lacuna in the Air Act with reference to inability to exceed the fine amount and imprisonment term under the Air Act are also applicable here. Sections 15, 16 read with

Section 19 of the EP Act specify a ceiling on the terms of punishment and this too can only be granted after congizance is taken by a competent court and the matter is prosecuted by the competent authority.

The National Ambient Air Quality Standards, 2009 ("the NAAQ Standards"):

The National Ambient Air Quality Standards, 2009 were promulgated on 16-11-2009 under the Environment (Protection) Rules, 1986 by the Ministry of Environment and Forests and also adopted by the Central Pollution Control Board under the Air Act on 18-11-2009. The NAAQ Standards are significant, in that, they make no differentiation between industrial and residential areas, as was the practise under the older Standards. They merely lay down different standards for ecologically sensitive areas, as may be notified by the Central Government. Since the standards have been adopted under the EP Act as well as the Air Act, they apply not only to air pollution control areas, but also across the country with the SPCBs having the responsibility of monitoring, collecting and desseminating data.

In order to implement the NAAQ Standards, the Central Pollution Control Board executed a nation-wide programme of ambient air quality monitoring known as the National Air Quality Monitoring Programme (NAMP). The network consists of three hundred and forty two (342) operating stations covering one hundred and twenty seven (127) cities/towns in twenty six (26) states and four (4) Union Territories of the country.

The objective of the NAMP is to determine trends in ambient air quality and to ascertain whether the prescribed ambient air quality standards are violated. It is also helpful in identifying growing problem areas and thereby developing preventive and corrective measures to counter the same.

Under the NAMP, Sulphur Dioxide (SO2), Oxides of Nitrogen as NO2, Suspended Particulate Matter (SPM) and Respirable Suspended Particulate Matter (RSPM/ PM10) are regularly monitored at all the locations. The monitoring of pollutants is carried out for 24 hours (4-hourly sampling for gaseous pollutants and 8-hourly sampling for particulate matter) with a frequency of twice a week, to have one hundred and four (104) observations in a year. Due to the involvement of a number of agencies and institution, the large number of personnel and equipments are involved in the sampling, chemical analyses, data reporting etc. And the possibility for error and personal biases being great, the CPCB treats the data collected as indicative rather than absolute.[18]

[18] http://www.cpcb.nic.in/air.php

Comments:

- The NAAQS standards were meant only to provide a set of standards to measure pollution levels across the country and take appropriate steps and do not, in themselves have any mechanism for enforcement. It is next to impossible to enforce the NAAQ Standards in cities or industrial clusters through the mechanisms in the Air Act/ EP Act without a highly vigilant SPCB. There is also no mechanism to ensure compliance by the SPCBs in mitigating pollution.

- That said, the Air Act is very wide in scope in terms of powers of the SPCBs in enforcing the Act and NAAQ Standards. In order to enforce the NAAQ Standards, especially in cities, the SPCBs are at liberty to notify Rules or Regulations (as per the procedure in the Act) to combat high pollution days and such measures can include traffic-related measures as the Air Act permits the State Governments (in consultation with the SPCBs) to issue mandatory instructions to the transport departments for the purpose of enforcing standards laid down by the SPCB. Needless to say, apart from notifying the requisite Rules/ Regulations, such measures would also require a high level of cooperation between the concerned departments. This is because the SPCB has no means of actually enforcing such Rules-- this would be within the jurisdiction of the Transport Departments and the traffic police. It would also be important to remember that while the SPCB can bring into place such traffic-related measures, these may meet with some opposition from inconvenienced commuters and such measures are often challenged in courts. A prime example of this is the Bus Rapid Transport corridor which was lauded by environmental groups as a forward-thinking measure, but has been suspended by the Delhi High Court pending further orders due to severe opposition from several groups.[19]

- The equipment used to measure the various parameters are very sensitive and require highly sensitive weighing measures without which the AAQ stations would provide accurate data. Since the market for these equipments is very small and there are virtually no competitors, it is possible that the equipment may not meet the manufacturer's claims.

- There are some criticisms of the fact that the NAAQ Standards measure concentration. It has been suggested that the unit of measurement should be kg/hour as a better indicator of particulate matter rather than concentration, as some industries could dilute the data by

[19] http://www.thehindu.com/news/cities/Delhi/article3609037.ece. The High Court has only suspended the BRT system due to congestion in some pockets and has directed the government to re-route buses for these roads or find an alternate solution.

having more air blown through the stacks.

- The NAMP only focuses on the above-mentioned pollutants, while the NAAQ Standards have a total of twelve parameters. Pollutants like PM2.5 are critical and several independent studies suggest that its levels are drastically increasing[20] but their measurement is not a part of NAMP. Furthermore, pollutants like benzo-pyrene, ozone and lead[21] (for which NAAQ Standards have been prescribed) are also emerging critical pollutants that have severe impacts on health in cities across the world but without a system for data collection, it would be impossible to chalk trends and formulate any policies for their reduction.
- The data collected through the NAMP may not present a true picture of the pollutants due to the poor network of monitoring stations, because the data collected does not co-relate to metrology data and climatic conditions and does not differentiate between peak load and base load data.
- Furthermore, the data collected may be more effectively utilized if information regarding the socio-economic conditions, occupations and other details about the people living around the monitoring station could be collected.
- The biggest development from the NAMP and the NAAQ Standards is that India now has a monitoring network with regular publication of ambient air quality statistics on the websites of the CPCB and some of the SPCBs, even if the data does not represent absolute figures. Since the promulgation of any policy or rules by the SPCBs must necessarily find their basis in data collected, the ambient air quality data collected from the NAMP could potentially effect policy changes.
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Vehicular Emission Norms:

Standards for vehicular emission in India seek to control and regulate the following aspects, each of which would have a significant impact on pollutants from vehicular emissions: (i) Vehicular Technology, (ii) Fuel Quality, (iii) Inspection & Maintenance of In-Use Vehicles, and (iv) Road and Traffic Management. While the SPCBs can play an important role in policy-making for vehicles, the biggest responsibility for enforcing vehicular norms falls with the transport departments.

[20] *Mobility Crisis: Agenda for Action 2010* (2010), Centre for Science and Environment, New Delhi.

[21] http://www.ipe.org.cn/upload/report-aqti-en.pdf

The Motor Vehicles Act, 1988:

The abovementioned norms for the above have been enshrined in the Central Motor Vehicles Rules, 1989 under the Motor Vehicles Act, 1988. Chapter V of the Rules lays down the mass emission standards for all vehicles. As of 1 April 2010, the Bharat Stage III (equivalent to Euro 3 norms) and Bharat Stage IV (equivalent to Euro 4) standards are in operation.[22] Rule 115 of the said Rules lays down the specifics, with regard to applicability of the standards which are for two-wheeled and four-wheeled vehicles, type of fuel and standards for testing.

SPCBs and Vehicular Pollution:

The biggest drawback with totally relying on the transport departments to mitigate vehicular pollution is that the said department is only empowered to enforce the emission norms and the rules under the Motor Vehicles Act. The transport department has limited policy-making responsibilities or even duties when it comes to air pollution. Several of the SPCBs prefer to leave that role entirely to the transport departments while preferring to concentrate on industrial pollution.

Interestingly, even though the SPCBs and to some extent, the CPCB are empowered (through the State Government) under the Air Act (Section 20) to issue instructions on vehicular pollution to the appropriate authorities under the Motor Vehicles Act for implementation, no such instructions are on record from any of the SPCBs. As a rule, the SPCBs do not have any policies or executive instructions for mitigation of vehicular pollution. While the State Governments/ SPCBs have no obligation whatsoever to issue any such emission instructions or vehicular standards, the Chapter on Indian litigation will point to two examples in which the High Courts recognised this power of the SPCBs to issue emission instructions. The reason why the CPCB/SPCBs ought to put in place vehicular policy instead of the Transport Departments is that the Pollution Control Boards have a much wider mandate and are not bound by the restrictive wording of the Motor Vehicles Act, which limits the power of the Transport Departments to certain areas only. The SPCBs on the other hand can explore creative solutions including and not limited to identifying new sources of pollution, new pollutants, previously unidentified causes of pollution and have the power to issue Rules/Regulations to combat these.

While the effectiveness of the enforcement of such Rules/ Regulations may be moot (given the relative toothlessness of the CPCB/SPCB), the power to issue instructions to the Transport Departments/ requisite departments can be explored. For example, in some cities the road layout

[22] http://www.cpcb.nic.in/Vehicular_Exhaust.php

or traffic intersection pattern may be a contributory cause of air pollution. The SPCB/CPCB's task would be identifying such underlying causes and then chalking out mitigative measures, while leaving the actual enforcement to the concerned departments or municipal bodies. Currently, the SPCBs' response to vehicular pollution has only been restricted to some public transport awareness campaigns and other such non-mandatory measures (as will be elaborated in the Chapter analysing the States' data). Otherwise, SPCBs simply leave the entire issue of vehicular pollution to the Transport Departments, nullifying Section 20 of the Air Act.

Climate Change Legislation:

India currently has no legislation to specifically combat climate change. While the Air Act and the EP Act are sufficiently wide enough to include greenhouse gases and carbon dioxide within the definition of "pollutants" and they can be accordingly controlled, it is clear that climate change is not a priority with the Indian Legislature as air pollution is understood in a more traditional sense as pollutants that directly affect human health as opposed to pollutants which have a less "direct" effect on the human environment. The NAAQ Standards are a prime example of this-- they cover only the traditional pollutants like particulate matter, heavy metals and other such substances. Furthermore, as has been demonstrated before, the rigid structure of the Air Act and EP Act and the fact that they were enacted before climate change took the centre stage globally means that creative or farthinking measures may be hard to adopt, as was demonstrated with the Emissions Trading Scheme situation and would be embroiled in the same difficulties caused by the lack of a civil jurisdiction under the Acts.

Furthermore, it is also pertinent to note that global climate change negotiations are currently heavily polarized into the "north" and "south" countries, with India being one of the main countries voicing developing countries' concerns (with binding commitments on developed countries and technology transfer being some key demands).[23] Additionally, India has no binding commitments under the Kyoto Protocol. Thus, attempts to bring in climate change legislations or even schemes may be hampered by the Indian foreign policy position with regard to climate change. It would not be out of place to mention that since few civil society groups have taken on climate change campaigns, this issue does not take centre stage in the public consciousness.

The National Green Tribunal Act, 2010:

The National Green Tribunal ("NGT") is a national level environmental court established by

[23] http://unfccc.int/cop8/latest/1_cpl6rev1.pdf

Parliament for dealing with cases concerning environment and forest related issues. It comprises of both judicial members as well as members specialized in various disciplines so that environmental issues can be adjudicated both in terms of compliance with laws as well as scientific and social aspects.

Jurisdiction of the NGT:

The NGT has original and appellate jurisdiction, i.e. the NGT can adjudicate on environmental issues that have never been agitated before any other Court or Government Body, but is also a Court of Appeal against orders granting Environmental Clearance to projects, consents to operate/ establish under the Air Act and Water Act and several other statutes specified in Section 16 of the Act.

Significantly, the NGT also has the jurisdiction to award compensation to persons who are affected by any environmental issue. Schedule II of the NGT Act provides for broadly 14 heads under which compensation or relief can be claimed for damage caused to public health, property and environment. (Sections 15(4) and 17(1) and Schedule II), in furtherance of the Polluter Pays Principle.

What is a Public Interest Litigation ("PIL") Petition?

A PIL is a writ petition which may be filed before the High Court (under Article 226 of the Constitution) or before the Supreme Court (under Article 32 of the Constitution), by invoking the Courts' extraordinary jurisdiction. In the interest of justice, in certain cases where there may have been some grave injustice caused or where there may be an issue of critical importance to the rights of persons or public injury, the Court may adjudicate on the issue and give directions to the appropriate government authorities to rectify the same. Before the NGT Act came into place, most environmental issues were agitated before the Supreme Court and High Courts by filing a PIL. Apart from the air pollution-related PILs filed by M C Mehta, some illustrative examples of PILs which resulted in major environmental developments in the country are:

Shiram Food & Fertilizer case[24] The Supreme Court directed a company manufacturing hazardous and lethal chemical and gases which posed danger to the life and health of workmen to take all necessary safety measures before re-opening the plant.

[24] (1986) 2 SCC 176.

M.C Mehta v. Union of India[25] In a PIL brought against Ganga water pollution so as to prevent any further pollution of the River Ganga, the Supreme Court held that petitioner, although not a riparian owner, was entitled to move the court for the enforcement of statutory provisions, as he was the person interested in protecting the lives of the people.

Council For Environment Legal Action v. Union Of India[26]: This was a PIL filed by a voluntary organisation regarding economic degradation in a coastal area. The Supreme Court issued appropriate orders and directions for enforcing laws to protect ecology.

The Supreme Court, apart from giving several directions, also enunciated the various principles of environmental law such as the polluter pays principle, the Rio Declaration, sustainable development and other such principles as will be discussed in the following chapters.

How is a PIL different from the NGT's Jurisdiction?:

In the case of a PIL, one had to invoke the extraordinary jurisdiction of the Court. This means that there may have been several environmental issues or PILs which were rejected by the Court as cases not fit for its intervention. Only certain grave issues of public interest are taken up. Furthermore, the matters are adjudicated by judges who may not be able to grasp scientific or technical issues. The NGT on the other hand, has original jurisdiction, i.e. any substantial question of environmental law can be decided by it, without having to invoke any "extraordinary jurisdiction". Furthermore, since the bench is comprised of a judicial and technical member, even scientific matters can be adjudicated by it. For example, the NGT recently passed an interim order staying any further grants of environmental clearances and expansions in Noida pending further orders taking into account the high levels of air pollution due to unchecked industrial growth and lack of AAQ studies.[27]

Comments:

- The NGT is a relatively new body that has been operational for around one year. However, the judgments of the Tribunal referred to in this Report make it clear that its reach is very far. Like any judicial body, it would be impossible to predict how the body would react to certain issues, but the fact that the NGT is comprised of a judicial member and a technical member who would understand technical nuances makes the prognosis

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25 1988) 1 SCC 471

26 (1996)5 SCC281

27 http://www.greentribunal.in/orderinpdf/1-2012(OP)_11Apr2012.pdf

good. This is evidenced by the number of recent judgments where arguments related to air pollution were favourably received by the NGT. The NGT also has the power to issue mandatory orders to the various governmental agencies and could be approached to ensure that governmental bodies enforce the available legal mechanisms.

- Several of the powers of the CPCB/SPCBs under the Air Act are not duties of the bodies, i.e. they are not mandatorily required to perform such activities. For example, the setting of standards for various pollutants or even vehicular pollution, carrying out carrying capacity studies, health-impact studies are all available powers of the CPCB/SPCB under their general powers. However, no such studies or standards are compulsorily mandated by the Acts. The NGT could potentially be approached to issue mandatory orders to the MoEF and other bodies to regularly carry out such studies or even to set up standards. If certain standards for a pollutant do not meet scientific requirements, the NGT could be approached to effect an amendment in the same. While the NGT may not amend the law, it can direct the concerned authority to consider such studies and possible amendment in a time-bound manner.

- It has also been the practise of some governmental bodies to permit the project proponents to carry out the necessary scientific studies and as in many cases, to blindly accept the results. The NGT (as well as other Courts) has taken serious note of this tendency of government bodies of not challenging the results of such studies (which obviously, tend to be skewed in favour of the project) and could thus, be instrumental in changing such practises.[28] It is clear that agitating environmental issues before the High Courts through PILs has seen its heyday and thus, the NGT may respond favourably to creative scientific and legal arguments on air pollution issues.
- Like nearly every other judicial body in the country, the NGT is currently understaffed and there have been several problems dogging the tribunal since its inception.[29] That said, it is also important to recognize that the Supreme Court has emphasized the importance of this Tribunal in the case of *Union of India v Vimal Bhai (SLP No. 12065 of 2009)* and has kept this case pending before it so as to track the progress by the

[28] See judgments of High Court of Himachal Pradesh, *Him Privesh Environmental Protection Society v. State of Himachal Pradesh (CWP No. 586 of 2010)*; National Green Tribunal in S*arpanch, Grampanchayat Tiroda v.Ministry of Environment and Forests (Appeal no. 3 of 2011)* and in *Jan Chetna and Ors. v. Ministry of Environment and Forests (Appeal No.22 of 2011(T)).*

[29] http://www.indianexpress.com/news/draft-bill-to-ensure-uniformity-in-service-norms-for-tribunals-centre-tells-sc/993974/

government bodies in making the tribunal fully functional.[30] In this light, it is also important to recognize that with the formation of the NGT the Higher Courts may become more reluctant to hear matters pertaining to the environment that have been filed as a PIL. Recently, the Supreme Court passed an order tranferring all cases pertaining to the environment to the NGT.[31] Thus, while the NGT may have some drawbacks, it is clear that if litigation is to be the preferred mode of policy-change for any issue, the NGT should be seriously considered.

[30] http://dailypioneer.com/nation/56600-after-court-rap-govt-serious-on-ngt-chief-office-space.html

[31] http://indiankanoon.org/doc/179481043/

3

CONTROLLING POLLUTION: FROM CPA TO CEPI

The evolution of CEPI:

The exercise to identify Critically Polluted areas in India was undertaken for the first time in May 1989 in a meeting of Chairpersons and Member Secretaries of the Central and State Pollution Control Board. At that time, 24 critical areas were identified.[32] Critically polluted areas are those where air, water and land pollution exceeds the assimilative capacity of the environment, affecting human health. The exercise to identify such areas has been on since 1989, but it was based mostly on the observation data of SPCBs. It was decided that a comprehensive, time bound programme would be evolved of these areas. Several review meetings followed but there was no improvement in the 24 industrial hubs.

This changed in 2009 when the CPCB, in collaboration with IIT-Delhi and experts from other institutions, devised a scientific method to evaluate and rank polluted areas.[33] It is called the *Comprehensive Environmental Pollution Index* (CEPI). The index was used to assess 88 industrial clusters in the country. CPCB chose these clusters after asking state governments to forward a list of polluted areas on the basis of pollution data. All the 88 areas have highly polluting industries, which include power plants, mining areas and chemical, pharma and dye factories. For CEPI evaluation of the clusters, data on land, water, air pollution, ecological damage and waste management in these areas were taken into account. The industrial clusters were ranked on a scale of 0-100. A high score indicated high levels of pollution and environmental degradation. After the evaluation, 43 areas which scored 70 points and above were declared critically polluted. According to the Ministry of Environment and Forest, the present CEPI system is intended to be used as an early warning tool for categorizing industrial clusters/areas in terms of the severity of the overall pollution levels.[34]

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[32] http://www.downtoearth.org.in/content/gentle-critical-pollution

[33] http://www.cpcb.nic.in/upload/NewItems/NewItem_152_Final-Book_2.pdf

[34] Ibid.

The CEPI has not been free from critical shortcomings: the list of 88 most polluted areas does not demarcate the boundaries of the areas. For example, the list names Ahmedabad, Aurangabad and Navi Mumbai as critically polluted. It is not clear whether it is the city district or industrial areas in the district that are polluted. Considering the ministry is planning a moratorium on new industrial units in critically polluted areas, it is crucial to define the area[35].

The Monitoring Mechanism:

According to the MoEF[36], 446 ambient air quality monitoring stations are operational, covering 182 cities/towns, industrial areas in 26 States and five Union Territories.[37] Presently, only the criteria pollutants, namely: sulphur dioxide (SO2), nitrogen dioxides (NO_2) and fine particulate matter (PM_{10}) are monitored under the NAMP by the Pollution Control Boards, Pollution Control Committees, Universities and Research Institutes. Besides, additional parameters for other toxic trace matters and polycyclic aromatic hydrocarbons are also being monitored in selected cities of the country. The continuous monitoring has been introduced in twenty seven cities namely, Agra, Ahmedabad, Bengaluru, Chandrapur, Chennai, Cuddalore, Delhi, Durgapur, Faridabad, Ghaziabad, Haldia, Howrah, Hyderabad, Jaipur, Jharia, Jodhpur, Kanpur, Kolkata, Lucknow, Mumbai, Panipat, Patna, Pune, Solapur, Tuticorin, Vadodara and Varanasi. A total of 81 manual monitoring stations have been added in the network under NAMP during 2010-11.

According to the Ministry of Environment and Forest[38], the annual average concentration in SO_2 levels in various cities shows a decreasing trend in Delhi, Kolkata, Mumbai, Chennai etc., during the last five years. The decreasing trend in Sulphur Dioxide levels may be due to various measures taken such as reduction of sulphur in diesel, use of LPG instead of coal as domestic fuel, conversion of diesel vehicles to CNG, etc. The annual average concentration in NO_2 levels in various Metropolitan cities has been found to be within the national standards. Various measures such as implementation of Bharat Stage- III norms have been taken to mitigate ambient NO_2 build-up.

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35 http://www.downtoearth.org.in/node/246

36 http://planningcommission.nic.in/aboutus/committee/wrkgrp12/hud/wg_environment%20final%20report.pdf

37 There is discrepancy in the data with respect to monitoring stations. The CPCB states that the NAMP Network consists of three hundred and forty two (342) operating stations covering one hundred and twenty seven (127) cities/towns in twenty six (26) states and four (4) Union Territories of the country.

38 Ibid.

The monitored ambient air quality data during the year, when compared with the revised NAAQS-2009, indicates that the annual average levels of Sulphur Dioxide (SO_2) are within the prescribed air quality norms across the country and that of Nitrogen Dioxide (NO_2) are within the norms in most of the cities. However, the levels of fine particulate matter (PM_{10}) exceed the prescribed norms in many cities including Delhi. **PM_{10} and NO_2 are the emerging air pollutants**[39]

Limitations of the CEPI Index:

Activists and some of the state governments have, however, been critical of the evaluation. Centre for Science and Environment (CSE), which analysed the CEPI evaluation found that areas where mining is rampant, like Bellary in Karnataka and Jharia in Jharkhand, were not even assessed.[40] The evaluations had other shortcomings—SPCBs do not have an adequate database and there is no transparency in data collection and tabulation of the affected population.

Moratorium, a formality?:

At the time of announcing the list of critically polluted areas, the MoEF had placed a moratorium on expanding existing industries or setting up new ones in these areas. The Ministry also asked the respective SPCBs to submit mitigation action plans for these areas in eight months. All plans were submitted by October, 2010.

But before any significant change in pollution levels could be seen on the ground, the ministry lifted the moratorium on Vapi and four other critically polluted areas in October. Eighteen more areas were taken off the moratorium list between February and May this year. The ministry justified the decision, saying it was based on initiation of works mentioned in the mitigation action plans submitted by states.

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39 Ibid.

40 http://www.downtoearth.org.in/content/gentle-critical-pollution

Only few Pollutants are Measured:

One of the issues of major concern is the fact that only a few criteria pollutants are measured and many pollutants are left out of the monitoring exercise. For example, the Gujarat PCB is responsible for monitoring air pollution, but it does not have monitoring facilities for pollutants like volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls and vinyl chloride, released by industries. Many of these pollutants are carcinogenic and released by chemicals, dyes, paints, pharmaceuticals and other industries using organic chemicals. For monitoring VOCs, CPCB has given the contract to Vadodara-based Gujarat Environment Management Institute. Monitoring of PAHs, polychlorinated biphenyls and vinyl chlorides has been outsourced to a private firm.

Comments:

- The introduction of the CEPI was initially thought of as a positive pro active intervention of the MoEF, which on the one hand would highlight the seriousness of the problem of pollution and on the other hand force the polluting units to take active mitigation measures to deal with the pollution. The initial listing of 88 industrial clusters by the CPCB/ MoEF was viewed as an important step in ensuring that pollution issues receive urgent attention. However, despite no actual and measurable change in the level of pollution and based purely on mitigation plans, the MoEF decided to arbitrarily remove the moratorium imposed on many of the clusters. The ad hoc basis on which the moratoria were removed clearly revealed that the purpose of declaring them was defeated. Industrial and corporate interest clearly managed to convince the Government to lift the moratoria based on pollution indicators. Recent studies in Cuddalore, clearly show that the wrong and misleading conclusions were drawn and moratoria removed.

- Clearly, due to the failure of the MoEF in properly implementing moratoriums based on the CEPI, there has been little to no reduction in pollution levels in these regions. However, the arbitrary nature in which the moratoriums have been removed, has led to action by the Court, specifically, the National Green Tribunal has questioned the arbitrary revoking of the moratorium for NOIDA despite pollution levels being high as per the CEPI. Thus, the CEPI may continue to prove to be a useful tool in litigations against projects or industries in these areas.

4

ENVIRONMENT IMPACT ASSESSMENT PROCESS AND AIR POLLUTION

The Environment Impact Assessment (EIA) process provides a starting point to deal with the likely increase in the level of air pollutants at the stage of site selection, choice of technology and the nature of studies to be undertaken. The EIA is mandatory for a vast range of projects which contribute to the pollution load. The existing, EIA process requires an assessment of the likely increase in pollutants if the proposed project is allowed. The EIA process could be an important tool in combating air pollution since preventive measures could be taken at the very beginning itself i.e. at the time of project planning and design.

The legal framework for EIA is provided through the Environment Impact Assessment Notification, 2006 issued under the provisions of the Environment (Protection) Act, 1986. The EIA process requires, the project proponent to engage an EIA Consultant to conduct an EIA study and prepare a report. The EIA report has to specifically cover the following aspect with respect to air pollution:

Release of pollutants or any hazardous, toxic or noxious substances to air (Kg/hr) [Para 5, Appendix 1 of the EIA Notification, 2006]

S.No.	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
5.1	Emissions from combustion of fossil fuels from stationary or mobile sources		
5.2	Emissions from production processes		
5.3	Emissions from materials handling including storage or transport		

5.4	Emissions from construction activities including plant and equipment		
5.5	Dust or odours from handling of materials including construction materials, sewage and waste		
5.6	Emissions from incineration of waste		
5.7	Emissions from burning of waste in open air (e.g. slash materials, construction debris)		
5.8	Emissions from any other sources		

9. Factors which should be considered (such as consequential development) which could lead to environmental effects or the potential for cumulative impacts with other existing or planned activities in the locality

S. No.	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
9.1	Lead to development of supporting utilities,ancillary development or development stimulated by the project which could have impact on the environment e.g.: • Supporting infrastructure (roads, power supply, waste or waste water treatment, etc.) • housing development • extractive industries • supply industries • other		
9.2	Lead to after-use of the site, which could		

	have an impact on the environment		
9.3	Set a precedent for later developments		
9.4	Have cumulative effects due to proximity to other existing or planned projects with similar effects		

Unfortunately, despite being a potent tool, EIAs have generally failed to take air pollution studies seriously. This is in view of the following:

- **Rapid Studies**: Most of the EIA studies are 'Rapid' Assessments done over a period of three months at the maximum and based largely on secondary data. The issues with respect to air pollution or even the fact that the area proposed for setting up of a new industry is an area which is critically polluted or included in the CEPI index is never considered.
- **No Cumulative Impact Assessment studies**: Despite a clear requirement for cumulative impact assessment, the same is rarely done. In all projects, only a listing of projects located within a distance of 10 km is carried out without any real impact assessment.
- **No Carrying capacity studies**: No carrying capacity studies are carried out and despite specific requirement in law projects are considered and approved without any such studies.
- **Wrong and misleading studies and assessments.** The data in most projects are wrong and are usually a 'copy and paste'. There is very limited vigilance on the same and as a result projects are approved based on wrong data and information.

The recent decision of the National Green Tribunal best illustrates the casual manner in which studies are carried out by EIA Consultants. While dealing with the challenge to the Environmental clearance granted to a Steel Plant at Chattisgarh[41], the National Green Tribunal concluded:

> "The minimum detectable limit for SO2 and NO2 as given in EIA report is 6 μg/m3. However, it is seen from Table 3.7 of the EIA report that almost all the minimum values reported for SO2 (5.0 to 5.3 μg/m3.) are below the minimum detectable limit of 6 μg/m3.

[41] Jan Chetna v. Ministry of Environment and Forests (Appeal No. 22 of 2011(T)).

> Even the mean 3 (three) values of SO2 are ranging between 5.1 to 5.3 µg/m3, which are below the minimum 2detectable limit. The background air quality in the area specially with respect to SO2 is expected to be more due to existence of a number of sponge iron units located in the area, but the mean ambient levels of SO2 as given in the EIA report are ranging between 5.1 to 8.7 µg/m3 are low even during the winter months when the inversion levels become quite low due to meteorological conditions. The reflected data casts a doubt on the reliability of the ambient air quality data produced in the EIA report, specially due to existence of a number of Sponge Iron Units, burning of domestic coal, vehicular traffic etc., in the area.
>
> In addition, it is seen from the EIA report that heavy metals such as Fe, Ni, Zn, Mn and Cu have been estimated in the Respirable Suspended Particulate Matters (RSPM) but the important heavy metal, such as mercury, has not been estimated, even though the mercury level in the ambient air is likely to be significant, specially in view of the consumption of large quantities of coal by a number of sponge iron plants located in the area. It would have been proper to prescribe estimation of mercury in the ambient air during the TOR stage by EAC/MoEF specially in view of the fact that the mercury levels are likely to increase due to doubling of the proposed capacity of the sponge iron plant from existing 66,000 TPA to 1,32,000 TPA. Besides, captive power plant of 25 MW (17+8 MW) is also based on coal as its main feed stock, and it would also contribute to mercury emission. In view of the unrealistic air quality data, the overall impacts as worked out based on mathematical modeling, does not appear to reflect the true picture in terms of likely impacts on air quality. There was need to look at base line/background air quality and meteorological data in a more critical way. It appears that the EIA Consultant has taken it in a very casual way.
>
> Regarding water quality data, it is seen from Table 3.10 and Table 3.11 of the EIA Report that the fluoride levels are almost same in the ground water and surface water, which appears to be unrealistic."

In some of the other cases also the National Green Tribunal came to a similar conclusion.

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AIR POLLUTION AND THE INDIAN JUDICIARY

The issue of air pollution and other environmental matters in the Supreme Court reached its zenith in the '90s. Apart from passing several orders seen as revolutionary at the time, the Supreme Court also gave legal standing to several international environmental principles. From a perusal of the following cases, it will become clear that the Supreme Court (and to a lesser extent, the High Courts) have been one of the biggest drivers of policy change in air pollution related issues. This chapter will cover the important environmental principles laid down by the Supreme Court, cases where the Supreme Court has intevened, landmark decisions of some of the higher Courts and also the current legal position with respect to the powers and functions of the SPCBs, who can approach a court in public interest environmental cases and the relevance of concepts like cumulative impact assessment studies in Indian environmental jurisprudence.

Applicable Environmental Principles in Indian Law:

- Under section 20 of the National Green Tribunal Act, the Tribunal "shall, while passing any order or decision or award, apply the principles of sustainable development, the precautionary principle and polluter pays principle".

- These principles were already present in Indian domestic law and applicable to the practice of statutory authorities and Courts. In *Vellore Citizen's Welfare Forum v Union of India* (1995) SCC 647, the Supreme Court held:

  "We have no hesitation in holding that sustainable development as a balancing concept between ecology and development has been accepted as part of customary international law though the salient features have yet to be finalised by international law jurists. We are however, of the view that "The Precautionary Principle" and "The Polluter Pays Principle" are essential features of "Sustainable Development".

- The Supreme Court then went on to define what is meant by "the Precautionary Principle" and "The Polluter Pays Principle", it stated:

  "*the absolute liability for harm to the environment extends not only to compensate victims of pollution but also the cost of restoring the environmental degradation. Remediation of the damaged environment is a part of the process of sustainable development and as such*

the polluter is liable to pay the cost to the individual sufferers as well as the cost of reversing the damaged ecology".

- Similarly, in *MC Mehta v Kamal Nath* (1997) 1SCC 388, the Supreme Court stated: "It is settled by this Court that one who pollutes the environment must pay to reverse the damage caused by his acts".

- In *AP Pollution Control Board v Nayudu*, Civil Appeals 368-71 of 1999, the Supreme Court, discussed a number of concepts at length. As it lays the foundation of Indian jurisprudence on the interpretation of guiding environmental principles it is worth quoting from it extensively:

  "*The Precautionary Principle and the new Burden of Proof - The Vellore Case:*

  30. The 'uncertainity' of scientific proof and its changing frontiers from time to time has led to great changes in environmental concepts during the period between the Stockholm Conference of 1972 and the Rio Conference of 1992. In Vellore Citizens' Welfare Forum v. Union of India and Ors. AIR 1996 SC 2715 , a three Judge Bench of this Court referred to these changes, to the 'precautionary principle' and the new concept of 'burden of proof in environmental matters. Kuldip Singh, J. after referring to the principles evolved in various international Conferences and to the concept of 'Sustainable Development', stated that the precautionary Principle, the Polluter-Pays Principle and the special concept of Onus of Proof have now emerged and govern the law in our country too, as is clear from Articles 47, 48-A and 51-A(g) of our Constitution and that, in fact, in the various environmental statutes, such as the Water Act, 1974 and other statutes, including the Environment (Protection) Act, 1986, these concepts are already implied. The learned Judge declared that these principles have now become part of our law. The relevant observations in the Vellore case in this behalf read as follows:

  In view of the above-mentioned constitutional and statutory provisions we have no hesitation in holding that the Precautionary Principle and the Polluter Pays Principle are part of the environmental law of the country.

  The Court observed that even otherwise the above-said principles are accepted as part of the Customary International Law and hence there should be no difficulty in accepting them as part of our domestic law. In fact on the facts of the case before this Court, it was directed that the authority to be appointed under Section 3(3) of the Environment (Protection) Act, 1986 shall implement the 'Precautionary Principle' and the 'Polluter Pays Principle'.

The learned Judges also observed that the new concept which places the Burden of Proof on the Developer or Industrialist who is proposing to alter the slants quo, has also become part of our environmental law.

31. The Vellore judgment has referred to these principles briefly but, in our view, it is necessary to explain their meaning in more detail, so that Courts and tribunals or environmental authorities can properly apply the said principles in the matters which come before them.

The precautionary Principle replaces the Assimilative Capacity principle:

32. A basic shift in the approach to environmental protection occurred initially between 1972 and 1982. Earlier the concept was based on the 'assimilative capacity rule as revealed from Principle 6 of the Stockholm Declaration of the U.N. Conference on Human Environment, 1972. The said principle assumed that science could provide policy-makers with the information and means necessary to avoid encroaching upon the capacity of the environment to assimilate impacts and it presumed that relevant technical expertise would be available when environmental harm was predicted and there would be sufficient time to act in order to avoid such harm. But in the 11th principle of the U.N. General Assembly Resolution on World Charter for Nature, 1982, the emphasis shifted to the 'precautionary Principle', and this was reiterated in the Rio Conference of 1992 in its Principle 15 which reads as follows:

Principle 15: In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage; lack of full scientific certainty shall not be used as a reason for proposing cost-effective measures to prevent environmental degradation.

33. In regard to the cause for the emergence of this principle, Charmian Barton, in the article earlier referred to in Vol. 22, Harv. Envtt. L. Rev. (1998) P. 509 at (p. 547) says:

There is nothing to prevent decision makers from assessing the record and concluding there is inadequate information on which to reach a determination. If it is not possible to make a decision with "some" confidence, then it makes sense to err on the side of caution and prevent activities that may cause serious or irreversible harm. An informed decision can be made at a later stage when additional data is available or resources permit further research. To ensure that greater caution is taken in environmental management, implementation of the principle through Judicial and legislative means is necessary.

In other words, inadequacies of science is the real basis that has led to the precautionary principle of 1982. It is based on the theory that it is better to err on the side of caution and prevent environmental harm which may indeed become irreversible.

34. The principle of precaution involves the anticipation of environmental harm and taking measures to avoid it or to choose the least environmentally harmful activity. It is based on scientific uncertainty. Environmental protection should not only aim at protecting health, property and economic interest but also protect the environment for its own sake. Precautionary duties must not only be triggered by the suspicion of concrete danger but also by (Justified) concern or risk potential. The precautionary principle was recommended by the UNEP Governing Council (1989). The Bomako Convention also lowered the threshold at which scientific evidence might require action by not referring to "serious" or "irreversible" as adjectives qualifying harm. However, summing up the legal status of the precautionary principle, one commentator characterised the principle as still "evolving" for though it is accepted as part of the international customary law, "the consequences of its application in any potential situation will be influenced by the circumstances of each case". (See First Report of Dr. Sreenivasa Rao Pemmaraju, Special - Rapporteur, International Law Commission dated 3.4.1998 paras 61 to 72).

The Special Burden of Proof in Environmental cases:

35. We shall next elaborate the new concept of burden of proof referred to in the Vellore case at p. 658, AIR 1996 SC 2715 . In that case, Kuldip Singh, J. stated as follows:

The 'onus of proof is on the actor or the developer/industrialist to show that his action is environmentally benign.

36. It is to be noticed that while the inadequacies of science have led to the 'precautionary principle', the said 'precautionary principle' in its turn, has led to the special principle of burden of proof in environmental cases where burden as to the absence of injurious effect of the actions proposed, is placed on those who want to change the status quo (Wynne, Uncertainty and Environmental Learning, 2 Global Envtl. Change 111 (1992) at p. 123). This is often termed as a reversal of the burden of proof, because otherwise in environmental cases, those opposing the changes would be compelled to shoulder the evidentiary burden, a procedure which is not fair. Therefore, it is necessary that the party attempting to preserve the status quo by maintaining a less-polluted state should not carry the burden of proof and the party who wants to alter it, must bear this burden. (See James M. Olson, Shifting the Burden of Proof, 20 Envtl. Law p.891 at 898 (1990). (Quoted in Vol. 22 (1998) Harv. Env. Law Review p. 509 at 519, 550).

37. The precautionary principle suggests that where there is an identifiable risk of serious or irreversible harm, including, for example, extinction of species, widespread toxic pollution in major threats to essential ecological processes, it may be appropriate to place the burden of proof on the person or entity proposing the activity that is potentially harmful to the environment. (See Report of Dr. Sreenivasa Rao Pemmaraju, Special Rapporteur, International Law Commission, dated 3.4,1998, para 61).

38. It is also explained that if the environmental risks being run by regulatory inaction are in some way "ascertain but non-negligible", then regulatory action is justified.. This will lead to the question as to what is the non-negligible risk'. In such a situation, the burden of proof is to be placed on those attempting to alter the status quo. They are to discharge this burden by showing the absence of a 'reasonable ecological or medical concern. That is the required standard of proof. The result would be that if insufficient evidence is presented by them to alleviate concern about the level of uncertainity, then the presumption should operate in favour of environmental protection. Such a presumption has been applied in Ashburton Acclimatisation Society v. Federated Fanners of New Zealand [1988] 1 NZLR 78. The required standard now is that the risk of harm to the environment or to human health is to be decided in public interest, according to a 'reasonable persons' test. (See Precautionary Principle in Australia by Charmian Barton) (Vol. 22) (1988) Harv. Env. L. Rev. 509 at 549).

Brief Survey of Judicial and technical inputs in environmental appellate authorities/tribunals:

39. We propose to briefly examine the deficiencies in the Judicial and technical inputs in the appellate system under some of our existing environmental laws.

40. Different statutes in our country relating to environment provide appeals to appellate authorities. But most of them still fall short of a combination of judicial and scientific needs. For example, the qualifications of the persons to be appointed as appellate authorities under section 28 of the Water (Prevention and Control of Pollution) Act, 1974, section 31 of the Air (Prevention and Control of Pollution) Act, 1981, under Rule 12 of the Hazardous Wastes (Management and Handling) Rules, 1989 are not clearly spelled out. While the appellate authority under section 28 in Andhra Pradesh as per the notification of the Andhra Pradesh Government is a retired High Court Judge and there is nobody on his panel to help him in technical matters, the same authority as per the notification in Delhi is the Financial Commissioner (see notification dated 18.2.1992) resulting in there being in NCT neither a regular judicial member nor a technical one. Again, under the National Environmental Tribunal Act, 1995, which has power to award compensation for death or injury to any person (other than workmen), the said Tribunal under section 10 no doubt

consists of a Chairman who could be a Judge or retired Judge of the Supreme or High Court and a Technical Member. But section 10(1)(b) read with section 10(2)(b) or (c) permits a Secretary to Government or Additional Secretary who has been a Vice-Chairman for 2 years to be appointed as Chairman. We are citing the above as instances of the grave inadequacies.

Principle of Good Governance: Need for modification of our statutes, rules and notification by including adequate Judicial & Scientific inputs:

41. Good Governance is an accepted principle of international and domestic law. It comprises of the rule of law, effective State institutions, transparency and accountability in public affairs, respect for human rights and the meaningful participation of citizens - (including scientists) - in the political processes of their countries and in decisions affecting their lives. (Report of the Secretary General on the work of the Organization, Official records of the UN General Assembly, 52 session, suppl. I (A/52/1) (para 22): It includes the need for the State to take the necessary legislative, administrative and other action's to implement the duty of prevention of environmental harm, as noted in Article 7 of the draft approved by the working Group of the International Law Commission in 1996. (See Report of Dr. Sreenivasa Rao Pemmaraju, Special Rapporteur of the International Law Commission dated 3.4.1998 on 'Prevention of tran boundary damage from hazardous activities') (paras 103, 104). Of paramount importance, in the establishment of Environmental Courts, Authorities and Tribunals is the need for providing adequate Judicial and Scientific inputs rather than leave complicated disputes regarding environmental pollution to officers drawn only from the Executive.

42. It appears to us from what has been stated earlier that things are not quite satisfactory and there is an urgent need to make appropriate amendments so as to ensure that at all times, the appellate authorities or tribunals consist of Judicial and also Technical personnel well versed i n environmental laws. Such defects in the constitution of these bodies can certainly undermine the very purpose of those legislations. We have already referred to the extreme complexity of the scientific or technological issues that arise in environmental matters. Nor, as pointed out by Lord Woolf and Robert Cranworth should the appellate bodies be restricted to Wednesbury limitations.

43. The Land and Environment Court of New South Wales in Australia, established in 1980, could be the ideal. It is a superior Court of Record and is composed of four Judges and nine technical and conciliation assessOrs. Its jurisdiction combines appeal, judicial review and enforcement functions. Such a composition in our opinion is necessary and ideal in environmental matters.

44. In fact, such an Environmental Court was envisaged by this Court atleast in two judgments. As long back as 1986, Bhagwati, CJ in M.C. Mehta v. Union of India and Shriram Foods & Fertilizers Case [1986] 1 SCR 312 observed:

We would also suggest to the Government of India that since cases involving issues of environmental pollution, ecological destructions and conflicts over national resources are increasingly coming up for adjudication and these cases involve assessment and evolution of scientific and technical data, it might be desirable to set up Environmental Courts on the regional basis with one professional Judge and two experts drawn from the Ecological Sciences Research Group keeping in view the nature of the case and the expertise required for its adjudication. There would of course be a right of appeal to this Court from the decision of the Environment Court.

In other words, this Court not only contemplated a combination of a Judge and Technical Experts but also an appeal to the Supreme Court from the Environmental Court.

45. Similarly, in the Vellore case: AIR 1996 SC 2715 , while criticising the inaction on the part of the Government of India in the appointment of an authority under section 3(3) of the Environment (Protection) Act, 1996. Kuldip Singh, J. observed that the Central Government should constitute an authority under section 3(3): headed by a retired Judge of the High Court and it may have other members - preferably with expertise in the field of pollution control and environmental protection - to be appointed by the Central Government.

We have tried to find out the result of the said directions. We have noticed that pursuant to the observations of this Court in Vellore case, certain notifications have been issued by including a High Court Judge in the said authority. In the Notification So. 671(E) dated 30.9.1996 issued by the Government of India for the State of Tamil Nadu under section 3(3) of the 1986 Act, appointing a 'Loss of Ecology (Prevention and Payment of Compensation) Authority, it is stated that it shall be manned by a retired High Court Judge and other technical members who would frame a scheme or schemes in consultation with NEERI etc. It could deal with all industries including tanning industries. A similar Notification So. 704 E dated 9.10.1996 was issued for the 'Environmental Impact Assessment Authority' for the NCT including a High Court Judge. Notification dated 6.2.1997 (No. 88E) under section 3(3) of the 1986 Act dealing with shrimp industry, of course, includes a retired High Court Judge and technical persons.

46. As stated earlier, the Government of India should, in our opinion bring about appropriate amendments in the environmental statutes, Rules and notification to ensure that in all Environmental Courts, Tribunals and appellate authorities there is always a

Judge of the rank of a High Court Judge or a Supreme Court Judge. - sitting or retired - and Scientist or group of Scientists of high ranking and experience so as to help a proper and fair adjudication of disputes relating to environment and pollution.

47. There is also an immediate need that in all the States and Union Territories, the appellate authorities under Section 28 of the Water (Prevention of Pollution) Act, 1974 and section 31 of the Air (Prevention of Pollution) Act, 1981 or other rules there is always a Judge of the High Court, sitting or retired and a Scientist or group of Scientists of high ranking and experience, to help in the adjudication of disputes relating to environment and pollution. An amendment to existing notifications under these Acts can be made for the present.

48. There is also need for amending the notifications issued under Rule 12 of the Hazardous Wastes (Management & Handling) Rules, 1989. What we have said applies to all other such Rules or notifications issued either by the Central Government or the State Governments.

The duty of the present generation towards posterity: Principle of Inter-generational Equity: Rights of the Future against the Present:

52. The principle of Inter-generational equity is of recent origin. The 1972 Stockholm Declaration refers to it in principles 1 and 2. In this context, the environment is viewed more as a resource basis for the survival of the present and future generations.

Principle 1 states:

Man has the fundamental right to freedom, equality and adequate conditions of life, in an environment of quality that permits a life of dignity and well-being, and he bears a solemn responsibility to protect and improve the environment for present and future generations....

Principle 2:

The natural resources of the earth, including the air, water, lands, flora and fauna and especially representative samples of natural ecosystems, must be safeguarded for the benefit of present and future generations through careful planning or management, as appropriate.

Several international conventions and treaties have recognised the above principles and in fact several imaginative proposals have been submitted including - the locus standi of individuals or groups to take out actions as representatives of future generations, or

appointing Ombudsman to take care of the rights of the future against the present (proposals of Sands & Brown Weiss referred to by Dr. Sreenivasa Rao Pemmaraju, Special Rapporteur, paras 97, 98 of his report)".

- In T.N. Godavarman Thirumulpad v. Union of India (judgment dated 13 February 2012), the Supreme Court enunciated the principle of "ecocentrism" over "anthropocentrism" in the context of conservation efforts of the Asiatic Wild Buffalo:

  9. Human-wildlife conflict is fast becoming a critical threat to the survival of many endangered species, like wild buffalo, elephants, tiger, lion etc. such conflicts affect not only its population but also has broadened environmental impacts on ecosystem equilibrium and biodiversity conservation. Laws are man-made, hence there is likelihood of anthropocentric bias towards man, and rights of wild animals often tend to be of secondary importance but in the universe man and animal are equally placed, but human rights approach to environmental protection in case of conflict, is often based on anthropocentricity.

  10. Man-animal conflict often results not because animals encroach human territories but vice-versa. Often, man thinks otherwise, because man's thinking is rooted in anthropocentrism. Remember, we are talking about the conflict between man and endangered species, endangered not because of natural causes alone but because man failed to preserve and protect them, the attitude was destructive, for pleasure and gain. Often, it is said such conflicts is due human population growth, land use transformation, species habitat loss, degradation and fragmentation, increase in eco-tourism, access to natural reserves, increase in livestock population, etc. Proper management practices have to be accepted, like conservation education for local population, resettlement of villages, curbing grazing by livestock and domestic animals in forest, etc., including prey-preservation for the wild animals. Provision for availability of natural water, less or no disturbance from the tourists has to be assured. State also has to take steps to remove encroachments and, if necessary, can also cancel the patta already granted and initiate acquisition proceedings to preserve and protect wildlife and its corridors.

Therefore, India's domestic law mandates that the following principles be used:

- The precautionary principle and the reversal of the burden of proof.
- The polluter pays principle.

- The principle of sustainable development, including inter-generational equity.
- Ecocentrism over anthropocentrism.

Who can approach a court to agitate issues related to air pollution?:

The issue of *locus standi*, or the standing of a person in approaching a court for agitating environmental matters is no longer a matter of debate in Indian courts. It is now accepted that since the Right to a clean environment is now a right under Article 21 of the Constitution and that the protection of the environment is a fundamental duty, any person who is interested or involved in an environmental matter may approach the courts, even if he is not a resident of an area or directly impacted by a project:

In the **Oleum Gas Leak Case**[42] (which will be discussed in greater length in the coming paragraphs), the Supreme Court allowed the Delhi Legal Aid & Advice Board as well as the Delhi Bar Association to file applications for the award of compensation to the victims of the escape of oleum gas. The Court observed, *"If this Court is prepared to accept a letter complaining of violation of the fundamental right of an individual or a class of individuals who cannot approach the Court for justice, there is no reason why these applications for compensation which have been made for enforcement of the fundamental right of the persons affected by the oleum gas leak under Article 21 should not be entertained.*" Thus, the Court laid down a very important precedent on the standing of parties in cases involving public interest.

The Court further held that Article 32 lays a constitutional obligation on the Supreme Court to protect the fundamental rights of the people and for that purpose this Court has all incidental and ancillary powers including the power to forge new remedies and fashion new strategies designed to enforce the fundamental rights.

The Delhi High Court followed the Supreme Court in **Prafulla Samantra v. Ministry of Environment and Forests (W.P.(C) 3126/2008)** and diluted *locus standi* requirements and decided on 28-04-2009:

"13. .... India, even today, lives largely in its villages. A project or scheme, which is likely to affect or impact a remote community, that may comprise even a cluster of villages, may or may not have an "association of persons" who work in the field of environment. The villagers, like

[42] M. C. Mehta & Anr. Vs. Union of India & Ors. AIR 1987 SC 1086

most others, are unlikely to know about the project clearance, or possess the wherewithal to question it, through an appeal. If the third respondent's contention, and the authority's impugned order were to be accepted, and upheld, such community's right to appeal, meaningfully, would be rendered a chimera, an illusion. In their case, the Act would be a cruel joke, paying lip service, while promising access to justice, but in reality depriving such a right. Such communities' right to be represented in courts, under Article 226 and 32, was undeniable; yet, in a specialized tribunal whose mandate it is to consider the impact upon them, their immediate environment, the flora, fauna and wildlife that sustained them for generations, they would have no say, representatively, except in the extremely restricted manner projected by the third respondent, and affirmed by the authority.

15. A well established rule of interpretation is that a beneficial statute should be given a purposive construction, to further legislative intention, if literal interpretation thwarts it. The Act is at once a special one, providing for evaluation by experts, and also, at the same time, a beneficial one, to further the cause of environment protection."

18. The world as we know is gravely imperiled by mankind's collective folly. Unconcern to the environment has reached such damaging levels which threatens the very existence of life on this planet. If standing before a special tribunal, created to assess impact of projects and activities that impact, or pose potential threats to the environment, or local communities, is construed narrowly, organizations working for the betterment of the environment whether in form of NGOs or otherwise, would be effectively kept out of the discourse, that is so crucial an input in such proceedings. Such association of persons, as long as they work in the field of environment, possess a right to oppose and challenge all actions, whether of the State or private parties, that impair or potentially impair the environment.

This was also the principle enunciated by the National Green Tribunal in ***Vimal Bhai v. Union of India (Appeal No. Of 2011) decided on 14-12-2011***, where the Hon'ble Tribunal was pleased to hold as under:

"In a given case, the person living in the area or vicinity of the proposed project may not know about many intrinsic scientific details and effects of the ultimate project and any disaster, it may cause. The safety of the dam and the likely devastation and loss of properties and lives of the people in the downstream, if the dam, being situated in a highly earthquake prone area, bursts or leaks - the structural flaws of the dam and rehabilitation policies, etc. Therefore, it may not be proper for this Tribunal to reject an Application on the ground that the applicant/appellant as the case may be, is not the resident of the area or not directly injured or aggrieved. The nature has been created over lakhs of thousands of years and such nature cannot be allowed to do away with one stroke of pen, in the guise of development, without properly examining the environmental and ecological impact of the project proposed. No scientific study assumes finality as with the progress of time our knowledge and understanding of the subject matter undergoes

metamorphosis with new evidence. "

In view of the above decisions, there is no longer any doubt that a person or group does not have to be directly affected by a pollutant or an environmental problem in order to agitate this issue before the Courts.

Carrying Capacity Studies and Sustainable Development:

In the case of **Karnataka Industrial Areas Development Board v. C. Kenchappa (2006) 6 SCC 371**, the Supreme Court reiterated the importance of carrying capacity studies to the ecology and in fulfilling the principle of sustainable development. The analysis of the SPCBs reveals the most States do not, as a principle, carry out any carrying capacity studies, in direct violation of the Supreme Court's order:

"In the case of M.C. Mehta v. Union of India, [1997] 2 SCC 353, this Court gave a number of directions to 292 industries located nearby Taj Mahal. This Court, in this case, observed that the old concept that development and ecology cannot go together is no longer acceptable. Sustainable development is the answer. The development of industry is essential for the economy of the country, but at the same time the environment and ecosystem have to be protected. The pollution created as a consequence of environment must be commensurate with the carrying capacity of our ecosystem. In any case, in view of the precautionary principle, the environmental measures must anticipate, prevent and attack the causes of environmental degradation.

The directions which have been given in the impugned judgment are perhaps on the lines of directions given by this Court in M.C. Mehta v. Union of India, [1997] 3 SCC 715. This Court observed that the preventive measures have to be taken keeping in view the carrying capacity of the ecosystem operating in the environmental surroundings under consideration. Badkhal and Surajkund lakes are popular tourist resorts almost next door to the capital city of Delhi. Two expert opinions on the record - by the Central Pollution Control Board and by the NEERI make it clear that the large-scale construction activity in the close vicinity of the two lakes is bound to cause adverse impact on the local ecology. NEERI has recommended green belt at one k.m. radius all around the two lakes.

In the Rio Conference of 1992 great concern has been shown about sustainable development. "Sustainable development" means `a development which can be sustained by nature with or without mitigation'. In other words; it is to maintain delicate balance between industrialization and ecology. While development of industry is essential for the growth of economy, at the same time, the environment and the ecosystem are required to be protected. The pollution created as a consequence of development must not exceed the carrying capacity of ecosystem."

In **T. Muruganandam v Union of India**[43], the NGT directed the MoEF to initiate a Carrying Capacity Study taking into account the assimilative and supportive capacity of the region, as such a study would *"go a long way in taking appropriate measures and environmental safeguards right from the beginning to avoid irreparable damages to the fragile ecosystem of Pichavaram Mangroves and marine environment."*

Power of the SPCBs for Enforcing the Air Act:

The Delhi High Court in its judgment **Splendor Landbase Ltd v. Delhi Pollution Control Committee dated 30 September, 2010** observed that under the Air (Prevention and Control of Pollution) Act, 1981 ("the Air Act"), the State Pollution Control Boards ("PCBs") do not have the power to levy penalty. Penalty can only be levied by the procedure prescribed under the Act and by the empowered authority. This was relied on by the National Green Tribunal in *Hindustan Cocacola Beverages Pvt. Ltd. v. West Bengal Pollution Control Board (Appeal No. 10 of 2011)* judgment dated 19 March 2012.[44] Some of the important observations made by the Delhi High Court are:

- The power to levy a penalty is in the nature of a penal power. It is settled law that unless there is a specific power in the statute enabling the authority to do so, it cannot levy penalties or damages with reference to the general power under Section 31A of the Air Act or Section 33A of the Water Act.
- The language used should leave no serious doubts about its effect so that the persons who are to be subjected to such a liability for the infringement of law are not left in a state of uncertainty as to what their duties or liabilities are.
- Neither in the Water Act nor in the Air Act is there any provision that permits DPCC to levy a penalty. That power is with the courts and that too after conviction.
- Levying penalty and requiring furnishing of bank guarantees and making the grant of consent to establish under the Water Act and consent to operate under the Air Act conditional upon payment of such penalties and furnishing of such bank guarantees are entirely without the authority of law.

[43] http://www.greentribunal.in/orderinpdf/17-2011(T)_23May2012_final_order.pdf

[44] http://www.greentribunal.in/orderinpdf/10-2011(Ap)_19Mar2012_final_order.pdf

- Penalties can be levied as per procedure prescribed and only Courts can take cognizance of offences under the Act and levy penalties, whether by way of imprisonment or fine. Similar is the position under the Air Act.
- The role of the SPCBs is to initiate proceedings before the Court of Competent Jurisdiction and no more.

Air Pollution and the Higher Judiciary:

The Supreme Court has been the driver of change in several environmental issues, but it would not be an exaggeration to say that the Supreme Court flexed its activist muscle in several cases and oversaw the shutting down of industries, passed directions to save the Taj Mahal from environmental degradation and made several orders with relation to vehicular pollution. That said, the Supreme Court's orders with relation to air pollution have always been urban-centric (with the exception of the stone-quarrying and mining cases) and this urban bias continues.

The Taj Trapezium Case[45]:

The Taj Mahal located in Agra, Uttar Pradesh was listed amongst the 100 most endangered sites in the world by the private sector preservation organisation called "World Monuments Fund" during the '90s[46] due to the effect of acid rain and the effect of atmospheric pollution on the monument. M C Mehta, an advocate, brought to the notice of the Supreme Court, the effect of foundries, chemical/hazardous industries and the refinery at Mathura and identified them as the major sources of damage to the Taj. SO2 emitted by the Mathura Refinery and the industries within an area now known as the "Taj Trapezium Zone (TTZ)", when combined with oxygen and moisture formed sulphuric acid (called "Acid rain") which had a corroding effect on the white marble of the monument.

The Petitioner relied on the "Report on Environmental Impact of Mathura Refinery" by the Varadarajan Committee wherein it was observed that *"There is substantial level of pollution of sulphur dioxide and particulate matter in the Agra region. Even though the total amount of emission of sulphur dioxide from these sources may be small, on account of their proximity to the monuments, their contribution to the air quality of the zone will be considerably high."*

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45 M C Mehta v. Union of India, Writ Petition (Civil) No. 13381 of 1984.

46 http://www.wmf.org/project/taj-mahal

The Supreme Court also relied on a 1990-published report of the National Environment Engineering Research Institute (NEERI) regarding status of air pollution around the Taj. It was observed that the SPM levels at the Taj Mahal were invariably high (more than 200 ug/m3) and exceeded the then-NAAQ standard of 100 ug/m3 for SPM for sensitive locations.

The Supreme Court heard the petition for three years, passed many interlocutory orders, issued numerous directions, called for reports of the experts, consulted the concerned authorities for effective remedies, closely monitored the updates and finally decided the petition with various remedial directions:

(1) The 292 listed industries were to convert to gas-based fuel or relocate their industry from the trapezium and coal/coke supplies to these industries were to be stopped forthwith.

(2) The Supreme Court, while acting in a very proactive manner and with a view to ensure that the things may reach their logical end, further decided to separately monitor issues relating to:

(a) The setting up of hydrocracker unit and various other devices by the Mathura Refinery.

(b) Construction of the Agra bypass to divert all the traffic which passes through the city.

(d) Setting aside an additional amount of Rs. 99.54 crores sanctioned by the Planning Commission which was to be utilised by the State Government for the construction of electricity supply projects to ensure uninterrupted electricity to the TTZ to stop the operation of generating sets which are major source of air pollution in the TTZ

(e) Creating a green belt around the Taj.

(f) All emporia and shops functioning within the Taj premises were also directed to be closed.

(h) Directions to the Government of India to decide the issue, pertaining to declaration of Agra as heritage city within two months.

Oleum Gas Leak Case[47]:

This PIL was also filed by M. C. Mehta seeking closure of the various units of Shriram Industries on the ground that same were hazardous to the community. During the pendency of the petition, on the 4th and 6th of December, 1985 an environment accident took place and lethal quantities of oleum gas leaked from from one of the units of the industry. This leakage resulted from the bursting of a tank containing oleum gas when the structure on which it was mounted, collapsed and adversely affected numerous inhabitants of the city. On 6th December, 1985 the

47 M. C. Mehta & Anr. Vs. Union of India & Ors. AIR 1987 SC 1086

District Magistrate, Delhi under Section 133(1) of Cr.P.C, directed the industry to cease all operations involving the manufacture and processing of hazardous and lethal chemicals and gases including chlorine, oleum, super-chlorine, phosphate, etc at their establishment in Delhi within two days and to remove such chemicals and gases from Delhi within seven days. At this juncture M.C.Mehta moved to the Supreme Court to claim compensation by filing a PIL for the losses caused and pleaded that the closed establishment should not be allowed to restart.

After settling the issue of legal standing which was discussed earlier, the Court also made several other pronouncements. The biggest issue was whether a private industry could be brought under the ambit of Article 21 of the Constitution, since only State functionaries can be challenged for the violation of fundamental rights. The Court held that the activity of producing chemicals and fertilizers is deemed by the State to be *an industry of vital public interest*, whose public import necessitates that the activity should be ultimately carried out by the State itself. If there was State support and the industry was under State control, then private corporations may also be permitted to supplement the State, thus suggesting that private corporations performing such "vital public interest" duties may fall within the ambit of Article 21. However, this was only an observation by the Court which went on to hold that that it would not be correct to say that, in India, once a corporation is deemed to be 'authority', it would be subject to the constitutional limitation of fundamental rights in the performance of all its functions, and concluded that matter without passing any decision on this issue.

On the issue of compensation, the Court observed that, "*If the enterprise is permitted to carry on an hazardous or inherently dangerous activity for its profit, the law must presume that such permission is conditional on the enterprise absorbing the cost of any accident arising on account of such hazardous or inherently dangerous activity as an appropriate item of its overheads. Such hazardous or inherently dangerous activity for private profit can be tolerated only on condition that the enterprise engaged in such hazardous or inherently dangerous activity indemnifies all those who suffer on account of the carrying on of such hazardous or inherently dangerous activity regardless of whether it is carried on carefully or not. This principle is also sustainable on the ground that the enterprise alone has the resource to discover and guard against hazards or dangers and to provide warning against potential hazards. We would therefore hold that where an enterprise is engaged in a hazardous or inherently dangerous activity and harm results to anyone on account of an accident in the operation of such hazardous or inherently dangerous activity resulting for example, in escape of toxic gas the enterprise is strictly and absolutely liable to compensate all those who are affected by the accident and such liability is not subject to any of the exceptions which operate vis-a-vis the tortious principle of strict liability under the rule in Rylands v. Fletcher."*

In light of the above, the Court found that the larger and more prosperous an enterprise, greater must be the amount of compensation payable by it on account of an accident in the carrying on

of the hazardous or inherently dangerous activity by the enterprise. In accordance with the above legal principles enunciated, the Supreme Court awarded damages to the victims of the gas leak.

Vehicular Pollution Case:[48]

Prior to 1996, Delhi was the third most polluted city in the world. With a view to protect the health of the present and future generations, the Supreme Court issued various directions to Delhi administrative authorities for controlling emissions from vehicles plying in Delhi.

To this end, the Supreme Court ordered the constitution of the Bhure Lal Committee by the Ministry for Environment and Forests. The Bhure Lal Committee submitted its Report in Augist 2001 and among several other recommendations, the Committee recommended to the Supreme Court that CNG and LPG are environmentally acceptable auto fuels for Delhi. Even before the specific recommendations made by the Bhure Lal Committee report, the Court through the orders dated 28.03.1995 and 09.02.1996 directed for conversion of government vehicles to CNG, as well as for the installation of CNG stations and kits.

In pursuance of the said directions, various measures were adopted:

(a) lowering of sulphur content in diesel, first to 0.50% and then to 0.05%;

(b) ensuring supply of only lead free petrol;

(c) requiring the fitting of catalytic converters;

(d) directing the phasing out of grossly polluting old vehicles;

(f) directing the lowering of the benzene content in petrol; and

(g) ensuring that new vehicles, petrol and diesel, meet Euro-II standards.

The Court held that the Government limiting its role to specifying of norms is a clear abdication of the constitutional and statutory duty cast upon the Government to protect and preserve the environment, and is "in the teeth of the precautionary principle". The Court went on to declare that,

"The increase in respiratory diseases specially amongst the children should normally be a cause of concern for any responsible government. The only concern of the Government now appears to

[48] M. C. Mehta & Anr. Vs. Union of India & Ors. AIR 1987 SC 1086

be is to protect the financial health of the polluters, including the oil companies who by present international desirable standards produce low quality petrol and diesel at the cost of public health."

The Supreme Court directed that the Union of India was to give priority to the transport sector including private vehicles all over India with regard to the allocation of CNG and that the NCT of Delhi would phase out 800 diesel buses per month starting May, 2002.

For implementing these directions, the Union of India and all governmental authorities were directed to:-

(a) Allocate and make available 16.1 lakh Kg per day (2 mmscmd) of CNG in the NCT of Delhi by 30th June, 2002 for use by the transport sector,

(b) Increase the above supply of CNG whenever the need arises

(c) Prepare a scheme containing a time schedule for supply of CNG to the other polluted cities of India and furnish the same to this Court by 9th May, 2002 for it's consideration;

(d) It will be open to the Union of India to supply LPG in addition to CNG as an alternate fuel or to supply any other clean non-adulterable fuel as the Bhure Lal Committee may recommend.

The Aravalli Mining Case[49]:

The Supreme Court examined the question of whether the mining activity in areas upto 5 kilometres from the Delhi-Haryana border and also in the Aravalli hills causes environment degradation. The Court found that the ambient air in the mining area was very poor due to the dust generated by the blasting operations, vehicular movement, loading/unloading/transportation and the exhaust gases from equipment and machinery used in the mining operations. The Supreme Court relied upon reports of the various agencies, authorities and inspections and proceeded to issue various directions and observations for protection of environment from the ill-effects of illegal and unscientific mining:

1. No mining activity could be carried out in an area over which a plantation had been undertaken under Aravalli project by utilization of foreign funds.

2. Mining activity would be permitted only on the basis of sustainable development and on compliance with stringent conditions.

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[49] (2009)6 SCC 142, (2010) 1 SCC 500

3. If, inspite of stringent conditions, there was a continued adverse irreversible effect on the ecology in the Aravalli hill range area, at a later date, the Court would consider total stoppage of mining activity in the area (as was finally carried out in its later decision in 2010).

4. The MoEF was directed to prepare a short term and long term action plan for the restoration of environmental quality of Aravalli hills in Gurgaon district within four months.

Chennai Port Case:[50]

The Madras High Court, in its recent judgment took serious note of the unabated air pollution caused by unloading of reddish iron ore dust in the Chennai Harbour and the consequential pollution in the surrounding areas. The litigation was initiated by a letter from the Avoor Muthiah Maistry Street Residents Welfare Association to the then Honourable Chief Justice of the Madras High Court along with two other public interest litigation petitions filed. The petitions outlined the health hazards of the dust to the people living in the surrounding areas causing breathing problems, diseases related to lungs, cancer etc and the effect of the airborne chemicals on buildings, which included the High Court complex itself.

While relying upon the various precedents on the issue the Court reiterated the principle that right to a clean environment, drinking water, a pollution-free atmosphere have been given the status of inalienable fundamental rights: *"The financial burdens or financial commitments of any State should never outweigh the sovereign duty of the State under Article 21, dealing with right to life, with its extended meaning of right to breathe clean air."*

While it was argued on behalf of the Chennai Port Trust that various steps had been taken to reduce the level of pollution, the High Court observed that the report of the inspections as well as the photographs placed on record showed that *"the Chennai Port has always exhibited a callous attitude to combat the pollution, in spite of repeated directions and observations by the Court the so-called measures adopted by them are proved to be inadequate and did not inspire any confidence that the Chennai Port will ever be able to combat this menace."* [51]

Since the High Court has a personal interest so to speak, since the High court complex was also one of the affected building, the Court observed as under: "*... we, as the Judges of this Chartered High Court situated in the proximity of Chennai Port, are the direct witnesses, rather victims, of this pollution along with residents of the entire stretch of Chennai Port. One cannot walk bare footed or touch the walls of this High Court, in spite of regular cleaning of the premises, as the*

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50 Avoor Muthiah Maistry Street Residents Welfare Association v. Government of Tamil Nadu, Madras High Court W.P.No.11747 of 2002.

51 Para 36

iron ore/coal dust particles settling in the premises in high quantities every day would make hands and foot dirty in thick black colour. It, naturally sends shocking waves through the nerves and makes one to think as to what we are breathing in oxygen or these black particles? The repeated observations and directions by this Court to the Chennai Port Trust to protect the environment by taking necessary steps to avoid dust particles flying, did not evince any fruitful result. Even though the Chennai Port has narrated, by their long affidavit, with the photographs annexed thereto, that they are sprinkling water on the iron ore and also set up nets to restrain the dust from flying, the report of the Committee appointed by this Court, the observations of which are extracted above, would show the half-baked manner in which such remedial measures are being conducted by the Chennai Port. It seems, the Chennai Port is very much worried about its business loss and are not willing to shift the iron ore/coal shifting to the Ennore Port only because of their business aspirations and nothing else. Had it been their real intention to act swiftly against such pollutants being mingled into the air, posing danger to the life of the millions of citizens living in the areas, in close proximity to the Chennai Port, they should have, by this times, shown 100% pollution free climate in the surroundings. But, it is not the case herein and the affidavits filed on the part of the Chennai Port have shown that all their activities are mere barren shells and the added factor is the lethargic attitude of the officials at the helm of affairs to arrest the pollution. This may even be because of the fact that whatever steps they are taking, they are turning to be inadequate and the pollution remains static and stagnate. Industry has no right to destroy the ecology, degrade the environment and pose a health hazard."[52]

The Court then ordered that dusty cargo like Coal, iron ore and all other dusty cargo moves only to Ennore Port on and from 1.10.2011 and no longer to the Chennai Port.

While the Court made several pertinent observations with regard to the effects of the ore dust, it is pertinent to note that the Court has made no orders with regard to the implementation of air pollution control measures to be put in place at Ennore Port or even a committee to oversee air pollution control mechanisms. Once again, this betrays the urban bias held by the judiciary with regard to air pollution cases.

Murali Purushothaman vs Union of India & Ors.[53]***,***

The Kerala High Court was approached by way of a public interest petition regarding the consequences of air pollution created through uncontrolled and unmitigated automobile spitting and the lack of enforcement of existing statutory measures to reduce the gravity of the problem.

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52 Paras 45 and 46.

53 II (1993) ACC 46, AIR 1993 Ker 297

The State Government contended that an Expert Committee had been constituted, consisting of representatives from all concerned departments and the committee made recommendations including acquisition of gas analysers and smoke meters for measuring smoke density. However, the State Government did not proceed because it was under the impression that there was a proposal for amendment to Rules 115 and 116 of the Rules being contemplated by the Central Government. To this, the High Court observed, "*No functionary can abdicate its functions merely on the premises of a proposal being mooted for modification of the statutory requirements. It is not certain that the proposal for amendment would crystallise into legislation. Even if it does, the action taken now can be suitably adjusted in consonance therewith. Expeditiousness cannot be slackened in this matter on some excuse or other, for, the problem is growing day by day to monstrous levels. Rule 116 came into force on 1 -7-1989 and hence there is no justification for waiting further for effectively implementing the provisions of the Rule even after four long years. Even during this period of four years automobiles proliferated alarmingly and consequently air pollution has grown with galloping pace.*"

The High Court issued directions to the State Government of Kerala in terms of the Expert Committee's recommendations and mandated the Government to provide at least one smoke meter and gas analyser (or any other approved instrument to measure carbon monoxide and other pollutants emitted by automobiles) to all the major District Centres (Kozhikode, Palakkad, Thrissur, Ernakulam, Kottayam, Alapuzha, Kollam and Thiruvananthapuram) expeditiously and to issue such instructions as necessary to all authorities in charge of registration of motor vehicles within three months in order to comply with the legislative mandate contained in Section 20 of the Air Act.

Smoke Affected Residents' Forum vs Municipal Corporation Of Greater Mumbai[54]:

This was a public interest petition filed before the Bombay High Court with regard to the health effects caused by emissions from motor vehicles plying in the city of Mumbai. The petitioners sought directions regarding consumption of unleaded petrol, reduction of sulphur content in diesel oil, issuance of P.U.C. certificate, vehicles conforming to the EURO-I norm and EURO-II norm and several other factors which were adding to the pollution load in the city. Significantly, the petition was based on several studies and data from doctors on the health aspects of air pollution. The Court referred to the views of leading doctors and eminent cardiologists who were of the opinion that upto 40% of the inhabitants of Mumbai suffer from numerous respiratory diseases and illnesses such as asthma, bronchitis, etc on account of the air pollution in Mumbai. Data was also provided to highlight the adverse effect on the constables and taxi drivers. The studies concluded that children were the most vulnerable to air pollution, specifically a study conducted by Dr. Kamat showed that children in Mumbai had markedly stunted development of

[54] 2002 (2) BomCR 343, 2002 (2) MhLj 89

the lungs when compared to children in Madras. In view of this, the High Court issued orders mandating that:

(i) No private (non-commercial) vehicle, which does not conform to India 2000 norms, as per Government of India Notification dated 28th August, 1997, shall be registered in Mumbai with effect from 1st January, 2000

(ii) No private (non-commercial) vehicle, not conforming to EURO II norms, shall be registered in Mumbai with effect from 1st January, 2001.

The High Court also observed, *"We are primarily concerned with taxis plying in Greater Mumbai, the three-wheelers commonly known as 'auto-rickshaws' and other transport vehicles. So far as private cars and two-wheelers are concerned, after some discussion, we do not consider it necessary, at this stage, to issue any direction. Of course, certain directions have been issued by this Court such as requirement of P.U.C. Certificate, etc., which apply to these vehicles, but we are of the considered view that it is not appropriate, at this stage, to pass any direction for phasing out these vehicles. With regard to (he BEST buses, we consider it in public interest, for the present, not to direct phasing out of the fleet of buses of BEST, though, as a matter of policy, BEST should also start thinking in terms of converting its fleet of buses to CNG/LPG. It is noticed that the buses of BEST are well-maintained, and on account of better maintenance, do not contribute to the atmospheric pollution to the extent some other heavy commercial vehicles which are not properly maintained contribute. We, however, make it clear that at a later stage, if necessary, this Court may issue directions even with regard to private cars, two-wheelers and BEST buses.*"

Finally the High Court also directed that:

- All taxis over the age of 8 years to be phased out, unless converted to run on CNG/LPG.
- All three-wheelers over the age of 10 years to be phased out, unless converted to run on CNG/LPG.
- All three-wheelers over the age of 8 years to be phased out, unless converted to run on CNG/LPG.
- Phasing out of transport vehicles more than 15 years old, unless converted to run on clean fuel (with the exception of BEST buses).

Karnataka Lorry Malikara Okkuta v. State of Karnataka[55]*:*

A registered association of lorry owners filed this petition to quash a Government Order completely banning the entry of vehicles which were aged more than 15 years from the outer Ring Road as opposed to their fundamental right to carry on a trade or business enshrined in Article 19(1)(g) of the Constitution, as the Government had not considered alternative methods of lowering pollution such as replacement of engine parts, CNG fuel, etc. The High Court of Karnataka held that, *"The Hon'ble Supreme Court in a number of cases has observed that the Government can take appropriate action to ensure safety and welfare of the public. More particularly, the Supreme Court in M.C. Mehta's case (supra) has held that directions that are issued under the Environment Act are for protecting and safeguarding the health of the people, a right provided and protected by Article 21 of the Constitution and would override the provisions of every statute including the Motor Vehicles Act, if they militate against the constitutional mandate of Article 21. It is also observed that the norms fixed under the Motor Vehicles Act are in addition to and not in derogation of the requirements of the Environment Act.*

In view of the above said provisions of the Environment Act and the Air Act and the observations of the Hon'ble Supreme Court in M.C. Mehta's case, it is clear that there is no merit in the contentions of the learned Counsel appearing for the petitioners that the State Government has no power to issue directions under Section 5 of the Environment Act and Section 20 of the Air Act."[56]

The above-discussed Karnataka High Court and Kerala High Court cases are excellent examples of forcing the SPCB's hand in putting in place vehicular pollution policy. As will be seen from the later part of the Study, most SPCBs do not have any policy or role to play in mitigating vehicular pollution despite having the power under Section 20 of the Air Act. While the Transport departments are restricted by the strict scope of the vehicular emission norms to merely enforce the same (by spot checks on vehicles, etc), the SPCBs can lay down policy guidelines and issue instructions to the Transport departments which have to be mandatorily followed. Thus, in view of this case, it may be possible to approach a Court to issue a writ of mandamus against the SPCBs to lay down emission/ vehicle related policy guidelines.

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55 ILR 2004 KAR 4206, 2004 (6) KarLJ

56 Paras 15 and 16

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AIR POLLUTION IN INTERNATIONAL LAW: DEFINING "PRECAUTIONARY PRINCIPLE", "THE POLLUTER PAYS PRINCIPLE" AND "SUSTAINABLE DEVELOPMENT"

Since the 1980's international law and jurisprudence has seen the introduction and development of concepts which seek to control and balance industrial development and its adverse effects on its environment. The "precautionary', "sustainable development" and "polluter-pays" principles, seek to inject a limitation to industrial development where there may be serious harm to the environment but where the evidence of harm is uncertain; to preserve and equitably use scarce natural resources; and to mandate those who breach pollution control laws to bear the costs of their unlawful impact. These principles if properly and fully applied during the industrial development process itself should ensure that industrial development, which is essentially a private interest, does not take place to the manifest detriment of a the public need for a clean environment.

There is increasing evidence to show that international law now recognises that the "precautionary principle" requires the person or body that who wishes to carry out the activity to prove that it will not cause unreasonable harm to the environment. It should be invoked where there is some prima facie evidence to believe that harmful effects might occur. Where the scientific evaluation of the consequences of the activity shows an uncertainty, the burden falls on that person or body to show a proportionate response to the degree of risk and take consequent safety measures.

The term "sustainable development' has become increasingly used in international law, jurisprudence and domestic policies. It remains essentially undefined, but its parameters include; the need to preserve natural resources for the benefit of future generations; exploiting natural resources in a way that is rational; equitable use between nation-states; and the need for environmental concerns to be integrated into economic and other development plans. The "polluter-pays" principle, is now recognised as an integral part of international law. It requires that the casual link between activity and the consequent pollution is to be assumed after an investigation with the competent authority. Any remedial action is to be taken only after hearing the polluter, unless remedial action is urgently required.

International Courts have for the most part failed to engage properly with the above principles, which has resulted in a very poor state of the public environment in the majority of countries. In the area of air pollution, India has the worst air quality of any country in the world. However, international courts have found that a clean environment, including air, is an integral part of the right to life, and the Indian Supreme Court has found this on several occasions. On a note of optimism the moves to litigate the adverse causes and effects of climate change, despite uncertain causes and polluters, is to be welcomed.

The Precautionary Principle

The precautionary principle only began to appear in international legal instruments in the mid-1980's. It aims to provide guidance in the development and application of environmental law where there is scientific uncertainty. However, there is considerable disagreement as to its meaning and effect, which are reflected in the particular views of the states and international judicial practice. The core of the principle in reflected in the Rio Declaration on Environment and Development 1992 which states:

> "*Where there are threats of serious irreversible damage, the lack of full scientific certainty shall not be used as a reason for postponing cost effective measures to prevent environmental degradation".* [57]

Whilst the formulation is not identical in each instrument, the language of Principle 15 attracts broad support, where parties are called on to adopt decisions which are based on "scientific finding" or "methods" or "in the light of knowledge available at the time". These standards suggest that action shall only be taken where there is scientific evidence[58]. This requires a party wishing to adopt measures to 'prove' a case for action based upon the existence of sufficient scientific evidence, which may be difficult to obtain. In 1987, the parties to the Montreal Protocol noted the 'precautionary measures' to control emission from certain CFC's which had already been taken at the national and regional levels and stated their determination to 'protect the ozone layer by taking precautionary measures to control equitably total global emissions of substances that deplete it". [59]

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[57] Principle 15, WSSD Plan of Implementation, paras 22 and 103.

[58] 1946 International Whaling Convention, Article v(2); 1972 Antartic Seals Convention Annex, para 7(b); 1972 World Heritage Convention, Preamble; 1972 London Convention, Article XV(2);1979 Bonn Convention, Articles III(2) and XI(3).

[59] Preamble

The requirement to have definitive scientific proof that environmental degradation or harm will occur is gradually being eroded. The 1992 OSAPAR Convention links prevention and precaution when it states that preventative measures are to be taken when there are '*reasonable grounds for concern...even when there is no conclusive evidence of a causal relationship between the inputs and effects*'[60].The threshold is therefore fairly low. The Standard applied in the 1992 Baltic Sea Convention introduced yet another variation: preventative measures are to be taken '*where there is reason to assume'* that harm might be caused '*even when there is no conclusive evidence of a casual relationship between inputs and there alleged effects*'[61]. The European Commission has published a Communication on the precautionary principle which outlines the Commission's approach to the use of the principle, establishes guidelines for applying it, and aims to develop understanding on the assessment, appraisal and management of risk in the face of scientific uncertainty[62]. The Communication appreciates that the precautionary principle has been 'progressively consolidated in international environmental law, and so it has since become a full-fledged and general principle of international law'[63].

In a case in the European Court of Justice (ECJ)[64], and by the EEA Court, which ruled that in cases relating to the effects on human health of certain products and where there may be a great measure of scientific and practical uncertainty linked to the issued under consideration, the application of the precautionary principle is justified and 'presupposes, firstly, an identification of potentially negative health consequences arising, in the present case, from a proposed fortification and, secondly a comprehensive evaluation of the risk to health based on the most recent scientific information'. The Court went on:

> "When the insufficiency, or the inconclusiveness, or the imprecise nature of the conclusions to be drawn from those considerations make it impossible to determine with certainty the risk or hazard, but the likelihood of considerable harm still persists were the negative eventuality to occur, the precautionary principle would justify the taking or restrictive measures".[65]

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60 Article 2(2)(a).

61 Article 3(2).

62 OM 2000 (1), 2nd February 2000.

63 Ibid 11

64 Case C-180.96, United Kingdom v EC Commission [1998] ECR I-2265

65 Case E-3/00, EFTA *Surveillance Authority v Norway* [2001] 2CMLR 47.

Notwithstanding the fact that the precautionary principle has now received widespread support by the international community in relation to a broad range of subject areas, there is no clear and uniform understanding of the meaning of the precautionary principle amongst states and other members of the international community. Under the Rio Declaration, the requirement to have preventative measures in the absence of scientific certainty is stated to be mandatory. However, what remains open is the level or standard of proof required to require measures to be used.

Burden of Proof

There is increasing evidence to show that the interpretation of the precautionary principle is one in which the burden of proof shifts to show that the person who wishes to carry out any activity to prove that it will not cause harm to the environment. This includes the EC's Urban Waster Water Directive, which allows certain urban waste water discharges to be subjected to less stringent treatment than that generally required by the Directive providing that 'comprehensive studies indicate that such discharges will not adversely affect the environment'. [66]

Some of the practices of international courts and tribunals, and of states shed some light on the meaning and effect of the precautionary principle. In the International Court of Justice in New Zealand's 1995 request concerning French nuclear testing, New Zealand relied extensively on the precautionary principle. It claimed that the burden shifted to France to prove that the proposed tests would not give rise to environmental damage. [67] The principle was also invoked by the Hungary and Slovakia in the *Gabcikovo-Nagymaros* case. In that case involving the Hungarian decision to suspend work on barrages due to ecological necessity, the ICJ found that Hungary had not proved that a "real, grave and imminent peril" existed in 1989 and that the measures taken by Hungary were not the only possible response to it. The ICJ found that there were serious uncertainties concerning future harm to freshwater supplies and biodiversity but that these:

> "*could not, alone establish the objective existence of a 'peril' in the sense of a component element of a state of necessity, The word 'peril' certainly evokes the idea of 'risk'; that is precisely what distinguishes 'peril' from material damage. But a state of necessity could not exist without a 'peril' duly established at the relevant point in time; the mere apprehension of a possible 'peril' could not suffice in that respect. It could moreover hardly be otherwise, when the 'peril' constituting the state of necessity has at the same time to be 'grave' and 'imminent'. Imminence is synonymous with 'immediacy' or 'proximity' and goes far beyond the concept of 'possibility' ...That does not exclude, in the*

[66] EC Directive 91/271, Article 6(2); chapter 15, pp 776-8 below.

[67] New Zealand Request, para 105; see also ICJ CR/95/20 at 20-1 and 36-8.

view of the Court, that a 'peril' appearing in the long term might be held to 'imminent' as soon as it is established, at the relevant point in time, that the realization of that peril, however far off it might be, is not thereby any less certain and inevitable".[68]

The legal status of the precautionary principle is evolving and there is now sufficient evidence to indicate that the principle in the Rio Declaration has reached the level of customary law. In addition it may be possible to argue that the following principles are contained in the precautionary principle:

a) The precautionary principle should be invoked where there is good reason, based on empirical evidence, or casual hypothesis, to believe that harmful effects might occur, even if the likelihood of harm is remote, and a scientific evaluation of the consequences and likelihoods reveals such uncertainty that it is impossible to assess the risk without sufficient confidence to inform the decision-making.

b) Invocation of the precautionary principle should lead to action which is proportionate to the required level of protection, consistent and targeted. It should be invoked in a process which is transparent and accountable to stakeholders.

c) The hazard maker should provide the minimum the information needed for decision making, but there should be flexibility to determine on a case by case basis the extent to which the burden of proof should shift towards the hazard creator in demonstrating presence of risk or degree of safety.

The 'Polluter Pays' Principle

The 'polluter pays' principle establishes the requirement that the costs of pollution should be borne by the person responsible for the pollution. The Principle has nevertheless attracted broad international support and is closely related to the rules governing civil and state liability for environmental damage. Principle 16 of the Rio Declaration provides that:

"National authorities should endeavour to promote the internalisation of environmental costs and the use of economic instruments, taking into account the approach that the polluter should in principle, bear the costs of pollution, with due regard to the public interests and, without distorting international trade and investment".

[68] (1997) ICJ Reports 62, paragraph 54.

The polluter pays principle, or variations thereof, is contained in the OECD and European Community instruments[69] and is also contained in *inter alia* other treaties such as the 1985 ASEAN Convention, the 1991 Alps Convention, the 1992 UNECE Convention, the 1992 UNECE Transboundary Waters Convention and the 1992 Baltic Sea Convention. The 1992 Industrial Accidents Convention describes the polluter-pays principle as being a "general principle of international law"[70].

In the *Raffinerie Mediterranee (ERG) SpA v Ministero dello Svillupo Economico*[71], the European Court of Justice laid down additional details in relation to the "polluter pays principle", it *inter alia* held[72]:

a) In accordance with the 'polluter pays' principle, for a causal link between an activity and pollution to be *presumed*, a competent authority must have plausible evidence capable of justifying its presumption, such as the fact that the operator's installation is located close to the pollution found and that there is a correlation between the pollutants identified and the substances used by the operator in connection with his activities.

b) When deciding to impose measures for remedying environmental damage on operators it is not required to establish fault, negligence or intent on the part of operators whose activities are held to be responsible for the environmental damage. On the other hand, that authority must, first, carry out a prior investigation into the origin of the pollution found, and it has a discretion as to the procedures, means to be employed and length of such an investigation.

c) The competent authority is required to establish, in accordance with national rules on evidence, a causal link between the activities of the operators at whom the remedial measures are directed and the pollution.

d) The competent authority is permitted to alter substantially measures for remedying environmental damage which were chosen at the conclusion of a procedure carried out

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69 EC programme of action on the environment in 1973 OJ C112, 20th December 1973, 1.

70 Preamble

71 (C-378/08) [2010] 3 CMLR 9 ECJ (Grand Chamber)

72 In relation to Directive 2004/35 on environmental liability with regard to the prevention and remedying of environmental damage article 3(1), article 4(5), article 7, article 11.

on a consultative basis with the operators concerned and which have already been implemented or begun to be put into effect. However, in order to adopt such a decision, that authority is required to give the operators on whom such measures are imposed the opportunity to be heard, except where the urgency of the environmental situation requires immediate action on the part of the competent authority.

e) The competent authority is also required to invite, inter alia, the persons on whose land those measures are to be carried out to submit their observations and to take them into account.

This increased attention being paid to the polluter-pays principle results, in part, from the greater consideration being given to the relationship between environmental protection and economic development, as well as recent efforts to develop the use of economic instruments in environmental law and policy. This will hopefully clarify the polluter-pays principle, particularly in relation to important issues. Firstly, the extent of the pollution control costs should be paid by the polluter. It is clear that the principle includes costs of measures required by public authorities to prevent and control pollution, it is less clear whether costs of decontamination, clean-up and reinstatement would be included. State practice in, for instance the Chernobyl accident and the 1976 Rhine Chloride Convention, does not support the view that all the costs of pollution should be borne by the polluter. The second issue concerns exceptions to the principle, for instance in the grant of subsidies by States, and whether that would impact on the polluter-pays principle.

The Principle of Sustainable Development

Sustainable development is the general principle that states should ensure the development and use of their natural resources in a manner which is sustainable. Whilst the concept appears to have been a feature of international law since 1893, four recurring elements appear to comprise the legal elements of the concept of "sustainable development" as reflected in the international agreements:

a) The need to preserve natural resources for the benefit of future generations (the principle of intergenerational equity).

b) The aim of exploiting natural resources in a manner which is 'sustainable', or 'rational' (the principle of sustainable use).

c) The 'equitable' use of natural resources, which implies that use by one state must take into account of the needs of other states (the principle of equitable use or intergenerational equity); and

d) The need to ensure that environmental considerations are integrated into economic and other development plans, programmes and projects, and that development needs are taken into account in applying environmental objectives (the principle of integration).

The most important of these concepts, in relation to the control of atmospheric pollution, is the requirement to integrate environmental considerations into economic and other social development in crafting, applying and interpreting environmental obligations. The formal application of this principle requires the collection and dissemination of environmental information, and the conduct of environmental impact assessments. [73] Principle 4 of the Rio Declaration provides that: "In order to achieve sustainable development, environmental protection shall constitute an integral part of the development process and cannot be seen in isolation from it".

There is unfortunately little detail on the meaning of "sustainable development", or the manner in which environmental protection shall be integrated into the development process. Numerous regional treaties support the approach which integrates the environment and development. The 1974 Paris Convention calls for "integrated planning policy consistent with requirement of environmental protection"; [74] the 1978 Kuwait Convention, which supports an: "integrated management approach...which will allow the achievement of environmental and development goals in a harmonious manner";[75] the 1978 Amazonian Treaty, which affirms the need to "maintain a balance between economic growth and conservation of the environment; [76] and the 1989 Fourth Lome Convention, which provided that the development of ACP states "shall be based on sustainable balance between its economic objectives, the rational management of the environment and the enhancement of natural resources: and requires the "preparation and implementation of coherent modes if development that have due regard for ecological balances"[77].

Correspondingly, both international law and foreign cases do not cast much light on how the principle of sustainable development should be used in the context of air monitoring

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73 See application by the ICJ in the Gabcikovo-Nagymaros case, (1997) ECJ Reports 7

74 Article 6(2)(d)

75 Preamble

76 Preamble

77 Articles 4 and 34.

and air pollution. However, it is clear that these considerations must be properly taken into account when embarking on development of any nature.

Other International Principles Applicable to Atmospheric Protection

The International Covenant on Economic, Social and Cultural Rights (ICESCR)

One international treaty that is frequently cited by courts in local air pollution cases (as opposed to transboundary air pollution cases) is the International Covenant on Economic, Social and Cultural Rights (ICESCR).[78] India acceded to the ICESCR in 1979 and may possibly have persuasive value in future air pollution litigations. Article 12 states:

> *1. The States Parties to the present Covenant recognize the right of everyone to the enjoyment of the highest attainable standard of physical and mental health.*
>
> *2. The steps to be taken by the States Parties to the present Covenant to achieve the full realization of this right shall include those necessary for:*
>
> .....
>
> *(b) The improvement of all aspects of environmental and industrial hygiene. . .*
>
> (excerpted)

In 2000, the Committee on Economic, Social and Cultural Rights published its interpretation of Article 12 and included discussion on the duty of States to protect the right to enjoy the highest attainable standard of health.[79] The comment states, *"States are also required to adopt measures against environmental and occupational health hazards and against any other threat as demonstrated by epidemiological data. For this purpose they should formulate and implement national policies aimed at reducing and eliminating pollution of air, water and soil . . . ."*

Part III describes conduct that violates Article 12, which includes the failure to enact or enforce pollution prevention laws:

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[78] (available at http://www2.ohchr.org/english/law/cescr.htm)

[79] See Committee on Economic, Social and Cultural Rights, Substantive Issues Arising in the Implementation of the International Covenant on Economic, Social and Cultural Rights: General Comment No. 14, UN Doc. E/C.12/2000/4 (2000) (available at http://www.unhchr.ch/tbs/doc.nsf/(symbol)/E.C.12.2000.4.En). (Para 36)

"Violations of the obligation to protect follow from the failure of a State to take all necessary measures to safeguard persons within their jurisdiction from infringements of the right to health by third parties. This category includes such omissions as the failure to regulate the activities of individuals, groups or corporations so as to prevent them from violating the right to health of others; the failure to protect consumers and workers from practices detrimental to health, e.g. by employers and manufacturers of medicines or food; the failure to discourage production, marketing and consumption of tobacco, narcotics and other harmful substances; the failure to protect women against violence or to prosecute perpetrators; the failure to discourage the continued observance of harmful traditional medical or cultural practices; and the failure to enact or enforce laws to prevent the pollution of water, air and soil by extractive and manufacturing industries."[80]

Transboundary Pollution

The award of the arbitral tribunal in the *Trail Smelter* case [81] is frequently cited to support the view that general principles of international law impose obligations on states to prevent transboundary air pollution. The dispute arose out of damage to crops, pasture land, trees and agriculture in the United States from sulphur dioxide emissions from a smelting plant in Canada. The arbitral Tribunal made rewards of compensation and stated:

> *"Under the principles of international law....no state has the right to use or permit the use of territory in such as manner as to cause injury by fumes in or to the territory of another or the property or persons therein, when the case is of serious consequence and the injury is established by clear and convincing evidence".* [82]

The development of the principle that no state has the right to produce harmful effects on other countries was contained in some of the early environmental treaties. The 1951 International Plant Protection Convention expressed the need to prevent the spread of plant pests and diseases across national boundaries[83]. The 1963 Nuclear Test Ban Treaty prohibits nuclear tests if the explosion would cause radioactive debris 'to be present outside the territorial limits of the state under

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80 Para 51

81 Trail Smelter case, 16th April 1938, 11th March 1941; 3RIAA 1907 (1941).

82 3 RIAA 1907 at 1965 (1941)

83 Premable

whose jurisdiction or control such explosion is conducted'[84], and the 1968 African Conservation Convention requires consultation and co-operation between parties where development plans are *"likely to affect the natural resources of any other state"*.[85] Under the 1972 World Heritage Convention, the parties agreed that they would not take deliberate measures which could directly or indirectly damage heritage which is "situated on the territory" of other parties.[86]

The Stockholm Conference of June 1972 reinforced the principle of the prohibition of transboundary air pollution. The Declaration of Principles for the Preservation and Enhancement of the Human Environment (Stockholm Declaration) contained Article 21 which provided as follows:

"States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction".

This remains the cornerstone of international environmental law and States were unable to improve it when adopting Principle 2 of the Rio Declaration which states:

"States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental and developmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other states or of areas beyond the limits of national jurisdiction"

Similar language also appears in treaties which are subsequent to these declarations. In particular, the United Nations Convention on the Sea (UNCLOS) states:

"shall take all measures necessary to ensure that activities under the jurisdiction or control are so conducted as not to cause damage by pollution to other states and their environment, and that pollution arising from the incidents or activities under their jurisdiction or control does not

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84 Article I(1)(b)

85 Article XV(1)(b).

86 Article 6(3).

spread beyond the areas where they exercise sovereign rights in accordance with [the] Convention". [87]

The 1985 ASEAN Agreement further recognises that Principle 21 is a *"generally accepted principle of international law".*

Correspondingly, it is therefore very likely that Principle 21 and Principle 2 now reflect customary international law, on the rights of states in respect of activities carried out within their territory or under their jurisdiction. In the ICJ case on the *Legality of the Threat or Use of Nuclear Weapons*, where Australia had asked the ICJ to judge and declare that the carrying out of further atmospheric nuclear tests was inconsistent with applicable rules of international law and would be unlawful, the Advisory Opinion stated that:

"The existence of the general obligation of State to ensure that activities within their jurisdiction and control respect the environment of other States or of areas beyond national control is now part of the corpus of international law relating to the environment".[88]

The scope and application of the rule however, remains a difficult question of what constitutes "environmental harm' for the purposes of triggering liability and allowing international claims to be brought. The rule may provide a legal basis for bringing claims under customary law asserting liability for environmental damage.

The Convention on Long-range Transboundary Air Pollution was entered into in 1979 in Geneva. While it has only been ratified by 51 parties, which do not include India it is considered to have substantially contributed to the development of international environmental law and has created the essential framework for controlling and reducing the damage to human health and the environment caused by transboundary air pollution.[89] The Convention finds its roots in studies conducted in the 1960s, when scientists demonstrated the interrelationship between sulphur emissions in continental Europe and the acidification of Scandinavian lakes. The 1972 United Nations Conference on the Human Environment in Stockholm signalled the start for active international cooperation to combat acidification. Between 1972 and 1977 several studies confirmed the hypothesis that air pollutants could travel several thousands of kilometres before

[87] Article 194(2)

[88] (1996) ICJ Reports 241, para 29.

[89] http://www.unece.org/env/lrtap/lrtap_h1.html

deposition and damage occurred.[90] This is of significance to India since there are several impacts of air pollution on rainfall patterns, cyclones development, etc.[91] Besides laying down the general principles of international cooperation for air pollution abatement, the Convention is an institutional framework for bringing together research and policy.

The Malé Declaration on Control and Prevention of Air Pollution and its Likely Transboundary Effects for South Asia was entered into in 1998 at the seventh meeting of the Governing Council of South Asia Cooperative Environment Programme (SACEP) and is the first regional environment agreement in South Asia to address the issue of transboundary air pollution through regional cooperation. The participating countries are Bangladesh, Bhutan, India, Iran, Maldives, Nepal, Pakistan, and Sri Lanka and its objective is "to promote the establishment of a scientific base for prevention and control of transboundary air pollution in South Asia to encourage and facilitate coordinated interventions of all the stakeholders on Transboundary and shared air pollution problems at national and regional levels." Deriving its mandate from the UN declaration on the Human Environment 1972 in accordance with the Charter of the United Nations, the Male Declaration urges mutual consultation between members countries and networking within national structures for policy purposes as well as technical requirements in the pursuit of reducing air pollution in the region.

The Declaration stated the need for countries to initiate studies and programmes on air pollution in each country of South Asia.[92] Member states including Bhutan, Bangladesh, India, Maldives, Iran, Nepal, Pakistan, Sri Lanka are expected to initiate research and document studies on the current situation of air pollution in their respective countries to act as basis against which national policy can be developed and implemented.

The action plan of the declaration was divided into four phases: Baseline information on air pollution and awareness raising (1999-2000), Capacity Building (2001-2004), Tackling air pollution problems (2005-2009) and finally impact assessment studies (ongoing).

[90] Ibid.

[91] http://www.nsf.gov/news/news_summ.jsp?cntn_id=122072&WT.mc_id=USNSF_51&WT.mc_ev=click

[92] http://www.rrcap.unep.org/male/

While it is claimed that India's commitment towards the Male Declaration was reiterated through policies such as the National Policy Statement on Abatement of Pollution (1992)[93]; The Environmental Action Programme (1993); The Motor Vehicle Act, 1988; The Central Motor Vehicle Rules, (1989) and similar legislations, it is clear that all the said changes have either been ineffective policy statements or have been Supreme Court-mandated. Post the declaration, India's role has been limited to participation in Intergovernmental Meetings. As required under the declaration, the MoEF acts as the National Focal Point and Central Pollution Control Board as the National Implementing Agency. The MoEF has stated that it has reinforced its commitments towards the Male Declaration by initiating programmes like monitoring and measurement, emission inventory, health impact assessment, crop impact assessment, materials impact assessment, modelling for transboundary movement of pollutants, etc.[94]

Currently, the Declaration does not have any emission reduction targets as such and concentrates on capacity building and dissemination of information of air pollution. That said, the Convention is of importance in recognising the problem of transboundary air pollution and may affect the participating countries' targets at negotiations in other international conventions which do have binding targets.

Climate Change and Climate Change Litigation

India does not have any binding commitments under domestic or international law to decrease its emissions of greenhouse cases. Article 10 of the Kyoto Protocol 1997 to the Framework Convention on Climate Change calls for advancement of the implementation of commitments by all parties, including developing country parties. The Preamble to Article 10 affirms that the provision is not "introducing any new commitments for Parties not included in Annex I" but is merely reaffirming existing commitments and "continuing to advance the implementation of commitments in order to achieve sustainable development". Thereafter, a number of commitments are listed in Article 10 which cover areas such as the formulation of national and regional programmes to improve the quality of local emission factors., activity data and/or models which reflect the socioeconomic conditions of each Party for the preparation and periodic updating of national inventories' of emissions of greenhouse gases and the formulation implementation, publication, and updating of "national and where appropriate, regional

[93] http://india.gov.in/allimpfrms/alldocs/14929.pdf

[94] Press Release ID: 72902 http://pib.nic.in/newsite/erelease.aspx?relid=72902

programmes containing measures to mitigate climate change and measures to facilitate adequate adaption to climate change". Other measures include the provision of information on programmes which contain measures addressing climate change and its adverse impacts, and the promotion of effective modalities relating to the transfer of environmentally sound technologies pertinent to climate change.

However, notwithstanding the fact that law may not directly require a State to impose restrictions on greenhouse gas emissions, there has nonetheless been some creative litigation which has pursued this in front of foreign courts.

In one such case, *Massachusetts et Al v Environmental Protection Agency* [95] the petitioners were a group of private organizations, the State of Massachusetts and other states. They petitioned the Environmental Protection Agency (EPA) to begin regulating four gases, including carbon dioxide, from new motors vehicles under the Clean Air Act. The relevant section of the Act requires the EPA "shall by regulation prescribe…standards applicable to the emission of any air pollutant from any class.. of new. motor vehicles.. which in [the EPA Administrator's] judgment cause(s) or contributes(s) to, air pollution…reasonably...anticipated to endanger public health or welfare". The Act further defined air pollutant to include "any air pollution agent…including any physical, chemical…substance…emitted into… the ambient air". The petitioners claimed that the release of such "greenhouse gases" led to a well-documented rise in global temperatures and climate change adversely affecting them and should consequently be regulated.

The EPA denying the petition stated (a) the Act did not authorize it to issue mandatory regulations to address global climate change and (b) even if it had the authority to set greenhouse gas emissions, it would have been unwise to do so at this time because a causal link between greenhouse gases and the increase in global surface air temperatures was not unequivocally established. The Agency also stated that any regulation of motor vehicle emission would be piecemeal and would conflict with the President's comprehensive approach of further research and persuading key developing nations to reduce emissions. In the United States Court of Appeals, the Court held that the petitioners had not shown on the evidence that the pollutants could "reasonably be anticipated to endanger public health or welfare". It denied the review. The petitioners appealed to the Supreme Court.

The Court first considered the question of jurisdiction under Article III of the US constitution. The EPA argued that because greenhouse gas emissions inflict widespread harm, the doctrine of standing represents and insuperable jurisdictional obstacle. The Court disagreeing held that the "gist of the question of standing" is whether a litigant has suffered a concrete and particularized injury that is either actual or imminent, that the injury is traceable to the defendant and that it is

95 NLR J-13-44, 2nd April 2007.

likely that a favourable decision will address the injury (*Lujan v Borden* 7 How 1 (1849). In the case of the state of Massachusetts, the risk of harm is both "'actual' and 'imminent'. If sea levels continue to rise as predicted due to global warming a significant fraction of Massachusetts coastal property will be lost.

On the second question, the EPA did not dispute the causal link between man-made greenhouse gas emissions and global warming. However, it argued that its decision not to regulate greenhouse gases from new motor vehicles contributed so insignificantly to the petitioners' injuries that it should not be held accountable for them. The Court held that even failure to undertake even an incremental step to reduce greenhouse gases was justiciable. In any event, the United States transportation sector accounts for more than 6% of worldwide carbon dioxide emissions and could not therefore be said not to be making a meaningful contribution to global warming. On the question of remedy, the Court found that notwithstanding the fact that regulating motor vehicles will not by itself reverse global warming, did not mean that it did not have jurisdiction. It stated: *"Because of the enormity of the potential consequences associated with manmade climate change, the fact that effectiveness of a remedy might be delayed during the (relatively short) time it takes for a new motor vehicle fleet to replace an older one is essentially irrelevant. Nor is it dispositive that developing countries such as China and India are poised to increase greenhouse gas emissions substantially over the next century. A reduction in domestic emissions would slow the pace of global emissions increases...The risk of catastrophic harm, though remote, is nevertheless real. That risk would be reduced to some extent if petitioners received the relief they seek"*.

On the merits of the EPA statutory power, the Court held that on the unambiguous words of the statute the authority had power to regulate greenhouse gases. The statute may not have been intended to regulate greenhouse gases but Congress (the drafting authority) must have understood that without regulatory flexibility within changing circumstances and scientific developments that Clean Air Act would soon become obsolete. Neither could the fact that there exists a number of voluntary programs for reducing carbon emissions, nor the fact that regulating might impair the US President's ability to negotiate with developing countries to reduce emissions, abrogate the EPA's responsibility to consider whether regulation is necessary on the basis of the scientific evidence. The Court stated:

> *"Because of the enormity of the potential consequences associated with manmade climate change, the fact that effectiveness of a remedy might be delayed during the (relatively short) time it takes for a new motor vehicle fleet to replace an older one is essentially irrelevant. Nor is it dispositive that developing countries such as China and India are poised to increase greenhouse gas emissions substantially over the next century. A reduction in domestic emissions would slow the pace of global emissions increases...The risk of catastrophic harm, though remote, is nevertheless real. That risk would be reduced to some extent if petitioners received the relief they seek"*.

Air Pollution Litigation in Other Countries:

Farooque v. Bangladesh and Ors., Supreme Court of Bangladesh[96]*:*

In 1986, Bangladesh's Department of Environment (DoE) conducted a study that yielded a list of 903 named polluters, mostly comprised of industrial facilities. In response to this list, the Ministry of Industries along with the DoE passed an ordinance intended to curb pollution. Almost 10 years later, the Bangladesh Environmental Lawyers Association (BELA) undertook a private study and discovered that the government had not imposed any measures or enforcement actions against the named polluters. The facilities were continuing to discharge pollution indiscriminately, and new facilities were adding even more pollution to the environment.

BELA filed a petition seeking to compel the government of Bangladesh to implement and enforce the country's anti-pollution laws. The Court agreed with BELA's observation that air and water pollution in Bangladesh had grown steadily worse over the years, and that the problem was attributable to the government's inaction. The Court stated, *"we do not see on papers before us, evidence of implementation of any of the many functions cast upon the concerned officials of the Directorate of Environment by the Act although it is their primary duty."*[97] Pointing to provisions in the Constitution of Bangladesh guaranteeing the right to protection of law (Article 31), the right to life (Article 32), and the right to health (Article 18), the Court explained that the government's failure to implement anti-pollution laws amounted to a breach of these rights. The Court favourably cited many of India's important court decisions protecting citizens' right to life and health.

The Court provided specific timelines for the DoE to ensure that existing industrial facilities adopted and installed pollution control measures, and directed the Ministry of Industries to ensure that all new industrial facilities installed adequate pollution control measures.

In 2009, the Court revisited the issue to much dismay, observing that the pollution crisis had not improved and concluding: "The Department failed to implement the directions given by this Court in the above noted decision given in 2001." June 23, 2009 Order, p. 4. In an attempt to

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96 (available at http://www.supremecourt.gov.bd/scweb/documents/308564_W.P.No.891of94(Judgemnt).pdf). See also Decision of June 23, 2009 (reviewing progress) (available at http://www.supremecourt.gov.bd/scweb/documents/308564_W.P.No.891of94(Order).pdf

97 Para 39

remedy this problem, the Court identified specific government officials and provided them with instructions to take specific action in ensuring that the laws are executed faithfully.

***Lopez Ostra v. Spain, European Court of Human Rights*[98]:**

A resident of the city of Lorca, Spain petitioned the European Court of Human Rights alleging that municipal authorities violated her right to respect for her private and family life (Article 8 of the European Convention) by failing to take steps to control pollution and odours caused by a waste treatment facility located in very close proximity to her home. A private company, which owned many tanneries in the community, operated the facility to process solid and liquid waste from the tanneries. As the Court explained, despite a partial shutdown *"the plant continued to emit fumes, repetitive noise and strong smells, which made [the] family's living conditions unbearable and caused both her and them serious health problems. [The petitioner] alleged in this connection that her right to respect for her home had been infringed."*[99] The situation was prolonged by the municipality's complacent enforcement of environmental laws.

The Court found that the municipality and other State authorities violated the European Convention because *"the State did not succeed in striking a fair balance between the interest of the town's economic well-being - that of having a waste-treatment plant - and the applicant's effective enjoyment of her right to respect for her home and her private and family life."*[100] The Court directed the State to pay money damages to the family, which had already relocated on the recommendation of their physician because the municipality refused to tackle the pollution problem.

***Giacomelli v. Italy, European Court of Human Rights*[101]:**

The Giacomelli case challenged a local municipality's decision to renew the operating license for

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98 Application No. 16798/90 (Eur. Ct. H.R. - Dec. 9, 1994) (available at http://cmiskp.echr.coe.int/tkp197/view.asp?item=1&portal=hbkm&action=html&source=tkp&highlight=lopez&sessionid=98597694&skin=hudoc-en)

99 Para 47

100 Para 58

101 Application No. 59909/00 (Eur. Ct. H.R.-Nov. 2, 2006) (available at http://www.ecolex.org/server2.php/libcat/docs/COU/Full/En/COU-157044.pdf).

a facility that stored and processed almost one-quarter of the hazardous industrial waste produced in Italy. Many residents living near the facility complained about noise and air pollution, and inspections indicated that the facility's emissions exceeded legal limits for certain harmful pollutants. The inspections also revealed that the company operating the waste facility failed to install or operate many pollution control devices. One local resident, Giacomelli, sought relief from the European Court of Human Rights alleging that the continuous noise and dangerous emissions from the facility violated her right to respect for her private and family life under Article 8 of the European Convention, and the facility posed a *"constant danger to the health and well-being of all those living in the vicinity."*[102]

The Court noted that local and national authorities are *"in principle better placed than an international court to assess the requirements relating to the treatment of industrial waste in a particular local context and to determine the most appropriate environmental policies and individual measures while taking into account the needs of the local community."*[103] However, local and state authorities must afford *"due respect to the interests safeguarded to the individual [by the European Convention.]"*[104] Part of this duty requires the State to conduct *"appropriate investigations and studies so that the effects of activities that might damage the environment and infringe individuals' rights may be predicted and evaluated."* The Court strongly emphasized that *"[t]he importance of public access to the conclusions of such studies and to information enabling members of the public to assess the danger to which they are exposed is beyond question."*

The Court ultimately agreed with Giacomelli and found that the Italian authorities had not properly evaluated potential health and environmental impacts prior to renewing the waste facility's operating permit.

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102 Para 70

103 Para 80

104 Para 82

Fadeyeva v. Russia, European Court of Human Rights[105]:

Fadeyeva, a Russian citizen, petitioned the European Court of Human Rights because she suffered severe health problems, caused by the toxic emissions from a steel plant near her home, and government officials refused to promptly relocate her to housing outside of the sanitary zone surrounding the plant.

Although the case centered on the question of whether the State was obligated to relocate Fadeyeva, the Court also addressed the State's failure to regulate private industry. Emissions from the steel plant routinely exceeded national pollution standards. The Court noted that the State had attempted to implement programs for reducing pollution and toxic emissions, but overall improvement in pollution conditions was occurring slowly and, in some years, levels of toxic pollution levels increased rather than decreased. According to the Court, the State was "in a position to evaluate the pollution hazards and to take adequate measures to prevent or reduce them[;]" therefore, it had a positive obligation to take reasonable and appropriate measures to protect human rights and to control pollution that interferes with citizens' rights under the European Convention. Id., para. 89.

Clean Air Foundation Ltd v. The Government Of The Hong Kong Special Administrative Region, High Court of Hong Kong[106]:

An environmental organization and a citizen advocate (the applicants) sought leave to apply for judicial review of the government of Hong Kong alleging failure to *"tackle the problems presented by air pollution."*[107] The applicants asserted that air quality in Hong Kong had become so bad that it posed a risk to public health and harmed the city's position as a financial and business center. The application alleged that by failing to adopt appropriate legislation and policies to reduce air pollution, the government of Hong Kong breached its legal duty to protect its citizens' right to life and right to health. The applicants sought a declaration from the Court specifying that the constitutional right to life, Hong Kong's "basic law," and the International Covenant on Economic, Social and Cultural Rights impose an affirmative duty on government

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105 Application No. 55723/00 (Eur. Ct. H.R. - June 9, 2005)(available at http://cmiskp.echr.coe.int/tkp197/view.asp?item=1&portal=hbkm&action=html&highlight=55723/00&sessionid=98978364&skin=hudoc-en)

106 No. 35 of 2007 (July 26, 2007) (available at http://www.hklii.hk/cgi-bin/sinodisp/eng/hk/cases/hkcfi/2007/757.html?stem=&synonyms=&query=clean%20Air%20Foundation%20Ltd).

107 Para 1

officials to protect residents from the harmful effects of air pollution. The applicants also sought a declaration that the government was not properly enforcing the Air Pollution Control Ordinance.

The Court ultimately dismissed the application for lack of jurisdiction, stating: *"While [the application for leave] purports to seek the determination of issues of law, on an objective assessment it is clear that it seeks in fact to review the merits of policy in an area in which Government must make difficult decisions in respect of competing social and economic priorities and, in law, is permitted a wide discretion to do so. While issues of importance to the community may have been raised, it is not for this court to determine those issues. They are issues for the political process."*[108]

Zia v. WAPDA - Pld, Supreme Court of Pakistan[109]:

The petitioners in this case were four residents that lived near the proposed site of a power grid station that would serve as a hub for a significant number of aboveground, high-voltage electrical wires. Among other things, the residents were concerned about the health impacts caused by exposure to electromagnetic fields.

In their petition, the citizens questioned whether a government agency has the right to endanger the lives of citizens without prior consent. The Court concluded that the government was obligated to closely consider the potential impacts to human health prior to approving any electrical grid station or transmission line, to provide public notice to citizens of proposed projects and allow them to lodge their objections, and to consider any objections prior to finalizing or approving the project. In the course of its decision, the Court discussed the policy of sustainable development and noted *"it may be pointed out that in all the developed countries great importance has been given to energy production. Our need is greater as it is bound to affect the economic development, but in the quest of economic development one has to adopt such measures which may not create hazards to life, destroy the environment and pollute the atmosphere."* [110]

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108 Para 43

109 1994 SC 693, (Feb. 12, 1994)(available at http://www.unep.org/padelia/publications/Jud.Dec.Nat.pre.pdf at pg. 323,

110 Para 11

Prakash Mani Sharma v. His Majesty's Government Cabinet Secretariat and Ors., Supreme Court of Nepal[111]:

The petitioner, advocate Prakash Sharma, sought to overturn a government decision allowing wide-scale import of diesel taxis from India into Nepal and asked the Court to issue an order prohibiting the use of diesel taxis in the Kathmandu Valley so as to protect the valley's air quality. The case posed the question whether environmental protection can be ignored in the name of development.

The Court declared that a healthy environment is a prerequisite for the protection of the right to personal freedoms under the Constitution of Nepal (Article 12). Personal freedoms at large can only be protected by a healthy environment, and it is an unquestionable fact that a polluted environment deprives the right to life protected by the law. The Court observed: *"[T]he present world community has deemed the right to development as a third generation right. The demand for rapid development also cannot be ignored. Especially a country left behind by the wave of the development like Nepal requires an accelerated development process. At the same time, the state also has an obligation to protect the environment taking into account the negative impact of development upon the environment. Therefore, development and environment should proceed harmoniously. This court is also aware of the respondent's inability to launch environmental protection programs as per the demand of the petitioner due to the constraints of resources and technology. Nevertheless, environmental destruction cannot be encouraged in the name of development."*

The Court concluded that the state has a primary obligation to protect the right to personal liberty by reducing environmental pollution as much as possible. Taking into account the government's failure to implement of previous judgments, the Court issued a directive to enforce essential measures to reduce vehicular pollution in Kathmandu Valley.

Comments

- As other parts of this research will reveal, the failure of statutory authorities to properly monitor and act upon air quality is the main source of the poor quality of India's atmosphere in its cities and industrial areas. This has led to the woeful situation where

[111] Writ Pet. No. 2237 of 1990 (March 11, 2003)(unofficial translation available at http://www.elaw.org/node/1594)

India's Courts, in particular the Supreme Court, has taken on the task of trying to ensure air quality norms are maintained where cases arise.

- The above review finds that, for the most part, Indian domestic law is consistent with other foreign courts and international law in recognising important environmental principles relating to the protection of the environment, including the atmosphere. However those principles are rarely, if ever, applied by the statutory authorities during the environmental protection procedures themselves. Consequently, they remain nebulous within the Indian context. Some ideas for promoting these concepts within the context of protection of the atmospheric environment are:
    - Projects which have a significant effect on the atmospheric environment, such as thermal power stations, iron plants and chemical factories, should be scrutinised by experts in air pollution and air modelling, to ensure that the predictions are correct.
    - Projects which have a significant effect on the atmospheric environment, especially near areas of high population density, a number of separate expert opinions should be provided by the project proponent, that the project will not result in serious irreversible damage to the atmospheric environment in either the short term, medium term or long term.
    - An explicit condition in the grant of any Environment Clearance (EC) that a failure to adhere to pollution norms will mandatorily lead to the polluter having to bear the costs of the pollution, including personal injury, and restitution costs, as per the 'polluter pays' principle and strict liability under Indian tort law.
    - Litigation on the lines of the *Massachusetts* case, requiring the Government of India to notify emission standards for greenhouse gases for motor vehicles.

7

THE SPCBs AND AIR POLLUTION

The SPCBs along with the CPCB are the nodal bodies in the mitigation of air pollution. While several other bodies, including the Ministry of Transport and the local Metropolitan Boards play important roles with reference to vehicular pollution, the charge of emission monitoring, ambient air monitoring and power to issue directions for mitigation of air pollution falls within the charge of the SPCBs. As a result, the following section mainly concentrates on the functioning of the State Boards, their mandate and their on-ground performance. Since the NAMP programme was instituted, all State Boards compulsorily have to submit monthly averages collected from ambient air quality ("AAQ") stations to the CPCB, and this data has been made available online. The maintenance and upkeep of the equipment for monitoring are being funded by the CPCB. The CPCB has prescribed Standard Operating Procedures for ambient air quality monitoring

including the grounds for selection of monitoring sites, frequency of data collection and other processes.[112] Some States have an additional smaller network of monitoring stations funded and maintained by the SPCBs themselves.

Common Trends:

After collating the data on the six States, there are several common trends that are apparent among the SPCBs:

- All the SPCBs have reported a severe shortage of staff. States like Gujarat have created additional Regional Offices but have not significantly increased the total strength of the Board, thus requiring two or three persons to perform many tasks.
- None of the SPCBs have conducted any carrying capacity studies for industrial clusters. In some cases, studies may have been carried out in severely polluted clusters which fall within the CEPI list. But as a policy, none of the SPCBs carry out any cumulative impact studies or any carrying capacity studies to project the future of any upcoming industrial estate/ area/ cluster in terms of air and water pollution.
- None of the SPCBs are carrying out any ambient air quality monitoring in rural areas or smaller towns. The monitoring is restricted to industrial areas and cities. The reason for this is because rural or unregulated sources of pollution are not perceived as significant dangers or contributors to air pollution. Whether or not this is true is moot, since no State-wide source apportionment studies have been carried out in any of the States. In any case, AAQ monitoring is also necessary to predict emerging problem areas and if a comprehensive network is not in place, such issues may go unnoticed.
- Most States, including the NAMP Network are only measuring NOx, SO2 and Particulate Matter. With the rising popularity of CNG as fuel in vehicles and thermal power plants, there is very little data on the benzo-pyrene levels in the country as no State has put in place equipment to measure the same.
- As a rule of thumb, SPCBs prefer to hold dialogue with industries and attempt to get industries to bring down emission levels through non-official means. Only if the problem is severe or unmitigated will a show cause notice be issued and the industry closed down. Further more, these closure directions may be revoked if the industry can show compliance. Thus, the closure directions are treated more as a suspension rather than a total shut down of the industry. As a result, with the exception of Tamil Nadu and to a lesser extent, Haryana, Section 22A of the Air Act remains woefully under-utilized.

[112] http://cpcb.nic.in/NAAQSManualVolumeI.pdf

- Most SPCBs prefer to avoid prosecution under the Air Act because of the lengthy and time consuming nature of criminal prosecution in the country. Due to the severe paucity of officers, the officers find themselves in court for several days pursuing the legal matters and are thus unable to manage their official work.
- With relation to the above, there is also a drastic difference between the number of samples that are being collected by the SPCBs and the number of samples that exceed emission norms. The reason for this could either be paucity of suitable laboratory equipment/ staff or that the samples are not even submitted to the labs for testing.
- Most of the States commonly require industries to provide a bank guarantee against completion of any air pollution mitigation measures. However, after the Delhi High Court judgment in *Splendor Landbase* which was discussed earlier, it is clear that this practice is not permissible under the Air Act. As a result, the SPCBs have no means of enforcement except closure of the industry or criminal prosecution, both of which are considered "extreme measures" which are only used in case of continued gross violations of the emission norms.
- None of the States have any comprehensive State policy towards air pollution mitigation. While there are action plans for the specific industrial clusters mention in the CEPI List, there is no State-wide policy as such. Perhaps this may be due to the lack of scientific know-how and the aforementioned shortage of manpower and facilities, but nearly all SPCBs have restricted themselves to three roles: (i) data collection agency; (ii) licensing authority/ inspection agency; and (iii) prosecuting agency. No SPCB has issued any instructions to the State Transport Departments or any other branch of government for mitigation of vehicular pollution even though this is specifically a part of the Boards' mandate. While CPCB has come out with a report in 2010 on vehicular pollution mitigation, the SPCBs have little or no involvement in this issue.[113]
- None of the SPCBs have any joint monitoring or data sharing programme/ system with each other.
- Similarly, none of the State Transport Departments have any air pollution mitigation policy as such and have also largely relegated themselves to the role of a licensing and inspecting authority and merely have the role of implementing Rule 115 of the Central Motor Vehicles Rules. As a result, there is a lack of a cohesive state-wide action plan or policy to understand the sources of pollution and take a comprehensive, multi-ministerial look at the problem of air pollution in the respective States.
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[113] http://cpcb.nic.in/upload/NewItems/NewItem_157_VPC_REPORT.pdf

In view of the above, the following section will examine the monitoring infrastructure and the role of the SPCBs in mitigation of air pollution.

ORISSA

The Orissa Pollution Control Board ("OSPCB") has its head office located in the State's capital, Bhubaneshwar and has nine regional offices (one for each district).[114] The data for this State has been obtained through information available on the OSPCB website, the OSPCB's Annual Report 2009-2010 (the latest Report available), information obtained through Right to Information appplications and from discussions held with Mr B.N. Bhol (Sr Env Scientist) and Mr N.R. Sahoo (Sr Env Engineer) of the OSPCB.

Staff Strength:

The total strength of the OSPCB is 170 persons (as of 2009-2010) with a sanctioned strength of 202 persons. The regional offices have a staff of between 6 to 17 persons.

Ambient Air Quality Monitoring and Data Collection:

Even though the NAAQS lays down 12 parameters for measurement, only five are being monitored in the State namely, PM10, PM2.5, SO2, Nox and SPM (in consonance with the NAMP). Even though SPM is not a prescribed standard under the current NAAQS Standards, the same is being monitored in industrial areas.

There is some contradictory data on the number of air monitoring stations in the State. While the reply under RTI states that there are 35 fully functional fine particulate samplers, the latest Annual Report (yet to be published), a copy of which was obtained during a visit to the Board's office in Bhubaneshwar indicates that there are 24 stations operating in the State currently. No reply was forthcoming on the reason for this discrepancy. It was indicated that not all the AAQ stations fall under the NAMP, but that some of the stations have been set up and are being monitored by the SPCB. However, data on the OSPCB website on air quality is only available for the year 2006.

[114] http://www.orissapcb.nic.in/airquality.asp

Further, according to a query in an RTI Application, the oldest piece of air monitoring equipment in use by the SPCB is 26 years old. However, it was later clarified by an Engineer that the SPCB does not decommission and auction off equipment due to fears of misuse and that equipment of such vintage is never in active use. The latest piece of equipment purchased on the other hand, was in 2010. The equipment is calibrated and inspected once a year, and is maintained under an Annual Maintenance Contract with the supplier. The most common reason for equipment failure is "wear and tear" and operating hours of the instruments used.

The AAQ stations are only set up in residential and industrial areas only, and at traffic junctions in cities. No AAQ Stations have been set up in eco-sensitive areas even though the NAAQ Standards prescribe a separate set of norms for such areas. There are no monitoring stations in rural areas. The reason given for this is that, even if monitoring stations were to be set up, it would be difficult to detect any pollution, because of swift dispersal of fuelwood, biomass and other sources of pollution. In any case, no source apportionment studies have ever been conducted and no major sources of pollution have been identified in rural areas.

Action Taken by the SPCB for Enforcement:

The entire State of Odisha has been declared as an air pollution control area under the Air Act in 2002. In the year 2010-2011, the OSPCB has collected 3777 air samples and analysed the same for five parameters. Since October 2010, OSPCB has issued closure notices against 17 companies and show cause notices to five companies.[115]

Large Scale Industries are monitored for air quality on a quarterly basis while small scale industries are only monitored once in two years. However, industries do submit compliance reports which contain air quality data from self-monitoring. Interestingly, the independent air quality data is never given any credence by the OSPCB who begin with the assumption that such data is faulty, thus rendering the entire compliance report requirement redundant. At the same time, no remedial steps are taken, such as prosecuting industries for falsifying data.

When a sample is collected during inspection and the same is found to exceed emission standards, the industry is informed of this and advised to take remedial action. Upon the second or even third inspection, if the samples are still found to be in excess of the emission standards or if the emission is in gross violation of the norms, a show cause notice is issued. The industry, in consultation with the Engineer of the OSPCB formulate an action plan with a suitable time frame for reduction. If the same is not completed within the said time frame, closure directions are issued. In rare cases, criminal prosecution is initiated.

Talcher-Angul, Jharsuguda and Ib Valley fall within critically polluted industrial clusters as per

[115] Annual Report of the OSPCB, 2010-2011 (yet to be published).

the CEPI index for air pollution. However, after action was taken by the OSPCB which implemented an action plan for pollution reduction and changes were recorded, the moratoriums on the areas have been lifted. The moratorium on Ib Valley was lifted after several representations by the State Government and only after imposing several conditions.

Critical Issues:

Sources of Pollution

While no source apportionment studies have ever been conducted, according to the officials of the OSPCB, such studies are not necessary as the sources of pollution are usually apparent. For example, there is a focus on emission control in industrial clusters. The sources of emission in these clusters are well-identified and targeted accordingly. The officials further expressed the view that Odisha's air pollution problems are not systemic, but are localised issues. Some of the biggest problems being faced in the State are:

- Stone crushing units: Apart from the illegal stone crushing units, regular monitoring and enforcement of guidelines for the licensed units has proved very difficult.
- Previously, brick kilns were moving chimney based kilns and were a significant source of pollution. However, after much intervention by the OSPCB, all chimneys have become fixed. As a result, the cost of bricks has increased over the years. Currently, the cost of flyash bricks have become competively priced and thus, the demand for bricks has dropped. That said, there are still many indigenous "clump kilns" being operated in tribal and rural areas for captive consumption. It is difficult to regulate this sector as they are temporary kilns. They remain a significant problem because of the number of kilns that are there and the fact that they use biomass and other inefficient fuels.
- In several coal-bearing areas, since coal is in abundance, most domestic purposes are met with by coal. As a result, in winter months, the levels of pollution in the area are greatly increased. To some extent, the OSPCB has intervened through non-official channels by encouraging the mining companies to provide LPG cylinders to their employees.

Difficulty in data collection

- According to the officials of the OSPCB, in industrial clusters, there are two sources of pollution: emission from the stacks which are monitored and secondary emissions due to vehicular pollution, fugitive emissions and other such sources. While the regulated stacks are easy to monitor and any excessive emission can usually be traced back to the problem, secondary sources of emission present a problem as it is difficult to identify the source. The only way to regulate the same are on the basis of AAQ readings and then

identifying potential problem areas by prescribing methods on a trial and error basis. Thus, while the stack emissions may be well within norms, it is possible that the ambient air quality of the area may be high due to the secondary sources. Often, it may be a minor problem which is indirectly contributing to the pollution, like speed bumps on a road causing greater spillage of material and thus, greater air pollution. Idenityfing these and prescribing norms for the same and the follow-up involved are very time-consuming as they may need to be industry or factory specific. Often, unscientific, unconventional or ad-hoc methods of detection and rectification are employed by the Engineers. In some cases this may result in lowering the particulate matter in the ambient air, but in other cases such measures have no effect and the Engineer prescribes further directions in a trial and error method.

- The lack of staff / logistical support is a common woe among all the SPCBs and Odisha is no different As is clear from the staff strength, a mere 6 to 17 persons are required to inspect industries, collect samples, suggest mitigation measures and take further action as necessary. As a result, there is an admitted inability to qualitatively and regularly monitor industries. However, it is believed that with continuous online monitoring of all industries being introduced, it may become easier to ensure compliance.
- It is also interesting to note that the industries are required to submit compliance reports with air quality data as measured by an independent lab. However, the officials of the OSPCB admitted that such compliance reports are presumed to be false/ incorrect data and are only accepted as a formality. However, even if the statistics are patently false, no action has ever been taken against the industry or the laboratory for production of false data.

Carrying capacity studies

No carrying capacity studies have ever been conducted for any industrial clusters or areas. However, a study for the Kalinga Nagar Industrial Area and the Talcher-Angul Industrial area are underway. Even though it is possible that even if all industries conform to emission norms, the ambient air quality levels for the area may exceed the prescribed norms, no study has been conducted so far. Furthermore, these industrial clusters are not planned; they simply tend to grow in an area and therefore, there may or may not be sufficient facilities and resources to meet the requirements of the burgeoning number of industries. It would be pertinent to mention that even though no formal study as such was conducted in the Ib Valley industrial area, Consents to Establish have been rejected as the area had reached its limit in terms of natural resources. No cumulative impact studies have ever been conducted or are even being contemplated.

Methods of Enforcement

Rather than merely shutting down an industry, the OCPCB prefers to impose as many conditions as possible. If an industry is grossly polluting an area, such mitigation measures will become highly uneconomical causing the industry to shut down, thus achieving the purpose. This is because the moment a closure notice is given, industries obtain a stay order from the High court or other appropriate court. Due to the language of the Air Act, the OSPCB's role is envisaged as a prosecuting agency. Over 300 cases against stone crushing units and as many against brick kilns are still under prosecution. This takes up valuable time of the OSPCB and is therefore not a preferred route for the enforcement of standards. This is a commonly used practise across the SPCBs.

TAMIL NADU

The Tamil Nadu Pollution Control Board ("TNPCB") is headquartered in Chennai and has 28 regional offices. The data for this State has been obtained from the Board's website, through RTI applications and through discussions held with Dr Chandrasekharan (Deputy Director, Labs), Mr Thyagarajan (Assistant Director, Labs), Mr Vikram Kapur (Chairperson) and several engineers.

Staff Strength:[116]

Engineering Staff: 143

Scientific Staff: 182

Dist. Env. Engineer Offices: 20

Asst. Env. Engineer Offices: 5

Ambient Air Quality Monitoring and Data Collection:

Tamil Nadu currently has the 18 NAMP Stations in the State (five in Chennai and 13 across the state). Recently five more stations have been approved by the CPCB for continuous online monitoring and one mobile station in the city as well. Additionally, three stations have been approved for the Cuddalore area and two in Mettur. The parameters being measured are: NOx, SO2 and PM10. Ammonia, Benzo-pyrate, lead and nickel are being contemplated for monitoring

[116] http://www.tnpcb.gov.in/organisation.asp

and the officials have stated that standard protocols for measurement of the same are in the process. With regard to PM2.5, the officials expressed some doubt about the quality of measurement equipment available. He stated that Indian-manufactured equipment for PM2.5 was not meeting the requisite standards and that improvements are required. That said, he also confirmed that there are five PM2.5 measuring stations in Chennai but the data is only accepted as indicative.

Action Taken by the TNPCB for Enforcement:

In the last six months (Spetember 2011 to February 2012), the TNPCB carried out:

Inspections: 522 (No records for how many samples were collected, following these inspections). Samples exceeded the prescribed norms: 12

Show cause notices issued: 373

Industries closed down: 23

Interestingly, Tamil Nadu is one of the few states to have taken any significant action under Section 22A of the Air Act by filing around 402 applications in the last year, which is in stark contrast to some of the other States which have filed no applications under Section 22A.

In the opinion of the officers of the TNPCB, industries are generally compliant with the directions of the TNPCB. Closure of industries is always the last and inevitable step taken only in case of gross or repeated violations as the TNPCB prefers to hold dialogues and ensure compliance as there is greater chance of sucess rather than enforcement mechanisms like cutting off electricity and water. Many opportunities are given to the defaulter to comply with directions and bring down emissions. Even though consents to operate are renewed yearly, non-renewal is an extreme step that is only taken in rare cases. Even violating industry's consents to operate are generally renewed. Additionally, industries are required to conduct regular AAQ monitoring through an accredited lab and submit reports to the Board. The TNPCB itself only conducts yearly surveys for large scale, red category industries. When drastic measures are directed against the industries, the industries generally turn to the appellate authority for staying such closure orders. While there is no confirmed percentage, the TNPCB officials confirmed that a significant number of closure directions are stayed at the High Court level.

Three industrial clusters have been identified in Tamil Nadu as critically polluted as per the CEPI: Cuddalore, Coimbatore and Ranipet. The State Government, in consultation with the TNPCB has created actions plans for the areas and has sought to have the moratoriums lifted. The moratoium on Coimbatore has been lifted, but the same persists in Cuddalore and Ranipet. According to the officials of the TNPCB, these areas have begun to show improvement in air quality data and as a result, the State Government has moved the Centre for lifting the moratorium.

Critical Issues:

Carrying capacity and source-apportionment studies

- A source apportionment study has been conducted by the CPCB for Chennai (among other cities in the country) Chennai which indicates that PM10 and NOx levels are on the rise, among several other issues.[117] However, no other study has been conducted in the State. Similarly, a carrying capacity study is underway in the Manali Industrial area; however no other carrying capacity studies have been conducted in any other industrial cluster. The State Industrial Promotion Corporation ("SIPCOT") is responsible for the setting up of several industrial parks in the State. However, the SPCB does not undertake any studies before granting consents to operate/ establish for such parks. The assumption is that such studies would have formed a part of the Environment Impact Process and would therefore not require any further studies. Similarly, cumulative impact assessment study are assumed to be a part of the EIA process and have never been conducted. However, a recent decision of the National Green Tribunal directed the project proponent in the case to conduct a cumulative impact assessment study in the area surround the project which falls in Cuddalore district[118] and also stressed on the importance of cumulative impact assessment studies to avoid any danger to human or marine life with reference to a thermal power plant in the Nagapattinam district.

Data Collection

- At present, data collection is the main goal of the TNPCB. The Board plans to put in place systems for continuous online monitoring of industries so as to reduce the number of visits by engineers and make up for the lack of manpower.
- As stated before, the paucity of man power is a problem faced by Tamil Nadu as well. According to the officials at the TNPCB, due to shortage of funds, the Tamil Nadu Government has placed a ban on creation of new posts even though the same are sorely needed.

Sources of Pollution in the State

- Chemical industries which produce fertilisers and pharmaceutical products emit "volatile

[117] http://www.cpcb.nic.in/Chennai.pdf

[118] http://www.greentribunal.in/orderinpdf/17-2011(T)_23May2012_final_order.pdf

organic compounds". According to the officials of the TNPCB, monitoring is being done by accredited labs and a study has been conducted by NEERI. This issue is also currently sub-judice before the High Court of Madras with regard to chemical industries in the Cuddalore district.[119]

- Industrial complexes, especially Cuddalore, Hosur, Tutticorin, Sriperambudur etc are being encouraged by several arms of the government, without giving any thought to the carrying capacity of the areas.
- Garbage incineration and dumping: unauthorised and large scale burning of garbage for obtaining scrap metal is a serious problem in several landfill areas in Chennai. Currently, some steps like fences, security guards, CCTV cameras etc are being contemplated to monitor the problem. In addition, a continuous ambient air monitoring station is being contemplated in one of the landfills.

Vehicular pollution in Chennai

- The aforemention source apportionment study took serious note of the vehicular emissions in the city. As a result, a High-Level Committee has been constituted by the State Government, which among other issues, will take decisions for governing and executing a plan of action to mitigate the problem of vehicular pollution. It is pertinent to mention that there is a multiplicity of bodies who play a role in vehicular traffic; however, this may be a further cause for the severe congestion being faced by the city as none of the bodies play a comprehensive role.
- The TNPCB does not have a policy for the reduction of the volume of vehicles on the roads. It merely encourages use of non-polluting vehicles and other alternate means, but it has limited powers with reference to vehicular pollution.
- The Chennai Metropolitan Development Authority ("CMDA") has come out with a set of recommendations for improving the street plan of the city and public transport system to reduce the volume on the roads, thereby cutting down on congestions and pollution caused as a result of traffic jams and ill-devised street plans.[120] According to the Chairman of the TNPCB (whose previous posting was at the CMDA), the CMDA also plans to introduce more conducive facilities like better pedestrian facilities, parking lots near bus/ train stations, etc.
- The Chennai Unified Metropolitan Transport Authority is a multi-disciplinary body

[119] Writ Petition (Civil) No. 27241 of 2004

[120] http://www.cmdachennai.gov.in/Highlights_HLC0901200913-1-09.pdf

created in 2010 to integrate all modes of transit. While the Authority is yet to make any major decisions, it was created with the idea that the Authority would oversee systemic changes in the public transport system which would mitigate air pollution, among its other tasks.

DELHI

The National Capital Territory of Delhi is one of the biggest metropolises in the world. Growing vehicular population, congestion and emissions from thermal power plants have given cause for concern in the city. In the early 90s, a Public Interest Petition filed by M.C. Mehta in the Supreme Court brought to light, the several stone crushing units around Delhi that were contributing to the city's ambient air.[121] In the late 90s, the rapid growth of the city and its satellite towns and the ensuing pollution from the urbanization culminated in a Public Interest Litigation Petition being filed by M.C. Mehta in the Supreme Court of India.[122] With a view to check the rapid deterioration of air quality in Delhi, which was becoming a health hazard, the Supreme Court gave several directions including the elimination of leaded fuel, switching of public bus fuel to CNG as well as the regular monitoring of the city's ambient air quality. Today, Delhi's air quality is overseen by the Delhi Pollution Control Committee ("DPCC") that is vested with powers under the Air Act and under the EP Act. The data in the following section has been collected through secondary sources and through RTI applications.

Unlike the other States, the DPCC's charge is only one city. Even though the DPCC has a robust air monitoring system in place and all public transport runs on CNG, the city's air continues to remain severely polluted due to many contributing factors including the rapid increase in private transport.

Staff Strength:

The DPCC has a sanctioned strength of 350 persons, while the total number of posts filled at the DPCC is only 81. Of these, the total number of Senior Level Scientists are only 2, with 3

[121] http://www.elaw.org/node/1421

[122] http://www.elaw.org/node/1419

Scientific assistants. The DPCC has only 3 Senior Environmental Engineers, 8 Engineers and 20 Junior Engineers. A bare reading of this makes it obvious that most of the inspection and sample collection work is being carried out by the Junior Engineers.

Air Quality Monitoring and Data Collection:

The entire NCT area has been declared as an air pollution control area. The DPCC has installed over 40 AAQ stations in the city[123], six of which are Continuous AAQ monitoring stations.[124] Currently, the monitoring stations are measuring five parameters: SPM, RSPM, NOx, SO2 and CO.[125] When SPM is no longer a parameter to be measured under the latest NAAQ Standards, most States are measuring the same. Furthermore, the data that is being tabulated does not draw a distinction between PM10 and PM2.5. The equipment is maintained by the supplier and is calibrated once a month, manually. Data is tabulated on a daily basis and real time unedited data is available on the DPCC website.

Action taken by the DPCC for Enforcement:

Since collection of samples, inspection and closure of industries are within the madate of the DPCC to effectively check industrial polluters, a study of the kind of action taken by the DPCC in this regard would be relevant. In the last six months (as on the date of the RTI reply), the DPCC has collected no samples and has conducted only two inspections of industries. That said, thermal power stations are monitored on a monthly basis and at the industries' request, 79 samples were collected. Of these, 12 were found to have exceeded norms. Since 1 September 2011 to 29 February 2012, 44 show cause notices have been issued to defaulting industries and 32 closure directions have been issued.

Critical Issues:

<u>World's most polluted city</u>

- A study in the year 2010 concluded that the city of New Delhi had the poorest quality of air in the world.[126] Despite the city's air quality being a subject matter before the Supreme

[123] http://www.dpcc.delhigovt.nic.in/pdf/map.pdf

[124] http://www.dpccairdata.com/dpccairdata/display/index.php

[125] http://www.dpcc.delhigovt.nic.in/Air40.html

[126] http://www.dailyfinance.com/2010/11/29/10-cities-with-worlds-worst-air/

Court, the city continues to battle severe vehicular traffic and congestion.

- There is very little awareness being spread by the DPCC on the effects of the various pollutants. The website states the AAQ statistics but there is no information on what this data means.

Vehicular Pollution

- Despite the conversion of public transport to CNG, the city remains critically polluted. As stated before, many have chalked this up to the surge in the number of diesel-run vehicles. Controlling or reducing the volume of diesel run vehicles may have a significant impact on the air quality.
- The poor bus transport system has also been blamed for the congestion. More than 50% of the city travels by the buses but the network of buses is considered poor, especially in light of the fact that it has not been linked with the Metro Rail system.[127] The Bus Rapid Transit System has come under severe criticism[128] and was even a subject matter before the Delhi High Court. The Delhi High Court has taken note of the problems being caused by the separate-lane system and has directed a comprehensive feasibility report on the system keeping in mind the volume of vehicles on the road.[129]
- The DPCC plays no role in mitigation of vehicular pollution. As is the case with all the other SPCBs, the DPCC has issued no instruction to the appropriate transport authorities nor has it formed any policy regarding vehicular pollution. Thus, with reference to air pollution, its role is only monitoring through AAQ stations and inspection of the thermal power plants and any industries that fall with its jurisdiction.

Thermal Power Plants

- While a lot of attention is paid to the traffic situation in the city, not enough is paid to the four thermal power plants that fall within the jurisdiction of the DPCC.

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127 *Mobility Crisis: Agenda for Action 2010* (2010), Centre for Science and Environment, New Delhi.

128 http://articles.timesofindia.indiatimes.com/2012-05-26/delhi/31860728_1_brt-corridor-bus-rapid-transit-brt-system

129 http://www.financialexpress.com/news/wont-let-brt-traffic-system-be-the-same-hc-tells-govt/955924/1

- While the DPCC has made available the data on the regular monitoring of NOx concentration[130], thermal power plants can be major sources of SO2, Ozone and particulate matter.[131] However, there is nothing on record to show whether the SO2 levels are being monitored regularly and if so, what the AAQ data is. Thus, claims that the SO2 levels are no longer a matter of concern in the country may not necessarily be true as there is nothing on record to show that the plants' flue gas desulphurizer units are being used regularly. Furthermore, gas-based thermal power plants emit significant quantities of benzo-pyrene for which the NAAQ Standards have been notified but is not being monitored by any SPCB, including the DPCC.

HARYANA

The State of Haryana is among the richest States in the country[132] and has several industries and factories in sectors like automobile and auto components, light engineering goods, IT and ITES, textile & apparels and electrical and electronic goods and has striven to make the State investor friendly and free from hurdles for investments.[133] The Haryana Pollution Control Board ("HSPCB") is the nodal organisation empowered under the Air Act and the EP Act to control and abate pollution in the state. Information detailed in the following sections have been obtained through RTI Queries sent by LIFE and from the HSPCB website.[134]

Staff Strength:

The total strength of the HSPCB, as per the budget provision is 257 persons (inclusive of all categories). The AAQ stations that are being maintained by the HSPCB generally have one to four regional officers along with members of staff manning the same and are also responsible for calibration and maintenance of the equipment.

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130 http://www.dpcc.delhigovt.nic.in/dpcc_remote/lis/viewTPPReportsView.php

131 http://www.rrcap.unep.org/male/manual/national/02chapter2.pdf

132 http://www.nytimes.com/2005/10/18/world/asia/18iht-rural.html?_r=1

133 http://haryana.gov.in/misc/industry-policy-2011.pdf

134 http://hspcb.gov.in/air.html

Air Quality Monitoring and Data Collection:

The entire State of Haryana has been declared as an air pollution control area. The HSPCB is currently monitoring Ambient Air Quality at six monitoring stations: two at Faridabad, one at Sonepat, two at Hissar and one at Yamuna Nagar. Some of the stations are maintained by the supplier of the equipment, i.e. Envirotech Online Equipments Pvt. Ltd. While the remaining are maintained by the Laboratory staff of the HSPCB. Additionally, seven monitoring stations have been set up by Indian Oil Corporation Panipat Refinery and three stations by National Fertilizer Limited, Panipat. The installation of a station is underway in Gurgaon. Furthermore, the oldest piece of equipment still in use was purchased around 12 years ago.

Action taken by the HSPCB:

In the last six months, the HSPCB (through its regional offices has carried out 777 inspections, collected 743 samples and found 140 of such samples to have exceeded prescribed norms, issued 130 show cause notices to defaulters and issued closure directions against 66 industries. Interestingly, of all the States in this study, Haryana is the only State to have initiated proceedings under Section 22A of the Air Act to close down 6 industries in the last year.

As per the CEPI, two clusters fall within critically polluted areas in Haryana: Faridabad and Panipat. It is pertinent to note that there is no HSPCB-monitored AAQ Station in Panipat.

Critical Issues:

<u>Data collection</u>

- As is obvious from the above sections, HSPCB has a very poor network of AAQ monitoring Stations. As stated before, this is of some concern as the State is playing host to several industrial sectors and insufficient data on monitoring would result in a very incorrect picture of the air pollution levels in the State. Furthermore, the city of Chandigarh, despite being the capital of the State, does not form a part of the NAMP network and is also a point of concern.

<u>Stone crushing units</u>

- Haryana has several stone crushing units in the state[135] and the HSPCB has even issued guidelines governing the same.[136] The guidelines provide for air pollution mitigation strategies but it is interesting to note that these guidelines do not provide for compulsory air quality monitoring by the stone crushing units.

Mining:

- Over exploitation of mines has been a recurring problem in Haryana. Due to illegal mines or small mines that are less than 5 hectares (mines larger than 5 hectares require a compulsory environmental clearance), mine opeators may not have sufficient dust and pollution preventative measures put in place to maximize profits. The Supreme Court, in **T.N. Godavarman Thirumulpad Vs. Union of India and Ors., October 8, 2009**, (2010) 1 SCC 500, totally banned the mining within the Aravalli range. Recently, in ***Deepak Kumar v. State of Haryana (S.L.P. (C) NO. 19628-19629 OF 2009)*** made it compulosry of even small mines to obtain an environmental clearance.

MAHARASHTRA

Maharashtra is one of the largest Indian states. The Maharashtra Pollution Control Board ("MPCB") is the nodal organisation for pollution control and is headquartered in the city of Mumbai and has 12 regional offices, each of which have several sub-regional offices. As with New Delhi, Mumbai's central problem is again, vehicular pollution and traffic congestion.

Air Quality Monitoring and Data Collection:

The entire State has been declared as an air pollution control area. There are a total of 82 AAQ stations in Maharashra[137], some of which are continuous monitoring stations, some under the State monitoring programme and other under the NAMP. The air quality data uploaded monthly and is collected as per the frequency and protocol issued by the CPCB. The continuous, real time unedited monitoring data is available on the website of the MPCB.

[135] http://www.tribuneindia.com/2006/20060510/cth1.htm

[136] http://hspcb.gov.in/mineralgrindingguidelines.pdf

[137] http://mpcb.omcommunication.net/envtdata/envtair_neww.php

Action Taken for Enforcement:

Inspections made in the last 6 months (Septmeber to February): 2143

Samples collected in the last 6 months (September to February): 2367

Number of samples exceeding prescribed norms: 242. However, this number may not reflect the true picture as many of the results from testing have not been received from the laboratory.

Number of closures of defaulting industries (September to February): 23

Number of Show Cause Notices issued (September to February): 323

No applications have been filed under S. 22A of the Air Act in the last year.

Five areas in Maharashtra fall within critically polluted industrial clusters after application of the CEPI for air pollution: Chandrapur, Aurangabad, Dombivalli, Navi Mumbai and Tarapur. Action plans were created for all the areas and the MPCB has submitted the same for consideration of the CPCB and for lifting of the moratorium.[138] Of these, the moratorium has been lifted on Tarapur, Dombivalli, Navi Mumbai and Aurangabad.

Critical Issues

Report of the Comptroller and Auditor General ("CAG")

- The CAG has prepared a performance audit Report for 2010-2011 on the MPCB. Specifically, the Report relates to the MPCB's poor performance in controlling water pollution. However, the same is relevant in the context of air pollution as well because the Report gives a good idea on the working on the institution. Some of the important findings in the Report are:

"There was no mechanism in place for monitoring the validity period of the consents granted to various industries by the Maharashtra Pollution Control Board. As of August 2011, 10,156 consent applications were pending for more than 120 days (Paragraph 2.2.8.1)."

"In the six test-checked Regional Offices, there were shortfalls ranging from 16.83 to 52.51 *per cent in collection of samples for testing, as of December 2010. (Paragraph 2.2.17.2)"*

- While there were several other findings on the MPCB, the above findings are relevant in this context since sample collection and testing is central to the enforcement of the Air

[138] http://mpcb.gov.in/CEPI/pdf/CPCB_letter.pdf

Act and abating pollution. Since no study has been conducted on the MPCB's air pollution abatement programme, the above may shed some light on the functioning of the same.

Source apportionment and carrying capacity studies

- As with the other States, no carrying capacity has been carried out in Maharashtra in industrial clusters. However, the CPCB has conducted a source apportionment study in the city of Mumbai.[139]
- Maharashtra is one of the few states where a health impact assessment of air pollution has been carried out. While there is no data on whether this study has affected any of the State's policy, it is still very significant.[140]

GUJARAT

The Gujarat Pollution Control Board ("GPCB") is the nodal organisation for the control and prevention of pollution in the State of Gujarat and is headquartered in Gandhinagar. The GPCB has 21 regional offices for administration in the State. The information in the section has been obtained through RTI replies and discussions with Mr Naresh Thakker, Public Relations Officer, GPCB (Retd.), Mr Mahindra Sadadiya, Evironmental Consultant and Prof J N Joshi.

Staff Strength:[141]

Total staff (including administrative staff): 440.

Senior Env. Scientists: 3

Senior Env. Engineers: 9

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139 *www.cpcb.nic.in/**Mumbai**-report.pdf*

140 http://mpcb.omcommunication.net/airtrends/test1.htm

141 As per the GPCB Annual Report 2010-11. The Report does not provide the break-up of the staff between the various regional offices. However, each Regional Office is headed by either a Senior Env. Scientist, an Environmental Engineer or a Senior Scientific Officer.

Senior Scientific Officer: 8

Environmental Engineer: 28

Scientific Officer: 38

Depy. Env. Engineer: 48

Asst. Env. Engineer: 15

Air Quality Monitoring and Data Collection:

Under the NAMP as well as the State's air quality monitoring programme, the GPCB is measuring the parameters of SPM, RSPM, SO2 and NOx in the State. The AAQ Stations have been set up mainly in Ahmedabad, Vadodara, Surat, Vapi, Bharuch and Rajkot. The network of AAQ stations number at around 48 stations.[142] The city of Ahmedabad has only about 8 stations.

Action Taken by the GPCB:

Inspections made (October to March): 13126

Samples collected (October to March): 3865

Number of show cause notices filed (October to March): 2504

A total of 864 industries were closed down (under all the Acts) and have all been allowed to restart after verifying compliance.[143]

Interestingly, after verifying records from the years 2004-2006 for which the revocation of closure directions were available, nearly all closure directions given by the GPCB under Section 31A of the Air Act have been revoked. These revocation orders rarely elaborate on the reasons for the revocation and only state that "appropriate mitigation measures" have been taken by the industry. In a few cases a few of these measures are elaborated, such as "baghouse filters" or "closed conveyor belts" but there is no mention of the emission reading from the stacks or the ambient air quality statistics after the industry is restarted.

Additionally, the State of Gujarat has been seeking bank guarantees towards fulfillment of direction. To this end a total amount of Rs. 5,05,41,002 has been collected by the GPCB in the year 2009-2010.

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[142] http://gpcb.gov.in/status-of-aaqm-in-major-cities-in-gujarat.htm

[143] Gujarat Pollution Control Board Annual Report (2010-11)

Under the CEPI, Gujarat has six critically polluted areas: Ankleshwar, Junagarh, Vapi, Vatwa, Bhavnagar and Ahmedabad. Of these, the moratorium has been lifted from three areas: Vapi, Bhavnagar and Junagarh.

Critical Issues:

New Schemes for Improvement of ambient air quality

- The GPCB has installed CCTVs at all factories in the Narol area with continuous online monitoring to ensure compliance with all mitigation and filtration measures for air pollution. This scheme was only recently implemented but has been touted as the way forward. However, while this may be suitable for certain critically polluted sectors, it may ultimately be unsustainable as they would require continuous monitoring of the CCTVs and the data collected from them and thus, may not be ably carried out by the shortstaffed regional offices.
- The environmental audit scheme was started in Gujarat in 2006[144] as a tool for a comprehensive audit of industries after a public interest litigation in the Gujarat High Court which directed the GPCB to introduce the Environmental Audit Scheme for industries manufacturing specified products; where qualified technical professionals would become a link between the individual industries on the one hand and the GPCB / other public authorities/ associations of industries on the other hand.[145]

CAG Performance Audit Report of the Home Department

While this Report does not refer to the GPCB itself, it is relevant in terms of air quality mitigation strategies in Gujarat. The CAG Report for 2010-11 found that:

"1.1.13.1 Defective planning in purchase of pollution measuring equipments: *GOI approved pollution measuring equipments (Rs.30 lakh) in the AAP for the year 2005-06 for measuring pollution emission level of the public vehicles plying on the road. DG&IGP office purchased (March 2006) pollution measuring equipments amounting to Rs. 29.98 lakh. When these equipments were tested (April 2006) by Additional Police Commissioner, Traffic Ahmedabad, they were found to be not giving correct results and consuming considerable time in measuring pollution. GOG subsequently transferred (March 2007) these equipments to Commissioner of Transport stating that these were originally approved for Transport Department as it was then part of Home Department.*

[144] http://gpcb.gov.in/pdf/GUIDELINES_FOR_ENVIRONMENTAL_AUDITITORS.pdf

[145] Vide the orders dated 20-12-96, 13-3-1997 and 16-9-1999.

Inclusion of such items in AAP was not warranted as the scheme was meant for police force only and though, then under Home Department,Transport Department was not a part of the police force."

The Vibrant Gujarat Summit

The "Vibrant Gujarat Summit 2011" was conducted by the State Government to welcome foreign investors by promising various attractive development schemes. This summit is a growing concern because of the growing number of Memorandums of Understandings being inked during the Summit, with each passing year. From 76 MoUs in 2003, the Summit resulted in 8662 MoUs being signed in 2009 and 7936 in 2011.[146] With six industrial clusters on the CEPI critically polluted list (of which moratoriums were lifted on three), there is some doubt as to whether the existing ambient air quality network and the understaffed regional offices would be able to handle the rapid industrialization.

[146] http://www.gujaratindia.com/business/mous-signed.htm

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ACTION PLAN

1. **Amendments in the Statutory Regime*:*** As was made clear in the chapter on the regulatory framework, there is a large rift between the Air Act which was enacted in the 80s and the kinds of air quality problems that are being faced today. In order to remedy this, there is a need for the statutes to be in tune with precautionary and polluter pay principle and also to allow for civil penalties and the emission trading scheme to be put in place. To this end, there is a need for the preparation of briefing notes for the Government on the need for changes and the kinds of changes that are required, media briefings or the intervention of courts as the last resort.

2. **Transition from Higher Courts to the NGT*:*** As mentioned before, the atmosphere for filing Public Interest Litigation petitions before the higher Courts (the state High Courts and the Supreme Courts) is very different today. Recently, in **Bhopal Gas Peedith Mahila Udith Sanghatan v. Union of India**[147] the Supreme Court directed the transfer of all environmental cases pending before it and the High Courts (for which the NGT has jurisdiction to hear), to the Tribunal. Furthermore, not all PILs are admitted by the Higher Court to be heard by it, since the hearing of PILs is a discretionary power. As a result, litigation on environmental issues have a much better chance of getting a proper hearing on legal and scientific issues before the NGT. While the NGT is not a constitutional court, the tribunal can become a mechanism for bringing about institutional changes. For instance, the NGT has passed several mandatory orders against the MoEF with regard to the mode of conducting public hearings, preparation of EIA reports, etc. Similar directions to the PCBs may go a long way in improving their mode of functioning.

3. **Effect of air pollution on health and economy*:*** There is a paucity of studies and data on the linkage between air pollution and the health impacts and well as economic aspects. If more comprehensive studies and data are made available, it would help creating public awareness which would ultimately bring about institutional changes. To this end, there is also the need for developing models and projections for

[147] http://www.elaw.org/node/6038

calculating heath and economic impact due to air pollution for seeking damages and mechanisms for mechanisms to seek compensation from courts.

4. **Carrying capacity and cumulative impact assessment studies*:*** As stressed on before, few States are carrying out any assessment studies or future projection models when permitting development in any area. The result of this unplanned growth is already visible in the form of the critically polluted industrial clusters under the CEPI. To avoid such critically polluted areas in the future, there is a need for effective advocacy on the importance of such studies to a State's air quality.

5. **Critically Polluted Clusters*:*** From the data above, it is clear that the moratoriums on CEPI-identified critically polluted clusters are purely cosmetic. Nearly every state in this Study has succeeded in lifting moratoriums on all or most clusters in their region. However, there is the need for post-moratorium observation of these areas in order to show how ineffective the CEPI has been in mitigating pollution. In addition to this, there is the need for analysis and evaluation of the action plans and post-moratorium growth in these areas for effective advocacy to bring about stricter enforcement of the moratoriums.

6. **Vehicular Pollution*:*** In Chennai, an Inter-Ministerial Committee of vehicular pollution was formed. On the one hand, the formation of similar Committees in other States could potentially solve the problem related to multiplicity of departments and the ensuing red tape. On the other hand, it could simply end up as yet another ineffective governmental body. The judgments of the Kerala High Court and the Karnataka High Courts (referred to in Chapter 6) show that the reluctance of SPCBs to come out with vehicular pollution policies could potentially be made mandatory by approaching a suitable court, such as the NGT by filing cases against the concerned SPCBs. While a national policy from the CPCB may be a more effective document in terms of the magnitude of its reach, it is also important to remember that different cities and towns may require different solution and one size may not fit all. Effective advocacy on the need for creative strategies and representations to the CPCB may be helpful in bringing about more regulation.

7. **Intervention in the EIA process*:*** The EIA procedure is an important process wherein air pollution related issues can be brought to the fore. While there is still insufficient focus on air quality related issues, there have been a few cases where the Expert Appraisal Committee of the MoEF has rejected EIA Reports on the ground of the baseline AAQ data being prior to the issuance of the Terms of Reference; the AAQ network not being properly selected; and the AAQ stations not being spread

across the entire study area.[148] Thus, there is scope for submitting written representations to the MoEF and the Expert Appraisal Committee to include parameters related to data collection, site selection, appraisal, public consultation and issues of non compliance with existing conditions within the Terms of Reference given to the different types of projects, and also to bring up these issues at the state of public hearing/ consultation.

8. **Looking beyond the big cities***:* While the issue of air quality in bigger cities like Delhi and Chennai have been agitated before the courts, there is a need to focus attention beyond big cities to areas which have high potential air pollution. Studies on the growth potentials of smaller towns and future projection models may greatly assist in identifying future problem areas. To this end, there is a need for effective advocacy on building a more robust monitoring network which would include small towns, eco-sensitive areas as well as some vulnerable sites (which may be limited in area) but have significant pollution impacts such as toll booths, high traffic zones, etc.

9. **Identifying future problem areas***:* The current stand of the CPCB, as elaborated in Chapter 4 is that SO2 is not a threat any more, while only NOx and PM10 are the critical pollutants. While it is possible that the SO2 figures may not reflect the true picture of SO2 levels in the country due to a poor monitoring network, even if one were to accept that SO2 is no longer a critical pollutant, the large number of thermal power plants coming up in the country may cause a resurgence of the pollutant. Therefore, there is a need to remain on alert with regard to SO2. Furthermore, only four of the twelve parameters in the NAAQ standards are currently being monitored in the country. Many States do not even possess the requisite equipment to monitor the remaining pollutants. Thus, there is a need for effective advocacy on the remaining pollutants, their effects and the need to monitor and mitigate the same.

10. **Air Pollution and Greenhouse Gases***:* Currently, there is a very traditional understanding of air pollution which only includes pollutants which cause harm to human functions. As a result, greenhouse gases which are not "poisonous" in the nature of NOx or SO2 are neither monitored nor is there any way of enforcing monitoring by the SPCBs since there are no emission standards under the NAAQ Standards. As a result, the vast quantities of greenhouse gases being emitted by industries, especially thermal power plants are going unnoticed. As stated before, even in its limited form the Air Act and EP Act are sufficiently wide in scope to

148 24th meeting of the Expert Appraisal Committee for Environmental Appraisal of Mining Projects of the Ministry of Environment and Forests, February 21-23, 2012.

include greenhouse gases under the definition of "pollutants". Thus, there is a lot of scope for intervention not only at the level of statutory reforms, but also policy changes and institutional changes by way of campaigns and advocacy programmes to increase awareness of climate change issues. Small changes such as encouraging SPCBs to put in place policies and mechanisms to monitor greenhouse gas emissions could go a long way in building a successful case for a strong climate change regime in the country.